From Barriers to Bridges

Understanding and Improving Interactions between Architect and User-Client in Dwelling Design

Audrey MERTENS

LIÈGE université
Sciences Appliquées

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Grounded in constructionist and participatory epistemologies, this thesis adopts a qualitative, multi-method approach combining a systematic literature review, interviews, ethnographic case studies, co-design workshops, and focus groups. These methods allow for an in-depth analysis of both architects' and user-clients' lived experiences, as well as the mechanisms that hinder or facilitate meaningful exchange. Central to this analysis is the concept of friction and the phenomenon of habitus shock, where professional and lay perspectives collide.

Structured as an article-based dissertation, the thesis comprises nine peer-reviewed or submitted papers. These contributions map current practices, confront divergent narratives, and assess the transformative effects of co-design workshops developed during the *My Architect and I* project, which brought architects and user-clients together to co-create resources supporting better interaction.

Key findings underline the importance of early mutual learning, mediation tools, and soft skills — competencies often underrepresented in architectural training. Ultimately, the thesis advocates for a redefinition of the architect's role: from expert-author to mediator. It calls on both academic and professional communities to adopt more human-centred and context-sensitive models of architectural interaction.

INTER'ACT

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Sciences Appliquées

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Understanding and Improving Interactions between Architect and User-Client in Dwelling Design

Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Engineering Science at the University of Liège

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"The great enemy of communication, we find, is the illusion of it. We have talked enough; but we have not listened. And by not listening we have failed to concede the immense complexity of our society — and thus the great gaps between ourselves and those with whom we seek understanding."
— Whyte, W. H. (1950, September). Is anybody listening? Fortune, 77, 174. Time Inc.

This thesis aims to ensure architects and user-clients move past the illusion and start building bridges—or perhaps, homes.

This PhD was the setting in which the following peer-reviewed publications and submissions were undertaken. The list below encompasses all thesis-related papers produced during the course of the doctoral research, whether or not they are included in the body of the thesis.

Mertens, A., Hamarat, Y., & Elsen, C. (2023*)*. Interactions between Architects and End-users during Housing Design Processes: A Systematic Literature Review. *Archnet-IJAR: International Journal of Architectural Research*, 17(4), 703-724. doi.org/10.1108/ARCH-03-2022-0079

Mertens, A., Hamarat, Y., & Elsen, C. (2023). Méthodologies et méthodes d'analyse des pratiques interactionnelles entre l'architecte et le client-usager dans le cas de projets d'habitation. *ModACT 2023 proceedings [online]*, Paris, France, 1(4). popups.uliege.be/3041-4687/index.php?id=69

Mertens, A., Yönder, Ç., Hamarat, Y., & Elsen, C. (2023). Origins of design choices: retrospective analysis of the resulting prototype of a Research through Design project. In *Proceedings of the International Conference 2023 of the Design Research Society Special Interest Group on Experiential Knowledge (EKSIG): From Abstractness to Concreteness – Experiential Knowledge and the Role of Prototypes in Design Research*, 689-701. ISBN: 9788894167436ek

Mertens, A.*, Yönder, Ç.*, Hamarat, Y.,and Elsen, C.(2023) Transformative effects of co-design: The case of the "My Architect And I" project. In De Sainz Molestina, D., Galluzzo, L., Rizzo, F., Spallazzo, D. (eds.), *IASDR 2023: Life-Changing Design*, 9-13 October, Milan, Italy, 17pp. doi.org/10.21606/iasdr.2023.376

Mertens, A., Hamarat, Y., & Elsen, C. (2023). Considering Architects and Clients' Interactions Through the Design Thinking Framework. In G. Goldschmidt & E. Tarazi (Eds.), *Expanding the Frontiers of Design: Critical Perspectives* (15pp.). Routledge. ISBN: 9781003170242

Mertens, A., Coniasse, L., & Elsen, C. (23 June 2024). Towards Empowering Cohousing Communities: Finding Balance with a Group of Users-clients Throughout the Architectural Process. In Gray, C., Ciliotta Chehade, E., Hekkert, P., Forlano, L., Ciuccarelli, P., Lloyd, P. (eds.), *DRS2024: Boston*, 23–28 June, Boston, USA, 22pp. doi.org/10.21606/drs.2024.462

Yönder, Ç.*, Mertens, A*., Hamarat, Y., & Elsen, C. (2025). User-Client Involvement and Participation in Private Dwelling: Insights from Belgian Architects. In *Proceedings of ARCC 2025* (ahead of print).

Yönder, Ç.*, Mertens, A*., Hamarat, Y., & Elsen, C. (under review). Unveiling Divergent Perspectives in Single-Family House Design: A Comparative Analysis of Belgian Architects' and User-Clients' Narratives. *Submitted for publication, Journal of Housing and the Built Environment.*

Mertens, A.*, Yönder, Ç.*, Hamarat, Y., & Elsen, C. (2025). Argumentation in Co-Design for Architect–Client Interaction Tools. *Architectural Engineering and Design Management*, 1-20. doi.org/10.1080/17452007.2025.2538032

Mertens, A., Bourguignon, M., & Elsen, C. (submitted). Navigating Architectural Process: Tracking Architects' and User-Clients' Habitus Shock in Private Dwelling Design. *Submitted for publication, Archnet- IJAR.*

Mertens, A., & Elsen, C. (submitted). From Authorship to Stewardship: Adjustments Between Architects and User-Clients in Private Dwelling Design. *Submitted for publication, CoDesign.*

Yönder, Ç.*, Mertens, A.*, Castel, K.A., Heine, M., Elsen, C. (submitted). A review of tools to support user-client involvement in architectural housing contexts. *Submitted for publication, CoDesign.*

*These authors have contributed equally to these papers.

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To the Readers. To the (rare and precious) readers who have made it this far, thank you for your interest in my work. Your dedication to reading acknowledgments deserves its own acknowledgment — and perhaps a cup of tea or coffee, and some chocolate!

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for being part of this journey.

ABSTRACT (EN)

Interactions between architects and user-clients in Belgian private residential sector remain fraught with tension. A growing body of research highlights a persistent disconnect between architectural professionals and their clients, often leading to frustration, anxiety, and unmet expectations on both sides. While architects are still widely perceived as expert-authors, recent perspectives call for more collaborative design approaches that value user-clients' experiential knowledge and emotional investment in their homes. This doctoral research investigates these complex dynamics, exploring the underlying causes of these challenges and proposes strategies to improve them.

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Structured as an article-based dissertation, the thesis comprises nine peer-reviewed or submitted papers. These contributions map current practices, confront divergent narratives, and assess the transformative effects of co-design workshops developed during the *My Architect and I* project, which brought architects and user-clients together to co-create resources supporting better interaction.

Key findings underline the importance of early mutual learning, mediation tools, and soft skills – competencies often underrepresented in architectural training. Ultimately, the thesis advocates for a redefinition of the architect's role: from expert-author to mediator. It calls on both academic and professional communities to adopt more human-centred and context-sensitive models of architectural interaction.

Keywords   Architect–client interaction; User involvement; Habitus shock; Co-design; Relational competencies; Private residential architecture; Architectural practice.

ABSTRACT (FR)

Les interactions entre architectes et client·es-usager·ère·s dans le logement résidentiel privé belge restent marquées par de nombreuses tensions. Un nombre croissant de recherches met en évidence une déconnexion persistante entre les architectes et leurs client·e·s, entraînant souvent frustration, anxiété et attentes non satisfaites des deux côtés. Tandis que les architectes sont encore largement perçus comme des auteur·rices-expert·es, des perspectives plus récentes appellent à des approches de conception plus collaboratives, valorisant les savoirs expérientiels des habitant·e·s et leur investissement émotionnel dans leur habitat.

Cette recherche doctorale s'intéresse à ces dynamiques complexes, en explorant les causes sous-jacentes de ces difficultés et en proposant des pistes concrètes pour les améliorer. Ancrée dans des épistémologies constructiviste et participative, cette thèse adopte une méthodologie qualitative multi-méthodes combinant revue systématique de la littérature, entretiens approfondis, études de cas ethnographiques, ateliers de co-design et *focus groups*. Ces méthodes permettent une analyse approfondie des expériences vécues tant par les architectes que par les client·es-usager·ère·s, ainsi que des mécanismes qui freinent ou facilitent les échanges significatifs. L'analyse se centre notamment sur les notions de friction et de choc d'habitus, lorsque des perspectives entrent en collision.

Structurée sous la forme d'une thèse par articles, la dissertation regroupe neuf publications évaluées par des pairs ou soumises à un journal. Ces contributions dressent un aperçu des pratiques actuelles, confrontent des récits divergents, et analysent les effets transformateurs des ateliers de co-design développés dans le cadre du projet *Moi et mon architecte*, qui a réuni architectes et habitant·e·s pour co-créer des outils facilitant leurs interactions.

Les résultats soulignent l'importance d'un apprentissage mutuel dès les premières phases du projet, du recours à des outils de médiation, ainsi que des compétences relationnelles — encore trop peu valorisées dans la formation des architectes. Cette thèse souligne l'importance d'une redéfinition du rôle et de la posture de l'architecte : d'auteur·rice-expert·e à médiateur·rice. Elle invite les milieux académique et professionnel à adopter des modèles d'interaction recentrés sur l'humain et sensibles aux contextes.

Mots clés   Interaction architecte-client ; Implication usagère ; Choc d'habitus ; Co-design ; Architecture résidentielle privée ; Pratiques architecturales.

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READER'S GUIDE

The thesis aims to uncover friction points, identify opportunities for improved user involvement in architectural processes, and propose actionable tools to facilitate interactions between architects and user-clients.

Key concepts are briefly introduced in the glossary. The thesis is then structured in **nine chapters** incorporating **nine papers** — some published, others submitted/under review — in which I am the first author or first co-author. Each chapter concludes with a summary linking the papers to the overarching narrative of the thesis.

This PhD thesis is embedded within a larger research initiative titled *My Architect and I*, conducted at the *Inter'Act lab*. The overarching project is structured around two main research axes, each of which I translated into a guiding research question that forms the backbone of this manuscript:

First Axis: Understanding Current Practices

RQ1. How do architects and user-clients interact throughout contemporary dwelling projects?

This question is addressed primarily in Chapters IV to VIII.

Second Axis: Co-designing Alternatives

RQ2. How can these interactions between architects and user-clients be facilitated or improved?

This second axis is explored in Chapters VI to VIII, with a particular emphasis in Chapters VII and VIII.

As each article includes its introduction and context, some overlap may occur, particularly in the introduction and literature review sections. While this structure may lead to occasional repetition, it allows selective readers to better understand each paper in its own.

Chapter I: Introduction

This opening chapter answers the question **"Why?"**

It establishes the context and significance of the research, introducing the key concepts of architect-client interactions and their role in dwelling design. The introduction lays the groundwork for this thesis, presenting the problem statement, and the overarching framework that connects the various components of the thesis.

Chapter II: Focus

The second chapter addresses the question, **"What?"**

Here, the specific research questions that drive the thesis are presented. These questions have guided the research to ensure a targeted inquiry towards meaningful insights and contributions.

Chapter III: Methodologies

In answering the question **"How?"**, this chapter provides an in-depth explanation of the research methods employed, detailing the approaches used to collect, analyse, and interpret data.

Contrary to conventional structures in which the state of the art precedes the methodological chapter, this thesis presents the research methodologies first. This decision stems from the singular nature of this article-based thesis, in which methodological positioning plays a central and structuring role. By outlining the research posture and data collection strategy upfront, the reader is better equipped to grasp the epistemological grounding of the work and the empirical anchoring of the analyses. Furthermore, the state-of-the-art emerges from two structured articles — one focused on scientific literature, the other on grey literature. As such, it is built upon clearly delineated methodological frameworks that are best understood once the methodology chapter has been established.

Chapter IV: State-of-the-Art

This chapter addresses the question **"What's going on?"** and includes a review of existing literature and practices, presented through two key papers:

Paper 1 Interactions between Architects and End-Users during Housing Design Processes: A Systematic Literature Review.

Paper 2* A review of tools to support user-client involvement in architectural housing contexts.

The state-of-the-art review identifies gaps in current knowledge and practice, setting the stage for the original contributions of the research. While research questions are conventionally derived from such gaps, they are presented earlier in this thesis — in Chapter II. This deliberate shift reflects the iterative and exploratory nature of the research process, in which preliminary investigations and methodological positioning played a key role in shaping the questions. Rather than generating the research questions, the literature review serves to reinforce them, provides a foundation for the sub-questions developed in later papers, and will inform the broader discussion of the thesis.

* Co-first author with Çiğdem Yönder

Chapter V: Architects' Insights

This chapter explores the question **"What's up with architects?"** by delving into architects' perspectives:

Paper 3* User-Client Involvement & Participation in Private Housing Context: Belgian Architects' Perspective.

Paper 4 Considering Architect-Client Interactions through the Design Thinking Framework.

It provides insights into how architects perceive and navigate their interactions with user-clients, highlighting challenges and opportunities for improvement.

Chapter VI: Confronting Both Narratives

Through the lens of two additional papers, this chapter adds-on to the architects' insights from Chapter V. By asking **"What's up with both of them?"**, it juxtaposes architects' and user-clients' narratives, revealing points of divergence and convergence:

Paper 5* Unveiling Divergent Perspectives in Single-Family House Design: A Comparative Analysis of Belgian Architects' and User-Clients' Narratives.

Paper 6 Navigating Architectural Process: Tracking Architects' and User-Clients' Habitus Shock in Private Dwelling Design.

Paper 7 From Authorship to Stewardship: Adjustments Between Architects and User-Clients in Private Dwelling Design.

By comparing these perspectives, the chapter provides a nuanced understanding of the interaction dynamics.

Chapter VII: Towards Improvement of the Interactions

In this chapter, the question **"So What?"** is explored through two papers. These papers are based on the process and effects of the "My Architect and I" Project, a co-design process that brought together both architects and user-clients to co-create tools designed to help navigate interactions.

Paper 8* Argumentation in Co-Design for Architect–Client Interaction Tools.

The focus is on proposing strategies to enhance collaboration and mutual understanding in architect-client interactions.

Paper 9* Transformative Effects of Co-Design: The Case of the "My Architect and I" Project.

* Co-first author with Çiğdem Yönder

Chapter VIII: Discussion

This chapter discusses the overarching major themes that influence the relationship and interactions between architects and user-clients. It revisits the general research questions presented in the Focus, and answers: **"What are the key take-aways?"**

Furthermore, this chapter discusses **limits** of the thesis, and provides **perspective** for future work.

Chapter IX: Concluding Remarques

The final chapter revisits the thesis's key **contributions** and offers a concise summary and final reflections. It emphasizes the practical and theoretical significance of the research and its potential to influence architectural practices.

Appendices

The appendices provide supplementary materials, including detailed contextual information, the full papers supporting Chapter III and part of Chapter VIII, and essential documentation such as consent forms and methodological notebooks. The appendices also feature practical resources used during the research, such as workshop materials and reports, which offer insights into the co-design sessions. These appendices are available upon request or in the online PDF version of the thesis.

GLOSSARY

This glossary is intended to clarify how certain key terms are used **within the context of this thesis**. While these concepts may carry different meanings in other disciplinary or professional settings, the purpose here is not to engage in a terminological debate. Instead, each definition reflects a specific interpretation drawn from selected authors relevant to this thesis. Broader theoretical choices and the conceptual framing of the thesis are discussed in Chapter III, section *d. Overarching Framework*.

Agency	(Giddens,1984 ; Bourdieu, 1977; Stevens, 1995)	Refers to the capacity of individuals or groups to act independently, make choices, and exert influence over their circumstances, environment, or social structures.
Argumentation	(Darses, 2002 ; Leitão, 2000 ; Leal & Marraud, 2022 ; Le Bail *et al.*, 2022)	A dynamic, discursive, and social activity through which participants present, justify, and challenge interconnected statements with the aim of convincing others and negotiating meaning.
Brief	(Ryd, 2004 ; Bogers *et al.*, 2008 ; Jenkins *et al.*, 2012; McDonnell & Lloyd, 2014 ; Zetlaoui-Léger, 2009 ; Çalışkan & Pekeriçli, 2023)	Dynamic and collaborative process of eliciting, articulating, negotiating, and refining client needs, constraints, and shared expectations. It often begins as an incomplete construct and evolves through ongoing dialogue between stakeholders. This process may be materialized in a formal document that communicates the requirements and aspirations guiding the design and construction of a project.
Co-Design	(Sanders & Stappers, 2008; Luck, 2012)	A collaborative or collective design method based on shared authorship and mutual respect for diverse knowledge types. Seeks to empower participants and increase contextual relevance.
Dwelling (vs. Housing)	(Saegert, 1985; Coolen et al, 2002; King, 2009; Till, 2009)	"Dwelling" refers to lived experience and emotional engagement with space; "housing" implies standard technical solutions.

Expectancies	(Black & Mendenhall, 1991 ; Van der Linden *et al.*, 2017)	Anticipated outcomes based on prior experience or assumptions, often shaping how stakeholders interpret the process or results.
Expectations	(McDonnell & Lloyd, 2014 ; Arora *et al.*, 2021)	Subjective, sometimes implicit, beliefs, hopes, or desires from stakeholders about the process or outcome. Not always formally stated.
Facilitator	(Luck, 2007; Golden, 2017)	Refers to a role enabling participant engagement through dialogue or active involvement in a process, prioritizing clarity, openness, and responsiveness – in order to co-construct meaning and contribute to design decisions.
Friction Point	(Tsing, 2005)	Refers to the effects of encounters across difference – heterogeneous and unequal – that generate movement, cultural form, and power dynamics; it is the grip that makes motion possible, not just what slows it down. In other words, points when expectations or knowledge systems collide, which can generate discomfort and tension, but can also be viewed as opportunity for learning, innovation, and transformation.
Habitus	(Bourdieu; 1977; Stevens, 1995; Siva and London, 2009, 2011, 2012; Gray, 2013; Schwaiger *et al.,*2019)	The system of lasting, embodied dispositions through which individuals perceive, interpret, and act in the world, shaped by their past experiences and social positioning. It operates below the level of conscious thought, influencing preferences, behaviors, and expectations in a way that often feels natural or self-evident. Misalignments often generate tension, friction, or shock.
Indicator	(Borsboom, 2008)	An empirically observable variable that stands in for a latent concept, allowing researchers to measure abstract constructs such as attitudes, or social positions through concrete data. It is "latent" only in the sense that what it indicates (the variable) is not itself directly observable.

Interaction	(Turner, 1989; Little, 2016)	Involves the reciprocal influence individuals exert on each other during social encounters. While traditionally associated with face-to-face situations where people are physically co-present for a certain period, such interactions can also occur through technologically mediated forms in contemporary society.
Mediator	(Golden, 2017; Morvan *et al.*, 2024)	Role that goes beyond facilitation, combining a supportive stance with active intervention to help navigate and resolve tensions or surpass friction points in the design process. The mediator contributes to structuring the dialogue, translating experiential knowledge into design-relevant input, and enabling participants to co-construct and externalize shared solutions. See also: mediation.
Mediation	(Elsen, 2011; Morvan *et al.*, 2024)	Extends beyond facilitation by introducing a sociotechnical and epistemic structuring of the design space. Interpersonal mediation fosters participation and actively supports the translation, transformation, and elevation of user knowledge into design-relevant contributions through five key added functions: Epistemic scaffolding (e.g., maieutic questioning, abductive reasoning) to help users surface, formulate, and reformulate tacit or situated experiences into articulated problems and proposals; Knowledge transfer, offering targeted professional expertise (technical, legal, conceptual) to enrich user contributions and orient them within the design frame; Representational support, ensuring users can appropriate tools and media to externalize their ideas effectively; Process guidance, structuring decision sequences and supporting understanding of design reasoning; And adaptive orchestration of group dynamics (strategies and tactics) to align individual insights with collective progression.

Mental model	(Casakin & Badke-Schaub, 2017)	A cognitive representation that individuals form in order to understand, describe, and predict the functioning of a system, process, or task.
Mutual Learning	(Albrecht, 1988; Steen, 2011; Luck, 2018)	Refers to a key characteristic of participatory and human-centred design processes in which designers and users engage in a reciprocal exchange of knowledge, perspectives, and experiences. This concept is grounded in the understanding that both parties – designers (or professionals) and users (or laypeople) – bring valuable but distinct types of knowledge to the process, and that design outcomes improve when this knowledge is shared and integrated collaboratively.
Mutual understanding	(Safin *et al.*, 2012; Joachim *et al.*, 2012)	Refers to the shared and negotiated comprehension of the design problem, proposed solutions, ongoing actions, and the state of the representational environment (e.g., tools, documents, activated functions). It is built through external representations that take on a public nature, enabling observation, commentary, and revision, and facilitating the emergence of a shared vision or common understanding of the problem space. This mutual comprehension is essential for grounding, coordinating design actions, and reaching compromises through negotiation.
Negotiation	(Darse, 2006; Baker *et al.*, 2009 ; Camus *et al.* 2010)	Refers to a dynamic process of interaction through which actors with differing perspectives collaboratively define goals, aim to resolve tensions, and co-construct decisions. It operates between conflict (bargaining) and cooperation (mutual learning), shaping both the process and meaning of the project.

Participation	(Arnstein, 1969; Sanoff, 2006; Castell, 2012 ; Schelings, 2021)	A dynamic, evolving process of involving users in design, aiming for shared decision-making, empowerment, and the co-production of space and knowledge. Participation is framed as a continuum of power redistribution and social learning.
Posture	(Camus *et al.*, 2010)	Refers to the position or attitude adopted by actors – such as architects – toward how they engage in negotiation processes within architectural projects. These postures shape their openness to dialogue, their interpretation of environmental goals, and their role in the collaborative dynamics of the project.
Projection	(Friedman, 2003; Cipolla & Bartholo, 2014; Heylighen and Dong, 2019)	Interpretation of users' needs, experiences, or expectations through the lens of their own personal experiences, values, and assumptions. Designers *projecting* an image of themselves onto the user mistake their own perspective for that of the other. It may inadvertently reinforce distance rather than inclusion: treating the user as "another I" does not lead to genuine understanding but rather to a projection of the self onto the other, obscuring the user's unique standpoint.
Requirements	(McGuire & Schiffer, 1983; Anish, 2020)	Explicit, formalized needs or conditions that a design must fulfil. These are typically explicit form of input guiding the design process and are often documented or formalized in specifications.
Responsibility	Defined by the author, inspired by Naumov & Tao (2025)	Attribution of how decision-making power and accountability are shared or deflected among project actors.
Role	(Turner, 1989)	A set of expectations, behaviours, and meanings attributed to an actor by others within the context of recurring interaction patterns based on functions and symbolic positions that actors adopt. These are fluid and negotiated throughout the design process.

Trust	(Siva & London, 2011 ; Flynn & Feeney, 2020)	A relational foundation enabling shared decisions, and psychological safety, enabling architect–client collaboration despite uncertainty, asymmetry of knowledge, and emotional turbulence. Trust must be actively maintained, fluctuating based on perceived competence, transparency, and shared progress. It is sensitive to project stages, expectations, communication quality, and setbacks.
TTSM	(Yönder, 2025)	Tools, Techniques, Strategies, Methods: These are the means employed within co-design processes to support knowledge sharing and learning.
User-Clients	Defined by the author, also used in Çalışkan (2023) – yet not defined.	In private/self-promoted dwelling projects, individuals or households who simultaneously assume the roles of both end-users and commissioning clients. They are directly involved in decision-making processes, often driven by personal values, needs, and aspirations, and actively shape the design and construction of their homes.
Values	(Détienne *et al.*, 2019)	Understood as structured sets of ideas that characterize individuals, groups, and cultures. They act as criteria for action and choice, and can intervene at three levels in the design process: as principles shaping participation (e.g., openness, equality), as design criteria influencing object-related decisions, and as points of negotiation between stakeholders. Misalignments often generate friction.

FOREWORD

I have always been a curious learner — drawn to the logic of mathematics and the poetry of philosophy. I grew up in a family of engineers — my mother, father, and sister all pursued careers in the field. My older sister even completed the same architectural engineering degree I later chose. Although I witnessed first-hand her challenges — the long hours, late or missing pay, and the profession's undervaluing of young architects — I still chose this path, albeit for different reasons.

I was also shaped by another branch of my family — my paternal grandparents, both university professors in philosophy and literature. Their home was filled with books, papers, and stories of academic conferences. This dual heritage — technical and reflective — profoundly influenced my approach to architecture, and later to research.

During my studies in architectural engineering at the University of Liège, I was always intrigued by research. It was one of many possible paths I found intellectually fulfilling. My master's years were formative: an Erasmus exchange in Paris introduced me to the social dimensions of architecture.

At *Paris-La-Villette* National School of Architecture, under the guidance of Marc Bourdier and Claudio Secci, I participated in a field workshop in São Paulo on the "informal city." Together with my peers Pol and Marina, I conducted my first lived-space mappings and user interviews. At the same time, I began experimenting with photography — an activity that gave me a new way to observe, reframe, and reflect.

Prof. Catherine Elsen's classes on user-centred methods further anchored my growing interest in architectural mediation. Around the same time, I took on a student job at *Edito*, an architectural office in Liège.

Despite this growing interest, I didn't plan for a PhD straight out of my master's. Administrative hurdles and funding uncertainties intimidated me. After obtaining my degree, I attended job interviews in architectural offices, only to be met with disappointing offers that undervalued my time and work and couldn't even cover my rent. Around that time, my side activity, photography, began to take off. I enrolled in a photography degree at *Saint-Luc* School of Art and simultaneously collaborated with Guillaume Desmet, an architect friend of my sister's, to stay connected to practice.

With him, I began working on a retrofitting project for friends of mine. What seemed simple at first quickly revealed the complexities of architectural practice: the clients' needs kept shifting, their budget remained vague, and the couple wasn't aligned in their vision. Despite our attempts to phase the project to accommodate evolving priorities, they hired a contractor without consulting us and made irreversible decisions before the plans were finalized. They even bought flooring before the layout was confirmed.

It was a deeply frustrating experience, one that left me with a strong sense that something was fundamentally broken in the communication between architects and their clients. Neither Guillaume nor I were equipped to handle such a situation effectively.

That's when Catherine reached out with an offer: a doctoral project focused precisely on architect–client interactions in housing design. It felt like everything clicked into place. This was an opportunity to take a step back — not to abandon practice, but to investigate the systemic dynamics at play and contribute to a more thoughtful, ethical, and responsive architectural culture.

I insisted on participating not only in diagnosing the problem but also in co-developing possible solutions. It felt essential to me not to stop at a critique, but to activate my inner designer, do-er, fixer, collaborator. Working within a research team took some adjustment, but it allowed us to collaborate, as a team of researchers, on a co-design process that itself enables architects and clients to design *together*. In a way, it was an inception of co-design — complex, but also reflective, recursive, and deeply aligned with who I am.

On a personal note, I recently was fortunate enough to buy my own apartment — an old space in need of significant retrofitting. I found myself occupying the dual role of architect and end-user in a project of my own. This hands-on experience gave me a deeper understanding of the concrete challenges that arise not just in the design phase, but during execution: financing hurdles and loan approvals, difficulties in selecting and coordinating contractors, unexpected delays, and decisions that must be made under pressure. Living through these constraints first hand sharpened my perspective on what this research needs to address. It reinforced the importance of studying not only the design phase, but also the messy, often unpredictable reality of implementation. This experience continues to inform my analysis, particularly in how I approach field observations and frame the questions that still need to be asked.

I write this thesis with a strong awareness of the position I occupy. I am a white woman, born into a financially stable family, with access to higher education and opportunities to travel, study abroad, and explore different professional avenues. This background has undoubtedly given me the safety net to take intellectual and creative risks. I acknowledge these privileges not to discredit my journey, but to stay grounded in the ethical responsibility that comes with them, especially when researching topics that intersect with disempowerment in architectural practice.

This thesis reflects a part of my journey. It is nourished by academic exploration, and shaped by the collaborative intelligence of the research team. It invites us to rethink architecture — not as the pursuit of individual brilliance, but as a shared, negotiated process grounded in empathy and dialogue.

CHAPTER I
Introduction

Establishing Context and Significance

Overview of the Architectural Practice in Wallonia-Brussels

There are mornings when even the most passionate architect questions their vocation. Not because of massive public contracts or bureaucratic nightmares, but because of the "small projects". These are the kinds of projects where, as Mouffe (2025) illustrates, the architect is contacted at dawn with concerns like "The contractor isn't here", only to discover that the client has not taken any initiative, responding instead with, "No. You're the architect". This seemingly banal exchange reveals a deeper, persistent ambiguity in roles and responsibilities that characterizes many architect–client relationships in small-scale residential projects. These modest renovations, budget-strapped extensions, or DIY-fuelled self-promotions often place architects in roles far beyond design: therapist, translator, magician, even scapegoat. Belgian architect Sébastien Mouffe (2025) shared this paradox through his social media: these projects wear you down, but they also stay with you. They can be jewels if you don't give up — offering, in exchange for exhaustion, human connection. It is within this emotionally charged and relationally complex context that this thesis takes root. The present research examines not merely architectural outcomes, but the difficult, delicate, and sometimes beautiful exchanges between architects and user-clients in Belgium's private residential sector —spaces where professional expertise meets personal dreams, and where misunderstanding often walks hand-in-hand with deep, transformative collaboration.

An even more caustic portrait of the contemporary Belgian architect emerges from *Anarchitecte*, a satirical collection of texts by Olivier Verdique, writing under the alias Alvar Le Corvanderpius. Through biting wit and meticulously sketched vignettes, Verdique lays bare the absurdities and frustrations of architectural practice in French-speaking Belgium at the turn of the 21st century. His pamphlets depict an architect besieged — by incoherent regulations, administrative overload, clients' contradictory desires, and the glaring lack of institutional recognition for architecture as a cultural and artistic practice (Verdique, 2021). Yet the tone is not one of detached cynicism. Like Mouffe, Verdique writes from within the profession, wielding satire as a tool of resistance. He does not pass judgment on his time but rebels against what he knows best: the increasingly suffocating constraints that threaten the very spirit of architectural creation. The figure of the architect becomes a tragicomic character — part clown, part craftsman — caught between professional ideals and everyday absurdities. *Anarchitecte* thus reinforces the central concern of this thesis: that the practice of architecture, especially in modest housing projects, is as much shaped by emotional labor, institutional friction, and social misunderstanding as it is by technical design. Understanding these tensions is crucial not only to diagnose current dysfunctions but to imagine more sustainable and respectful modes of interaction between architects and those they design for.

As of 2024, Belgium counts 15,900 registered architects (ACE, 2024), representing approximately one architect per 740 inhabitants, or about 0.00135% of the population. Compared to the European average — 579,600 architects, or roughly one architect per 775 inhabitants — Belgium stands on the more densely represented side. France, for instance, has only one architect per 2,200 inhabitants, meaning architects represent just 0.00045% of the French population.

This can be explained by the fact that the practice of architecture is legally embedded in the building process through the Law of 20 February 1939, which mandates the involvement of a registered architect for any project requiring a building permit or involving structural alterations. This regulation positions Belgian architects as legally indispensable intermediaries between private clients, regulatory authorities, and construction actors.

Despite this formal requirement, interactions between architects and user-clients, particularly in private dwelling projects, remain fraught with tension. A nationwide survey of 1,330 individuals who built their own homes between 2000 and 2013 revealed that only 50% were satisfied with their architect, while nearly one-third reported stress, anxiety, or irritability during the design and construction process (Nauwelaers & Rossini, 2014). In a 2018 study, architects themselves report that customers' requests are among the 5 most challenging aspects of their work (Stals *et al.*, 2018).

The profession remains slightly male-dominated on the Belgian market (59% men, 41% women). The majority of architects work in the private sector, either as sole practitioners (27%), salaried employees (14%), or within other private structures (39%) (ACE, 2024). Despite their legally central role, architects' financial and temporal constraints are significant: in 2024, median annual earnings stood at €34,447—a modest increase since 2010 (€28,188)—with sole practitioners and directors/associate architects reporting weekly working hours exceeding 46 hours on average (ACE, 2024).

Architectural commissions in Belgium remain overwhelmingly oriented toward private housing, which accounted for 57% of project types in 2024 (ACE, 2024). Most commissions involve new construction (49%), though refurbishment (39%) and heritage (12%) work remain substantial components of the market.

Belgian researchers revealed a disconnect between this professional activity and the lived experience of clients. Vanzande (2020) and Halleux (2005) have traced the historical and economic forces contributing to this disjunction. Vanzande (2020) outlines a cultural shift from self-built, user-designed dwellings to top-down, industrialized housing production. These studies underscore a fundamental tension: while architects in Belgium remain institutionally embedded in the housing process, the relationship with user-clients is marked by asymmetries and unmet expectations.

Unique Challenges in Single-Family Housing Projects

User-clients — those who will personally inhabit the spaces being designed — often place particularly high demands on architects, especially when working within tight budget constraints (Arora *et al.*, 2021). These demands intensify the complexity of architect–client interactions, which play a critical role in determining both project outcomes and user satisfaction (Angral, 2019). Clients' expectations and misunderstandings about architects' roles complicate interactions further, ranking among the top factors that negatively affect architects' daily practice (Stals *et al.*, 2018).

Despite growing calls for more inclusive and collaborative design practices, architectural culture and education continue to valorise the figure of the autonomous, creative professional. Although architectural authority over clients has declined in recent decades (Waite & Braidwood, 2017), Ahuja *et al.* (2020) observe the enduring image of the architect as the 'spiritual leader' of the project, an archetype deeply embedded in professional identity and reinforced from the earliest stages of training: according to Adad (2004), architects consider the house as an art object due to their scholar years. Studio teaching still prioritizes aesthetic originality and individual expression (Winch & Schneider, 1993; RIBA, 2015). As Cuff (1991, p. 154) notes, "becoming an architect is about becoming an artist, but a peculiar kind of artist who stays within certain boundaries". Arboleda (2020, p.16) points out that architectural tools have developed upon large, iconic architectural designs, as celebrations "of the designer's creative strokes". Other reports and studies (Stater, 2002 in Siva and London, 2011; Angral, 2019; RIBA, 2015) raise the architects' tendency to be peer-oriented rather than client-oriented, therefore, bringing these to see architects as arrogant or inflexible (Siva and London, 2011; Angral, 2019). Architects are known to rely on their own experience as a main reference whilst designing (Cuff, 1991; Imrie, 2003; Verhulst *et al.*, 2016; Heylighen and Dong, 2019). Angral (2019) raises concerns about "viewing architecture as art, a culture of allegiance and indoctrination, disassociation from clients and end-users, neglecting moral and ethical responsibilities, and outdated models of education and practice" (p. 59).

The tension between this artistic self-conception and the increasing complexity of practice has long been acknowledged. Since the foundational studies of Blau (1987), Cuff (1991), and Larson (1993), the profession has evolved from the solitary auteur to the service firm (McNeill, 2009), with architects expected to be more integrated into the building production process (Murray, 2008; Farrell, 2014; Cohen *et al.*, 2005). Yet the romanticized stereotype of the passionate, solitary genius persists (Heynen, 2014), shaping both public perception and the aspirations of emerging practitioners (Ahuja *et al.*, 2019; Ahuja *et al.*, 2020). This narrative is further legitimized by architecture's most prestigious accolades, such as the Pritzker Prize, which continue to celebrate the heroic

individual, often disconnected from client needs or material constraints (Wiscombe, 2006; Cuff, 2012; Pelkonen, 2012; Heynen, 2014; Ahuja *et al.*, 2020).

Recent years have witnessed a growing interest in user-centred and participatory design methodologies, reflecting broader societal expectations for inclusion, transparency, and sustainability in architecture (Lawson, 2006; Sarkar & Gero, 2017; Arboleda, 2020). These approaches not only aim to align design outcomes more closely with users' lived experiences, but also position architecture as a contributor to social, cultural, and environmental goals (Golden, 2017). Co-design, in particular, reframes the user as a co-creator rather than a passive recipient, engaging them throughout the design process (Sanders & Stappers, 2008). This shift signals a transformation in the roles of designers and user-clients alike, expanding the front end of the design process and introducing new opportunities for dialogue, empathy, and mutual learning.

Yet despite these promising developments, user-involved projects often expose structural asymmetries. Communication breakdowns, unbalanced power dynamics, and steep learning curves remain common, particularly when clients are unfamiliar with design language or processes (Siva *et al.*, 2012; Frimpong & Dansoh, 2018). While some architects adopt a facilitative posture (Adad, 2004), enabling users to articulate and refine their needs over time (Huang & Wang, 2012), client engagement frequently remains superficial, restricted to early briefing stages (Norouzi *et al.*, 2015; Van der Linden *et al.*, 2017). User-clients' needs may evolve significantly through the process, yet traditional design timelines and decision-making models rarely accommodate this fluidity.

These challenges are compounded by the persistence of design paradigms centred on individual authorship. Despite widespread calls for change (Prost & Chaslin, 2014; Macaire, 2009; McDonnell & Lloyd, 2014), many architectural models still reflect an art-service dichotomy that marginalises collaborative modes. Architects continue to draw primarily on their own experience when designing (Cuff, 1991; Verhulst *et al.*, 2016; Heylighen & Dong, 2019), often relying on visual or narrative tools ill-suited to client interpretation (Arboleda, 2020; Steen, 2011). Consequently, user input may be limited or misinterpreted, reducing opportunities for genuine co-creation. As Sanders (2005) and Sanders & Stappers (2008) argue, the move toward co-design demands not only methodological shifts but also deeper changes in mindsets, roles, and professional cultures. Without such transformations, participatory intent in architecture risks remaining superficial or symbolic.

Potential for Long-Term Improvements

Addressing communication and interactional challenges offers significant potential for lasting improvements in architectural practice. Strengthening architect– user-client relationships can enhance user satisfaction, reduce project-related stress, and improve professional efficiency. Clearer dialogue and mutual understanding foster trust and streamline decision-making, benefiting both parties. More broadly, this thesis argues that rethinking these dynamics is key to reshaping the profession itself. Embracing inclusive, empathetic, and context-sensitive modes of engagement enables architects to better navigate complex social, emotional, and material realities. Relational competence — often marginalised in traditional training — must be recognised as a core skill, essential to the profession's relevance and resilience. In a context where architects are increasingly called to mediate between diverging expectations, limited resources, and evolving ways of living, improving interactional quality is not a peripheral concern, but a cornerstone of more ethical, sustainable, and impactful practice.

Why?

ACE DATA (2024) & Belgian archictural context

Archi

User-Clients

Customers' requests = Top 5 making their daily work difficult (Stals et al, 2018)

50% not satisfied (Nauwelaers & Rossini, 2014)

Friction (Adad, 2004; Angral, 2019) Habitus Shock (Siva & London, 2011)

Co-design tools (Sanders & Stappers, 2008; Arboleda, 2020)

Potential impacts: Empowerment of both
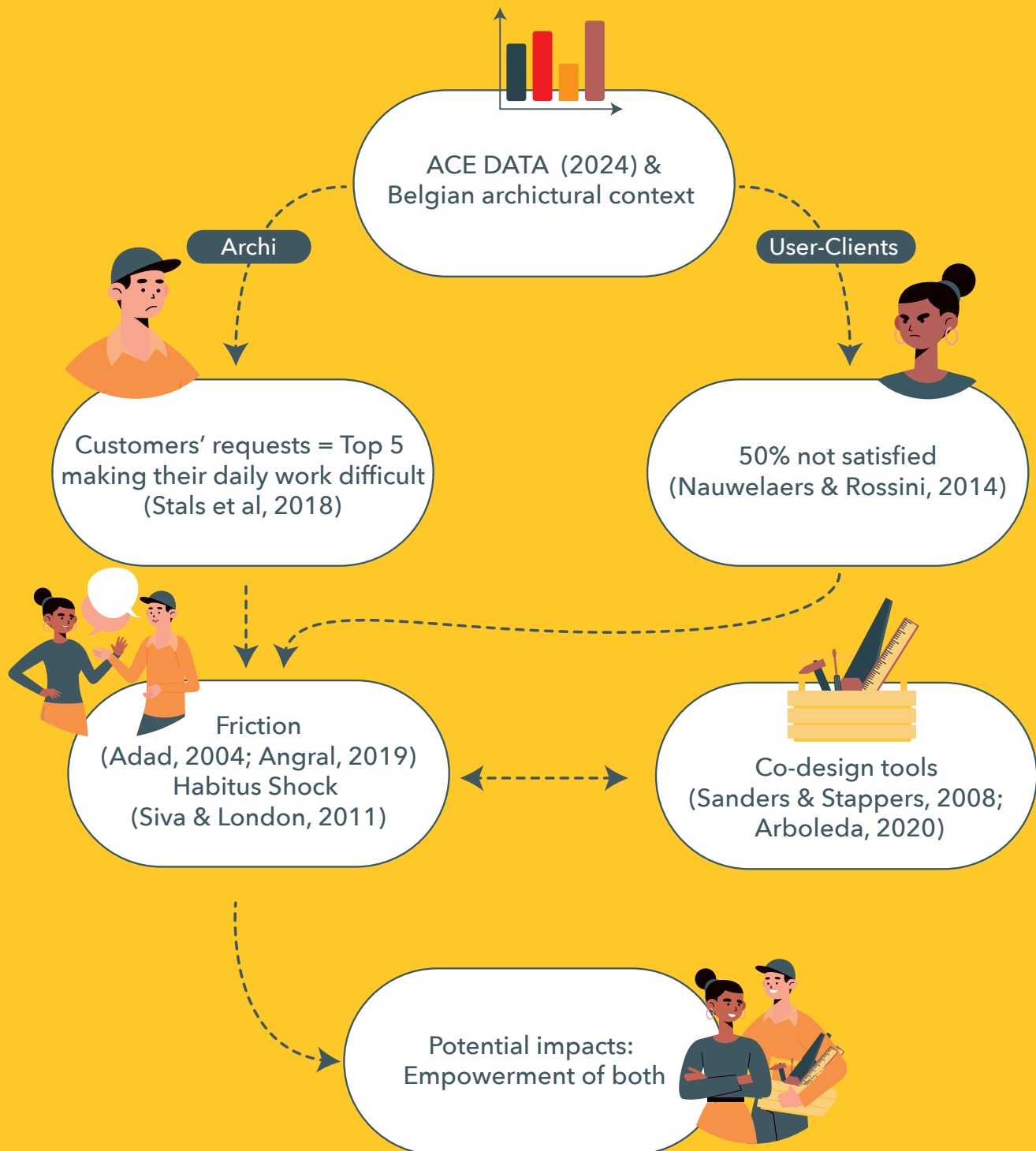
Figure 1. Visual summary of the Introduction, answering the question "Why is this research relevant?"

CHAPTER II
Focus

II.1. Research Questions

This thesis is driven by two overarching research questions (RQs):

RQ1 (Diagnostic). *How do architects and user-clients interact throughout contemporary dwelling projects?*

RQ2 (Co-design & Improvement). *How can these interactions between architects and user-clients be facilitated or improved?*

The central hypothesis guiding this research is that significant opportunities exist to enhance architect–client interactions, thus improving project outcomes, user satisfaction, and professional effectiveness. The following table summarizes the research questions for each article, with one column indicating whether the article addresses the general research question RQ1, RQ2 or both RQ1 and RQ2, and another column listing the specific research questions unique to each standalone article, even though each contributes to the overarching thesis discussion.

Table 1. Research questions specific to each article

Paper	General QR	Specific Research Question(s)
1	RQ1	How do end-users and architects currently interact during housing design processes? (Focus: actors, encounters, field, bottlenecks, and potentialities.)
2	RQ1 & RQ2	(i) What are the existing TTSM to engage user-clients in the architectural field? (ii) How do these tools foster knowledge exchange & mutual-understanding?
3	RQ1	(i) What professional posture do architects adopt with user-clients? (ii) How do they perceive user-clients involvement?
4	RQ1 & RQ2	(i) What postures do architects adopt toward end-users? (ii) How do these relate to Design Thinking principles, and what patterns emerge from successful interactions?
5	RQ1 & RQ2	What key factors influence design outcomes and user-client satisfaction in single-family house design processes in Belgium?
6	RQ1	(i) How does habitus shock manifest in architectural processes for both user-clients and architects? (ii) How do architects and user-clients perceive and interpret critical turning points differently throughout the design process? (iii) What comfort or enthusiasm variations emerge in long-duration architectural collaborations, and how do these affect project engagement?
7	RQ1 & RQ2	(i) How do architects come to understand and engage with the habitus of their user-clients in order to grasp their needs and expectations? (ii) How do architects and user-clients learn and adjust throughout the design process? And how do the interactions between architects and user-clients contribute to the development of new knowledge, skills, and forms of understanding? (iii) What roles and postures do architects adopt to facilitate (or hinder) mutual adjustment with user-clients over the course of a project?
8	RQ1 & RQ2	(i) Which co-design activity generates the highest interaction and exchange? (ii) Which activity prompts the most argumentative expression? (iii) Do architects and user-clients rely more on abstract or concrete reasoning? (iv) Which themes provoke the most reactions or disagreements?
9	RQ2	(i) What transformative effects result from co-design processes beyond design outputs, and what triggers these effects? (ii) How do participants' perspectives and practices evolve through participation in the project?

II.2. Structure of the Research

The research is organized around two complementary axes corresponding directly to the research questions above:

Axis 1: Diagnostic of Current Interaction Dynamics
The first axis (addressing RQ1) provides an analysis of existing architect–user-client interactions, highlighting current practices, methods, and gaps. This diagnostic phase unfolds through three analytical dimensions:

Current Interaction Methods (Chapters IV–V): A comprehensive mapping of present interaction practices based on literature and an analysis of existing TTSMs.

Divergences and Habitus Shock (Chapter VI): Identifying areas where architects' and clients' perspectives diverge, examining misunderstandings and cultural frictions (habitus shock), and exploring opportunities for mutual learning.

Communication and Argumentation (Chapter VII): Analyzing challenges related to communication and argumentation within existing practices to identify key areas offering an opportunity for improvement.

Axis 2: Co-design and Evaluation of Improved Practices
The second axis (addressing RQ2) explores practical methods to enhance and transform interactions:

Co-Design Methodologies (Chapters VII–VIII): Evaluation of a co-design approach intended to improve architect–client interactions, foster mutual understanding, and achieve better collaborative outcomes.

Evaluation and Reflection (Chapter VIII): Assessing the effectiveness of implemented co-design strategies, evaluating their practical impacts on interaction dynamics, satisfaction levels, and overall project success.

II.3. Disclaimers

To clearly delineate the scope of this research, it is essential to clarify explicitly what this study does **not** aim to accomplish:

Not a Comprehensive Review of General Architectural Practice:

The research explicitly targets architect–client interaction dynamics within single-family housing projects in Wallonia-Brussels. Findings from this study are not intended to be directly generalized to other types of architectural projects or broader professional contexts. Should insights from this research be applied to different contexts or practices, they must first be carefully recontextualized, adapted, and rigorously re-evaluated.

Not an Assessment of Architectural Quality or Aesthetic Choices:

Evaluations focus strictly on social interactions, collaborative processes, and satisfaction outcomes. Architectural quality, technical performance, and aesthetics fall beyond the scope.

Not Solely a Theoretical Exploration:

Although anchored in theoretical insights, this thesis places significant emphasis on empirical research, practical methodologies and co-design tools, aiming explicitly at practical and actionable outcomes rather than historical analysis or extensive theoretical propositions.

Not an Exhaustive Evaluation of all Available Co-Design Methods:

The research evaluates selected co-design processes and tools, assessing their effectiveness within the studied contexts rather than providing an exhaustive survey of all possible co-design methods.

Aiming to Build the Missing Foundation for Collaboration:

Ultimately, this work aspires to "build the pile" that is still missing for architects and user-clients to construct a more robust and meaningful **bridge** between them. By identifying friction points, supporting mutual understanding, and providing concrete tools to enhance collaboration, the thesis contributes to laying the groundwork for more balanced, transparent, and human-centred architectural practices.

RQ1 (Diagnostic).
How do architects and user-clients interact throughout contemporary dwelling projects?

Research Purpose

RQ2 (Co-design & Improvement).
How can these interactions between architects and user-clients be facilitated or improved?
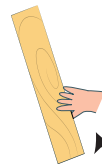
Research Purpose

Figure 2. Visual representation of the Focus

CHAPTER III
Methodologies

This chapter builds upon the methodological reflections previously developed in the context of the following conference paper:

Mertens, A., Hamarat, Y., & Elsen, C. (2023). Méthodologies et méthodes d'analyse des pratiques interactionnelles entre l'architecte et le client-usager dans le cas de projets d'habitation. *ModACT 2023 proceedings [online]*, Paris, France, 1(4). popups.uliege.be/3041-4687/index.php?id=69

III.1. Ethical Considerations

This research was conducted in accordance with ethical standards for research involving human participants, in line with Belgian and European legislation, including the General Data Protection Regulation (GDPR, EU Regulation 2016/679) and the Belgian law of 30 July 2018 on the protection of personal data. Ethical approval was granted by the Human and Social Sciences Ethics Committee of the University of Liège (Comité d'éthique en Sciences Humaines et Sociales) on April 22, 2019. File number: 20200103.

Respect for Autonomy and Informed Consent

All participants (architects, user-clients, and workshop attendees) were informed of the nature and aims of the research. For interviews, participants provided written informed consent prior to participation. The consent forms (Appendix 3) detailed the objectives of each study, the methods used, the treatment and protection of data, participant rights (including the right to withdraw at any time), and researcher contact details. These forms also included a section for explicit, signed consent. For the workshops, we integrated information on participation and consent approval into our online participation form. For focus groups, we informed participants about this in our invitation emails and obtained verbal consent at the beginning of the sessions.

Data Protection and Confidentiality

All collected data were stored on a secure server maintained by the University of Liège's General IT Service (SEGI), accessible only via the researcher's personal ULiege ID and password. Names appearing in the thesis are pseudonyms to dissociate identity from the data used in analysis. When videographic documentation was used, restricted framing was applied to prevent potential identification.

Ethical Stance and Transparency

The research was guided by a commitment to participant autonomy, respect, and transparency. Clear communication was maintained regarding the goals of the project, the intended use of collected data, and the potential outcomes. The voluntary nature of participation was reiterated throughout, and efforts were made to ensure all participants felt comfortable voicing their perspectives, particularly in co-design settings.

Navigating Power Dynamics

Special attention was paid to the potential imbalances of power between architects, user-clients, and the researcher. Strategies were implemented to foster equitable participation and minimize bias in workshop facilitation, interviews, and data interpretation. In particular, co-design activities were designed to support inclusive dialogue, giving equal weight to professional expertise and lived experience.

III.2. Positioning the Researcher

Epistemic Position and Theoretical Perspective

This chapter outlines the epistemic stance and methodological foundations that underpin this research. While each paper within the thesis details its specific methodology, the present section offers a transversal reflection on the overarching paradigms, theoretical lenses, and data collection strategies used throughout the work.

Following Crotty (1998), four layers structure a researcher's positioning:

Epistemology – the theory of knowledge that provides the broader conceptual framework within which methodology and theory are embedded.

Theoretical perspective – the philosophical standpoint informing the methodology and shaping how we "see" the world.

Methodologies – the strategy or plan of action that justifies the use of those methods.

Methods – the techniques or procedures used to gather and analyze data.

The epistemological orientation of this thesis draws primarily on **constructionist**[1] and **participatory** paradigms (Lincoln *et al.*, 2011; Heron & Reason, 1997). In line with these paradigms, the research assumes that social reality is not fixed or objective but instead **socially constructed**, context-dependent, and emergent from interactions between individuals and their environments (Crotty, 1998). From this perspective, knowledge is not simply "discovered" but co-created, meaning that the dynamics between architects and user-clients must be understood through the lens of lived experience, situated practices, and the researcher's own interpretive perspective.

The **constructionist paradigm**, in particular, views all knowledge — and therefore all meaningful reality — as constructed through human interaction and embedded in specific cultural and social contexts (Crotty, 1998, p.112–113). The **participatory paradigm** complements this view by emphasizing co-creation, reflexivity, and horizontal relationships between the researcher and the individuals involved in the study (Kilgore, 2001; Lincoln *et al.*, 2011). These paradigms align with the project's intention to foster meaningful collaboration in architectural practice and to surface the tacit, often unspoken, knowledge that informs decisions on both sides of the architect–client relationship.

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[1] Although the literature often uses the terms "constructivist" and "constructionist" interchangeably, I followed Crotty's (1998) distinction and use **constructionist**, given its emphasis on collective meaning-making within social settings.

This theoretical orientation also borrows from **symbolic interactionism** (Denzin, 2004), which centers on how social meanings emerge through interaction, and from **relativism**, which holds that multiple realities can be valid and co-exist, especially when they are locally and contextually constructed (Lincoln *et al.*, 2011).

Plural Researchers and Reflexive Practice

Reflexivity was a central and ongoing practice throughout this research, both at the **individual** and **collective** level. This work is the result of close collaboration with colleagues (frequently) and master's students (occasionally) at various stages of the process — including co-design workshops, interviews, transcription, and analysis.

This plural configuration enriched the research with multiple perspectives and also prompted regular discussions around interpretations, methodological decisions, and ethical concerns. These moments of collective reflexivity acted as safeguards against blind spots or interpretative bias and supported the trustworthiness of the findings.

This plural configuration also came with its share of difficulties. The presence of multiple researchers — each with their own disciplinary background, interpretive lens, and facilitation style — inevitably led to divergent viewpoints and sometimes conflicting interpretations. Debates arose around the meaning of specific quotes or the categorization of interactions. These disagreements, while at times destabilizing, were also intellectually fruitful, forcing us to refine our arguments and make our analytical choices more explicit.

This thesis acknowledges that no researcher enters the field as a perfectly neutral observer. Our positionalities, values, and expectations shaped the way we designed the tools, framed the questions, and facilitated the workshops. Even the most well-intentioned forms of engagement may have introduced subtle biases — whether through the way scenarios were introduced, how silence was interpreted, or which narratives were privileged in the analysis. Recognizing this, we strived to maintain a critical posture throughout the research process while embracing the inherently situated and interpretive nature of qualitative research.

Navigating Insider–Outsider–Facilitator Roles

My positioning within the field was neither fixed nor neutral; it fluctuated throughout the research depending on context, audience, and activity. As someone trained in architectural engineering and with brief yet formative experience in architectural practice, I initially approached the field with a degree of insider familiarity. My early interactions with user-clients had already exposed me to the emotional intensity, misaligned expectations, and communication difficulties that often arise in residential projects. These personal experiences sensitized me to the challenges reported by architects during interviews and workshops.

However, I was acutely aware of the risk of over-identifying with the architectural perspective or projecting my own experience onto participants. To mitigate this, I made a conscious effort to remain open to divergent narratives, especially from user-clients whose perspectives and backgrounds differed from mine. Rather than fitting these accounts into pre-existing frameworks, I aimed to let their stories shape my understanding. I adopted an actively listening posture, privileging emergent insights over confirmation of assumptions.

In some settings — particularly in educational contexts or co-design activities with clients — I found myself positioned more as an insider. Shared values around participation, learning, and dialogue often helped create common ground. My strong personal commitment to education and continuous learning also influenced how I designed knowledge-sharing spaces. I tended to favor formats that encouraged autonomy, reflection, and reciprocal exchange — approaches aligned with the participatory values underpinning this research. Aware of how these values could shape both my facilitation style and the outcomes, I chose not to neutralize them but instead to make them explicit and reflect critically on their implications.

In contrast, there were contexts — such as interviews with experienced professionals or observations in unfamiliar architectural offices — where I was clearly perceived as an outsider. My age, academic affiliation, and limited seniority marked a distance that was sometimes a barrier to immediate trust, but also created an analytical space that encouraged participants to verbalize what might otherwise have remained implicit.

In moments of **non-participant observation**, I embraced the distance as an opportunity to attentively observe the interactional routines, relational dynamics, without intervening in the unfolding situations. These observations, particularly those documented in Papers 6 and 7, extended over 26 and 31 months of intermittent yet sustained contact with architects and user-clients. Over time, a form of **relational proximity** naturally emerged. Emails, phone calls, and interviews gradually became more personal, and a sense of mutual

trust began to take shape. Although I consistently reminded participants of my non-interventionist stance — that I would not take sides nor directly influence decisions —I remain aware that my continued presence have had an effect on the case studies. At times, this proximity evolved into a **reflexive space** for participants themselves: some confided in me during difficult moments, while others used our exchanges to reflect on their roles, expectations, or frustrations within the project. I did not consider these moments a breach of neutrality, but rather a sign of the ethical and human responsibility entailed in long-term qualitative work. This closeness, when handled with care and discretion, became an opportunity to access **richer and more nuanced data**, always within the boundaries of participant confidentiality, respect, and consent. Far from undermining the research, these evolving relationships contributed to a deeper, more situated understanding of the emotional and cognitive trajectories experienced by both architects and clients.

Finally, in **co-design workshops**, my role evolved into that of a facilitator, a mediator of interaction between architects and user-clients. This required a subtle balancing act: ensuring equitable participation, prompting critical reflection without steering content, and managing group dynamics while minimizing researcher influence on the outcomes. As a facilitator, I was both present and restrained, aiming to hold space for exchange while remaining mindful of how my posture could shape interactions.

This fluid movement between insider, outsider, and facilitator roles required ongoing reflexivity, humility, and situational awareness. It was precisely through this shifting positionality that I was able to engage meaningfully with the complexities of architect–client relationships, while maintaining a critical and empathetic perspective throughout the research process.

Theoretical Foundations

This research is grounded in an interdisciplinary framework combining sociology of interaction, professional practice theory, and human-centered design (HCD), enriched by theories of habitus and transformative learning. The conceptual foundation draws from both social theory and design research to analyse architect–user relationships in private dwelling projects. It supports an interpretive, qualitative inquiry into how roles, rituals, and frictions shape architectural processes and outcomes.

Interaction as a Unit of Analysis: Roles and Misalignments

At the core of this inquiry is the understanding of **interaction** as the primary unit of analysis. Building on Turner's sociological framework (1989), interactions are conceptualized not merely as exchanges of information but as socially situated, ritualized encounters where **roles**, **expectations**, and **symbolic behaviours** are performed, reinforced, or contested. Site visits, drawing explanations, and even silences between architects and users function as **interaction rituals**, repetitive practices that structure social meaning and reinforce relational dynamics.

Based on Turner (1989), roles are understood as set of expectations, behaviours, and meanings attributed to an actor by others within the context of recurring interaction patterns based on functions and symbolic positions that actors adopt. These are fluid and negotiated throughout the design process. Those provide a useful lens to classify observed behaviours. It allows one to trace how architects oscillate between postures of authority, facilitation, or responsiveness, while clients seek reassurance, validation, or inclusion. These asymmetries often surface in **misalignments of motivation**: for instance, a user may seek emotional comfort during uncertainty, while the architect remains focused on technical constraints. Such dissonances can destabilize the interaction and expose deeper cultural tensions.

This research critically engages with the **roles and postures of architects** in user-involved settings. The role refers to the functional and symbolic position architects hold, while the posture reflects their performative stance toward users (Camus *et al.*, 2010; Till, 2009; Golden, 2017). Changing postures are not superficial: they recalibrate how **responsibility, authorship, and care** are distributed across the project.

Design as a Reflective Conversation: Professional Learning in Uncertainty

Complementing this sociological perspective, Schön's theory of professional practice (1983, p. 17) provides a nuanced understanding of how designers operate managing "complexity" and "uncertainty". The architect's practice is not a linear application of knowledge but a **reflective conversation with the**

situation, shaped by iterative reframing and experimentation. Feedback loops between user input and design decisions constitute key **moments of reflection-in-action**, wherein tacit and explicit knowledge are made more visible, questioned, and reconfigured.

Co-design workshops are a privileged site for this phenomenon: rather than merely co-creating tools, they serve as **experimental micro-labs of knowledge transformation**, where designers and users collaboratively test ideas, confront ambiguities, and renegotiate problem definitions. The concept of **meta-cognitive reflection** — how actors reflect not only on content but on their learning process — becomes central to assessing the impact of these moments (Schön, 1983).

Habitus Shock and Cultural Frictions

To further explain the emotional and cognitive turbulences that users experience during design, the research draws on **Bourdieu's theory of habitus** (1977) and its adaptation to architecture by Siva & London (2009, 2011).

Bourdieu (1977, p. 72) defines habitus as "systems of durable, transposable dispositions principles of generation and structuring of practices and representations", where ndividuals can act inventively, but they tend to encounter circumstances congruent with those that fashioned their habitus.

Habitus shock refers to the psychological and social disorientation felt when a person's deeply internalized dispositions are confronted with a culture governed by unfamiliar norms and logics. It denotes the confusion, stress, or frustration experienced when one encounters an unfamiliar habitus whose values, practices, and expectations diverge from those previously taken for granted. In architectural contexts, this occurs when user-clients enter the professional field of architecture - characterized by its own doxa, symbolic capital, and peer-oriented norms - and suddenly find their everyday categories, priorities, and experiences destabilized (Bourdieu, 1977; Adler, 1975; Chen, 2008). Like culture shock (Oberg, 1960; Pedersen, 1994), habitus shock is not only potentially disorienting but also a site of possible growth: through negotiation, learning, and adaptation, both architects and clients may see their dispositions reshaped in the process.

This phenomenon is particularly relevant in private housing contexts, where domestic clients often lack the procedural literacy of architectural practice. The U-curve of adaptation (Adler, 1975; Black & Mendenhall, 1991) and Siva and London's five profiles of shock (2011) offer developmental models to interpret these trajectories — from initial enthusiasm to confusion, resistance, and eventual adaptation. These emotional arcs are often not linear, and require sustained architectural support to facilitate user learning and integration.

Architectural practice constitutes a social milieu structured by values, rituals, and power relations that shape interactions with clients (Bourdieu, 1977; Chen,

2008). Stevens (1995) describes the ongoing reproduction of this milieu through habitus, pointing to an architectural habitus. Members of this habitus cultivate a distinctive knowledge territory to maintain autonomy and social distinction (Cuff, 1991; Dovey, 2002). The tacit preservation of exclusivity and opacity around the profession's knowledge base creates value mismatches that complicate relationship management. Habitus theory is particularly insightful for understanding these dynamics, as it highlights how silent norms and rituals guide practice (Bourdieu, 1977).

Architects acquire agency through both formal education and informal inculcation in practice (Cuff, 1991). The interplay between architectural knowledge and its practical mastery generates distinctive design philosophies and everyday performances, from discourse to professional demeanour. Cuff (1991) charts a trajectory from student to principal and identifies the design "crit" as a formative rite of passage: a setting where work is evaluated by architects and peers while largely excluding clients, users, and allied actors. This early training in peer-oriented judgment fosters professional distance.

The architectural habitus, professional dispositions shaped by design education and peer norms (Stevens, 1995; Gray, 2013), tends to emphasize creative autonomy and aesthetic authority. This orientation, while central to the profession's symbolic capital, often clashes with user-clients' needs for clarity, empathy, and process transparency (Waite & Braidwood, 2017; RIBA, 2015). The interaction of two misaligned habituses, those of architects and clients, becomes a critical site of friction.

Bourdieu's concept of field helps to situate these dynamics. Within fields, individual habituses align into group habitus. Group habituses encompass shared dispositions, tacit norms, and rules of conduct (Dovey, 2002). In architecture, this explains why works celebrated by peers may appear alien or unappealing to the lay public (Arboleda, 2020). The distance between group habituses, and the lack of shared cultural codes, intensifies the architect–client gap.

Yet, not all pursuit of professional ideals produces dissatisfied clients. Negotiated relationships can help narrow mismatches, and demystification (i.e., making processes, rationales, and trade-offs legible) is a precondition for user-clients to fully value design skills (Chen, 2008). Moreover, habitus is not immutable. Debates on its durability prompted Bourdieu to emphasize its capacity for restructuring under new conditions (2002). Pathways of change include escaping a habitus though multiple exposures and habitus breakdown (Friedmann, 2002). In architectural projects, especially in the domestic sector, repeated interactions between architects and user-clients expose both parties to unfamiliar logics, producing tensions but also opportunities for adjustment and mutual transformation.

Participatory scales

Arnstein's participation ladder is widely referenced scale for understanding the degree and quality of stakeholder involvement in planning and design processes. It helps distinguish between superficial involvement and genuine power-sharing, which is especially important in collaborative projects with diverse participants (Arnstein, 1969). Arnstein's ladder (Figure 3 below) is a model that categorizes citizen participation into eight rungs, ranging from non-participation (manipulation, therapy) to degrees of tokenism (informing, consultation, placation) and ultimately to degrees of citizen power (partnership, delegated power, citizen control). Despite its limitations, this ladder is a first step to evaluating how much influence participants truly have over decisions, for instance throughout co-design processes. Higher rungs of Arnstein's ladder (partnership and above) are associated with more meaningful involvement, where participants share real decision-making power.

Figure 3. Reproduction of Arnstein's Ladder of Participation (1969)

Figure 4 presents a simplified model, the SKL model, revising Arnstein's ladder and focusing primarily on formalized participation processes. Adapted to design, these are the steps of this model (revised for design, from Castell, 2012, p.5):

1 **Information**: End-users are informed about planning processes; no interactive feedback loop.

2 **Consultation**: End-users can provide input, but without guaranteed influence.

3 **Dialogue**: Structured exchanges between Designers and Users, who are asked about development issues.

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4 **Involvement**: Users are invited to participate actively in the process, involving problem identification and development of proposals. Final decisions are made by the designers.

5 **Delegation**: Users have decision-making roles within a predefined scope.

SKL's model reframes participation as a set of flexible levels rather than stages toward a full power shift. It emphasizes manageable scopes and pragmatic integration with existing structures.
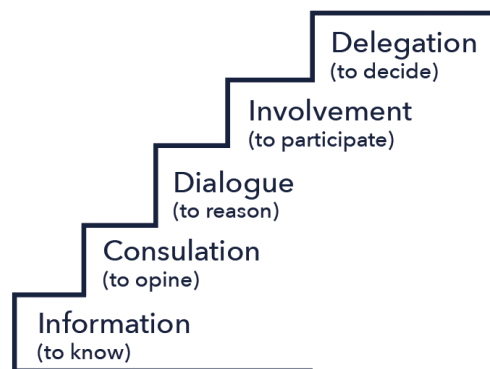
Figure 4. Five-step model of user participation (adapted from Castell, 2012, p.5, which is based on Lindholm & Moritz, 2007; SKL, 2011).

Human-Centred Design approaches

As Steen (2011) outlines, human-centred design navigates two fundamental tensions: (1) the balance between designer expertise and user knowledge, and (2) the need to understand current practices while envisioning alternative futures. These dual tensions often generate ambiguity in architect–user dynamics and require conscious reflexive postures from professionals (Schön, 1983).

Steen's mapping of HCD approaches (Figure 5) — including co-design, lead-user approaches, empathic design, etc. — helps position this study in relation to established practices: at the frontier of ethnography and co-design.
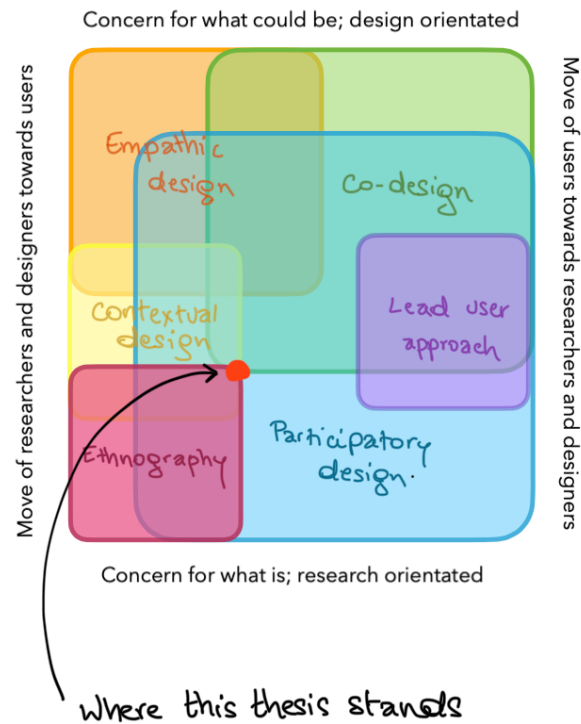
Figure 5. Position of this thesis within the different human-centred design approaches
(based on Steen, 2011, p.48)

Co-design emerges as a model where users act as creative agents, not merely sources of information. Sanders and Stappers (2008) explore the emergence of co-creation as a central paradigm shift in human-centred design. The designer takes on the role of a facilitator of collective imagination, navigating the "fuzzy front end" of the design process with openness and humility (Sanders & Stappers, 2008, p.6, Figure 6). This posture disrupts the traditional "solitary genius" archetype and invites a redefinition of architectural authorship.
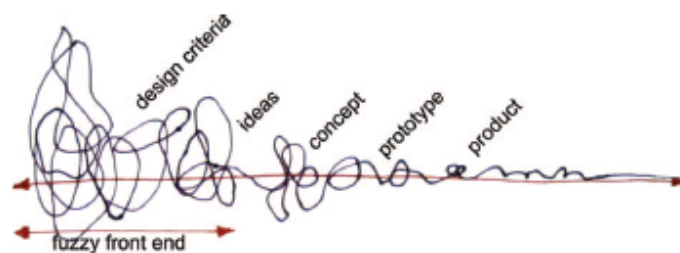
Figure 6. Co-designing process (Sander and Stappers, 2008, p.6)

However, engaging with this ambiguous early phase can be disorienting for user-clients, who may struggle to articulate needs, project themselves into unfamiliar futures, or engage with abstract design conversations. Sandman *et al.* (2018) expand on this challenge by underscoring the importance of reflexivity, immersive techniques, and emotional adjustments — key dimensions for catalysing system-level change and fostering user empowerment in residential design contexts.

Friction and Argumentation – Towards Learning

Tensions in architect–user interactions are not solely problematic but may serve as **productive friction points** (Tsing, 2005). When expectations collide, when arguments emerge, or when design meanings are renegotiated, there lies an opportunity for **mutual learning** (Steen, 2011; Luck, 2018). These moments reflect deeper processes of **knowledge co-production**, emotional investment, and value negotiation.

Design conversations are often **argumentative in nature** (Darses, 2002; Le Bail *et al.*, 2022): architects and users justify choices, question assumptions, and co-construct positions through narrative and evidence. This process is not just discursive but **transformative**. Drawing on Blomkamp (2018) transformative effect theory and Bloom's revised taxonomy (Krathwohl, 2001), such exchanges may help participants reach higher cognitive stages: evaluating options, reflecting on beliefs, and generating new design paradigms (in Paper 7).

III.4. Methodologies and Methods

Methodological Framing & Justification

Qualitative & Exploratory Orientation
Following Mukamurera *et al.* (2006), this research adopts a qualitative, exploratory approach, emphasizing systematic analysis despite its inductive nature. This ensures rigor in both data handling and method choices.

This qualitative posture was particularly well-suited to our research objectives, which aimed not to measure predefined variables but to understand the depth and complexity of interactions between architects and user-clients. In the context of self-promoted dwellings, where experiences are highly situated, emotional, and shaped by implicit expectations, quantitative methods would have risked overlooking the subtleties of meaning-making processes. The qualitative approach allows us to get in touch with participants' lived experiences, to interpret their narratives in context, and to remain open to unexpected themes that emerge through fieldwork. It also aligns with a constructivist epistemology, in which knowledge is seen as co-produced rather than objectively extracted.

Ethnography
Ethnography was used to investigate current practices, rooted in the constructivist frameworks of Flick (2004) and Crotty (1998), with a focus on relativism and symbolic interactionism. This approach was particularly relevant for uncovering how architect–client interactions are socially constructed and context-dependent, rather than fixed or universal. It enabled the research to move beyond retrospective accounts, capturing lived experiences as they unfolded and immersing the researcher in the embodied dimensions of interaction while becoming familiar with the field. Following Ciesielska et al. (2018), the ethnographic stance emphasised developing "sensitivities" to subtle communication patterns and power dynamics, which often remain invisible by solely analysing documents. In this thesis, ethnography was adapted to the specific constraints of architectural practice: observations were complemented by follow-up interviews and document analysis, ensuring both depth of interpretation and triangulation of findings.

Research Through Design
Research through Design (RtD) informed the co-design methods and artifact development that formed the second axis of this thesis. Following Godin and Zahedi (2014), design activities were understood not merely as producing tools but as a way of generating situated insights on interaction and collaboration. RtD was chosen over more traditional approaches because it enabled stakeholders themselves to shape and test possible futures, making latent expectations and needs explicit through materialisation. By engaging architects and clients in iterative designing and prototyping, RtD complemented the

diagnostic findings of interviews, case studies, and the systematic literature review, adding a constructive, "hands on", and participatory dimension to enrich the thesis's previous constructionist epistemology. In this way, RtD bridged empirical diagnosis and actionable propositions, offering a methodological path to both analyse and improve architect and user-client interactions.

Methodological Limitations

This study presents several limitations that should be acknowledged.

First, the regional focus and relatively small sample size limit the generalizability of the findings; the insights produced are context-specific and may not fully reflect practices in other cultural or regulatory settings.

Second, during the co-design workshops, the tools were tested in simulated settings rather than in the course of actual design projects. While these conditions allowed for controlled exploration and comparative analysis, they may not capture the full complexity, constraints, or emotional dynamics of real-world architectural collaborations.

Finally, the data collection and interpretation relied heavily on participant self-reporting and researcher observation, two inherently subjective processes. Participants' reflections may have been influenced by politeness, social desirability or memory bias, and the researcher's own presence and positionality could have shaped interactions during data generation. These limitations do not invalidate the results but rather call for cautious interpretation and invite further research under varied and embedded conditions.

Data Collection Techniques and Analysis Across All Papers

Mixed-Methods & Triangulation

A qualitative, mixed-methods approach underpins the research, combining ethnographic techniques with Research Through Design. We drew on methods including:

Literature Review:

A systematic review (inspired by Kitchenham & Charters, 2007) was carried out alone, using clear search protocols, inclusion/exclusion criteria, NVivo coding, and snowball sampling, to identify key themes on architect–user interactions. Regular discussions with members of my research committee provided reflexive external input.

Semi-Structured Interviews:

Conducted with 15 architects (data self-collected) and 14 user-clients (provided by Prof. Catherine Elsen and Dr. Yaparak Hamarat), interviews explored their experiences and framing of architect–client interactions. Analysis followed thematic coding in NVivo, combining inductive and deductive approaches.

Case Studies & Non-Participant Observations:

Three ongoing residential projects were observed over more than two years (data self-collected). Field notes, emails, audio recordings, and design artifacts were collected to document interaction routines and friction points. The data was coded with the help of two master students, eg. Antony Dupont and Mylène Bourguignon.

Co-Design Workshops:

Structured in four phases — Restitution & Sharing; Ideation & Design; Tests & Iteration; Diffusion & Implementation — these workshops engaged architects and user-clients (Figure 7), generating four pretypes. Two were prototyped and further developed, tested, and disseminated (and can be found in Appendix 8).

Focus Groups:

Two online focus groups (October 2022, 90 minutes each), conducted jointly with Çiğdem Yönder, evaluated the co-design process, separating architects and user-clients to explore transformative effects and participant experiences.

With the actors from architectural sector in Wallonia and general public

31 MAI '22

WORKSHOPS
SEMINARS

Diffusion & Implementation

In architectural agencies
In a design conference
In the event of 31 mai

MAI - JUIN '22

WORKSHOPS

Tests & Iterations

5 workshops in four cities in Wallonia-Brussels

duration: 2h x5
with 12 architects
9 user-clients

FEBRUARY- MARS '22

WORKSHOPS

Ideation & Design

Online in Wallonia-Brussels

duration: 2h
with 16 architects
8 user-clients

27 JANUARY '22

WORKSHOP

Restitution & Sharing

Figure 7. Co-design workshops of the "My Architect & I" project, visualisation by Yaprak Hamarat, adapted by Çiğdem Yönder

Coding & Inter-Coder Reliability

Triangulation was ensured through independent data coding by multiple researchers:

TTSM literature was collected independently by two master students, eg. Margaux Heine and Karol'Ann Castel, and coded independently by two researchers, eg. Çiğdem Yönder and myself.

Architect interviews were pre-analysed independently by four researchers (eg. the Inter'Act Lab team members at the time[2]), then discussed during a post-it session to converge and create themes (used in paper 5 and the co-design process mentioned in papers 8 and 9). The interviews were then coded individually in NVivo to extract detailed themes for papers 3 and 4.

User-client interviews were co-analysed by four researchers (eg. Inter'Act Lab team members[1]) and similarly to the architects', discussed to converge for paper 5 and the co-design process (papers 8 and 9).

Habitus-shock coding was done independently by two researchers, Mylène Bourguignon and myself, and validated with participants via specific interviews *a posteriori*.

The design and evaluation of co-design tools were jointly conducted by the Inter'Act Lab team members[1], with participant feedback integrated iteratively.

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[2] *Eg. Prof. Catherine Elsen, Dr. Yaparak Hamarat, Çiğdem Yönder and myself.*

How?

Research Philosophy

Constructionist & Participatory paradigms –
knowledge is co-created, socially and
contextually situated.
Informed by symbolic interactionism –
focuses on the negotiation of meaning in
architect–client exchanges.

Research Approaches

Abductive Qualitative Research –
iterative movement between data
and theory.

Multi-method Strategies

Ethnographic Methods & Case Studies -

Research Through Design (RtD) –
co-design workshops and tool
development as both intervention and
investigation.

Data collection & Analysis

Data Sources -
i.   Systematic literature review;
ii.   Grey literature analysis;
iii.   29 semi-structured interviews
        (architects, clients);
iv.   Two long-term case studies
        (on-site observations, collection of
        design artifacts);
v.   Co-design workshops (generating
        and testing tools for interaction);
vi.   Focus groups to assess
        transformative effects in
        perceptions and relationships.

Data Analysis -
Thematic coding
and content analysis;
Habitus Shock Tracing
validated with participants;
Activity analysis.

**Team-based coding and
interpretation - mitigates bias**

Figure 8. Visual summary of the Methodological Chapter, answering the question "How?"

CHAPTER IV
State-of-the-art

Interactions between architects and end-users during housing design processes: a systematic literature review

Abstract

Purpose – This research focuses on the interactions between architects and end-users during the design process of housing projects, both experiencing challenges and friction points when meeting.

Design/methodology/approach – The authors conducted a systematic literature review (SLR), based on and adapted from Kitchenham and Charters' work (2007). The thematic analysis of 104 identified articles reveals 13 main themes and 30 subthemes specific to architects, end-users and the interactions of architects and end-users, and 3 main groups of other actors intervening in these dynamics. The authors organize the data by actors and the actors' social encounters, themes and subthemes. The authors focus on some aspects, given possible evolution of practices.

Findings – The authors question the role of architects and the ways both parties share respective knowledge. The authors also discuss the various scales of social encounters depicted through literature, from traditional discursive meetings to participatory practices, and raise the lack of convincing tools genuinely used in current housing architecture practices. Finally, the authors point out the need for further field research in order to practically bridge the gap between researchers and practitioners.

Originality/value – The authors present an overview of the most relevant papers, organized in a table and grouped by themes. This represents a major output of this SLR, and gives the concerned readers the opportunity to get a grasp on readers' sub/theme of interest.

Keywords   Housing architecture, Architect-user interactions, Participatory practices, Co-design, Client satisfaction, Systematic literature review

1. Introduction

The relationships between architects and clients have been investigated for several decades (Cuff, 1991; Van der Linden *et al.*, 2017) and the analysis of their interactions offers provoking results: communication gaps have been pointed out (Cairns, 1996; Tidafi, 1996; Olsson, 2004; Lawson, 2006; Steen, 2011) limiting users' input to functional and structural recommendations (Cuff, 1991; Sanders, 2005), whereas inputs related to space meaning or embodied knowledge are rarely collected (Van der Linden *et al.*, 2019).

Although some isolated, alternative initiatives of social interaction with/for users have been explored (see the work of Geddes' (1994), Alexander's (1968), Habraken (2021) or later phenomenologists' (Coxon, 2015)), general models for

participation in architecture never really reached the necessary balance between users' involvement and architects' desire to keep the creative lead (Luck, 2007; Steen, 2011; Tribout, 2012; Zetlaoui-Léger, 2013; McDonnell and Lloyd, 2014), i.e. designers' need for recognition when it comes to giving purpose and sense of directionto some piece of architecture.

Consequently, misunderstandings and frustrations still generate tensions between architects and clients (Defays and Elsen, 2018), who seem to experience difficulties in communicating and in sharing knowledge. Some architects even rely on self-reference and implicit assumptions (Till, 2009): instead of trying to design for everyone, they prefer designing as for themselves (Oudshoorn *et al.*, 2004). Other researchers show that when the interactions are correctly facilitated, clients and users are able to engage (Luck, 2007; Van der Linden *et al.*, 2017) and apprehend design values (Siva and London, 2011). Throughout this paper, we intend to delineate the factors that can impact the interaction between architects and clients/end-users. We aim to provide a better understanding of the ongoing postures, practices, and factors impacting design interactions and satisfaction levels as depicted in recent scientific literature through a systematic review.

2. Focus

In this section, we want to show the reader how we framed our purpose.

2.1 Actors

We focus on the architects and on the future occupants who are going to use the buildings most frequently. If the term "end-user" reveals some limits in semantically describing human beings' relations to artificial environments through the reduced lens of "use" (Deni and Catoir-Brisson, 2019), it helps to designate clearly the real occupant of the building. Lee and Wohn (2016) consistently use the terms "future occupants" to avoid confusion. Orchowska (2019) insists on the term "residents." Abdirad and Nazari (2015) differentiate the client from final users and occupants: compromises to please the clients, if not made in accordance with the occupants' best interests, are equivalent to bargaining the power in design projects.

We interchangeably use end-user, user, resident, and occupant in the case of housing. When developing other authors' analysis, we prefer to refer to their own terminologies to transcribe results as accurately as possible. Even when not echoing end-users per se, information about the interactions occurring between clients and architects can be relevant to nourish our understanding of the challenges they face during design interactions.

2.2 Social encounters and satisfaction levels

The term "design interaction" used above is to be understood here as in Luck's paper (2014), i.e., interactions of all sorts between architects and residents

during the design phase. Yet, we realize that this term might be misleading regarding its use in the field of human-computer interaction. We will rather rely on another concept to depict interactions, understood by Little (2016) as social encounters: "Social interaction is the process of reciprocal influence exercised by individuals over one another during social encounters. Usually, it refers to face-to-face encounters in which people are physically present with one another for a specified duration. However, in contemporary society, we can think of social encounters that are technologically mediated" (p. 914).

Regarding satisfaction levels associated with these social encounters, we agree with Oluwatayo *et al.*'s definition (2014) as a starting point: "In architectural practice, the client is the owner of a building project who engages the services of an architect. Clients' satisfaction is therefore defined as the perception of the quality of architectural services received by the owner of the building" (p. 318).

2.3 Stages of the architectural process

Even though Siva and London demonstrate that "uncertainties and the associated stresses are inevitable in the course of projects and typically occur during the construction stage" (Siva and London, 2011), in this paper, we argue that social encounters between architects and end-users should be analyzed as soon as the preparation and design phases (according to RIBA's (2007) and Norouzi *et al.*'s (2014) definitions) to better delineate the roots of possible difficulties.

The design process is indeed iterative (Stojanović and Stamenovic, 2015) and unfolds through the "interactive involvement of designers and clients in discussions of design requirements and solutions" (Norouzi *et al.*, 2014, p. 988). While dissatisfactions can appear at any time during the project, they may also emerge in the initial and briefing phase of the design process. Expertise, beliefs, expectations, and motivations need to be shared and adjusted on both sides at that time in order to create a shared common ground throughout all stages of the project (Casakin and Badke-Schaub, 2017; Bogers *et al.*, 2008).

2.4 Housing architecture

In this paper, we look into architects' and end-users' social encounters solely during housing processes, which present the advantage of being widespread processes all around the world (Dimuna and Olotuah, 2019). Focusing on housing moreover allows exploring issues affecting a large sector of the industry (Siva and London, 2012; Frimpong and Dansoh, 2018), as architects working in housing still constitute the majority of the profession, at least in Europe, e.g., in the United Kingdom (RIBA, 2011).

As pointed out by Oluwatayo *et al.* (2014), "previous studies have focused on [. . .] public sector clients" whilst very few provide empirical data on "first-time private clients who engaged the services of architects for their personal homes" (p. 316). We argue that the context of single-family housing, where architects

are often in direct contact with the end-users, is the opportunity to sensitize architects to approaches that integrate end-users in the design process. However, we still consider some studies from other fields of architecture (e.g., healthcare), provided that interactions that were being depicted could be beneficial to housing as well.

2.5 Research questions

We frame this review limiting its purpose to social encounters and satisfaction levels occurring between architects and end-users at any design phase of housing projects. From our main research question, namely "How do end-users and architects currently interact during the process of housing design?", we derived three major search areas: Actors, Encounter, and Field. We aim to identify current practices in architects' and users' interactions, their main bottlenecks, and potentialities. We focus first separately on literature concerning each actor, then questioning their social encounters.

3. Methodology

According to Kitchenham and Charters' recommendations to conduct a Systematic Literature Review (or "SLR"; 2007) and similarly to Jovanović *et al.*'s work (2019), we provide an adapted protocol (Figure 9) to identify the existing body of knowledge which corresponds to our focus. After framing the problematic (section 2), we identify available resources to collect papers to be reviewed (section 3.1). We define the search parameters and prepare a set of selection criteria corresponding to our scope (section 3.2): this helps us include or exclude papers to form the final panel to review. We extract the data to analyze and create a corpus that we submit to thematic coding using the NVivo software (section 3.4). Throughout data compilation, we iteratively reassess the selection according to our previously defined criteria. We pinpoint seminal papers to reintroduce in the review through a succinct one-round snowball sampling (Lecy and Beatty, 2012). Finally, we dig into each coding node in order to identify the main concepts handled in literature and highlight thematic ideas. This process nurtures our discussion about the postures, roles, and models of social encounters occurring between architects and end-users, and helps us identify potential areas for improvement.

3.1 Resources

Our starting point is a set of expert-sourced papers, provided by preliminary studies such as Defays and Elsen's work (2018) for instance. Our second resource is online databases. We opt for the Scopus Database because it covers the main scientific databases in architectural and design research; it includes the most impactful journals in these fields (e.g., Archnet-IJAR or Design Studies) and is among the accessible databases at our institution (see Paul-Hus *et al.*, 2019 for a database comparative analysis).
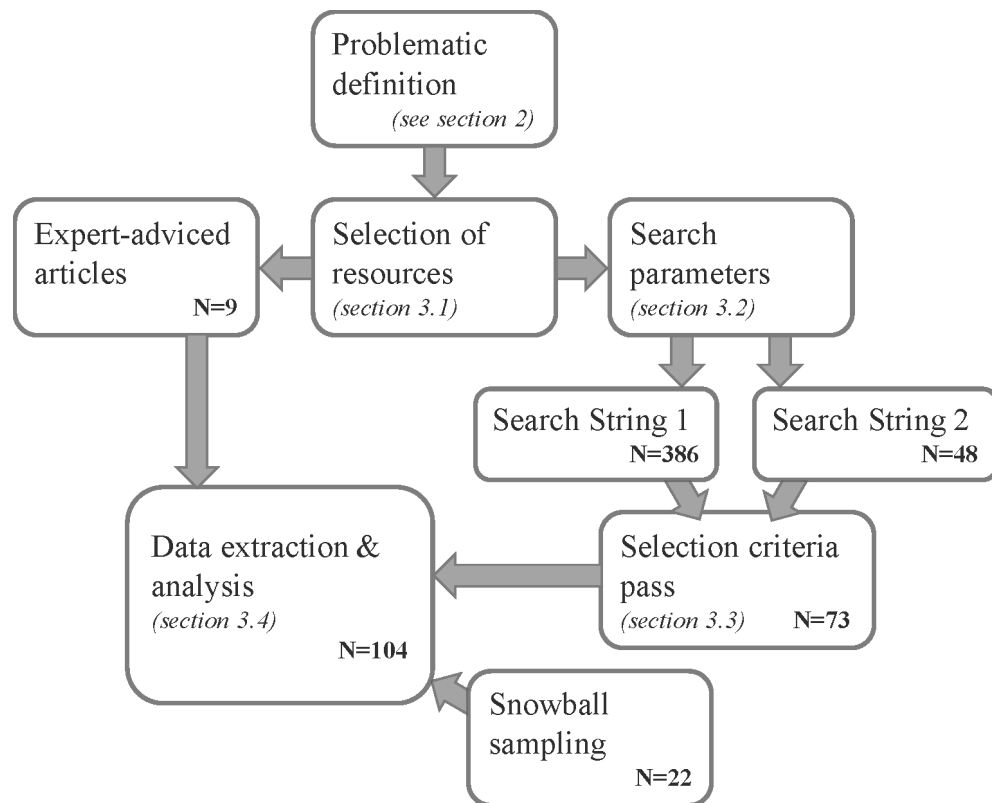
Figure 9. Methodology diagram of the SLR with the quantity of concerned papers.[3]

3.2 Search parameters

After several iterations, we build two search strings to run through our database. We narrow down the main keywords to being either part of the title, the abstract, or the keywords to avoid full texts where terms could be used in an anecdotal manner. We also explicitly select "social sciences," "engineering," "arts and humanities," and "environmental sciences" areas while excluding other fields that may use similar vocabulary (e.g., mathematics, software engineering, robotics, landscape, or medical fields).

For this literature review, we focus on articles, conference papers, and conference reviews. Gray literature is also very rich and could inform us differently about current practices, but we decide to put these sources aside for now. Regarding the language, the set of articles is limited to English and French written papers, as these are the languages that all three authors are comfortable with.

There has been a great augmentation of papers written on these subjects since 2005. Therefore, to reach a manageable number of articles, we focus on the latest literature (from 2005 to 2020) and expect the seminal papers to be included either through expert-sourced articles or snowball sampling.

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[3] The research string is available in the Appendix 1.

3.3 Selection criteria

We define criteria to narrow down the set of papers to be reviewed (Kitchenham and Charters, 2007). We include papers discussing the social encounters between architects and clients or end-users, or at least discussing major issues that one of the two parties might experience. We consider papers either theoretical or empirical in nature.

We exclude:

(1) Papers in other fields than architecture (e.g., structural design, farming/agriculture, household recycling, mobile networks . . .);

(2) Papers too far from the field of housing architecture (e.g., participation at an urban level; heritage conservation; GIS web; BIM-based management);

(3) Papers focusing exclusively on buildings' visual quality and aesthetics or acoustic properties;

(4) Papers focusing on the interactions users have with the built environment without any reference to the architect;

(5) Papers exclusively focusing on post-occupancy evaluations or on houses' energetic comfort and performances.

We conduct a first round of exclusion, screening through titles and abstracts, and then read full texts. This first read sheds light on the contents and allows us to exclude some more articles.

3.4 Data extraction and analysis

We use the software NVivo 13 to conduct a qualitative analysis through thematic nodes, firstly based on our focus (section 2) and on the keywords used during our database search. We then refine the preliminary coding nodes with an iterative approach, going through the articles and enriching the coding tree with concepts extracted from the literature. This review adopts a dialectical approach, contrasting different views of authors following the main themes we identified as critical in the literature.

4. Findings

The analysis reveals 13 major themes (Figure 10) that we organize by actors individually versus their social encounters. In each node, the first column consists of the major umbrella theme. In some cases, subthemes are raised in literature and are listed in the second column. References are enclosed in Table 1, facing each coded theme or subtheme.

A1. Architects' ways of knowing
- A1.1 Architectural education, background and culture (section 4.1.1)
- A1.2 Quality of an architectural design

A2. Roles & Missions
- A2.1 Reconsidering the traditional posture (section 4.1.2)

A3. Expectations

A4. End-user appraisal
- A4.1 Empathy
- A4.2 User-centered design (UCD) human-centered design (HCD) & Design-for-human-flourishing (DFHF)
- A4.3 Social engagement
- A4.4 Inclusive design
- A4.5 Flexible design (e.g. Universal design)

Architects (section 4.1)

SE1. Conventional practices (e.g. client consultation) (section 4.3.1)
- SE1.1 Briefings
- SE1.2 FTF (face-to-face) / Conversational interactions
- SE1.3 Visual representation (e.g. Layouts, sketches, drawings; 3D model prints...)

SE2. Sharing the knowledge

SE3. Sources of (dis)satisfaction (e.g. (Mis)communication) (section 4.3.2)
- SE3.1 Need for mutual acknowledgement
- SE3.2 Common culture & mutual learning

SE4. Assessment methods
- SE4.1 Post-occupation assessments (e.g. POE)

Social Encounters (section 4.3)

SE5. Alternative practices in terms of interaction (section 4.3.3)
- SE5.1 Customization
- SE5.2 Software and computer-based tools
- SE5.3 Visits
- SE5.4 Client-learning support
- SE5.5 Scenario-based design for architects, (Fiction design, role-playing...)
- SE5.6 Prototype testing
- SE5.7 Co-design & similar practices
- SE5.8 Bottom-up practices

Users (section 4.2)

U1. Users' ways of knowing (section 4.2.1)
- U1.1 Habitus Shock
- U1.2 Experience-based knowledge

U2. Involvement (section 4.2.2)
- U2.1 Empowerment
- U2.2 Status-quo

U3. Expectations
- U3.1 User preference

U4. Special-needs people
- U4.1 Elder people
- U4.2 People with disabled-bodies or suffering from dementia
- U4.3 Hospital patients & Care givers

Other Actors

O1. External actors (e.g. Banks, Local Authorities, Real estate agents and developers)

O2. Actors in the field (e.g. Engineers, interior designers, landscape architects, contractors, project managers and Construction counselors and user managers)

O3. Architecture students and teachers

Figure 10. Themes and subthemes, organized by actors

Table 2. Themes distinguished in the SLR, those in bold fonts developed in the following sections.

Theme	Subtheme	Authors
A1.		(Boumová & Zdráhalová, 2016)(Heylighen, 2008)(McDonnell & Lloyd, 2014)
	A1.1	(Bogers *et al.*, 2008)(Boumová & Zdráhalová, 2016)(Frimpong & Dansoh, 2018)(Havik & Pllumbi, 2020)(Herriott, 2018)(Siva & London, 2011)(Lasiewicz-Sych, 2019)(Luck, 2018)(Oluwatayo *et al.*, 2014)(Mota, 2019)(Treviño Sherk & Cobreros Rodriguez, 2019) (Stevens *et al.*, 2016) (Stevens *et al.*, 2016)(Angral, 2019)(Uhl & Boyd Whyte, 2016)(Scott *et al.*, 2018)(Defays & Elsen, 2018)(Adad, 2004)(Luck, 2007)
	A1.2	(Abdirad & Nazari, 2015)(Arboleda, 2020)(Bos-de Vos *et al.*, 2016)(Dimuna & Olotuah, 2019)(Dursun & Saglamer, 2009)(Kosk, 2016)(Latortue *et al.*, 2015)(Lee & Wohn, 2016)(Llinares & Page, 2011)(Maxwell & Aitchison, 2017)(Oluwatayo *et al.*, 2014)(Moghimi *et al.*, 2017)(Orrell *et al.*, 2013)(Uhl & Boyd Whyte, 2016)(Cole-Colander, 2003a)
A2.		(Adinyira & Dafeamekpor, 2015)(Bos-de Vos *et al.*, 2016)(Casakin & Badke-Schaub, 2017)(Frimpong & Dansoh, 2018)(Schwaiger *et al.*, 2019)(Siva & London, 2011)(Siva & London, 2012)(Kazimee, 2008)(Kosk, 2016)(Oluwatayo *et al.*, 2014)(Stojanović & Stamenović, 2015)(Santi *et al.*, 2019)(Angral, 2019)(Defays & Elsen, 2018)(Adad, 2004)(Cole-Colander, 2003a)(Champy, 1997)
	A2.1	(Arboleda, 2020)(de Maat, 2012)(Dursun & Saglamer, 2009)(Havik & Pllumbi, 2020)(Mishchenko, 2013)(Moghimi *et al.*, 2017)(Mota, 2019)(Saghafi & Mirzaei, 2020)(Treviño Sherk & Cobreros Rodriguez, 2019)(Uhl & Boyd Whyte, 2016)(Angral, 2019)(Sandman *et al.*, 2018)(Heylighen & Dong, 2019a)(Adad, 2004)(Pressman, 2014)
A3.		(Bogers *et al.*, 2008)(Angral, 2019)(Norouzi, 2014)(Annemans *et al.*, 2014)
A4.		(Arboleda, 2020)(Boumová & Zdráhalová, 2016)(Göbel, 2017)(Herriott, 2018)(Kosk, 2016)
	A4.1	(Altay *et al.*, 2016)(Siva & London, 2011)(Treviño Sherk & Cobreros Rodriguez, 2019)(Stevens *et al.*, 2016)(Stevens *et al.*, 2016)(Sandman *et al.*, 2018)(Heylighen & Dong, 2019a)
	A4.2	(Altay *et al.*, 2016)(de Maat, 2012)(Frimpong & Dansoh, 2018)(Schwaiger *et al.*, 2019)(Lallemand & Gronier, 2015)(Latortue *et al.*, 2015)(Lo Bianco *et al.*, 2020)(Lo *et al.*, 2017)(Moghimi *et al.*, 2017)(Santi *et al.*, 2019)(Treviño Sherk & Cobreros Rodriguez, 2019) (Angral, 2019)(Pirinen & Tervo, 2020)(Lai *et al.*, 2010)(Stevens *et al.*, 2016)
	A4.3	(Arboleda, 2020)(Dimuna & Olotuah, 2019)(Havik & Pllumbi, 2020)(Stojanović & Stamenović, 2015)(Sani *et al.*, 2011)(Sandman *et al.*, 2018)(Scott *et al.*, 2018)
	A4.4	(Altay *et al.*, 2016)(Herriott, 2018)(Mishchenko, 2013)(Santi *et al.*, 2019)(Scott *et al.*, 2018)
	A4.5	(Afacan & Demirkan, 2010)(Altay *et al.*, 2016)(Herriott, 2018)(Mishchenko, 2013)(Hosseini Raviz *et al.*, 2015)(Włodarczyk & Włodarczyk, 2015)(Beisi & Yingying, 2011)
U1.		(Alkali *et al.*, 2015)(Boumová & Zdráhalová, 2016)(Cheng & Lee, 2005)(Lee *et al.*, 2017)(Siva & London, 2011)(Lasiewicz-Sych, 2019)(Luck, 2012; 2014; 2018)(Van der Linden *et al.*, 2019a)(Luck & McDonnell, 2006)
	U1.1	(Schwaiger *et al.*, 2019)(Siva & London, 2011)(Saghafi & Mirzaei, 2020)(Siva & London, 2012)(Adad, 2004)
	U1.2	(Arboleda, 2020)(Casakin & Badke-Schaub, 2017)(Heylighen, 2008)(McDonnell & Lloyd, 2014)(Schwaiger *et al.*, 2019)(Lo Bianco *et al.*, 2020)(Luck, 2012)(Luck,

		2014)(Mishchenko, 2013)(Ostanska, 2017)(Payne *et al.*, 2015)(Angral, 2019)(Vermeersch & Heylighen, 2015)(Annemans *et al.*, 2014)(Van der Linden *et al.*, 2019a)
U2.		(Bos-de Vos *et al.*, 2016)(Havik & Pllumbi, 2020)(Herriott, 2018)(X. S. Lee *et al.*, 2017)(McDonnell & Lloyd, 2014)(Schwaiger *et al.*, 2019)(Siva & London, 2011)(Jenkins *et al.*, 2012)(Kosk, 2016)(Latortue *et al.*, 2015)(Luck, 2012)(Luck, 2018)(Ostanska, 2017)(Schoenwitz *et al.*, 2012)(Sani *et al.*, 2011)(Sandman *et al.*, 2018)(Uhl & Boyd Whyte, 2016)(Defays & Elsen, 2018)(Lee, 2006)(Luck, 2007)(Norouzi, 2014)
	U2.1	(Lee *et al.*, 2017)(Luck, 2018)(Mota, 2019)(Treviño Sherk & Cobreros Rodriguez, 2019)(Norouzi, 2014)
	U2.2	(Frimpong & Dansoh, 2018)(Orchowska, 2019)(Sani *et al.*, 2011)
U3.		(Adinyira & Dafeamekpor, 2015)(Cheng & Lee, 2005)(Siva & London, 2011)(Lasiewicz-Sych, 2019)(Oluwatayo *et al.*, 2014)(Payne *et al.*, 2015)(Santi *et al.*, 2019)(Angral, 2019)(Tabrizi *et al.*, 2012)(Wong & Jusan, 2017)(Adad, 2004)(Luck & McDonnell, 2006)(Norouzi, 2014)
	U3.1	(Llinares *et al*, 2012)(Mishchenko, 2013)(Moghimi *et al.*, 2017)(Park & Lee, 2012)(Pirinen & Tervo, 2020)
U4.		(Afacan & Demirkan, 2010)(Altay *et al.*, 2016)(Payne *et al.*, 2015)
	U4.1	(Lo Bianco *et al.*, 2020)(Mattie *et al.*, 2016)(Orrell *et al.*, 2013)(Ostanska, 2017)(Stevens *et al.*, 2016)(Scott *et al.*, 2018)(Włodarczyk & Włodarczyk, 2015)
	U4.2	(Mishchenko, 2013)(Vermeersch & Heylighen, 2015)(Torrington, 2007)
	U4.3	(Herriott, 2018)(Payne *et al.*, 2015)(Torrington, 2007)(Annemans *et al.*, 2014)
O1.		(Adad, 2004)(Frimpong & Dansoh, 2018)(Schwaiger *et al.*, 2019)(Boumová & Zdráhalová, 2016)(Cheng & Lee, 2005)
O2.		(Bogers *et al.*, 2008)(Göbel, 2017)(Schwaiger *et al.*, 2019)(Latortue *et al.*, 2015)(Angral, 2019)(Adad, 2004)(Salam *et al.*, 2019)(Oluwatayo *et al.*, 2014)
O3.		(Altay *et al.*, 2016)(Busby & Harrison, 2018)(Treviño Sherk & Cobreros Rodriguez, 2019)(Stevens *et al.*, 2016)(Scott *et al.*, 2018)(Wong & Jusan, 2017)(Adad, 2004)
SE1.		(Adinyira & Dafeamekpor, 2015)(Bos-de Vos *et al.*, 2016)(Casakin, 2012)(McDonnell & Lloyd, 2014)(Siva & London, 2011)(Stojanović & Stamenović, 2015)(Angral, 2019)(Adad, 2004)(Van der Linden *et al.*, 2019a)(Luck & McDonnell, 2006)(Norouzi *et al.*, 2015a)
	SE1.1	(Aburamadan & Trillo, 2020)(Adinyira & Dafeamekpor, 2015)(Bogers *et al.*, 2008)(Herriott, 2018)(Siva & London, 2011)(Jenkins *et al.*, 2012)(Payne *et al.*, 2015)(Stevens *et al.*, 2016) (Angral, 2019)(Lai *et al.*, 2010)(Van der Linden *et al.*, 2019a)(Luck & McDonnell, 2006)(Norouzi *et al.*, 2014)
	SE1.2	(Bogers *et al.*, 2008)(Bos-de Vos *et al.*, 2016)(McDonnell & Lloyd, 2014)(Schwaiger *et al.*, 2019)(Norouzi *et al.*, 2015b)(Norouzi *et al.*, 2015a)(Van der Linden *et al.*, 2017)(Sarvarazadeh *et al.*, 2013)(Jenkins *et al.*, 2012)(Luck, 2014)(Mota, 2019)(Stevens *et al.*, 2016)(Scott *et al.*, 2018)(Defays & Elsen, 2018)(Adad, 2004)(Luck, 2007)(Norouzi *et al.*, 2014)
	SE1.3	(Boumová & Zdráhalová, 2016)(Casakin, 2012)(Göbel, 2017)(McDonnell & Lloyd, 2014)(Schwaiger *et al.*, 2019)(Mota, 2019)(Salam *et al.*, 2019)(Stojanović & Stamenović, 2015)(Scott *et al.*, 2018)(Van der Linden *et al.*, 2019a)(Norouzi *et al.*, 2014)
SE2.		(Boumová & Zdráhalová, 2016)(Casakin, 2012)(Havik & Pllumbi, 2020)(Herriott, 2018)(Heylighen, 2008)(McDonnell & Lloyd, 2014)(Schwaiger *et al.*, 2019)(Jenkins

		et al., 2012)(Latortue *et al.*, 2015)(Luck, 2014; 2018)(Salam *et al.*, 2019)(Saghafi & Mirzaei, 2020)(Siva & London, 2012)(Pirinen & Tervo, 2020)(Defays & Elsen, 2018)(Annemans *et al.*, 2014)(Van der Linden *et al.*, 2019a)(Luck & McDonnell, 2006)(Norouzi *et al.*, 2014)
SE3.		(Abdirad & Nazari, 2015)(Adinyira & Dafeamekpor, 2015)(Beisi & Yingying, 2011)(Bogers *et al.*, 2008)(Bos-de Vos *et al.*, 2016)(Cheng & Lee, 2005)(Dimuna & Olotuah, 2019)(Frimpong & Dansoh, 2018)(Herriott, 2018)(McDonnell & Lloyd, 2014)(Schwaiger *et al.*, 2019)(Kosk, 2016)(Luck, 2014)(Oluwatayo *et al.*, 2014)(Shao & Nagai, 2018)(Siva & London, 2012)(Schoenwitz *et al.*, 2012)(Angral, 2019)(Scott *et al.*, 2018)(Adad, 2004)(Cole-Colander, 2003a)(Norouzi *et al.*, 2014)
	SE3.1	(Busby & Harrison, 2018)(Havik & Pllumbi, 2020)(Siva & London, 2011)(Luck, 2012; 2014)(Orchowska, 2019)(Siva & London, 2012) (Angral, 2019)(Vermeersch & Heylighen, 2015)(Adad, 2004)(Annemans *et al.*, 2014)
	SE3.2	(Siva & London, 2011)(Latortue *et al.*, 2015)(Luck, 2014)(Orchowska, 2019)(Saghafi & Mirzaei, 2020)(Siva & London, 2012)(Angral, 2019)(Sani *et al.*, 2011)(Sandman *et al.*, 2018)(Cole-Colander, 2003a)(Luck, 2007)
SE4.		(Adinyira & Dafeamekpor, 2015)(Jenkins *et al.*, 2012)(Lee & Wohn, 2016)(Mattie *et al.*, 2016)(Oluwatayo *et al.*, 2014)(Orrell *et al.*, 2013)(Stojanović & Stamenović, 2015)(Shao & Nagai, 2018)(Sandman *et al.*, 2018)(Torrington, 2007)
	SE4.1	(Abdirad & Nazari, 2015)(Arboleda, 2020)(Hong *et al.*, 2018)(Schwaiger *et al.*, 2019)(Zeithaml *et al.*, 1993)(Love & Holt, 2000)(Maloney, 2002)(Lee & Wohn, 2016)(Lima & Maia, 2012) (Luck, 2014)(Shao & Nagai, 2018)(Torrington, 2007)(Scott *et al.*, 2018)(Annemans *et al.*, 2014)
SE5.		(Altay *et al.*, 2016)(Dabieh, 2016)(Havik & Pllumbi, 2020)(Moghimi *et al.*, 2017)(Orchowska, 2019)(Shao & Nagai, 2018)(Treviño Sherk & Cobreros Rodriguez, 2019)(Lai *et al.*, 2010)(Luck & McDonnell, 2006)
	SE5.1	(Cheng & Lee, 2005)(Lee *et al.*, 2017)(Johnsson *et al.*, 2013)(Latortue *et al.*, 2015)(Maxwell & Aitchison, 2017)(Schoenwitz *et al.*, 2012)(Park & Lee, 2012)(Zawidzki *et al.*, 2011)
	SE5.2	(Afacan & Demirkan, 2010)(Casakin, 2012)(Desthieux *et al.*, 2006)(Lee & Wohn, 2016)(Lo *et al.*, 2016)(Lo *et al.*, 2017)(Saghafi & Mirzaei, 2020)(Park & Lee, 2012)(Tabrizi *et al.*, 2012)(Zawidzki *et al.*, 2011)(Llinares & Page, 2011)
	SE5.3	(Göbel, 2017)(McDonnell & Lloyd, 2014)(Vermeersch & Heylighen, 2015)(Van der Linden *et al.*, 2019)
	SE5.4	(Casakin, 2012)(Schwaiger *et al.*, 2019)(Siva & London, 2011; 2012)(Luck, 2012; 2014; 2018)(Oluwatayo *et al.*, 2014)(Sani *et al.*, 2011)(Sandman *et al.*, 2018)(Norouzi, 2014)
	SE5.5	(Altay *et al.*, 2016)(Cheng & Lee, 2005)(Herriott, 2018)(Van der Linden *et al.*, 2019)(Treviño Sherk & Cobreros Rodriguez, 2019)(Stevens *et al.*, 2016)(Pirinen & Tervo, 2020)(Heylighen & Dong, 2019a)
	SE5.6	(Herriott, 2018)
	SE5.7	(Göbel, 2017)(Havik & Pllumbi, 2020)(Schwaiger *et al.*, 2019)(Kosk, 2016)(Latortue *et al.*, 2015)(Lo Bianco *et al.*, 2020)(Lo *et al.*, 2017)(Luck, 2012; 2018)(Mishchenko, 2013)(Mota, 2019)(Payne *et al.*, 2015)(Saghafi & Mirzaei, 2020)(Treviño Sherk & Cobreros Rodriguez, 2019)(Sani *et al.*, 2011)(Sandman *et al.*, 2018)(Pirinen & Tervo, 2020)(Uhl & Boyd Whyte, 2016)(Scott *et al.*, 2018)(Heylighen & Dong, 2019)(Adad, 2004)(Y. Lee, 2006)(Luck, 2007)
	SE5.8	(Arboleda, 2020)(Luck, 2012)(Adad, 2004)(Schwaiger *et al.*, 2019)(Urban, 2015)(Kazimee, 2008)

We further develop some of the following themes and subthemes. We identify these ones as potential friction points between architects and end-users considering the lens of housing design, raising discussions directly echoing our research question. Other themes are not deemed less relevant for research in general; they are simply less crucial to review first, given our focus.

Some subthemes that could also fit into the scope of our research are available in the table, without being extensively discussed further. They are suggested as potential leads to interested readers.

4.1 Architects

It is important to understand the specificity of each party in order to tackle the interaction between them. In the case of architects, literature points out the specificity of the architectural culture, handed down from generation to generation, which is bound to evolve as implied by some researchers nurturing our corpus (e.g., Arboleda, 2020; de Maat, 2012; Dursun and Saglamer, 2009; Havik and Pllumbi, 2020).

4.1.1 Architectural education, background, and culture

Various reports and studies (Stater, 2002 in Siva and London, 2011; Angral, 2019; RIBA, 2015) raise the architects' tendency to be peer-oriented rather than client-oriented, alienating the clients and end-users, therefore, bringing these to see architects as "arrogant" and "inflexible" (Siva and London, 2011; Angral, 2019). Architects are known to rely on their own experience as a main reference whilst designing (Cuff, 1991; Imrie, 2003; Verhulst *et al.*, 2016; Heylighen and Dong, 2019).

Angral (2019) emphasizes the marginalization of practicing architects and raises concerns about "viewing architecture as art, a culture of allegiance and indoctrination, disassociation from clients and end-users, neglecting moral and ethical responsibilities, and outdated models of education and practice" (p. 59). This peer-oriented point of view roots in architects' school times. According to Adad (2004), some architects are victims of their scholar years and consider the house as an art object.

Arboleda also vividly criticizes architectural culture as the artistic nature of some projects can surpass quality issues such as functionality and stability of the building. She also points out that architectural tools have developed nowadays upon large, iconic architectural designs, as celebrations "of the designer's creative strokes" (Arboleda, 2020, p. 16) and fail at being socially relevant. Architects' years of education thus do not help bridge the disconnection with the clients.

Frimpong and Dansoh (2018) also address the lack of management skills in the architectural educational path in terms of organizing, leading, collaborating, and costing that young architects tend to neglect, whereas the ability to design

is placed above all else. The architectural culture conveyed by these educational backgrounds engenders a condescending view of those who are not familiar with architecture (Cuff, 1991).

4.1.2 Architects' roles and mission: reconsidering the traditional posture

The architects' role seems to be unclear for laypersons nowadays. Architecture should be a service-oriented profession, where the architects in charge do not impose their judgment on a larger group of people (Abdirad and Nazari, 2015) but rather orchestrate a complex network of stakeholders and needs. According to Adad (2004), architects used to give advice, guidance, and technical assistance without imposing their point of view; he regrets that today, architects become the undisputed project managers, occupy an important place in the decision-making process, and confine the users to nothing more than "consumers." Frimpong and Dansoh (2018) imply that clients nowadays have developed the perception that architects are arrogant, inaccessible, and unapproachable. Architects would compromise to please their clients not so much for their well-being, but rather to keep a steady flow of jobs and achieve profitability (Siva and London, 2011).

For some authors (e.g., Dursun and Saglamer, 2009; Siva and London, 2011), the architect is a designer whose main mission is to transform the client's needs into reality. According to Havik and Pllumbi (2020), "there is currently a global radical re-thinking of the political and ethical role of the architectural profession" (p. 12) in favor of user participation, with some researchers even questioning the necessity of the profession (Adad, 2004). Among the guidelines suggested to support this renewal, we read that architects should cooperate with psychologists and sociologists and remain in a continuous learning posture (Kosk, 2016; Treviño Sherk and Cobreros Rodriguez, 2019), or that human relations and participatory approaches should be taught in architectural curricula (Luck, 2018; Oluwatayo et al., 2014; Angral, 2019).

Arboleda (2020) even embraces a bottom-up approach and develops an alternative posture that she calls "ethno-architect": "incorporating anthropology's emic perspective — that is, the perspective from (. . .) the end-users. On that condition, the designer strives to understand the users' perspective in a way that is as unbiased as possible, as an ethnographer endeavors to do" (p. 17). In such cases, the role of the architect is not erased by user participation (Champy, 1997, in Latortue et al., 2015) but rather is to "facilitate the process because the participants cannot understand or draw" (Pressman, 2014, in Saghafi and Mirzaei, 2020, p. 4).

4.2 End-users

Before studying further the participatory approaches suggested above, an overview of the other side of the coin is necessary. First, we lay out what the literature brought up in terms of users' knowledge and expertise, then we look into end-users' involvement and expectations.

4.2.1 Users' ways of knowing: owning their expertise and dealing with the habitus shock

Recent studies (McDonnell and Lloyd, 2014; Van der Linden *et al.*, 2019) recognize the importance of embodied knowledge as a key issue in a balanced relationship between architects and clients. Luck and McDonnell (2006) raised the fact that "the user's knowledge contribution to the design discussions were most frequently the functional and structural naming of the representational elements of design. This was considered to be the level at which most users were comfortable," given "their current use of the space" (p. 163).

Schwaiger *et al.* (2019) spot an interesting category of clients who hold specific skills (such as knowledge in construction or understanding of a designer's tasks or craftsmanship); in that case, the architect can pull ideas from or enrich the design process through enlightened conversations. Nevertheless, most clients are not related to the construction field and can experience trouble getting a grip on technical dimensions or specific language (Cheng and Lee, 2005; Luck, 2007; Siva and London, 2011; Alkali *et al.*, 2015).

This important aspect of the user experience, often observed during the early phases of a construction project, is often referred to as the "Habitus Shock" (Adler, 1975; Schwaiger *et al.*, 2019; Bourdieu, 1977). It is a state of "confusion, stress or frustration experienced by clients who find themselves exposed to an unfamiliar architectural habitus" (Siva and London, 2011, p. 179). In response to this shock, Siva and London (2011) introduce client learning as "the client's acquisition of skills and knowledge in relation to the design and construction process," with client learning during habitus shock being a "characteristic of successful relationships" (p. 185). Clients grow more relaxed when confronted with unexpected difficulties because they understand the complex processes necessary to reach refined results (Siva and London, 2012).

4.2.2 Involvement: the will to participate?

In order to create a sense of belonging and to develop sustainable housing projects, involvement (Sani *et al.*, 2011; Adad, 2004; Arboleda, 2020) or users' participation in design (Kaatz *et al.*, 2005; Gustavsson and Elander, 2016; Moghimi *et al.*, 2017; Treviño Sherk and Cobreros Rodriguez, 2019) is said to be essential. Even more than for architects, the role that users should take in the process is unagreed on. Some argue in favor of customization methods such as platforms to enhance "industrialized house building" (Maxwell and Aitchison, 2017); others expect the clients to highlight potential issues they

encounter in their use of space — that is, to unfold their user knowledge to detect problems that architects would not have discovered alone (Luck, 2012).

Several studies demonstrate that users nowadays are no longer willing to undergo the whole design process simply as external observers, but rather as actors in the design process (Lawson, 2006; Schwaiger *et al.*, 2019), being experts of their own habits and behaviors (Casakin and Badke-Schaub, 2017), owning their problems and sometimes even the solutions (Sanders, 2005; Arboleda, 2020). This "client-led revolution" translates into always better-informed users expecting to have their say all along the decision-making process, considering themselves as "part of a team." No longer design recipients, they engage in the process by leading radical changes and decisions (Cole-Colander, 2003) and by suggesting design ideas (Luck & McDonnell, 2006; Glock, 2009). They enter the design process as co-creators possessing relevant expertise (Fleming, 1996) and are sometimes reluctant to hire architects on projects if it is not absolutely mandatory (Frimpong and Dansoh, 2018).

4.3 Encounter

As mentioned in section 2, the relationship between architects and end-users can really be troublesome, especially in housing projects (London and Chen, 2004; Emmitt and Gorse, 2007 in Siva and London, 2012; Frimpong and Dansoh, 2018). According to Casakin and Badke-Schaub, "despite their mutual interest in establishing a business relationship, usually architects and clients have little knowledge about each other [and] play dissimilar roles in the dynamic interaction that takes place in collaborative work meetings," and this shapes "their actions, thoughts, behaviors, and feelings throughout the design process" (Casakin and Badke-Schaub, 2017, p. 3).

However, it is understood that the relationship gradually established between an architect and their client is the result of a complex balance between trust, degree of autonomy, and letting go from the side of architects, and user involvement on the other side (Defays and Elsen, 2018).

4.3.1 Conventional practices: in need of a change?

Nowadays, most architects do not often go beyond early conversational interactions to reach out to users' needs and expectations (Norouzi *et al.*, 2015a; Van der Linden *et al.*, 2017). Even though currently established as the most frequent interaction modality, these exchanges do not make users' data sufficiently tangible and significant, and therefore, they are not the most appropriate way for users to efficiently leverage their particular expertise or actively engage in design processes (Norouzi *et al.*, 2015b; Sarvarazadeh *et al.*, 2013). Consensus between groups (more than one user or one architect involved) and knowledge transfer can also be tricky and bring up frictions (Van der Linden *et al.*, 2019).

4.3.2 (Dis)satisfaction, (mis)communication: mutual learning

The sources of dissatisfaction in the relationship can be multiple. Luck (2014) points out three possible causes: the lack of acknowledgment of the user's expertise, the lack of acknowledgment by the user of the architect's work, and the lack of common culture.

The lack of mutual acknowledgment is also discussed by Siva and London (2012): "The clients' initial negative perceptions towards the architect (. . .) were largely overturned through their experience with them. Instead, they had a more refined understanding of the skills, expertise and knowledge of the architect and recognized the value of employing an architect to deliver a cost-effective solution that took into consideration other key elements which added to the quality of the building" (p. 264). As mentioned earlier, there can also be confusion or misunderstanding about the roles of architects and their responsibilities (Adad, 2004; Angral, 2019). Some architects are sometimes solicited only to sign already-made plans, without being given the chance to bring any added value, which leads to dissatisfaction and tensions (Defays and Elsen, 2018).

In brighter terms, architects accepting some sort of partnership with the client, and a high level of respect and trust for the architect's expertise on behalf of the client, contribute to the success of the relationships (Siva and London, 2011).

As for the lack of common culture, Angral (2019) agrees with Luck (2014), especially with respect to the language and terminology used by architects and clients. Uhl and Boyd Whyte (2016) also point out differences in expectations: "When asked to choose between functionality and aesthetics, more than half (. . .) of respondents said that clients prefer functionality over aesthetics [. . .] current systems of architectural education produce graduates who only have aesthetic skills and do not know much about functionality and affordability" (p. 64).

Adding to Luck's list of sources of dissatisfaction, Shao and Nagai (2018) — although studying workspace architecture — reach an observation transferable to housing architecture, related to the lack of emotional communication when the design fails to meet physiological and psychological needs.

Another major source of dissatisfaction hides in the architects' fees. For Angral (2019), "the agreement was that percentage-based fee structures encourage situations where clients first need to commit to the architect before the architect will discuss the design. Although the professional conduct of architects, the initial contract paperwork, the fee structure, etc., inform the clients as to how much it will cost them in terms of architectural fees, they do not communicate the look and feel of the end product. In other words, a contract of engagement is simply a promise in the shape of paperwork, which lacks the factor of 'take-home feeling' or 'value for money'" (p. 67).

4.3.3 Focus on some alternative practices

We have identified other interactions that somewhat fall outside the practices that we have described as "conventional," and that could by themselves be the topic of a distinct literature review. Amongst other practices available in Figure 10 for interested readers, we choose to present here client-learning support, co-design and similar practices, and bottom-up practices.

As previously mentioned, client-learning can lead to better satisfaction throughout the overall project for both parties. Taking this a step further, Luck (2014) encourages architects to take the role of the pedagogue and provide client-learning support to accompany the layperson through the cultural shock they will experience when going through their architectural/construction process, for instance for their home.

Amongst less conventional practices, we also identify Participatory Design (PD) in Luck (2018) and Sanders' (2002), and co-design as depicted by Sanders and Stappers (2008) and Cain (2005). As the line between participation and co-design can be blurry, we choose to look here at the two through the lens of their common thread that is designing "with" and "by" users (when users assume the role of designers) instead of only designing "for" users. We keep in mind that these practices have their own limits, among them their time-consuming nature, which constitutes an obstacle for architects (Latortue *et al.*, 2015).

Bottom-up practices are here understood as depicted by Arboleda (2020) — that is, allowing users to take up the design task. We consider that houses' auto-construction and vernacular practices fall under this scope (e.g., in Schwaiger *et al.* (2019) and Urban (2015)) and shake up the usual borders of the field. Kazimee (2008) and Urban (2015) argue that vernacular practices tend to be more contextualized, respectful of the existing environment. This reasoning converges with Adad's (2004), arguing that building used to be considered as an art and a social act of the inhabitants themselves acting as "architects," and that the result was always well integrated in its social, cultural, and physical context, respecting the ecosystem in an instinctive way.

5. Discussion and implications for practice

Looking back on our analysis of the literature (per actor and about their mutual friction points), we highlight paths to improve social encounters and emphasize some of those paths by looking at how themes relate to each other. As a meta-observation, we first underline how vast the literature pointing to architect-user interactions is, but without being systematically really specific on that matter: most papers tackle connected topics and peripherally bring rich contributions to the subject, but few are really dedicated to and engage in a discussion regarding the architect-user relationship.

5.1 Rethink the future of the architectural profession, also in terms of mutual learning

Papers debating architects' postures and education identify a breach between the role the architects are taking and the expectations and current needs of society. The peer-oriented vision should make space for a rather service-oriented one, more inclusive of the users' inputs in the design and overall process. A crucial challenge the profession faces today is thus to find a consensus about the role of architects and to develop an academic program consistent with this renewal. If not, architects will find themselves increasingly deprecated and dismissed.

A follow-up research question would be: can increased users' involvement be acceptable and feasible, considering current architectural practices, and consistent with the actual field constraints? Why/to what extent is this shift not already happening and implemented?

In addition, it is important that laypeople not familiar with the field become more sensitized and educated to the added value of an architect in a project, and to the role and responsibilities of an architect, as to maintain a balance in each other's contributions. The connection we are arguing for echoes the client-learning goal, advocated in the reviewed literature. We suggest that this position should be shared to favor mutual learning. Clients hold skills and expertise that could benefit the architectural field. This loops back to the need to reconsider the architect's role and missions, and to the need to develop adequate tools and pedagogical environments to support this kind of practice.

5.2 Trust and acknowledgment are key for communication

Building awareness about the other partner's value in the process cannot come without building an actual relationship on a solid common ground. We argue that understanding the other; listening and communicating between stakeholders is essential to reach a satisfactory outcome for both sides for a successful home project. Siva and London's (2011) study raises awareness on the concepts of intimacy and chemistry between architects and clients, leading to trust. Demonstrating or developing empathy with clients about these notions is crucial to create that bond. The literature presents few convincing tools to facilitate this social connection and trust bonding between users and architects. We would expect an influence from other disciplines (e.g., design in general, sociology, psychology) to be fruitful.

6. Limits of the study

For this SLR we did not use two or more databases as recommended (Kitchenham and Charters, 2007). We consider that N = 104 articles reviewed give us already a strong foundation to develop our arguments, and that most leading publication channels are covered in Scopus.

Phrasing our research strings, we include keywords related to our focus' lexicon (including keywords related to dwelling), snowballing to enrich this focus. Other keywords could have been used and would have provided another corpus of articles to be reviewed.

Moreover, we acknowledge that the languages chosen as inclusion criteria create a cultural bias that influences the results of this research.

To establish our coding nodes in NVivo, we created a first coding tree with the keywords from the research strings, then had them evolve inductively whilst coding a first round of articles. At some point, this tree seemed to stabilize and was kept.

It can be argued that we left a lot of actors out of the picture. Indeed, we acknowledge that the construction field cannot be reduced to architect-client/user interactions in a vacuum, since they are part of a larger framework with a multiplicity of actors who bring their own critical issues. Other actors not only necessarily intervene in the process, they can also have a huge impact on the interactions between architects and end-users. Further extensive research could focus on this matter, as to add up on the present results.

Additional research could also address the matter directly in the field, to complete the existing literature with contextualized data, to model interactions in practice. This would make the diagnosis more legitimate and help suggest advice and devices to help practitioners facilitate their work and interactions.

7. Conclusions

To outline the relationship between end-users and architects, we trace in more depth some of the issues raised through a systematic review of the literature, organized by actor and themes. The main points that emerge are the following.

Firstly, we point out that the literature is vast and the practices described are diversified, often lack nuance or detail, and raise many debates. In this context, it is challenging to reconstruct a coherent narrative or to suggest straightforward solution paths. We present an overview of the most relevant papers, organized in a table, by themes. This represents a major output of this SLR, giving the concerned readers the opportunity to get a grasp on their subtheme of interest.

Secondly, it is urgent to find a consensus on the role of architects and to teach in schools a program that is consistent with this agreement. It is important that this role is communicated to the general public, to inform on the mission and responsibilities of architects, which too often, users are not familiar with. Architects have to incarnate an educational and accompanying role towards the client, especially when it comes to housing design. We underline the importance of understanding, listening, and communication between actors, but also of mutual learning between parties.

Finally, we note that the literature presents few convincing tools in terms of user-architect interaction. An influence in this field from other disciplines (e.g., design in general, possibly sociology and psychology) could present a lead to progress.

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A review of tools to support user-client involvement in architectural housing contexts

Abstract

This paper investigates the tools, techniques, strategies, and methods (TTSM) that can facilitate the involvement of user-clients in the design of single-family dwellings. We focus specifically on TTSM found in the open-access online domain. Our aim is to clarify how these TTSM support collaboration and interaction between parties, thereby bridging the gaps (i) between architects and non-experts and (ii) between scientific and grey literature.

The study employs a qualitative research design based on a systematic document analysis. Our results present and discuss 123 TTSM that can support collaboration and interaction between user-clients and architects in three key areas of the architectural design process: 1) Design, Activity, and Ordering; 2) Social, Communication, and Decision-Making; and 3) Management, Process, and Coordination. We also highlight an additional dimension, "Mediation" for TTSM in architecture. These dimensions may not directly impact a project but can indirectly facilitate a broader understanding of architectural processes, the profession, its vocabulary, and its culture. The study underscores the importance of strategies that prioritize clear communication and engagement, with material and digital tools supporting both participatory design and professional knowledge transfer.

Our overview of TTSM moreover addresses gaps in the literature concerning their practical and systematic use in architects' interactions with user-clients. It offers practical insights into how architects and architectural firms can enhance collaboration and user involvement, while also identifying future avenues for improvement in terms of providing necessary support for both architects and user-clients in their interactions.

Keywords   Architectural tools; User involvement; Design tools; Design communication.

1. Introduction: Context and Theoretical Framework

The role of the user and client involvement in architectural design processes have evolved significantly in recent years, as designers and architects seek to create spaces that are not only functional but also reflective of the needs and desires of their users. Participation models such as those discussed by Sanders *et al.* (2010) and Sanders & Stappers (2014) have highlighted the importance of engaging non-expert users in the design process, moving away from traditional hierarchical design approaches towards more collaborative, co-creative methods.

One critical aspect of this user and client involvement is the use of adapted tools, techniques, strategies, and methods (TTSM) that facilitate communication between designers and non-designers (Yönder, 2025). Accordingly, this paper focuses on examining the various TTSM currently employed in architectural practice to facilitate user and client involvement. We concentrate on single-family housing design contexts due to their unique nature: clients are also the future users of the building and are therefore naturally involved in the design and construction processes.

Previous research emphasizes that architect-client interactions frequently experience significant communication gaps, with user-clients often limited to providing primarily functional and structural feedback, while architects rarely capture inputs related to spatial meaning or embodied knowledge (Cairns, 1996; Tidafi, 1996; Lawson, 2006; Steen, 2011; Van der Linden et al., 2019). While notable participatory initiatives have been developed by seminal figures like Alexander (1968) and Habraken (2021), general participatory models still fail to reconcile meaningful user involvement with architects' desire to maintain creative control and recognition (Luck, 2007; Steen, 2011; McDonnell & Lloyd, 2014). Consequently, misunderstandings and frustrations remain prevalent, largely due to difficulties in mutual communication and the limited sharing of experiential knowledge (Defays & Elsen, 2018; Till, 2009; Oudshoorn et al., 2004). However, research also shows that properly facilitated interactions enable user-clients to engage more meaningfully, fostering a deeper understanding of architectural design values (Luck, 2007; Van der Linden et al., 2017; Siva & London, 2011).

In Belgium, for instance, architects predominantly adopt conventional methods such as initial verbal consultations, site visits, and annotated sketches to engage user-clients (Mertens & Yönder et al., 2024). Digital tools such as virtual reality (VR) and detailed visualizations have emerged as promising futures, yet their adoption remains limited due to concerns over costs, accessibility, and potential misunderstandings about their practical use (Mertens & Yönder et al., 2024).

Misunderstandings frequently arise from discrepancies in visual literacy between architects and clients, leading to significant friction points and diminished client satisfaction (Dzurilla et al., 2023). Moreover, architects' preference for consultation over participatory approaches reveals tensions in maintaining control over the creative and design process, despite acknowledging the benefits of deeper client engagement (Mertens & Yönder et al., 2024). Thus, there remains a clear need for further field research to bridge the gap between theory and practice, particularly through the development of effective, convincing participatory tools (Mertens et al., 2022).

Such tensions and misunderstandings are further exacerbated by misaligned expectations concerning budget constraints, aesthetic preferences, and the

perceived roles within the project. These divergences often manifest as "habitus shock," defined as the confusion, stress, or frustration experienced by clients who find themselves confronted with an unfamiliar architectural environment, including technical jargon and procedures (Adler, 1975; Bourdieu, 1977; Siva & London, 2009; Siva & London, 2011; Schwaiger *et al.*, 2019). Consequently, while participatory methods such as immersive walkthroughs and mood boards demonstrate potential for improving communication and satisfaction, significant resistance persists, highlighting the need for architect-client collaboration models that better integrate diverse client perspectives and expertise (Mertens & Yönder *et al.*, 2024).

1.1. Definitions: Tools, techniques, strategies and methods

Here we would like to briefly clarify our definitions of tools, techniques, strategies and methods.

Tools: As Rabardel (1995) describes, tools are artefacts with both material and symbolic properties designed for specific goals. Tools such as cards, plans, and models possess agency, realized through human interaction. In architectural practice, tools like pen and paper or CAD tools can enable architects to communicate design ideas through sketches, physical plans, and 3D visualizations, and may help bridge the gap between abstract design concepts and user comprehension.

Techniques: According to Sanders *et al.* (2010) and Sanders & Stappers (2014), techniques refer to the "way of doing" things and are shared between human agents and tools. Thus, sketching, drawing, modelling or real-time visualization can be understood as different techniques to communicate design propositions. Some of them enable user-clients to engage more directly with the design process by providing a hands-on way of exploring and refining design elements.

Strategies: Strategies guide the overall approach to the use of tools and techniques. They are shaped by the architect's assumptions, desired outcomes, and overall methodology. For instance, strategies like gamification in design games or materialization in prototyping or model-making guide the tools and techniques to achieve specific objectives throughout a design process.

Methods: Methods, as complex procedures, arrange and combine tools, techniques, and strategies in ways that suit the specific context of a project. Tailored to each project, methods such as scenario-based design games or workshops facilitate both user engagement and knowledge exchange (Kankainen *et al.*, 2012; Tobar-Munoz *et al.*, 2016).

1.2. Architectural tools, techniques, strategies and methods

The architectural design process is facilitated by the use of TTSM that support various aspects of the design process. Weytjens *et al.* (2009) group architectural tools into six categories, based on survey data from 319 architects in Flanders, Belgium. These are 1) knowledge, 2) evaluation and analysis, 3) structuring, 4) modelling, 5) presentation and 6) communication. Knowledge-based tools provide information support for their design work, while evaluation and analysis tools ensure that designs meet the specified project requirements. Modelling tools are used to visualize and represent the design. Structuring tools help organize the design process. Presentation tools aid in disseminating design information to stakeholders, and communication tools facilitate the necessary communication among all involved parties (Weytjens *et al.*, 2009). In their everyday-life, architects make use of modelling the most (%83,2), presentation (%90,1) and knowledge-based tools (%94,8). While they use less tools for communication and structuring, they also express a need in these areas (Weytjens *et al.*, 2009).

These needs or categories also relate to different dimensions of architectural design. Architectural design is a process which can be understood, as 1) "ordering of the built environment, both spatially and temporally"; 2) as "a process of decision making based on human communication, negotiation and simulation in order to define a shared goal" and 3) as "the scheme of activities, actions and plans to achieve defined goals" (Lawrence, 1993, p. 300). From our understanding, the first dimension emphasizes the object of architecture: the building and its design. The second dimension pertains to the relational dynamics involved in achieving the design, resulting from collaboration between experts, clients, users, and other stakeholders — i.e. the social domain. The third dimension highlights the architectural design process as a service, bringing the management aspects to the forefront.

Design and social dimensions address the design communication, which encompasses sharing of needs, expectations and ideas about the future building project and architects sharing design propositions (Dzurilla *et al.*, 2023; Segers *et al.*, 2000). Design communication commences with the establishment of the design brief, which generally relies on verbal interactions, predominantly in the form of face-to-face meetings as well as site-visits (Russell *et al.*, 2017), with the occasional use of visual aids such as inspirational photographs (Russell *et al.*, 2017). Tools such as photographs help to overcome misunderstandings related to verbal communication and language issues, for example when discussing more abstract concepts such as "style", as every individual would have different connotations (Chuang and Chien, 2021).

Following the initial design proposal from the architect, visual communication tools are then employed to share architectural ideas and enable feedback and revisions. These include two-dimensional representations such as hand-drawn

or computer-aided design (CAD) sketches, plans, elevations, three-dimensional fly-throughs, renderings or images of existing spaces to illustrate the "look and feel" of spaces (Van der Linden *et al.*, 2017; Russell *et al.*, 2017). Again, visual tools are found useful for design communication, especially high-fidelity ones such as photographs and renderings, due to lack of user-clients understanding on reading technical representations (Chuang and Chien, 2021; Norouzi *et al.*, 2015).

Current literature mostly focuses on tools that are used generally solely by architects (Weytjens *et al.*, 2009) and that prioritize ordering and design, such as design representations, 2D drawings, 3D models or simulations (Bueno and Turkienicz, 2014; Lawrence, 1993). Some studies include the social dimension and collaboration of architects with clients and users. These studies generally focus on communication of design proposals and decision making through the intersection of modeling and presentation needs (Segers *et al.*, 2000).

In the context of participatory design, we found a vast array of proposed tools and methods (for a recent literature review see: Yönder, 2025). Some of them, such as games, reflect a more holistic approach to simulate not only the design or the building in itself, but also the design process in an engaging manner (Summers, 1979). While participatory contexts are currently an exception in architectural practice rather than a norm, we argue that in single-family housing contexts it becomes the reality of the practice through the involvement of the user as client of the future building in question.

Followingly, in this study we investigate the grey literature by combining the categorization put forward by Weytjens *et al.* (2009) and the dimensions of Lawrence (1993).

2. Focus

This research focuses on identifying existing TTSM that engage architects, users, clients, and/or the general public to facilitate collaboration and interaction in the design process for single-family housing. Specifically, we aim to analyse the possible uses and nature of these tools. We examine how these TTSM enhance knowledge exchange and foster collaboration between architects and users/clients. In the specific context of private dwellings, end-users and clients are often the same individuals; therefore, we refer to them hereafter as "user-clients".

3. Methodology

3.1. Data collection

We systematically identified and documented TTSM used by architectural firms or associations, independent architects, (public) institutions, laypeople, and construction industry service providers. Our aim was to find tools that are either frequently used or considered innovative.

We used a combination of search engines (Google, Instagram), video platforms (Netflix, YouTube) and specialized platforms (Archdaily, LinkedIn, Pinterest) to gather data. These platforms offered insights into how architects and related professionals communicate their projects to the public.

Data collection was conducted by two independent researchers following a double-blind protocol to minimize algorithmic bias. The two researchers did not work together prior to the research nor knew each other, were not in contact in any way, and had different backgrounds and ages. However, as both researchers were located in Belgium, our data collection strategy still holds geographical bias as a limitation.

The two researchers independently created lists based on their searches. The initial data comparison focused on identifying common sources, titles, and links between the two datasets. Tools with exact matches in sources and links were marked as strict similarities, while those with similar sources but unrecorded links were categorized as approximate similarities. After removing duplicates, a total of 123 tools were included in the data analysis.

3.2. Data analysis

We went through a two-step process in data analysis. First the two researchers who conducted data collection categorized the TTSM following a combination of inductive and deductive logic. Tools were grouped into families based on their 1) function, 2) nature, and 3) use in architectural processes. Categories such as visualization, check-lists, and guides emerged from both researchers' datasets. Sub-categories were then refined iteratively based on the detailed analysis of tool themes, descriptions, and their practical applications.

In the second step of data analysis (Table 3), two other researchers introduced and superimposed the first coding with an inductive coding scheme based on the categorization put forward by Weytjens *et al.* (2009) and the dimensions of Lawrence (1993). We also added a seventh code, "Mediation", which didn't find a place in these two categorisations. This code refers to the TTSM aiming to promote architectural culture.

Table 3. Second round of coding scheme

Format	Digital	
	Physical	
Sub-Format	document / pdf document / word / book / booklet / image / video / audio / virtual reality model / webpage / website / social media channel / online post / event / toolkit / podcast / simulation / drawing / installation / animation / lexicon / questionnaire / online course / checklist / forum	
Strategy	Materialisation, Visualisation, Familiarization, Fiction, Narrativity, Conventional	
Diffusion	institution (chamber or cultural); architect; lay people; construction industry service providers; academics; associations of architects	
Categorisation 1 (based on Lawrence (1993))	C1.1 - Design/Activity/Ordering	"ordering of the built environment, both spatially and temporally" (p. X)
	C1.2 - Social/Communication/Decision Making	"a process of decision making based on human communication, negotiation and simulation in order to define a shared goal" (p. X)
	C1.3 - Management/Process/Coordination	"the scheme of activities, actions and plans to achieve defined goals" (p. X)
	C1.4. Mediation	To promote architectural culture
Categorisation 2 (based on Weytjens *et al.* (2009))	C2.1. Knowledge-based	To provide necessary information for design
	C2.2. Modelling	To facilitate design thinking through externalization
	C2.3. Evaluation & Analysis	To check the alignment between requirements and design
	C2.4. Presentation	To present design to other experts as well as non-experts (such as client, user)
	C2.5. Communication	To support overall communication during project
	C2.6. Structuring	To organize the design process
	C2.7. Mediation	To promote architectural culture

4. Findings

4.1. Overview of TTSM[4]

Here, we first provide an overview of our results based on the; 1) author/diffusion and target audience, 2) formats, sub-formats and strategies, 3) TTSM categorisations based on Weytjens *et al.* (2009) and the dimensions of Lawrence (1993). We then present a more detailed analysis of the aim and nature of these TTSM based on our second categorisation through Lawrence's (1993) and through tool families.

4.1.1. Authors/disseminators and target audience
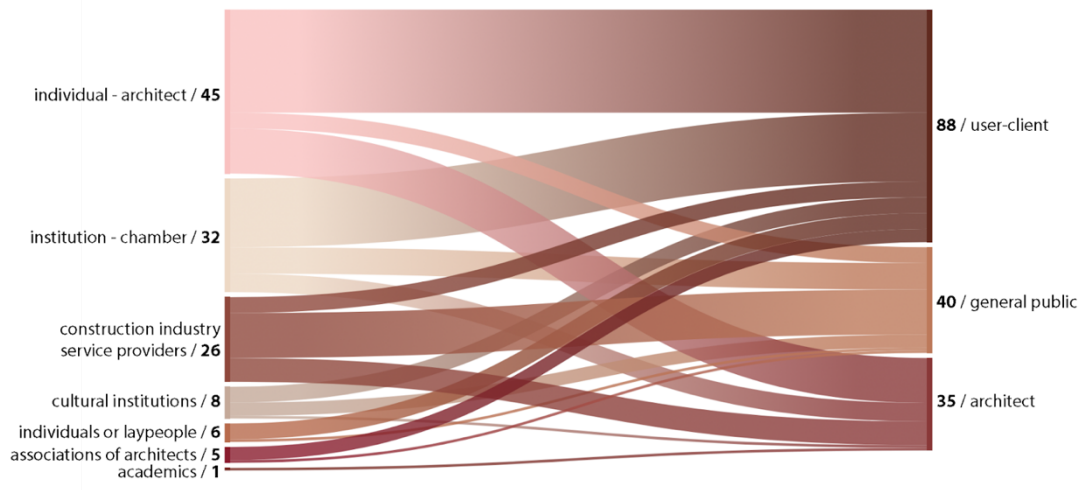
Figure 11. Comparative visualisation of authors/disseminators (left) and target audience (right)

When we examine the authors or disseminators of TTSM, the majority of tools in our dataset were created and/or shared by individual architects (n = 45). This was followed by chambers of architects (n = 32) and construction industry service providers (n = 26). Cultural institutions (n = 8), individuals or laypeople (n = 6), associations of architects (n = 5), and academics (n = 1) had lower representation in this regard.

The target audience, or those who could benefit from using these TTSM, consisted of user-clients (n = 88), the general public (n = 40), and architects (n = 35). This coding category was not exclusive, so a single TTSM could address more than one type of audience.

4.1.2. Formats, sub-formats, strategies: materiality of TTSM
The TTSMs were mostly available in digital form (n=104), while only 19 were designed to be physical tools, or physical tools reported online. We share the sub-formats below. This coding category was not exclusive, so a single TTSM could have more than one type of sub-format.

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[4] The full TTSM table can be found in the Appendices.
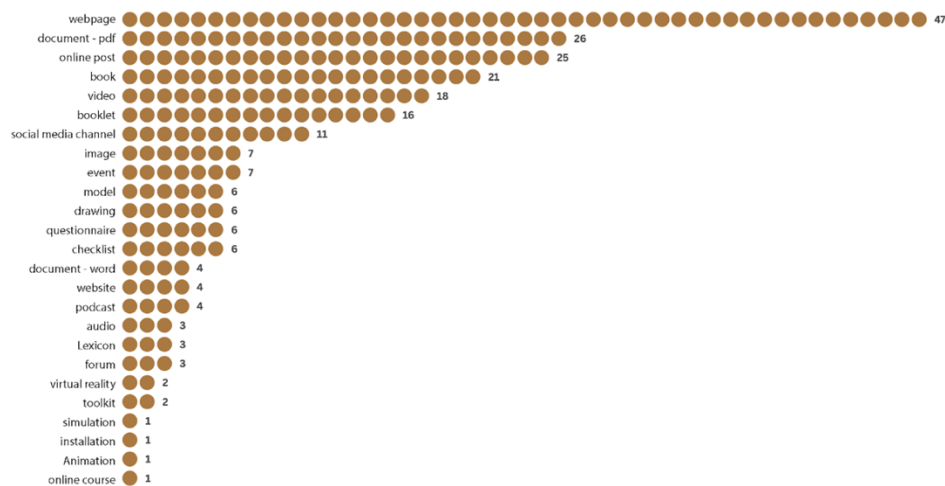
Figure 12. The sub-formats found in the dataset

To better understand the wide range of tools architects use to communicate with clients or the general public, we organized them into "families" categories. Each group reflects a specific function these tools fulfil — whether to inform, guide, educate, or foster interaction. Table 4 offers an overview of these categories, accompanied by short descriptions formulated by the authors:

Table 4. Classification of Tools and Descriptions

Category	Description
Visualisation	Tools that allow the client to understand the space and its layout from different perspectives.
Visit	A real immersion that enables the architect to gather crucial information the client considers while visiting the site.
Themed Interview / Report	Video in which architects address specific themes of the architectural project to help the general public and potential clients to better understand it.
Experience Sharing	Tools presented as text or video, in which a stakeholder uses their experience to advise other architects and clients.
Educational / Didactic	Tools engaging the general public's participation, whether through movement, handling, or simply playful approaches.
Glossary / Lexicon	Text- or image-based tools defining architectural or general construction terms.
Questionnaire	Questions addressed to the client before any contract signing, aimed at formulating the client's needs in greater detail.
Directory	Web page allowing a potential client to choose an architect in a suitable location and sometimes even verify their license to practice.
Template Documentation	Tools providing an example of standard project documentation or listing its contents.
Checklist	Checklist used to guide the client or architects on various subjects.
Guide	Tools advising the client more formally on various topics, in the form of a book, PDF, or training.
Advice	Tools offering less formal guidance to the client via web pages, images, or podcasts.
FAQ	Tools advising the client or general public through specific questions on forums, podcasts, videos, etc.
Services	The architecture firm's web page clearly defining the services included in its offerings.
Press	Tools informing the client and/or the general public about general topics or facts in the architectural world, aimed at educating the listener, reader, or viewer.
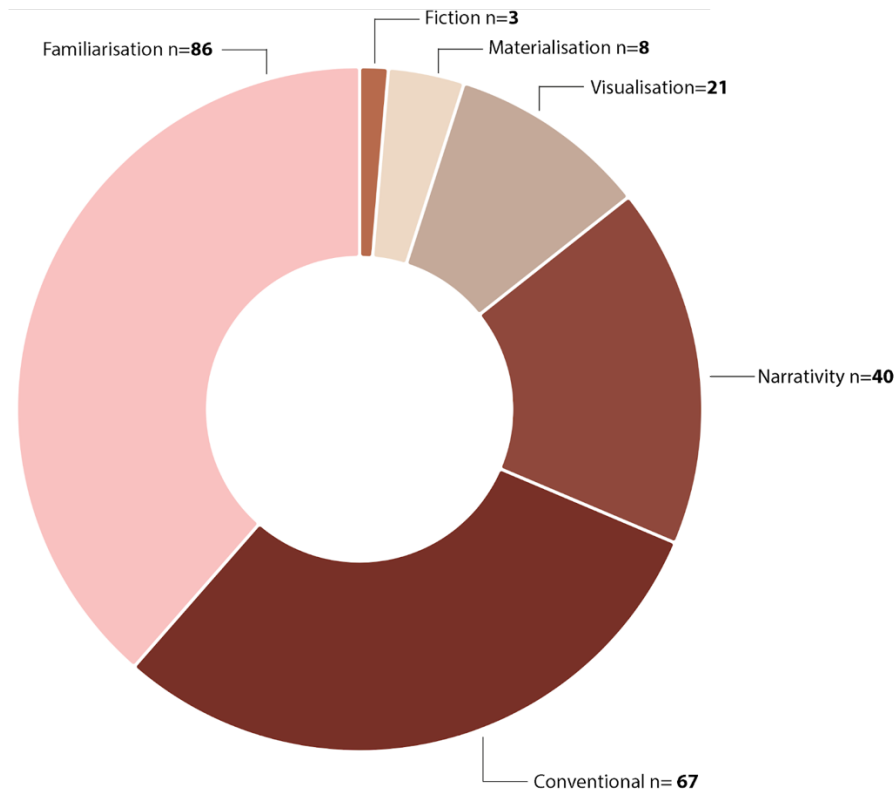
Figure 13. The strategies found in the dataset

For the strategies (this coding item being also not exclusive), familiarisation (defined as presenting information in a more accessible form for the broader public, such as through streaming series or podcasts) was the most prominent. We also observed that more than half of the TTSM in current practice use conventional strategies, such as distributing text-based information through PDFs. This was followed by narrativity, which refers to using explanations, stories, and visual forms of narration to convey information. Visualisation was the most common fourth strategy, involving visual imagery, sketches, etc. Materialisation, observed in only eight TTSM, referred to the use of concrete materials to provide hands-on experiences. Finally, only three fiction-based tools were identified.

4.1.3. Categorisation
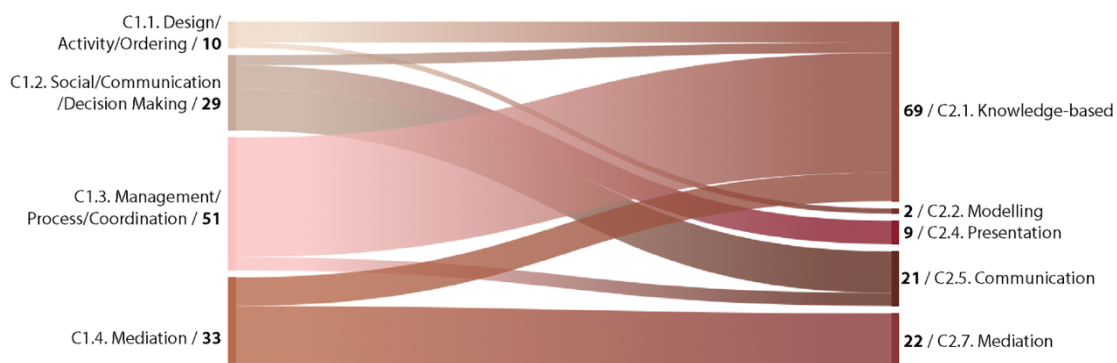
Figure 14. Comparative visualisation of categorisation 1 (left) and categorisation 2 (right)

Our first categorisation is based on the three dimensions of architectural practice proposed by Lawrence (1993). Here, we found that most of the TTSM were associated with "C1.3. Management – Process – Coordination" (n = 51). This was followed by "C1.2. Social – Communication – Decision-Making" (n = 29). "C1.1. Design – Activity – Ordering" (n = 10) had the lowest occurrence in our dataset. In this categorisation scheme, 33 tools did not fit in any of the predefined categories and were assigned to our emergent category, "C1.4. Mediation". This category captures tools that are not used directly in practical architectural project contexts but can indirectly have an effect by promoting architectural culture to a broader audience.

Our second categorisation, based on the framework proposed by Weytjens *et al.* (2009), showed that most of the TTSM were oriented toward "C2.1. Knowledge-based" use (n = 69), followed by "C2.5. Communication" (n = 21) and "C2.4. Presentation" (n = 9). For the categories "C2.2. Modelling" (n = 2), "C2.3. Evaluation" (n = 1), and "C2.6. Structuring" (n = 0), we were able to code few to no examples. Meanwhile, we once again introduced a new category in this scheme for TTSM that fall under the "C2.7. Mediation" category (n = 22). This second categorisation demonstrated the prominence of knowledge-based TTSM in our dataset and revealed the lack of TTSM in the structuring, evaluation, and modelling categories. Now, we will delve into these categories in more detail. Our first categorisation provided a more robust understanding of our dataset. Accordingly, we decided to present our results based on our first categorisation, while superimposing it with the second.

4.2. TTSM related to design as an activity and to the ordering of the built environment

Ten tools were categorised under "C1.1. Design – Activity – Ordering" (defined as "ordering of the built environment, both spatially and temporally" (Lawrence, 1993)). When we superimposed this category with C2, eight of them fell under "C2.1. Knowledge-based" and consisted of annotated documents, questionnaires, mood boards, or written briefs specifically aimed at identifying users' needs and gathering information from clients to initiate the design process. These tools were oriented toward user-client use, to enable them to explain and communicate their projects in a more structured manner to their architects (n = 7). We also found video explanations of client meetings and site visits, which can be useful for both architects and user-clients to improve their interactions in the early phases.

In these knowledge-based tools, we identified two main strategies: conventional and visualisation. Digital PDFs and written documents mostly employ conventional strategies, where users prepare and transmit design intentions or requirements, providing essential information for design in written form by answering questions or filling in forms. In some cases, user-clients are

expected to share inspirational imagery, where visualisation emerges as an additional strategy that goes beyond verbal means.

Overall, these tools enable the inclusion of personal references, narratives, and inspirational materials, helping architects situate design choices within the lived experiences and expectations of the client. This supports architects in structuring the initial order of the project and enables users' voices to influence the spatial configuration from the outset, as well as their active participation in the spatial imagination and programmatic ordering of the project.

While these tools may seem to function primarily as means of communicating needs and desires, and thus could also be categorised under "C2.5: Communication" or "C1.2: Social – Communication – Decision Making" (defined as "a process of decision making based on human communication, negotiation, and simulation in order to define a shared goal" (Lawrence, 1993)), their primary function in this context aligns more closely with "design activity" (Design – Activity – Ordering). Here, users not only communicate preferences but also actively contribute to the spatial and temporal structuring of the built environment through their input.

However, their input remains at a conventional level, where they do not engage hands-on in "C2.2: Modelling" or in facilitating design thinking through externalisation for instance. Here, we were only able to code two TTSM among the 123 that were directly oriented toward literally designing together. Both of these used materialisation as a strategy by proposing scaled or life-size models and plans to enable thinking and designing through material tools. In these cases, user-clients were more actively participating in the structuring of the built environment through their design actions.

4.3. TTSM related to social, communication aspects, and decision-making

Twenty-nine tools were categorised under "C1.2 – Social/Communication/Decision Making" (defined as "a process of decision making based on human communication, negotiation, and simulation in order to define a shared goal" (Lawrence, 1993)). When we superimposed this category with C2, we saw that four of them fell under "C2.1. Knowledge-based", nine fell under "C2.4. Presentation", and sixteen fell under "C2.5. Communication".

The four "C2.1. Knowledge-based" tools in this category had a pedagogical orientation and were intended to share essential information with clients to support design communication — for example, by explaining technical drawing language and how to read architectural plans (n = 4). These tools aim to address the barriers clients and architects face when communicating design ideas, due to difficulties in reading technical drawings for instance.

The nine "C2.4. Presentation" tools in this category consisted of techniques such as sketching, visual representations including plans, axonometric

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drawings, 3D drawings, video animations, architectural models, and virtual reality. These emphasise a suite of both traditional and innovative representational strategies. While these tools used visualisation as a major and common strategy, most of them were well-known tools that can be considered as traditional representational and presentation techniques of architecture.

Iterative meetings (physical or digital), site visits, and real-time sketching potentially create space for negotiation and incremental decision-making. The use of shared online documents, annotated PDFs, and communication platforms enables ongoing feedback, clarifications, and updates. Storyboards, booklets, and presentations not only convey project information but also foster mutual understanding and trust by making the process transparent and participatory. Virtual reality is also highlighted as an innovative tool and technique that can enable clients to better understand the design before construction, compared to hard-to-read technical drawings. As a result, it enables greater collaboration and helps avoid misunderstandings.

Finally, the sixteen "C2.5. Communication" tools in this category consisted of relational communication tools. These were mostly presented as textual explanations providing guidance and advice. When oriented toward the user-client (n = 5), they aimed to help clients assessing compatibility and clarifying included services before signing, explaining how an architect builds a productive relationship with clients, providing actionable tips for improving communication between architects and clients, and empowering clients to clearly communicate their vision to their architect. When oriented toward the architect (n = 11), they aimed to emphasise the importance of listening to clients during design development, to stress the importance of a positive first meeting, to provide insights and instruction for developing a strong architect–client relationship, to build and maintain trust, to help architects articulate their value and communicate effectively, and to warn architects about potential pitfalls in client relationships.

4.4. TTSM related to architectural processes, management, and coordination

Fifty-one tools were categorised under "C1.3 – Management/ Process/ Coordination" (defined as "the scheme of activities, actions, and plans to achieve defined goals", (Ref)). When we superimposed this category with C2, we saw that forty-six of them fell under "C2.1. Knowledge-based" and five fell under "C2.5. Communication".

When we take a closer look at the forty-six "C2.1. Knowledge-based" tools in this category, we see divergent aims ranging from helping user-clients find the right architect to informing, guiding, and educating clients about architectural processes.

Most of the tools focused on explaining to clients what to expect from the architectural design process and its steps. These tools were found to be useful

for preparing and supporting user-clients who are not familiar with architectural services, the architect's work, or what to expect when engaging in design and construction.

Nine of these tools focused on guiding clients in finding an architect, with three of them being directories from architectural chambers designed to connect clients with local architects. The others primarily aimed to highlight important considerations to help clients make informed decisions when choosing an architect. Besides textual explanations, we also found guidance in the form of a checklist.

Additionally, we observed that some of the TTSM aimed to clarify both the architect's role and the client's role, helping clients become effective participants in a construction project and work successfully with an architect. While most of these tools focused on the architect's role, some also highlighted the contractor's role and position within the process (n = 2). We also found tools addressing legal aspects of the process and clarifying the responsibilities of different parties. Some of them outlined potential risks and provided guidance on what to do in the event of a dispute (n = 3).

4.5. Inductive Dimension: Mediation

The analysis of coded tools and strategies also revealed an emergent dimension best described as mediative (n = 33), which didn't find a place in the first C1 or C2 coding scheme. This prompted us to propose inductively a new dimension titled "Mediation". These tools and strategies aimed at translating disciplinary knowledge, professional roles, and project constraints as well as architectural culture into accessible formats, fostering lay-people understanding and cultural accessibility between architects, user-clients, and the broader public.

Among these, 11 tools specifically targeted the augmentation of user-client agency by improving understanding: they clarified architectural jargon through lexicons, explained the architect's roles and missions, presented legal or procedural information, and offered accessible overviews of the architectural process as a whole. These tools aim to pre-empt misunderstandings and ease the friction often seen in early project phases. Within the mediation dimension, the most prominent strategies are those designed to bridge divergent viewpoints, clarify misunderstandings, and create shared meaning throughout the architectural process.

In addition to targeted client support, broader mediation tools (n = 22) addressed the general public. These include formats such as humorous guides (n = 5), open-building or site tours, exhibitions and other cultural and artistic activities and documentation. Their aim is to increase collective literacy around the architectural habitus and expand cultural familiarity with design practices.

The mediative dimension, as revealed by this inductive phase of coding, functions as a meta-level support for the architectural process: it sustains participation even in moments of asymmetry or misunderstanding, fosters trust, and opens up channels of engagement that are not strictly project-bound. By strengthening the user's cultural and cognitive entry points into architecture, these tools serve to rebalance the expert-layperson dynamic in a more sustainable and inclusive way.

5. Discussion

5.1. An emphasis on knowledge

Based on our dataset, the current tools found in the gray literature and that are oriented toward user-client use mostly address the knowledge gap of user-clients or the broader public regarding architectural processes, techniques, tools, and culture. While these tools can be useful for addressing knowledge disparities and bridging the gap for user-clients in the architectural realm, we argue that architectural practice can benefit from tools that not only aim to inform user-clients but also place them in a more active and engaged position within the architectural design process.

5.2. Too little space for designing together

We suggest that architects and architectural practice needs to go beyond traditional and presentational techniques to foster more active and meaningful user-client involvement in design. While we saw tools such as questionnaires, moodboards, use of inspirational imagery to enable user-clients to share their needs, desires and visions with their architects, there are far fewer tools that move beyond verbal expression and translation to enable co-design co-production of shared authorship, or collaborative negotiation. While previous studies put forward the extensive use of modelling tools by architects (%90,1 according to Weytjens et al., 2009), this study showed that they rarely actively collaborate with user-clients in modelling but rather through presentation. Our results showed that even though the housing context's special circumstances such as clients also being the users of the future building and they were engaging in some kind of an unstructured co-design process, there is little space for actually designing together.

While some newer approaches such as virtual reality addresses such barriers, their use is not (yet) potentially seen as mainstream in current practices. Few tools such as real-size plans and ready-to-use model kits give some hints towards a more participatory architectural practice. Still architecture can learn and engage more with participatory practices beyond the disciplinary boundaries. The use of participatory tools not only enhances the client's understanding but also fosters a more collaborative and inclusive design process.

5.3. Going beyond architectural representations

The presentation tools remain rather traditional (such as sketches and technical drawings), can be hard to understand, interpret or engage with for user-clients (Chuang and Chien, 2021; Norouzi *et al.*, 2015). Such tools risk operating in a "one-way" mode, providing information to the user, but rarely creating feedback loops or mechanisms for users to adapt, question, or shape the mediating content in return. Meanwhile, 3D digital models, animations, virtual reality walkthroughs, and screen-shared plans make spatial and material choices more accessible. While these tools can bridge the representational gap between architects and their user clients, foster client understanding and participation, their use is often constrained by cost or perceived complexity.

5.4. Opting for inclusive practices

Most of the tools in our dataset were rather using traditional modalities and mostly based on verbal explanations, or architectural representations that require specific skills such as reading a plan. Mediation strategies for less literate, marginalized, or differently-abled users are underrepresented, as are tools designed for multicultural or multilingual settings. We believe that it is urgent to question and introduce tools that can address different user and client profiles into the architectural practice contexts.

5.5. Being prepared to frictions and relational aspects

While we traced some rare tools addressing potential risks as well as what to do in case of a dispute, we argue that there is a shortage of tools embedded at key decision points or critical moments of friction throughout the project lifecycle, such as during budget negotiations, major design pivots, or construction site disputes.

Similarly, only few tools address the emotional and psychological mediation needed in high-stress phases, for example when projects face setbacks, interpersonal conflict, or deep habitus shock (Ref Habitus ici). While relation communication tools that we traced tried to highlight the importance of a good architect and user-client relationship, they remained textual explanations and guides. There is potential for tools (e.g., role-play scenarios, empathic storytelling, conflict resolution protocols) to mediate not only knowledge but also trust, empathy, and psychological safety. Providing such tools can also be useful to prepare both parties for the relational aspects of the architectural processes and foster stronger relationship management.

6. Conclusion

In this study, we investigated the tools, techniques, strategies, and methods (TTSM) that can facilitate the involvement of user-clients in the design of single-family dwellings. We collected, coded, and categorised a total of 123 tools from grey literature that can support collaboration and interaction between parties, helping to bridge the gap between architects and non-experts.

Our analysis of TTSM used in architectural practice reveals a broad spectrum of tools, and we present them by focusing on four areas they support: 1) Design, Activity, and Ordering; 2) Social, Communication, and Decision-Making; 3) Management, Process, and Coordination; and 4) Mediation. Our overview highlights the recent grey literature concerning the practical and systematic use of TTSM in architects' interactions with user-clients.

Our results underscore the importance of tools that support knowledge sharing, clear communication and engagement, as well as needs around project management. We highlight the lack of tools for designing together and the need to go beyond traditional representational modalities that can be exclusive due to knowledge disparities and varying abilities among user-clients. We also emphasise the importance of supporting the relational aspects of architectural processes.

This study helps to valorise and give visibility to some of the existing tools in the grey literature, and offers practical insights into how architects and architectural firms can enhance collaboration and user involvement. We also hope our study will serve as a basis and framework for the development of new tools that can further nurture the architect–user-client relationship and support co-design.

What's going on?

Architects

Researchers

Lack of convincing tools to support genuine user participation

Figure 15. "What's going on?"

Gaps

Communication and Cultural Gaps
- Persistent gaps in communication and understanding stemming from a peer-oriented architectural culture, reinforced by education,
- Users' habitus shock due to unfamiliarity with architectural language, roles, and processes,
- Role ambiguity and a lack of shared understanding of the architect's mission.

Tools
- Most tools geared toward informing rather than engaging users,
- Hands-on co-design tools rare and poorly implemented,
- Weak support during high-friction phases (e.g., conflict, setbacks),
- Mutual learning and client empowerment rarely supported by current tools or practices in everyday housing projects.

CHAPTER V
Architects' insights

User-Client Involvement and Participation in Private Dwelling: Insights from Belgian Architects

Abstract

This paper explores Belgian architects' perceptions and practices regarding user-client involvement in private dwelling design, based on insights from 15 interviews. We focus on (1) current practices of user-client involvement, (2) expected roles and levels of involvement, and (3) architects' views on participation. Findings show that architects mostly use conversation-based interactions, limiting user-client involvement, but also sometimes employ tools like virtual reality, mood boards, and probes to enhance engagement. While architects emphasize the uniqueness of private housing processes when it comes to user-client involvement, they generally prefer consultation over proactive involvement, gathering feedback without relinquishing control. There is a tension between the desire for collaboration, managing expectations, and maintaining project integrity. This paper highlights both the potential and limitations of user-client involvement, underscoring resistance to participatory approaches and contributing to a nuanced understanding of user-centered architectural design methodologies.

Keywords User involvement, client involvement, participation, housing, architectural practices.

1. Introduction

In Wallonia and Brussels (Belgium), any construction work that affects a building's envelope or structure mandates the involvement of a registered architect, highlighting the importance placed on professional oversight and high standards in the construction process, including private housing. Private housing dominates Belgium's architectural landscape, with 89% of firms engaged in residential design (ACE 2022). The sector's small-scale nature – 93% of practices employ fewer than five people, with 65% being sole practitioners – emphasizes close client-architect relationships but also presents significant challenges, such as navigating regulatory frameworks and diverse client expectations. These interactions are further complicated by financial constraints, which limit the possibility for small firms to iteratively adopt new tools and strategies.

User involvement encompasses a spectrum from passive consultation to active collaboration. While traditional methods such as site visits and verbal exchanges dominate, emerging tools like virtual reality, mood boards, and annotated sketches are gaining traction. These methods help bridge the gap

between architects and user-clients, enabling more tangible and informed discussions.

In Belgium, the mandatory involvement of registered architects underscores the profession's crucial role in ensuring high-quality housing. However, architects frequently limit user-client participation to consultation, prioritizing control over collaboration. This paper explores (1) current user-client involvement practices in private housing, (2) expected roles and levels of involvement, and (3) architects' perspectives on participatory approaches.

2. User/Client involvement and participation in architecture

User involvement in architectural design enhances satisfaction, improves outcomes, and aligns projects with user needs (Defays & Elsen 2018). Damodaran (1996) categorizes user involvement into four levels: none, informative, consultative, and participative. At the informative level, users provide and receive information. At the consultative level, users comment on a predefined solution. Meanwhile, at the participative level, users can actively influence decisions. Participatory design, as Sanders (2002) explains, emphasizes active user contributions, fostering collaboration. Participatory approaches, seen as essential for best practices (Design Council 2007; 2019), emphasize collective, collaborative, or cooperative design processes (Zamenopoulos & Alexiou 2018) and align with broader democratic ambitions to address societal challenges (Klein 2010; Yönder *et al.* 2022). Despite its benefits, such as improved satisfaction and alignment with user needs (Kaya 2004; Pemsel *et al.* 2010; Latortue *et al.* 2015), architects, especially in private housing, often resist these approaches, favouring consultation over participation. User participation is often reduced to consultation sessions dominated by architects, creating imbalances that stifle dialogue (Adad 2004). Reliance on conversation-based methods limits client participation (Norouzi *et al.* 2015; Van der Linden *et al.* 2017). Architects recognize the value of user involvement but prefer consultative methods due to concerns over maintaining control. Yet, studies suggest that greater client involvement, particularly in the early design stages, leads to better outcomes (Defays & Elsen 2018).

Design materials like sketches and 3D models are vital for conveying spatial experiences but cannot fully replace direct user feedback (Van der Linden *et al.* 2019).

Client involvement also aids in understanding design challenges, with architects adopting pedagogical roles to support decision-making and learning (Norouzi *et al.* 2014; Luck 2012; Siva & London 2011, 2012).

Practices like site visits and reference project analysis enable architects to gain insights into user experiences (McDonnell & Lloyd 2014; Van der Linden *et al.* 2019).

Private housing, the dominant sector in Belgium, presents unique challenges for small-scale architectural practices that still rely on conversation-based methods. While fostering close client-architect relationships, these methods often limit the depth of client engagement. By examining Belgian architects' perspectives, this paper explores how interactional models can better align with client expectations and enhance architectural practice. Here, the term "user-client" refers to the project owner, encompassing both the client and end-user.

3. Materials and Methods

Fifteen semi-structured interviews were conducted with practicing architects in the French-speaking community of Belgium, encompassing the Wallonia and Brussels Regions (see Table 5). The participants were recruited online through the *Order of French-Speaking Architects of Belgium*'s newsletter.

The shortest interview lasted 54 minutes (Geraldine), while the longest lasted 2 hours and 4 minutes (Gerard). The average duration of the interviews was 1 hour and 44 minutes. All the interviews were audio recorded and transcribed for analysis.

The interview questions aimed to understand the architects' professional practices, tools, roles and responsibilities in housing projects, and their relationships with clients and users. They cover the terms used to refer to clients and users; reasons for client selection; experiences with client involvement; strategies for managing conflicts, and tools and strategies for building trust. Additionally, the questions delve into participatory approaches, communication tools and methods for post-project feedback, with a focus on understanding their impact on the architect's practice and client relationships. The latter is the main focus of this paper, while other results will be discussed elsewhere.

Thematic analysis (Lejeune 2019) was performed to identify themes and patterns related to current practices and interactions, mostly focusing on: (i) current ways of involving user-clients in the design process; (ii) expected roles and levels of involvement; and (iii) architects' perspectives and understandings of participation in architectural practice. Both first authors analyzed the excerpts separately, then discussed the analysis.

Table 5. Brief overview of the 15 interviewed profiles.

Pseudonym	Age	Profile	Duration of the interview
Geraldine	38	Associate architect in a firm of four, works primarily in renovation	00:54:16
Baptiste	40	Associate architect in a firm of twelve people, works on public building and collective housing projects.	02:23:18
Dorian	59	Works independently on all types of projects, construction or transformation.	01:30:41
Valerie	46	Works independently primarily on housing projects of all scales.	02:23:18
Kevin	36	Runs a firm of seven people, primarily working on renovation projects.	01:18:37
Cynthia	30	Collaborator in a firm of four people, primarily working on small transformations.	01:26:08
Henri	47	Works independently on all types of projects, but primarily on renovation projects.	01:59:39
Violette	54	Works independently on all types of projects, including commercial and residential projects of all scales.	01:24:22
Dimitri	55	Associate architect in a team of nine collaborators, working on all types of projects, at all scales.	01:55:04
Lionnel	26	Collaborator in an agency and independently working on the side, currently on small residential projects.	01:45:02
Michele	61	Associate architect in a firm of sixteen people, works on all types of projects.	01:50:24
Florence	35	Works independently, primarily in residential housing and interior architecture.	02:00:21
Gerard	58	Leads a firm of ten people, primarily working on public buildings.	02:04:34
Coralie	41	Associate architect in a firm of three people, primarily working on the construction or renovation of villas or farms.	01:38:00
Beatrice	37	Works alone or collaborates with another independent architect, primarily on construction or extension projects.	01:25:16

4. Findings and Discussion

This section discusses the testimonies from the interviews. While the small sample size of fifteen architects and reliance on self-reported data may introduce biases and limit the diversity of perspectives captured, the study provides valuable insights into user-client involvement and participatory practices in private housing. The results are organized thematically, integrating narratives of common and fringe practices to address the research questions and identify gaps and potential improvements for the profession.

4.1. The current ways of involving user-clients in the design process

4.1.1. Understanding and Expressing User-Client's Needs and Expectations

Most of the interactions with user-clients begin by email or a phone call. Together, architect and user-client organize a site visit which helps contextualize needs and expectations. As noted by McDonnell and Lloyd (2014) and Van der Linden *et al.* (2019), visiting sites with clients and examining reference projects or current facilities provide architects with tangible insights into user experiences.

Yet, some architects go beyond those simple site visits and verbal exchanges and develop specific approaches to gain a deeper understanding of their user-clients as well as to encourage them to reflect more on their needs. Tools like annotated sketches and mood boards facilitate communication, enabling clients to articulate preferences effectively. For instance, Beatrice uses Pinterest screenshots to understand spatial preferences, while Kevin's "Blank Page Method" encourages clients to document ideas throughout the process. He explains his approach as follows:

> *We meet clients for the first time, and I tell them, 'If we work together, I want you to have a blank sheet that you leave in the kitchen or elsewhere, where you write down everything that comes to mind about your project.'*
> *This method ensures that all ideas, even conflicting ones, are noted and discussed. (Kevin)*

Sometimes user-clients also take a proactive role to share their needs and expectations. Florence describes a project where the clients were exceptionally collaborative and enthusiastic: they had prepared for her a detailed PDF enclosing their wishes for each room, including inspirations and material preferences. This mood board initiative clarified expectations and facilitated the design process, allowing the project to progress quickly and efficiently.

Despite these efforts, architects face challenges in translating client input into actionable designs. Annotated sketches often reveal discrepancies between clients' initial visions and practical constraints. In some cases,tools like 3D views and virtual reality enhance understanding by visualizing spaces, though cost and time limitations restrict their use.

4.1.2. Design Phase: Client's expression of adjustments through 2D or 3D tools

Besides inspirational images, annotating sketches and architectural drawings become a major way for user-clients to express their needs and desires as well as suggesting minor adjustments. Beatrice highlights the importance of such client feedback through annotated sketches and Geraldine also mentions that after presenting initial project drafts, clients often scan and return annotated copies, suggesting minor adjustments:

> *We always have two sets of plans. They have their set. We scribble on ours. They have the archive of the initial project. We scribble on ours. And that's it. And then we clean it up. Depending on what was said, sometimes it's illegible because on-site we'll bring two or three ideas to modify. And yes, that's really done by hand on the plan. (Geraldine)*
>
> *It happens naturally. Often, they photocopy the preliminary plans I provide them, and then they often scan them for me, or they drop them off at the office and we discuss them. (Beatrice)*

While in some rare cases, user-clients draw to express their opinions, as mentioned by Geraldine, more often they express reluctance about drawing, expressing that they don't know how to draw. However, architects reassure them, encouraging participation through simple sketches added up to existing plans. As shared by Valerie, drawing helps clients better understand the feasibility of their own ideas:

> *If clients take the plan and draw on it, it's not a problem for me. Because it's while drawing that they sometimes see: 'Oh yes, I would have done that. Oh well no, that doesn't work at all. (Valerie)*

Yet, architectural representations are not easy to understand for people who are not trained in architecture, and in some cases, architects use actual walkthroughs to help user-clients themselves reflect on a future design situation:

> *People say, 'I don't realize.' We're going to get up. We're going to go see where we are. Here, you see we have... I had a case on a project. We had to reconfigure the staircases. There was a real circulation problem in the house. And really, the clients didn't realize. Here we're going to open. Here we're going to have the stairs. We're going to go down. Try to put people in the situation because it's not easy… (Geraldine)*

Another strategy to overcome the limits of 2D drawings is using images and 3D views:

> *3D views or now, rather, on a screen. We almost always do that. (...) views in plan, elevation, section, we do that because they will be needed anyway for the permit. On the other hand, for the preliminary design, we don't bother, in the first presentation of the preliminary design, to do facades and sections. (...) We do 3D because that's what speaks to people. (...) So the first presentation is more visual so that clients understand the project well. (Geraldine)*

Some architects additionally point out the benefits of the use of virtual reality (VR) to help clients visualize specific spaces within a project. Baptiste finds this technology engaging and useful for decision-making. Similarly, Gerard discusses integrating VR technology into the design process as a potentially useful way to place clients closer to their future living situations. Florence shares a recent positive experience with VR, describing it as "hyper interesting" for allowing clients to virtually walk through the project. She finds this technology particularly useful for visualizing volumes and spaces, helping to advance certain projects. Still, all three of them mention how time and cost constraints limit their use of VR in their practice.

Florence also mentions the risk that clients might perceive digital tools as oversimplifying the design process, without realizing the quantity of work required by each modification. She further expresses concerns that clients might think they can easily modify the project, like in a video game, without understanding the necessary work nor the consequences behind each change.

4.1.3. Dealing with complex issues: Communication, Emotions, and Budget Clarity

Private housing contexts present specific challenges for architects regarding user-client involvement. The first challenge pertains to communication issues. As user-clients are more personally invested in their housing projects, they often blur professional boundaries, such as working hours and official communication channels:

> *Sometimes, when we send them emails, instead of reading what we've written, they'll immediately call. So sometimes you also have to turn off your phone to say (...) no, it's the weekend. (Valerie)*

Additionally, this personal attachment of clients to their projects brings emotional concerns, as well as issues related to their privacy. Architects can find themselves in the middle of delicate discussions:

> *The worst is when the husband and wife don't agree. That's annoying. Because then… Yes, at that moment, then I say: listen, you sort it out between yourselves and then we'll meet again. Because when they don't agree and they discuss it in front of you, that's an incredible waste of time. And we're not couples therapists. (Valerie)*

Besides relational aspects, critical issues such as the budget tend to be misjudged by clients. Florence recounts a situation where she realized the client's budget was insufficient. She prepared a retro-budget, breaking down costs to show the client the realistic amount left for construction after deducting all related expenses. This transparency and pedagogic style in communication helps user-client understand the financial constraints and avoid future issues:

> *If they have 100,000 euros for the work, you need to add VAT. You need to add my fees, Energy Performance of the Building evaluation fees, the engineer's fees. In the end, it's more like 140,000 euros. But here they have 100,000 all-inclusive? 'All-inclusive' is usually understood in two seconds. And that's why I do a (…) 'retro budgeting'. If you have 100,000 all-inclusive, we take this off, we take that off, we take this off… and that's what's left. So, once the agreement is signed, all these steps are included and explained. So, I don't get a stomachache every time I have to send them an invoice because the invoices are detailed in the agreement. (Florence)*

Through a simple method of communication, Florence demonstrates how she can support client learning. This technique, aligning with Norouzi *et al.* (2014), Luck (2012), and Siva and London (2011; 2012)'s work, could inspire communication methods for other complex issues.

4.2. Expected roles and levels of involvement

In the private dwelling context, user-clients hold responsibilities such as choosing contractors or applying for planning permits. Their lack of knowledge and experience in architecture and construction might create barriers to making such informed and important decisions. Such lack of knowledge and resulting mistakes sometimes necessitate architects to deal with the consequences of decisions that they did themselves not take:

> *Making a choice about a company (...) often people (...) only look at the amount and they don't look at anything else. And then it's the architect who ends up dealing with the mess during the construction. (Beatrice)*

To avoid negative results for the project, architects may to go beyond their own responsibilities and engage more with the client's responsibilities:

> *They say: We have a 120,000 euros budget. I tell them: you're far off. (...) if we go into this now, we'll hit a wall. I am not responsible for your budget. Officially, I am not responsible for the client's budget. I must respond to their program [that's it] (...) But I still warn them. (Henri)*

Some architects take on client responsibilities, such as submitting permits or requesting property certificates, to simplify the process and allow clients more time for project decisions. Valerie explains,

> *I'll personally submit the permit (and) all things that are complicated for them because they've never done that (...) I expect them not to hinder my progress and to make the right decisions regarding the project they want to live in.*

User-clients' lack of architectural knowledge in areas like choosing contractors or handling permits thus often forces architects to manage the consequences of poorly informed decisions. This underscores the need for architects to guide clients more effectively in their responsibilities to ensure better project outcomes.

4.2.1. Major Responsibility of User-Clients: Making choices

The primary responsibility of user-clients, as expected by architects, is making timely decisions about their needs and preferences. Delays and indecision often hinder progress, particularly when clients frequently change their minds. Valerie warns,

> *Two weeks later, don't tell me: 'I haven't decided.' We move forward, or it won't work.*

Beatrice highlights the challenges of indecision during critical stages, such as planning permits:

> *At the preliminary design stage, it's about making choices. (...) because sometimes people don't know. They don't agree. They change their minds. (This client) wanted her permit to be issued but at the same time she was calling me between meetings to change things again, so naturally that also delays the modifications. (...) That kind of change should be made at the preliminary design stage. At the urban planning permit stage, what can we expect?*

Lionnel shares an example of a client who was overly invested but struggled to make decisions:

> *Too invested, this lady who is very impatient and actually has trouble making up her mind. (...) She saw a certain way, a certain staircase that she liked. (…) She keeps feeding ideas non-stop, believing she was doing the right thing, to get to the result that will please her (…) But she's doing it in the wrong way, so let's say she was maybe a little too invested in that sense.*

Similarly, Florence recalls a client whose constant changes complicated a renovation project, adding stress and undermining trust in her expertise. This lack of trust left Florence feeling undervalued and relegated to contractor management duties.

Architects emphasize the importance of guiding clients effectively to avoid these issues. While intense client involvement can enrich projects, it often complicates collaboration when driven by impulsive ideas or a lack of appreciation for architects' expertise, leading to frustration and miscommunication.

4.2.2. A special case: self-construction

Architects' narratives on self-construction reveal two types of user-clients: those seeking guidance and those viewing the architect's role as a mere legal formality. Coralie notes,

> *[Some] come saying they don't know anything. There, support makes sense. Others just want their permit and nothing more.*

She rejects clients seeking only a signature, insisting on adhering to the legal framework and her advising responsibilities.

Beatrice observes that even in self-construction, the design phase remains similar to other projects:

I had clients who have done everything in self-construction. But in the design phase, it was like any other client.

Increased user-client involvement brings new responsibilities, such as conducting research. Beatrice recalls a client extensively researching natural materials due to health concerns, describing it as a nice exchange.

In self-construction, architects balance supporting genuine guidance seekers and managing clients who undervalue their role. They expect user-clients to undertake more responsibilities, advocating for tailored support and a consultant service approach to enhance collaboration and learning.

4.3. Architects' perspectives and understandings of participation in architectural practice

We found that most of the architects we interviewed had a limited understanding of participation and most of them couldn't answer the question: *What is your point of view on participatory practices in architecture?*

Participatory approaches? No, that doesn't ring a bell for me. (…) I'll open a small parenthesis because I'm not necessarily looking for more client interaction. (Dorian)

Others generally refer to the public project contexts to exemplify participation in architecture or self-built processes that don't include a design dimension. Among the fifteen participants, only three architects took a net supporting position for participation in architecture, four expressed uncertainty and four clearly positioned against. A summary of these uptakes is presented in Table 6.

Table 6. Participants' perspective on participation.

Architect (pseudos)	Pro/Con/Mitigated/ Doesn't Understand	Reason (quotes)	Practicing participation or not
Geraldine	Pro - highlighting multiplicity of perspectives	*Participation: it brings several opinions, several interlocutors. For me, it can only be a good exchange.*	No
Valerie	Limited understanding/ Pro (but limited to choosing the "decorations", in her own words)	*It evokes the idea of asking people for their opinion. In Belgium, I'm not sure if it works so well because the people who participate are those who have nothing else to do, who have the time. Or else they're extremists and all that. (…) To some extent, it's true that there's little participation in public markets. (...) Because in procurement contract, the user doesn't exist at all. (values user-involvement for) the decoration because I'm not an interior architect (…) I'll choose something I like which isn't a good idea. Unless they tell me: go ahead, you decide.*	No
Dimitri	Mitigated	*It depends on what we mean by participation. (…) during the development of the studies, we are forced to meet with people from the*	Yes

		neighborhood and to work on a form of participation. *Participation cannot simply be reduced to a kind of idea collection (…) It's really something that has to be well-structured.*	
Beatrice	Mitigated	*(values) the participation of various stakeholders. The client hasn't mastered all building techniques. There's already quite a bit of interaction among the designers and I really try to explain why we chose what we did.*	Yes
Baptiste	Mitigated/Con	*it's so risky because we have people expressing ideas and if we don't follow through, they'll be disappointed.*	Yes
Florence	Mitigated/ Not understanding how it translates to private projects	*(Participation) doesn't (sound familiar) except for examples in the context of public projects. For me, it evokes involving either a neighborhood in a larger project, or clients in a more limited project, or for instance, like a consultation committee but on a smaller scale.* *I believe we should listen to everyone, if those individuals are affected by the project or by the impact the project may have on their own lives. However, I don't really like approaches that are (…) against ideas. I always distrust extremes, whether for or against a project.*	Yes
Gerard	Mitigated/ con for private dwelling	*With public buildings, we need to do programmatic work that requires attention (…) structuring, tools, etc. For a home, we don't, in my opinion. We don't need to equip ourselves with a [participation] tool.* *If you take lawyers, architects, or garbage collectors, and ask them what they want, everyone will come up with their own ideals.*	Yes
Dorian	Doesn't understand/ Con	*Participatory approaches? No, I'm not familiar with that. (…) I'll open a small parenthesis because I'm not necessarily looking for more client interaction.*	No
Lionnel	Pro in public context/Mitigate for private owners (at some point conflates participatory design approaches, participatory construction sites, and self-built projects)	*Participatory approaches (…) we work a lot on that in the studio. It's a bit of a trendy notion, all these participatory construction sites and others. If we are building a youth center for a specific audience, it's important that this audience is interested and understands what we are talking about and how things are done.* *It can be a bit challenging. In private sector work, with a lot of self-construction, the client participates in building their own house. There are significant stakes in seeing how things come together and discussing details or making adjustments on the construction site itself.* *(A client) too invested... this reminds me of the example of (a client) who was very impatient and struggled to make decisions.*	Yes
Michele	Doesn't understand/ (confuses	*When asked about what participatory approaches evoke: What do you mean?*	No

	participation in the design and self-built projects)	In co-housing, sure. Well, when people build in self-construction. We have fewer of those now, but I had many self-construction clients in the past.	
Kevin	Doesn't understand	What does 'participative' mean? (...) A participatory construction site? Is that what we're talking about?	No
Cynthia	Doesn't understand	I've not quite heard of it but participatory means other approaches that can lead the client to the solution. So, what I do, from time to time, is home upgrades, what do you call that? It's the state that manages it.	No/not sure
Henri	Con	The richness of our understanding of architecture is necessarily linked to knowledge of architecture to understand what proportion is. (…) So, everyone keeps their role. And that's why I think it's important that the Order of Architects follows your work a bit, hoping that one day it will help to clearly explain everyone's roles.	No
Violette	Con	I'm not very convinced by it, I think that enlightened despotism is still better. It's the same thing as with the client who started designing their own bathroom. After they've drawn it, it's fine because it allows me to see what they want. But when it becomes institutionalized with committees and all: spare me!	No
Coralie	Doesn't understand	When asked about what participatory approaches evoke, if anything: Nothing. Is it towards the client? For me, participatory approach reminds me of a conversation I had with a girl who (practiced what she called a holistic approach) (...) then when she left, we went to see what holistic means, because we didn't know, not at all. And then we read that it means taking things in their entirety etc. And then we said to ourselves with (her collaborator): we are miles away from all of that.	No

Besides understanding and positioning for or against participation, we also identified a few barriers to participation as expressed by architects. These are discussed in the following sections.

4.3.1 Perception of Participation
Architects often view participation skeptically, fearing it may lead to unrealistic expectations or disappointment if client ideas are not implemented. Participation is also perceived as time-consuming and prone to complications from overly available or extreme clients. These concerns highlight the challenges of shifting from consultative to participative involvement. While consultative methods allow for limited input, participative approaches require active, ongoing collaboration, demanding significant time and effort. Future research should explore how user-clients value architects acting as facilitators and their interest in proactive inclusion during the design process.

4.3.2 Lack of Client Knowledge

According to some of the interviewees such as Beatrice, Michele and Henri, user-clients' lack of knowledge about the domain creates a barrier for user-clients to easily participate in the design and decision-making processes in complex construction practices. Client learning support, where architects take on a pedagogical role to help clients understand design issues and decisions at different stages of the project, could help bridge this gap (Norouzi *et al.* 2014; Siva and London 2011; 2012). This approach not only empowers clients but also enhances the overall quality of the design process by fostering better communication and mutual understanding between architects and user-clients.

4.3.3 Cultural and Aesthetic Differences

A key barrier identified in the testimonies is the distinction between high and low architectural culture, where user-client tastes often clash with architects' vision of a coherent built environment. Henri illustrates this by comparing urban planning in Walloon Brabant, where mismatched styles create disjointed landscapes, to the Netherlands, which fosters harmony. He questions whether involving project owners in design decisions is always beneficial. Valerie, while supporting user-client involvement, also distances herself from high architectural culture, focusing instead on client comfort:

> If clients take the plan and draw on it, it's not a problem for me. (…) I don't really care, to be honest. I don't have an oversized architect's ego, and I don't need to be published in magazines and all that. I don't care. It's important that people feel comfortable in their homes. (…) He choose ugly switches and everything. Afterwards, I tried to tell him: 'Are you sure and all that.' But then he has different tastes from mine. So, there you go, it's not me who's going to live in his house. (Laughs) It's not a problem for me. (Valerie)

This highlights the ongoing tension between professional architectural standards and personalized user-client preferences in the practice. Valerie's acceptance of user-client modifications, albeit to a limited extent, still reflects a move towards more individualized input.

Henri's and Valerie's comments reflect the tension described by Adad (2004), where architects' paternalistic approaches can stifle communication and prioritize their views over user input.

4.3.4 Lack of Interpersonal Skills

The third barrier identified is the lack of interpersonal skills among architects, which are essential for managing relational aspects of the design process. While aware of these challenges, architects often view them as outside the architectural profession. Lionnel describes this as

managing social issues, communication with people, psychology, understanding each individual to find the right tone, not to rush them, or knowing what to say and how to say it to each person.

Kevin adds: *We're not trained for dealing with other people. Honestly, in the office, we constantly reflect on this: dealing with private clients, in particular. We always find ourselves facing people who don't have mastery of the construction field, so we end up having to teach them things, having to respect their point of view. But they're all different. They all experience different stresses. It's difficult. We end up being psychologists.*

These testimonies align with the literature (Design Council 2007; 2019; Zamenopoulos & Alexiou 2018; Siva & London, 2011) emphasizing the need for well-structured participatory processes, concrete models in architectural practice, and client-learning. They highlight the importance of integrating interpersonal skills into architectural education to enable architects to better support participatory approaches.

5. Conclusions

This paper contributes to understanding user-client involvement in architectural design, examining roles, levels of involvement, and architects' perspectives on participation. While architects rely on traditional methods like conversational consultative approaches, site visits and annotated drawings, they remain cautious about participatory practices due to challenges in managing expectations and maintaining project integrity.

Some architects are beginning to adopt tools such as virtual reality, mood boards, and probes to enhance client engagement, though their use remains unsystematized. Participation is still largely associated with public projects, participatory construction sites or self-construction contexts, and most architects do not define everyday private housing practices as participatory. To foster a participatory culture in architectural practice and education, it is essential to address user-clients' lack of knowledge, architects' interpersonal skills, and the gap between professional and lay architectural cultures.

Considering architect's and clients' interactions through the design thinking framework

Abstract

As the quality of the relationship between designers and users highly contributes to the success of the design process, involving users in the design process is more than ever crucial to the project. This chapter argues that design thinking could help architectural routines evolve regarding the interactions between end-users and architects. Though the design thinking principles may serve as an inspirational framework, we claim they still need to be adapted to architects' needs and fields' constraints. This chapter focuses on the Belgian housing design field, specifically questioning the posture architects tend to have towards their end-users through five narratives collected from on-field practitioners. The aim is to establish a parallel between day-to-day architectural practice and design thinking as a mindset and as a process, as to delineate the essential points architects might benefit from and to question the role that end-users could furthermore play throughout housing design processes.

1 Context of the research project

1.1 Background of the research project

This research is part of a wider research project aiming to provide a better understanding of how architects and end-users interact nowadays, and to suggest ways to renew these interactional models. As the intertwined relationship between designers and end-users constitutes a crucial part of the design process, involving users in the design process is more than ever essential to the project success (Lawson, 2006; Esteyez & Léglise, 2015; Sarkar & Gero, 2017; Arboleda, 2020). Recently researchers have put into question the traditional model of architectural design, seen as the result of a sole Master's artful persuasion (Prost & Chaslin, 2014). This model has been said to be completely outdated and no longer practicable (Siva & London, 2011; Albrecht, 1988; Macaire, 2009; McDonnell & Lloyd, 2014). As an alternative, this paper leans towards the Design Thinking framework as an inspiration to help architectural routines evolve when it comes to users and architects' interactions, while still being adapted to architects' needs and field constraints.

1.2 Belgian context

Considering the architectural practice, we specifically focus on housing in Belgium (in Wallonia & Brussels), where any construction work affecting the envelope or structure of a building requires an architect in charge. In the process of digging into existing interactional models, one of the first steps consists of getting a better grasp of architects' actual organizations and current practices.

One of the most well-known Belgian associations for consumer protection ("Test-Achats") has shown that amongst 1330 respondents who built their personal homes between 2000 and 2013, only half felt satisfied with their architect(s) at the end of the process. Almost half of the participants moreover expressed having experienced stress and 27% confessed having suffered from irritability and anxiety throughout the process (Nauwelaers & Rossini, 2014). Another questionnaire broadcasted in Belgium showed that the client is among the « top 5 factors » that make architects' jobs more difficult on an everyday basis (Stals *et al.*, 2018). This friction occurring in the housing design process between architects and end-users highlights the need to further question the social interactions underlying the design process, as these interactions seem to be a source of dissatisfaction.

2 Architectural design through the design thinking framework (a thematic literature review)

End-user low satisfaction levels constitute a key issue nowadays in architectural design (Siva & London, 2011). Discounting the importance of alarming reports, architectural design indeed missed several opportunities to systematize user-centered and participatory approaches, therefore lagging behind other design fields (Bacqué *et al.*, 2011; Van der Linden *et al.*, 2019a). If housing architecture is a branch of the design practices, we question the influx of Design Thinking in that scale of practice.

We will develop this connection through two levels: conceptual and pragmatic. Firstly, we touch upon the principles of Design Thinking as a reflective approach (section 2.1.). Secondly, we tackle its use as a process and a set of tools for architects (section 2.2). This framework will be used as a lens to look into our empirical data, as to later frame how it might support user centeredness in architectural practice.

2.1 Might design thinking be a mindset… for architects?

As Brenner and Uebernickel put it, "innovation is made by humans for humans" (2016, p.8). This human-centered premise is presented as one of the fundamentals triggering all Design Thinking principles. Another fundamental aspect would be combining both divergent thinking – following unconventional paths – and convergent thinking to eventually grasp the details and stakes of the most promising path (Cooper, 2008; Brenner & Uebernickel, 2016). Those

lines of thinking, by nature, require experimenting and iterating, prototyping, failing, implementing and enhancing prototypes, looping with this process until the output meets most expectations in a satisfactory manner. Of course, some architects can already be referred to as *design thinkers* in that regard, but one has to observe that most of those concepts are not systematically and/or explicitly taught in architecture schools, nor implemented in most architectural offices (Nishimura *et al.*, 2017). Looking into architectural practices, another question arises: whose insights and user-centered data might drive such iterative processes in architecture, be they applied? Architectural offices functioning with design teams (instead of an individual architect working on his/her own project) might already be closer to the Design Thinking mindset, in the sense that during collective ideation, processes get challenged by other designers, all of them working together with creative confidence and optimism (Brown, 2009).

Nevertheless, in the architectural field, more often than not we see architects operating in the close, tiny, mono-disciplinary microcosms of their firms. This is especially true in Belgium, where research has shown that most architects work in structures of less than 10 employees, 42,7% of surveyed architects (N=572) even working alone, or with just one colleague (Stals *et al.*, 2017). Historically and structurally speaking, architects thus do not tend to exit their microcosms and cultivate empathy towards end-users, at least not as often as designers from other design disciplines. Attention has been brought to this issue repeatedly (Tribout, 2012; McDonnell & Lloyd, 2014) and, as a consequence, participatory practices slowly gained more interest from architects, especially in public spaces' design or building projects driven by the public sector (Biau *et al.*, 2012; Zetlaoui-Léger, 2013). If such citizens' input, needs and expectations are nowadays considered as enriching these divergent-convergent processes, it is not clear if such participatory practices might also percolate smaller scale projects, such as housing projects.

2.2 Might design thinking act as a process, a toolbox… for architects?

The fragmented nature of the architectural design field, as underlined by Jacob (2016), can be challenging to analyze. Based on Lawson (2006), Jacob provides a brief model of the architectural process, arguing that during the first step called "formulating", architects have to define, identify, understand, frame and explore highly complex, intricated and ill-structured design problems. Emphasis is put on the fact that architects, while navigating such problem space, should generate stories to reframe the issues from different points of view and perspectives. In this case, we argue that being in contact with the key actors eventually populating the artefact being designed, e.g., the future end-users, might help open up some relevant perspectives, that architects while working between themselves might otherwise not open to. From where we stand, this first phase might well be the cornerstone, with the involvement of

end-users profoundly changing the whole story. This aspect of Jacob's model that we defend is closer to matching Brenner and Uebernickel's (2016) "need finding" step (Figure 16).

In his second step, Jacob (2016) delineates the "representation phase", when architects externalize their ideas and thoughts to represent the problematic through models or drawings, among other visual supports depending on the nature of the outcome. If we compare Jacob's model to Brenner and Uebernickel's (2016), this step also overlaps the "need finding" step mentioned earlier (Figure 16). This is the moment where architects create externalized, mediating supports and could further include other actors into the architectural conversation. In Jacob's third and final step, architects come up with one or more solutions - also referred to as "moving" by Lawson (2006) - in a form of divergent/convergent process, which connects well with design thinking principles of ideating, prototyping and testing (Figure 16). Still according to Jacob (2016), designers should integrate objective/technical and subjective/aesthetic judgments in making choices and be able to reflect in action, and also be able to reflect on how they go about the design process itself, for example by keeping sketchbooks or collecting artifacts reflecting what they consider to be good design to learn from when considering future designs. Reflecting on Lawson and Jacobs's process descriptions, we realize those do not fall very far from Brenner and Uebernickel's Design Thinking description (2016). For both authors, the sequence of steps from "formulating" to "moving" rarely follows a linear logic (Lawson, 2006), but is rather continuous and iterative. However, whilst keeping Lawson's and Jacob's hypothesis and developments in mind, we will base our comparative analyze on Brenner and Uebernickel's model (Figure 16).
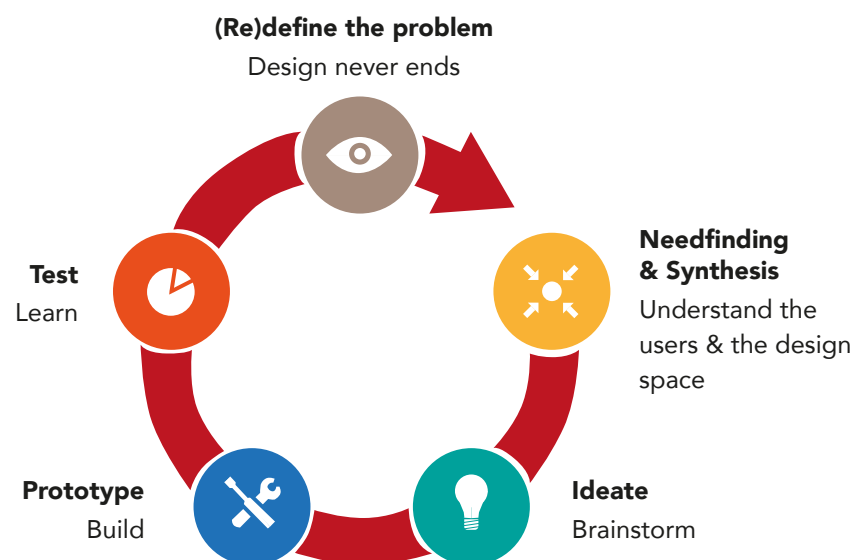
Figure 16. The Design-Thinking-micro process, in Brenner & Uebernickel (2016, p.11)

If the five steps forecasted in Figure 16 are typically implemented to aim for judicious innovation through Design Thinking, it is still unclear at this point how (or if) those five steps might be transposed or interpreted in the small scale of housing architecture practices, or if any of the tools Brenner and Uebernickel have popularized with their 2016 book – i.e. Stakeholder Maps, Empathy Maps, 5-whys, AEIOU-Method, Personas, Observation and Storytelling – are taken upon by architects in the Belgium housing context. Several researches have indeed shown that, in small scale architectural practices, most architects rarely go beyond early conversational interactions to reach out to users' needs and expectations (Norouzi *et al.*, 2015; Van der Linden *et al.*, 2017).

2.3   Focus

In this paper, we specifically question the posture architects tend to have towards their end-users and we use Design Thinking as a framework through which we study these architectural practices. We first want to summarize the process and meeting points of architects and end-users during small-scale housing projects. We question the architects' postures toward the end-users and look for success stories in these relationships. Finally, we look for the patterns depicted by the interviewed architects in regard of the Design Thinking principles, steps and tools raised here above.

3   Research methodology

After building a theoretical understanding of our use of the Design Thinking model through international scientific literature, we put our focus on Belgian practices through empirical inquiry. We broadcasted a questionnaire through the Belgian Architects' Association, as to invite all Walloon and Brussels architects affiliated to this Association to take part in this study. We then conducted five semi-structured, in-depth interviews.

On that basis, we consider the data through the lens of abductive analysis (Timmermans & Tavory, 2012): with Brenner and Uebernickel's principles as a comparative model, we analyze and compare the phenomenon described by architects in terms of design methods and we let the data express unexpected trends, adding specific and original depth to the model regarding our field (e.g., housing architecture in the Walloon Context).

3.1   Online survey and profile of the participants

The recruitment questionnaire, aiming to profile different significant groups of architects active in the housing sector, got 96 respondents. Questions touched upon their location in Belgium, their experience, education, the scale of their agency, their level of responsibility, the percentage of housing projects overall, the type of clients they usually deal with (private individuals and families/ investors…), if they feel impacted in their daily practice by their relationships with their clients, and eventually how often they interact with them. We grouped the respondents in view of their answers, and we selected an architect

amongst each main group to conduct an in-depth interview and collect qualitative data on the actual day-to-day practices regarding the interactions with their clients. We added the profile of another architect who had not participated in the survey but was interviewed in the same conditions than the others. This last profile was a pragmatic choice yielded by an opportunity: a senior architect in contact with our research lab agreed to participate in the interviews even though he had not responded to the questionnaire. This allowed us to include the profile of someone who was not amongst the architects innately drawn to this problematic (and spontaneously taking part in the survey), i.e., someone who was not necessarily predisposed to volunteer and participate in our research, but rather did it give favourable circumstances.

In this paper, we thus focus and analyse interviews of five architects (two female, three male), situated in three different provinces (Brussel [2], Liege [2], Luxembourg [1]) and who mainly practice residential architecture. Only one is fully dedicated to individual clients with a single-family housing project, while others also work for residential projects carried by institutions (e.g., social housing and co-op housing), self-builders or real estate's investors. They have various professional experiences (less than six years [1], between 10-14 years [2], more than 25 years [2]). Only one of the participants is trained as an architectural engineer and four others are architects, one with a collective housing specialty. On a daily basis, they work in an environment welcoming between 3 and 14 collaborators, except for one of them who works alone. All of them hold leadership positions, three for their own companies and two for third parties. With the exception of one of them (for whom we could not collect data through the survey), the others declared that the relation with the client influences a lot their motivation and the quality of their daily life at work. To conclude, we identified that the way these architects meet their clients during the early design phases of architectural project is quite different, notably in terms of frequency. While one of them declares meeting the client only twice, others meet between three and five times, and another can meet with them up to eight times before reaching the building permit phase.

3.2   Semi-structured in-depth interview & analysis

These interviews aim to collect rich qualitative data on architects' relations with their clients, who are also the end-users of the building being designed, since we are here looking at housing projects cases. The objective is to understand multiple interactions that intertwine different issues related to communication, architectural culture, money management and time, among others. This complex situation, called a "wicked problem" (see (Buchanan, 1992) for a genealogy of the concept of design thinking), requires a global understanding of the phenomenon and a co-construction of some shared sense between the researcher and the interviewee (Imbert, 2010; Denzin & Lincoln, 2011). Therefore, a conversational place is necessary for architects to develop their

point of view when it comes to the role given to the end-users throughout the architectural practice.

Semi-structured interviews are nowadays recognized for their added value when researching architectural or design processes. For example, four Japan-based designers were interviewed to study "their perception of Western and Japanese people's behavior in co-design workshops" (Taoka *et al.*, 2021, p.2), while 20 interviews were realized to identify "perceptions, sources and tools, as well as perceived barriers and motivations for inclusive design" in Flemish architectural practice (Van der Linden *et al.*, 2016, p.33). Holopainen (2010) studied a service design project in order to understand how designers and architects design their services, with which particularities. Part of a broader ethnographic approach, they conducted eight scheduled, semi-structured interviews to "provide[d] a more structured way of discovering the opinions of the informants" (Holopainen, 2010, p.602). As we see in these examples, even though such interviews should be completed with other methodological approaches to deeply understand architects' practices (see 5. Limits and Perspectives), semi-structured interviews allow to reveal architects' perspectives, at least in an exploratory approach.

Through general and specific questions, both on residential architecture and relations with clients, the semi-structured interviews created a reflexive conversation and revealed the experiences, opinions, feelings, and particular situations experienced by the architects during their careers. A set of 20 questions organized into six thematic categories thus guided the conversation on the specific topic of interactions between architects and end-users, while leaving the possibility for the participants to explore other subjects more freely when relevant and when the allocated time allowed. In brief, five one-to-one recorded semi-structured interviews were realized through Zoom (3), in the interviewee house (1), or hosted at a university office (1) and lasted between one and two hours. We focused only on discursive content on basis of a written transcription of all of the audio recordings (h=8:58:57). After such a transcription, we did a comparative analysis of the interview data, using an abductive approach. To do so, we used our research topics operationalized through the questions asked to interviewees. We annotated common and singular patterns meaningful to our research object, i.e., interactions between architects and end-users. We aim to reveal the plurality of the data without generalizing it (Beaud & Weber, 2010; Dodier & Baszanger, 1997). To this end, we differentiate the interviewees from one another using pseudonyms to preserve their anonymity. We compared these results to the Design Thinking framework, thus revealing similarities and differences between architectural practices and design thinking and discussing the added aspects of the architect's narrative to enrich the reference model. Firstly, we conduct analysis using a collective lens, pointing out the big overlaps in the interviewees'

narratives that echo the Design Thinking model. Then we zoom into an individual lens, and match specific excerpts corresponding or diverging from the model to illustrate differences and surprising specificities as expressed through our interviews.

4 Findings & discussion

Looking into the data, we first focus on some insightful practices and comments raised during the interviews. Then, we delineate the similarities and gaps between the Design Thinking framework and the practices depicted by the interviewed practitioners.

In most narratives, we tried to grasp the elements that caused frictions, or on the opposite were actually working really well. Thus, we acknowledge that the following anecdotes are not representative of all interactions that may occur between end-users and architects, but these examples can serve as a basis for further reflection on the variety of practices. We also want to drive the reader's attention to the fact that some of these short stories are anecdotal in the interviewee's practice, whilst some other narratives are more customary and thus representative of this single interviewee's routines.

4.1 Overlapping positions

The five interviewed architects told us stories about their practices when encountering clients that would reach out to them for their housing project. These narratives allow us to create a summary timeline on the most frequent meeting points occurring between architects and clients throughout the design phase of the project (at least in their contexts). This sequence of steps is a compilation of the main steps described by these five participants, practicing architecture in Belgium in offices employing less than 20 collaborators. The process described includes a first contact phase between the user and the architect, when they both "test each other" in order to decide whether or not they are going to be working together. The second phase, sometimes already forming in parallel with the first phase, is about creating or adjusting a brief, firstly through physical or virtual meetings and conversations, secondly by presenting reference images and/or bringing along the first sketches and drafts of the architect's ideas ("sketch", "*esquisse*" in French). When the architects sense there is a good enough grasp on the user's needs and expectations, they define and detail the layouts and enter the phase they call preliminary project or pre- project ("*avant-projet*" in French). Finally, when the architects consider all the variables as set, they undertake the building permit documentation, which is mandatory for any work on the building's envelope or structure, delineating a rather fixed version of the project ("*dossier de permis*" in French). Of course, this sequence appears as rarely linear, and does not do justice to the messiness and the complexity of an actual design process. This

simplification is displayed as a support for the reader's comprehension of the main steps that are discussed in the rest of this paper.

One of the main strains mentioned by every interviewed architect, apart from the usually tight budget to hold, is the little time they have for all day-to-day responsibilities. They are in charge of usually small teams of co-workers, and do not have all the support staff they would dream of as to make more time for meta-cognitive thinking. This could be an explanation for the architects' lack of hindsight on their practices and lack of reflection when it comes to enhancing their interactions with their clients in general. This is a key point that has to be kept in mind for any future recommendations.

Another explanation that could be explored is also brought up by several interviewees. Indeed, Kevin, Michele and Gerard raise the question of the architectural educational background compared to the actual practice. Whereas handling these complex social interactions require huge amounts of social skills from the architect's part, all three of them mention that being an architect sometimes feels like having to be a psychologist, while never receiving any training in such matter. Architectural training often focuses on the form, function and techniques of the end-product design (e.g., the building, the public space…) but lacks coaching on the overall process of designing, especially in terms of social interactions with colleagues (Calixte, 2021) but also with clients. If empathy is often presented as key to a relevant design (Heylighen & Dong, 2019), these architects regret not having an actual psychology course. Whether this might have been recently implemented in architectural trainings around Belgium should be looked into; yet we wonder: would it be possible to accompany senior architects with further continued training to bridge this gap, in order to enhance their current practices, whilst still fitting their tight schedule? As the leader of his architectural firm, Kevin mentions that he called an expert in psychology to give all of his associates a course on collaborating and working as a team. This kind of courses could be a great inspiration to adapt a format of classes tackling the psychology behind interactions with users.

Overall, they all seem to be generally in favour of user-centred design in their discourse, but still often depict a vision of the "wise" architect facing the "naive" end-users. Gerard, while emphasizing the importance of being at the user's service, still adopts a paternalistic position, explicitly saying he knows what to do for the good of the occupants, that he "offers" his high-quality viewpoints and "help them take a step back to re-examine their needs". Whilst this hindsight coaching is non-rebuttably welcome and rich, we advocate that any user should be considered as the main "expert" when it comes to their needs, desires and uses.

Gerard does mention the difference between designing for private mono-family housing (with very specific, individual choices), and larger scale housing

when the design is thought to be suiting "everyone". In that regard, he says he enjoys larger projects, public housing for instance, but still designs some residential projects from time to time. Florence also expresses her preference for clients who let themselves be taken by the hand, who listen to what she suggests, without challenging her too much. Still regarding user expertise, Michele addresses the difference of confidence she might put in a user, depending on whether such a user holds certain skills, background or knowledge in construction-related topics. She values clients that come with certain craftmanship skills and show themselves to be open to debate and exchange with her. This again expresses a certain reluctance to seriously considering every single end-user's input as expertise. All five of the interviewees state that they refuse clients who arrive with ready-made plans to be signed, but we were not able to collect information on whether those layouts were copied or stolen from another project, or if some or all of the mentioned cases might have actually been drafted by the clients themselves. However, this still highlights the reluctance these architects express about not being the initiator of the design process and design concept.

4.2   Individual excerpts and anecdotes

Another possible explanation for this reluctance to accept ready-made layouts is brought up by Kevin during his interview:

"You don't expect to get the gift [of recognition] but to get it, to feel a real thank you and that your work was appreciated, that is clearly the reason I'm in this business. (...) I could earn more, and stress less [in another job] but I would like it less because I wouldn't have the fulfilment that my job brings me. Recognition is part of that. The fulfilment is to be able to please, to bring projects to life for the people trusting us, bringing our touch to it for people to live in".

From his point of view, the actual passion in his job comes from the fact that he is able to create and gift the project and get full recognition for it; in that regard, we can understand the reluctance he shows when it comes to sharing credit on any design ideation process. However, couldn't he get the recognition he craves by including the end-users more and thus co-creating together with them an even more relevant project, fitting their wishes and needs? The shift in authorship touches a delicate cultural preconception, stating that only the artist is the creator of an art piece he/she offers to the world.

For Lionnel, the ideal mission for an architect could be summarized as designing living spaces that allow people to blossom. In contrast with this utopia, he says, is the reality of the architect's task: to respect and apply norms, regulations and to take responsibility when things go wrong. On the one hand, he puts the user's wellbeing as the main target, but then on the other hand, it seems like the practice and real-life constraints keep him from actually fulfilling

this goal. He also mentions the complexity of communicating with people who do not have an architectural background nor sensitivity to the design culture. According to him, people do not have sufficient general skills in terms of reading a blueprint or harmonizing elements and materials. Again, the architect is placed as *the* expert.

When specifically asked about their thoughts on participation practices, in general, all the interviewees pause for a short while. Whilst Kevin is not quite sure what participation means, and while Florence shuts down the conversation saying firmly "it's good to listen to all the people whose lives will be impacted by the project", Gerard praises it for public projects, but would not go there for smaller scale houses. However, he does detail a participation process he was involved in, in the context of a school project, where all the potential future users were invited to a consultation committee and were invited to speak. They visited the site, room by room, noting down everything that was said, listening to and reframing the debates between stakeholders. He also mentions some work groups with teachers and maintenance staff, of children needs being collected, and even the presentation of a model to the children as to get feedback in an iterative process. The design was then presented to the parents and another feedback loop was implemented to take into account their comments and opinions.

His enthusiasm in narrating this memorable project surely contrasts with his reluctance in including the end-user in the very first steps of the design process when it comes to private housing for instance. Once again, the cultural architectural background of these architects does not include any sort of training in participatory approaches and co-creation methods, which might explain such reluctance.

Regarding Florence's case, even though she did not manifest a particular interest in per-say participation, she does have an interesting posture when it comes to client-communication. She qualifies her mission *prima* facie as to have to put all of what she has learned to ensure the comfort and wellbeing of the occupants. She prefers private housing projects and puts a great emphasis on a human connection with her clients, introducing herself not only as an architect but reminding that she is a human being, a woman, a mother too. She wants her clients to be able to empathize with her and tells them "We are going to live together for a few months" before signing the contact. She also mentions what she calls her "feedback methods":

"I sent a card every year (…) I take a picture of one of the year's projects and send it as a postcard to each client at the end of the year, to tell them 'Hi, I'm still here. I hope all is well'(...) I'll publish out images from previous projects. I make a post on Instagram, (...) saying: Here it's already been that many months since the project was finished, or things like that. And [feedback] works through replies to those kinds of posts or replies to stories for me. (…) I've also had

clients call me (…) they give me a nice little comment. Or a client who was pregnant at the same time as me, who wrote to me when her baby was born. Yes, little things like that, but always positive (...) without wanting to sound pretentious. And I also think it is because I'm filtering my clients."

However, she still admits that two of her stories are not that easygoing. She addresses her vision on what went wrong in these relationships:

"It happened two times, and the two times the clients were people who came to me, not because they were convinced that what I was doing was great, or that it was what they wanted. No, they came because they needed an architect, already had been kicked out by another one. And because somebody had told them that they knew somebody… that was me. And I was kind of as a last resort."

Lionnel also has a success story hidden in an anecdote recalled in his interview, that could be taken as an inspiration for similar cases. In this project, he was in charge of redesigning a small house where his clients experienced difficulties in the daily use. He suggested setting up a small "simple" solution, like a prototype, to test what it could be like to partition the living room, and thus created a small entrance hall with a wardrobe. Eventually, the prototype met the expectations of the end-users so well that it was sustained, and the project did not need to be taken further since the issue had been solved. This can be seen as a smart and effective application of the prototyping principle in a small-scale housing architecture context.

Another isolated success story happened in Gerard's career, about 20 years ago. He could not recall who initiated this method, but for a specific client, he had to narrate the space. He did have blueprints and sketches but did not take them out at first. Instead, he did some storytelling, he interpreted a daily journey taking place in the designed spaces. This scenario of life, staging the space in the tale while involving the listener, was a success says Gerard, a great moment shared with his client, who then became and has since stayed a friend of his. The project did not evolve much afterwards, from what he recalls, as if this was a crucial step when the end-user could project himself into the immaterial design at this time and was content with what he heard. Unfortunately, this was a one-time experience for Gerard, thus nothing indicates that this could be an unfailing method to follow. However, the fact that this experience had a positive outcome can be interpreted as a positive signal to test this method further.

4.3   Patterns of design thinking in architectural practices

Putting together these five narratives and all of the stories of project within, we delineate the practices that can be considered as complete or incomplete steps of a Design Thinking-like process, discussing potential add-ons specific to our field (e.g., housing architectural practices in Wallonia).

4.3.1 Need finding & synthesizing. The collection of user data is very variable, and as mentioned earlier, can even vary for a same architect depending on the client he/she meets. As harsh as this elitist way of doing may seem, some architects did confess this practice: depending on the budget of the client and the scale of the project, the architect will bring a different approach to the user's needs, such as higher attention to detail, visiting their homes and ensuring a better client support overall.

Every architect interviewed did use reference images, most of them with a procedure encouraging clients to come up with images they really like and images they dislike, and having them explain why. This photo elicitation-like technique (Clark *et al.*, 2013) has proven to be really effective in bringing up reactions and insightful information about the wishes of the client.

Kevin also has an original method for collecting precious information. He asks the clients to have a notebook or a large piece of paper that will lie on the kitchen counter or anywhere in the current living space to note down whatever comes to their minds regarding the project, even the smallest thing, even if they think it might seem ridiculous or irrelevant. This allows him to collect some more detailed and intimate information, but also trains the clients to actually think and write down what they really need. Although this method sounds really promising, it relies first on the discipline and rigorousness that the clients put into writing things down, but also on their ability to reflect on what they do and what they need. Although this method might miss the actual information that could be observed in action (Zahle, 2012), it still can be a great start to collect further information on uses, expectations, needs and desires of the clients.

Charlie's method is more conventional and consists of a questionnaire of preferences that she sends to her new clients to collect broad information for the project.

Florence had the opportunity to meet with clients initiating new ways of presenting themselves. In one case, it was a family and they had prepared a slide presentation to present all the members of the family, their usages of the rooms, their needs and expectations. "They premade the job for me", she recalls. In the second case, a couple handed her a mood board for the project, which she also welcomed warmly. Although these two cases could be a coincidence, they might also be evidence that the sense of humanity she brings to her communication practices is paying off, as the clients feel freer to share intimate information with her. On another level, this could be another thread to pull on for a shift in the relationship: a thread that could not be pulled by architects, but for once could be pulled by the clients; a way to empower and encourage them to take the lead on unraveling their habits and uses to their architect. As we see it, we conclude that there is no apparent consensus on the methods or tools to collect user data, nor to constitute a brief in small scale housing projects. Everyone seems to do things in their own way.

4.3.2 Ideating. Sometimes, it seems that the architects will skip right to the ideation step, collecting only some basic information on the brief and then hurtling to come up with sketches and drafts already. We might want to hear the user's side of this story in order to frame if this might be perceived as an issue.

This ideation step is not so well documented in the interviewees' narrative and still seems to be cultivated as the mystery of artistic creation. Kevin does mention that he often goes to reference books for inspirational images, that can also serve later on to communicate with the client.

Only one thing appears quite clearly in the architects' narratives, and somehow goes against the conclusions of our thematic literature review: none of them mention ideas brought by the users when it comes to the design of volumes, layouts, organization, light... Sometimes, they mention that the clients should chose some of the materials, at best, or sometimes just the interior finishing or some of the equipment, but do not really seem ready to let go with, nor share their creative processes.

4.3.3 Prototyping. As previously mentioned, some actual tools come in handy when it comes to giving end-users a sense of the future project. Mood boards are often brought up as a useful way to "draft a vision of the space" quite early in the design process. Lionnel preaches for physical scale-models but recognizes that it is slowly fading out of the architects' common practices, as they have less and less time and budget to work with nowadays. He also mentions Virtual Reality (VR) headsets that can allow end-users to virtually move around a model of the project. However, this kind of technology is not supported by Gerard. These are interesting tools, he says, but the time to invest in regard to what we want to show is not yet profitable for small projects. If the model is there and well-built for construction or design purposes, it is a blessing to be able to show it to the client as a plus. But if the model is not accomplished enough, it can be detrimental to the project. Building the model is very time consuming and not every architect is trained to model virtually their drawings. Gerard and Charlie agree that to be able to showcase a sensory aspect of the chosen materiality, it is easier to work with a still image of an outlook that can be further worked with rendering mode. Florence also creates these kinds of sensory previews but uses a *collage* method to style her prospective views on the project. She adds a layer to the use of these images by suggesting taking the end-users to the room or place that is modelled, in order to better visualize the changes and discuss the designs on actual site.

She also did once some "*pretotyping*" with tape and cardboard on site to help end-users get a better sense of the spaces delineated in the project. She is also interested in VR and augmented reality, which would allow clients to virtually walk through the project but insists, just as Gerard, on the lack of time to make such models, as well as the lack of funds for this kind of equipment. She also

worries that it might lead people to think that you can "easily" move an element while not realizing all of the consequences implied by small changes and thus not realizing how long it can take to actually implement these small kinds of changes.

4.3.4 Testing & redefining. All of the techniques described here above are supposed to be implemented at some point between the "sketch" phase and the end of the "preliminary project" phase. As a design project is rarely a linear process but rather an iterative, messy process (Brenner & Uebernickel, 2016; Jacob, 2016), often when the client is consulted, there is an update and a change to apply. In this case, it might be important to highlight the fact that it is often not *per se* a test, but rather the architect reaching out to ask for some validation from their clients.

Architects are inclined to accept the changes requested by their clients up to a certain point. Indeed, one of the interviewees insists on the fact that challenging the first drafts is common and clients are welcomed to do so. But as the architect's time is very precious and counted, the interviewed architects have a policy of accepting up to 4 or 5 modifications throughout the "sketch" and "preliminary project" phases and will often even try to aim for a maximum of 3 major modifications.

To that end, Kevin and Gerard for instance present 2 rough sketches at the very beginning of the project, in order to rule out the unfollowed paths without having to explore them further. This resonates with Brenner's "fail often and early" principle (2016, p.8).

4.3.5 Issues with feedbacks. The first four design thinking steps can be somehow referred to, or at least reinterpreted through the architects' narratives. Commonly emphasizing the importance of empathy and pointing to the iterative process of working through variants of the project, the definition and ideation steps yet vary the most from one profile to the other.

The fifth step however seems to be the most critical. While listening to architects depicting their practices, what stood out the most is the limited feedback of the user on the project being designed, and even more the lack of user's feedback on the overall collaboration process. Indeed, none of the interviewed profiles had an actual feedback method in place to grasp the possible difficulties or dissatisfactions their clients might have experienced during the design and construction process. This particular issue resonates with the Design Thinking framework, where feedback is an essential step to understand and improve both the output and the process.

In the architectural field, the post occupancy evaluation (POE) literature generally tackles this feedback issue. While indeed being addressed (see for instance: Love, 2000; Ng *et al.*, 2011), this study sheds light on the fact that evaluation still appears to be rarely applied in practice, thus revealing a gap

between the scientific and the architects' worlds, at least in view of the cases studied. Furthermore, we argue that POE methods undertake the satisfaction issue behind time, after the harm is already done. Even if it brings valuable information for architects to enhance their ongoing practices, the unsatisfied end-users are left with their frustrations and maintenance issues. We advocate in favor of a shift in architectural practice, and for an evaluation and feedback loop as soon as in the early phases of the design process, to aim for better end-user's satisfaction upstream rather than downstream. In that regard, we also want to drive the attention on the loop of *"sketch" ("esquisse" in French), "preliminary project" ("avant-projet")* and *"consultation of the clients/end-user"* described by the interviewed architects in regard of their design processes, and emphasize the need for an actual user input during these phases, rather than just allowing them a light comment or validation.

5   Limitations and future research

If the research points out possibilities for improvement when it comes to architects and end-users' interactions, five qualitative in-depth interviews cannot lead to generalities nor imply representativeness of all Belgian architects. However, the paper still highlights that Design Thinking seems to be hardly diffusing in housing architectural practices, which raises the question of how architectural practices could benefit from broader inspiration from other design practices.

Even though interviews are limited to the "self-reporting issue" (Van der Linden *et al.*, 2016); are restrained to the gap between reflexivity and practice (Boltanski & Thevenot, 1991); remain limited to what architects say they are doing or think they are doing and are influenced by what architects are open to share with the researcher vs. what they really do in practice, they remain a powerful exploratory method to study a professional community. Interviews reveal "the shared vocabulary, attitudes, and values of architects", as well as their relations to users (Van der Linden *et al.*, 2016).

Worth to mention, this study is part of a broader set of interviews (n=15) which will be soon completed and will be nurtured by observations conducted with an ethnographic approach. Therefore, such interviews constitute an excellent basis to build a solid step-by-step research method to tackle this complex topic of users' place in architectural practice. The complementarity between exploratory questionnaires, interviews and observations in the field is crucial to understand this specific research object (Van der Linden *et al.*, 2016). Moreover, this research is part of a broader research program, including a study on participatory approaches developed in the design field (service, social, graphic, product). The aim is to understand contemporary architectural practices while identifying and adapting strategies developed in design to improve interactions between architects and end-users.

During autumn 2021, we conduct interviews with designers, begin observations with architects, and design upcoming workshops. Then, in winter 2022, we shift to participatory activities through workshops, develop prototypes and probes, and experiment deeply the levers and obstacles for a more collaborative approach between architects and end-users.

5   Conclusions

Through in-depth interviews, we addressed the main social encounters architects describe when describing the design phases of some of their small-scale housing projects. Then this paper outlined some pain points and success stories extracted from those processes. Finally, we delineated and discussed some patterns depicted by the interviewed architects in regard of the Design Thinking principles, steps and tools raised here above, highlighting the (lack of) feedback processes at stake in these narratives. We advocate that an improvement in the interactions between end-users and architects is possible and argue for an architectural practice learning further from the Design Thinking principles. Moreover, we stand in favor of further involving users into the design process, the quality of the relationship between designers and users still constituting a key issue in architecture. Such an involvement and such a shift in the architect's posture towards the end-user seems to be encountering resistances in the architects' practices, and has to be tackled keeping in mind the architects' real-life constraints such as budgets and timing. It nevertheless remains more than ever crucial to the success of any architectural project.

What's up with architects?

Annotated sketches, mood boards, 3D visualizations, and occasionally virtual reality or probes to communicate and co-reflect with clients, though these tools remain unsystematized and constrained by cost and time

Lack of post-project feedback mechanisms; Iterative feedback during design is often limited to light consultation rather than true involvement

Can I give you some feedback?

No

Participation still feels more relevant to public projects or self-builds than to housing design. Many of us prefer consultation to full collaboration, concerned about losing control, disappointing clients, time constraints, and their limited design expertise.

Clients often struggle with decision-making and lack architectural literacy. They can be overly invested and impulsive, or disengaged altogether. Boundaries blur, and expectations rarely match realities—especially around budget, timelines, and design constraints.

Figure 17. Visual summary of Chapter V: "What's up with architects?"

CHAPTER VI

Confronting both narratives

This paper is under review.

Yönder, Ç.*, Mertens, A*., Hamarat, Y., & Elsen, C. (under review). Unveiling Divergent Perspectives in Single-Family House Design: A Comparative Analysis of Belgian Architects' and User-Clients' Narratives. *Submitted for publication, Journal of Housing and the Built Environment.*

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Unveiling Divergent Perspectives in Single-Family House Design: A Comparative Analysis of Belgian Architects' and User-Clients' Narratives

Abstract

This study explores the relationship between architects and user-clients in private residential projects, identifying key challenges and priorities. Through a comparative thematic analysis of 15 architect interviews and 14 user-client interviews, the research contrasts the perspectives of both groups on single-family housing design, construction, and renovation. Ten primary concerns emerged: (1) personality compatibility, (2) (mis)understandings, (3) budgetary constraints, (4) bespoke designs, (5) intimacy, (6) time management and planning, (7) project revisions, (8) building permits, (9) breaking ties, and (10) the construction phase. The study focuses on the Walloon and Brussels regions of Belgium and small-scale residential projects initiated by homeowners. This research contributes to a better understanding of the complex dynamics between architects and user-clients, emphasizing the importance of addressing these critical issues to improve collaboration and ensure more satisfactory architectural processes and outcomes.

1. Introduction

In Belgium, 75% of the architectural market consists of private housing. Individual houses, extensions, and loft conversions make up the majority of this sector, accounting for 62% (ACE, 2022). Despite its prevalence, the architectural design and implementation process in the context of single-family housing is often perceived as problematic and challenging for both architects and private user-clients. In Belgium, a study revealed that only 50% of clients were satisfied with their architects, 48% reported experiencing significant stress during the process, and many indicated they would not want to undergo such a process again (Nauwelaers & Rossini, 2014). Additionally, previous academic research based on the perspectives of Belgian architects underscores that client relations remain one of the most challenging aspects of their practice (Stals *et al.*, 2018).

In single-family housing projects, users typically participate in the design process as clients. However, the relationship between architects and user-clients often encounters numerous challenges. These difficulties stem from differing perspectives, priorities, and levels of expertise (Mertens *et al.*, 2023; Siva & London, 2009). A recent study by Angral (2019) on architect-client relationships in private housing projects identifies key issues that contribute to

friction. One major source of conflict is the mismatch in expectations: while clients prioritize functionality and affordability, architects tend to focus on aesthetics. As a result, clients often turn to contractors rather than architects to ensure their projects meet budget, quality, and completion goals. Additionally, percentage-based fees obscure the value of architectural work, shifting attention to construction and diminishing the perceived role of architects. This lack of clarity makes it difficult for clients to fully understand the scope of services architects provide (Angral, 2019). Similarly, Siva and London (2009; 2011) emphasize that clients frequently struggle to grasp the nature of architectural services. The disconnect between architect and client backgrounds (referred to as *habitus shock*) can create misunderstandings that must be carefully managed to foster a productive relationship. Furthermore, most clients lack the professional language and visual literacy needed to interpret architectural design concepts. Since architects primarily communicate ideas through drawings, images and models, clients unfamiliar with these spatial representations may find it challenging to fully engage in the design process (Norouzi *et al.*, 2015, p. 113; Dzurilla *et al.*, 2023).

On the other hand, the architectural profession has long been shaped by a tradition emphasizing artistic creativity, often fostering perceptions of arrogance among user-clients (Angral, 2019). Architectural education reinforces this peer-oriented approach, frequently prioritizing aesthetics over client-centric design, which can alienate those unfamiliar with its practices (Stater, 2002; Siva and London, 2011; Arboleda, 2020). However, the profession is gradually undergoing a shift toward greater user participation and iterative learning (Havik and Pllumbi, 2020). Today, users demand active engagement as co-creators throughout the design process (Siva and London, 2011). This also requires respect and acceptance of the user's creativity and experience-based expertise stemming from their everyday life (Lee, 2008; Antonini, 2021).

Accordingly, this paper delves into the dynamics at stake between these two parties, within residential construction and retrofitting. It aims to investigate the major challenges and concerns that have effect on this relationship, in French speaking regions of Belgium, Wallonia and Brussels. The purpose is to trace both architect and user-client's narratives to be able to understand both perspectives and relational dynamics, and in return to put forward potential areas of improvement to facilitate more harmonious design collaborations. The reader should be aware that this study is part of a broader project called "My architect and I", which aims to co-design tools to improve architect and user-client relationship. This paper focuses on the first phase, consisting of the interviews with architects and user-clients. These are conducted with a primary focus on understanding the current situation for diagnostic purposes, and serves as groundwork for a co-design process to improve architect-user client relationship.

In Section 2, we present our research focus and positioning. Section 3 outlines our methodology. In Section 4, we analyse the results of our comparative study on architect and user-client interviews. Sections 5 and 6 include discussions and conclusions, where we also introduce a journey map-inspired visualization based on our findings. This visualization illustrates how the diagnostic phase informs the co-design process. Please note that this paper does not explore the details of the co-design process.

2. Focus and Positioning

This research is structured around the following research question:

What are the key factors influencing design outcomes and user-client satisfaction in the interactions between architects and clients during single-family house design processes in the Belgian context?

This research is grounded in constructionism, which views knowledge and reality as products of human practices. These practices are shaped by interactions between individuals and their world, within inherently social contexts (Crotty, 2015). This perspective underscores the co-constructed nature of architectural design, as architects and user-clients collaboratively shape both the process and outcomes of their interactions.

The researchers' diverse academic and professional backgrounds also shaped their approach to the study. They integrate expertise in architecture, design, and qualitative methodologies, drawing from both practical and academic experiences in Europe and beyond. This diversity enriches the exploration of architect-client interactions, fostering a balanced and critical perspective. By engaging deeply with both architects and clients, the study challenges traditional notions of expertise, prompting reflection on the roles and biases of both parties. This dialogical approach underscores the value of collaboration in design and highlights the importance of empathy in professional practice.

3. Methodology

The study was approved by the Human and Social Sciences Ethics Committee of the University of Liège. Participants were fully informed about the research's objectives, methods, and the use of anonymized data. All participants signed consent forms prior to interviews.

3.1 Participants

The research conducted in this study involved two key participant groups: architects and user-clients. The final sample consists of fifteen architects and fourteen user-clients. Architects are recruited for in-depth interviews, ten of which sourced from various-sized architectural agencies (from 0 to 14 colleagues), with varying years of experience, gender representation, and geographic locations across the Walloon and Brussels regions of Belgium. These participants are identified through a questionnaire distributed by the national Architect Association (namely "Ordre des Architectes"). Five more profiles, recruited through the researchers' personal networks, were added to the sample.

Fourteen user-clients are selected through the personal networks of the researchers. The recruitment process aims to encompass diverse backgrounds and perspectives among user-clients. The participants have either recently undergone construction or renovation of a residence or are currently in the midst of such a process, actively engaged with an architect.

3.2 Data Collection

All interviews are conducted in French, with each session lasting approximately 1 to 2 hours. The semi-structured interviews (Gudkova, 2018) are conducted by a designated interviewer amongst the team of four researchers. They follow an interview guide specific to the participants' profile (user-client or architect). The guide consists of a series of questions and prompts covering a range of themes, including expectations and roles, tools and media used, initial contacts, conflicts that may arise, user participation, feedback processes etc. This approach provides a consistent framework for data collection while allowing flexibility for natural and fluid conversations. The interviews are repeated until saturation is reached in terms of themes and problematic friction points brought up by interviewees (Glaser *et al.*, 1967; Pourtois and Desmet, 1997; Savoie-Zajc and Karsenti, 2000).

3.3 Data Analysis

Data analysis is a collaborative effort involving the four researchers. This analysis process is part of the co-design process planning (table 7). During the first sessions, all researchers collectively review and analyze the transcripts from both architect and user-client interviews.

Table 7. Analysis of architect and user-client interviews within co-design process planning

Date Session	Activity	Key Outcomes
18/05/21	Triangulation analysis of architects' interviews	Extracted themes from architect interviews
29/10/21	Analysis of all user-clients' interviews	Extracted themes from user-clients' interviews
10/11/21	Delineation of common themes (user-clients & architects)	Identifying common themes between user-clients and architects
23/11/21	Collective work session	Refining thematic categories: Efforts were made to further refine thematic categories, specifying their origin (literature reviews, empirical, or both).

Thematic analysis (Lejeune, 2019; Braun, and Clarke, 2006; Mukamurera *et al.*, 2006) is the chosen method for data analysis. This involves identifying, extracting, and categorizing major themes and key points from the interview transcripts. The aim is to gain a comprehensive understanding of the topics discussed by the participants, as well as to integrate and contrast the perspectives of architects and user-clients to nourish a future co-design process. The quotes presented herein have been translated from the original French. Participants have been anonymized and names are pseudonyms.

4. Results

4.1 Personality compatibility

In home design, the architect-client relationship often transcends a professional contract, with personality compatibility significantly impacting satisfaction and relationship quality. Some clients report strong connections with their architects, emphasizing close, sincere communication and a relationship that feels like a genuine dialogue beyond mere professionalism:

> *The architect suits us well. We can exchange in a very close and sincere manner, which is important. We understand each other. It's professional and very close at the same time. It's more than just a professional relationship; it's really a dialogue. She listens, weighs the pros and cons, suggests ideas, submits them, shows them, and asks what we think. (Igor & Clementine, user-clients)*

Not all relationships are peaceful. Maxime and Sabrina express dissatisfaction with their architect's lack of attentiveness:

> *With the architect, we felt a lack of listening. (...) We tried to see what he would bring us compared to the turnkey solution. We never got anything. (...) We visited a house he had built and realized it was high-end and didn't match the life we would have with our three children. (...) Our goal was*

> *functionality for the house. For him (...) it was aesthetics and material quality above all. (Maxime & Sabrina, user-clients)*

Architects can face challenges when working with a diverse clientele. They must adapt to different personalities, manage expectations, and find effective ways to communicate and collaborate effectively. They acknowledge the need to balance design aesthetics and functionality while maintaining budget control.

Florence (architect) reflects on the common reasons clients seek architectural services in terms of taste and distinct architectural styles, as well as the importance of establishing a good relationship and the need for a harmonious working relationship:

> *In general, people who come to me do so because they've seen a project they really like [what I do]. (...) And it doesn't go well when people don't come to me for that. I noticed that. (...) And if it's going to be a struggle, it's not worth it. If the feeling doesn't click, it doesn't serve anyone, not for them, not for me either. (Florence, architect)*

Lionnel (architect) discusses the complexities and self-doubts when working with clients of diverse personalities:

> *We always deal with different personalities. For each person, there's a moment when we think, 'I should have asked or checked this earlier.' (...) If I have five clients, I have five examples' times x issues. I don't think there's ever a client where everything goes perfectly, where we can say, 'I managed it flawlessly from start to finish'. (Lionnel, architect)*

4.2 (Mis)understandings

The architect-client relationship in the field of architectural design is a multifaceted partnership that can be impacted by the level of expertise and familiarity that user-clients possess regarding the architectural process. Often, user-clients embark on this journey with limited prior knowledge, learning along the way. This learning curve can, at times, result in misunderstandings and a potential erosion of trust between architects and clients. In this context, we explore the spectrum of client expertise, communication complexities, and the clients' responsiveness to architectural guidance.

Laurence, a user-client, expressed her surprise at the lack of initial explanation about the intricacies of the process, which led to a steep learning curve:

> *The mission was quite vague. (…) There was a very blurry area between 'it's his role, it's my role' (...) So in the end, I probably found my way, but I didn't expect to have to commit to this extent. (…) I learned a lot of skills, things I couldn't even imagine knowing. (Laurence, user-client)*

Similarly, Florence (architect) acknowledged that clients often seemed unaware of the various professionals involved in the process, causing misunderstandings:

And I realize that we didn't explain to them: yes, the PEB [Energy Performance Certificate] will come into play. Oh yes, there's an engineer. Every time, people were surprised (...) It always seemed as if we had forgotten something, like the PEB, but no, they are part of the process. I realized it's because people didn't know – and that's normal. (...) They can't know that soil tests are required, will cost this much, and aren't included in our mission. (Florence, architect)

This highlights the importance of transparent communication from architects to clients to manage expectations effectively. Additionally, user-clients' diverse backgrounds and levels of experience play a crucial role in shaping their perceptions of the architectural process. Some have experience and willingness to take responsibility for the overall process.

Michele, an architect, comments the resilience of self-builders while acknowledging the challenges they face due to their lack of experience:

Self-builders, it worked well, I think. They are courageous people. Sometimes, it's tough on relationships because they don't realize what they're getting into. It's true that it's a commitment of a year or two, no more leisure time, and it can be challenging. (Michele, architect)

In contrast, Maxime and Sabrina, user-clients with some prior knowledge, felt equipped to contribute significantly to the design process:

We thought, anyway, with a plan like this, the South being on that side - so we want to be able to eat in the garden - and the kitchen should be at the front; we want to be able to sleep at the back (...) it wasn't just what we wanted, it was how it had to be done! It was logical! (...) We were able to draw on some experience: I actually grew up in the house next door for 20 years... so everything related to orientation; sun; summer-winter, etc., all of that, I knew of course... we also knew the urban planning constraints very well. (Maxime & Sabrina, user-clients)

Unfamiliar terminology and a lack of experience can pose challenges for user-clients, making clear communication essential.

We're not handy, my partner isn't either, and on top of that, (...) for us, it's incomprehensible because we don't understand the words... beams, boards, we don't understand all of that, it's not our vocabulary. So it's a bit complicated for us to understand. (Paloma, user-client)

Architects, such as Lionnel, find that clients with no prior experience are often more receptive to architectural suggestions, emphasizing the potential for architects to enhance clients' living experiences.

People with no experience, no particular sensitivity to space, and surprisingly, they are the most receptive to things we've shown them (...) And when we arrived on-site, what struck us, even though it wasn't part of the initial request, was the absence of an entry hall, for example. And we thought it was a shame, in a family home, to arrive in this living space

without anything that provides a transition. So we proposed to create an entry hall. They were very pleased. It's a very simple gesture that was very well received; with just an intention, we already improve people's daily lives a lot, you know. (Lionnel, architect)

The architect-client relationship is a multifaceted interaction influenced by clients' prior knowledge, architects' communication skills, and the level of transparency throughout the design process. Effective communication and transparency about the architectural process are crucial for fostering trust and minimizing misunderstandings between architects and user-clients.

4.3 Budget issues

Budgeting in construction projects is complex. Florence (architect) underscores the importance of clarifying the concept of "all included," as it often involves various cost components beyond the initial construction expenses, such as VAT, fees, and expert charges. She introduces the concept of a "retro budget", suggesting that architects might use strategies to manage client expectations and ensure transparency regarding budgeting.

> *We always talk in terms of construction costs in euros. So, if they have 100,000 euros in construction costs, you need to add the VAT. You need to add my fees, those of the 'PEB' (Energy Performance) expert, those of the engineer, and in the end, we're closer to 140,000 euros, right? And it's not 100,000 all included. Usually, "all included" is understood in a split second. That's why I do (...) a retro budget, planning the budget in reverse. So, if you have 100, if you have 100,000 all-inclusive. We subtract this. We subtract that. We subtract that, and that's what's left. (Florence, Architect)*

Kevin, another architect, echoes this sentiment by discussing how clients frequently have exaggerated expectations regarding project costs. Clients sometimes request projects that significantly exceed their allocated budget, putting architects in the position of delivering potentially disappointing news:

> *I (expect) rather exaggerated expectations from our clients, so... And we often have this, it's project owners who come to us saying: here, I just bought. I have a budget of 100,000 euros, and I want a project worth more than 300,000 to 400,000 euros. And I want it done by the day after tomorrow. Ah! We're always the bearers of bad news. (Kevin, architect)*

Monique, a user-client, presents a different dimension of the budgeting issue. She shares her experience of setting a strict budget for her tiny house project and the challenges she faced when architects proposed solutions exceeding her financial limits:

> *I lost my job about ten years ago (...) I had a requirement: I wanted this tiny house to not cost more than 100,000 euros. I couldn't have put in more because I didn't have it, I couldn't have had it, and that was clear from the start. If it's 125,000 euros, I wouldn't have had the extra 25,000 euros! I'm not a profile to whom they'll lend money. The architect moved*

towards budgeting, and we were reaching 160-170,000 euros. I said to her: 'I told you right away that this wasn't possible!' (...) It was then a matter of reducing the floor area. And suddenly I found myself with something else, down by 50,000 euros, and no matter how I compared one [project] to the other, apart from 8 square meters, I couldn't understand. So, we reached a misunderstanding, she [the architect] was getting upset. (Monique, user-client)

Building up on Monique's concerns, Maria sheds light on the differences in understanding between architects and clients when it comes to pricing:

For us, when we're told 100 euros, it's 100 euros. I go to the store to buy a pair of shoes, it's 100 euros. But the architect thinks 100 euros without VAT. That means he's thinking 120 euros. (Maria, user-client)

Paloma, another user-client, emphasizes the need for better budget management and financial transparency. She expresses concerns about the absence of shared online documents and the challenges of tracking project expenses:

Budget is really one of the things that isn't going well. We don't have regular updates on the budget's progress, and since we're busy and trust him, I have no idea if we've exceeded the budget by 30% or 50%. (...) It's problematic that there are no shared online documents showing the planned budget, the actual budget, and the amounts invoiced. I imagine he'll send me a breakdown document. We're trying (...) to keep all the invoices we receive so we can write a check at the end. So, I'm a little afraid. (Paloma, user-client)

These examples highlight the potential for miscommunication, as clients may assume that the quoted price already includes taxes, while architects may provide pre-tax figures. This emphasizes the importance for architects to be sensitive to clients' budget constraints and the need for clear communication and transparency.

4.4 Bespoke designs

Architects like Dorian and Gerard underscore the significance of tailored design solutions. They emphasize the importance of engaging clients in the creative process, listening to their requests while also offering their expertise. This collaborative approach aims to craft unique, custom solutions that align with clients' needs and desires, fostering a sense of partnership and client satisfaction.

What I consider to be more important, it's still the design. Providing a response to what people are looking for and what they might not have found by themselves or through a turnkey solution. (...) providing a tailored response to people's needs. (Dorian, architect)

I wouldn't be comfortable with a formula where the client says, 'Draw me a house and call me when it's done.' (...) It's just not in my nature. Is it

possible for me to do it somehow? Yes, I can do it for public buildings because that's where it works. But for a house, it would seem a bit peculiar, a bit strange. (Gerard, architect)

Some user-clients, such as Monique and Aurelie, enter the design process with distinct visions of their ideal homes. They value the architects' input and creativity but may also face challenges in reconciling their preconceived ideas with the architects' proposals. This dynamic highlights the delicate balance between client preferences and architect input.

So, my initial idea was very simple, it was this, a tiny house that I had seen in New York's Central Park, and I wanted that, and nothing else. (...) They made me a first sketch, which in my opinion, absolutely did not match the photo. That's what already annoys me, you know, architects all do the same thing! They all make cubes. And that's not what I wanted! (...) they didn't like that. In a way, I was depriving them of their architect's creativity because I came with a preconceived idea. (Monique, user-client)

He came back with three proposals... We thought a lot... Everything was there... There were already many things I had in mind (...) But he suggested things that (...) I wouldn't have thought of myself. (Aurelie, user-client)

Furthermore, architects like Michele and Coralie emphasize the importance of understanding clients' needs, desires, and budgets, particularly in single-family housing projects. They discuss the role of architects in guiding clients with varying levels of prior knowledge, aiming to ensure that clients receive valuable guidance while staying within the legal and practical framework:

We do custom work and try to break away from clichés, which is quite presumptuous, but we do. We try to move away from stereotypes. It's a bit double-edged because obviously, we are also influenced by the images we see and the things we find beautiful. (Michele, architect)

We really have two ways of working. Some people come saying they don't know anything at all, and in that case, the guidance is really meaningful. Then, there are people who say they just want to get their permit and don't want us to handle anything else. We don't want to do that because we want to stay within the legal framework. We have an obligation to supervise the construction afterward. (Coralie, architect)

When it comes to single-family housing, the relationship we have with people is very important to understand their needs, desires, and budget and ensure they are satisfied. That's really the goal. That's why in our architecture studio, our goal is not to impose our architecture on clients who come because they want a house like they've seen. It's really about responding to a client and a context. But the context, precisely, means that there are things we won't accept to do. (Michele, architect)

Charlotte's experience demonstrates the mutual respect and collaboration that can develop between architects and clients. By engaging in a lot of deep discussions, considering architectural style, and granting creative freedom, they achieve a harmonious partnership that results in an innovative and appealing design:

> *It's true that I have a basic aesthetic and graphic concern, so working with an architect felt natural. (...) There was a good understanding in both directions. I didn't bring endless diagrams or lifestyle magazines saying, 'We should have this or that.' We talked more about philosophy, the type of house we wanted, the openings. At one point, we even discussed 'introverted vs. extroverted' houses in philosophical terms. Allowing him that freedom and creativity gave us many interesting results. (Charlotte, user-client)*

Architects and user-clients share a mutual appreciation for the importance of tailored and collaborative design processes. Architects prioritize understanding clients' needs and preferences while user-clients recognize the added value that architects bring to their initial ideas. User-clients navigate a learning curve, at times grappling with their own design visions, but ultimately seek to create homes that align with their unique desires and needs. Both parties understand that creativity, contextual design, and collaboration are essential elements in achieving successful bespoke designs.

4.5 Close Proximity

Architecture involves a particular relationship between architects and clients, one that extends beyond the conventional professional boundaries. The following quotes offer a glimpse into the dynamics of this unique connection.

Benoît and Françoise, user-clients, exemplify a collaborative approach. They collectively prepared a specification document, emphasizing the cohesiveness of their group's needs and values. This proactive engagement showcases the significance of a shared vision in architectural projects:

> *The future residents of the co-housing collectively prepared a specification document to clearly express the group's needs, desires, and philosophy, along with a questionnaire for the five architects invited to present their approaches. (Benoît & Françoise, user-client)*

Fabrice, another user-client, highlights a scenario where one partner took the lead in articulating their desires, demonstrating varying degrees of client involvement:

> *My partner had very clear ideas and came with a 4-page folder, photos, Pinterest boards, houses. She was very proactive (...) even before we had a plot of land. I kept telling her, 'It's not the time,' but she would show, and he [the architect] would look, take notes (...) I think 70% of the information he noted down politely, considering the commercial aspect of his profession. However, some details, like interior layouts or tile choices, weren't necessary to share. (Fabrice, user-client)*

While the architect appreciated the input, not all information provided was utilized, underscoring the delicate balance between client engagement and architectural expertise.

Maria, also a user-client, shares her experience shedding light on architects' roles in steering clients away from costly decisions. In her case, the architect's refusal to incorporate skylights saved her thousands of euros, revealing the value of their professional judgment, which she now recognizes.

The quotes from Violette, an architect, and Florence, another architect, offer insights into the architect's perspective. Violette recounts instances where her role as an architect intertwined with her clients' personal lives, almost becoming invasive. Florence, on the other hand, shares how clients proactively introduced themselves to ensure she understood their lifestyles and needs, emphasizing the intimacy architects often gain access to during projects:

> *I'm often invited to their housewarming parties, and these are people more or less my age. At one party, they gave me flowers even though I had brought a bouquet myself. They stopped the celebration to thank me and even gave a little speech. (...) At one point, the homeowner said, 'Thank you, you saved my relationship'. And I thought, this is becoming too invasive, right? (...) I'm an architect, not a couple therapist. (Violette, architect)*

> *They showed me a board of how they lived, introducing themselves individually, including the dog. They wanted us to understand their way of life, schedules, ages, and even the names of their children, so I could make the best extension proposal. (...) That was purely their initiative. (Florence, architect)*

Henri, an architect, delves into the delicate task of understanding clients' intimate requests and preferences. He exemplifies how architects must navigate their ways into clients' lives, sometimes uncovering deeply personal details that are essential for crafting the most appropriate design responses:

> *In housing, we stage people's lives. (...) When you meet someone, you have to quickly figure out who you're dealing with and understand their real request. People are sometimes reserved about revealing intimate details, but they're things we need to know. One day, a couple asked me to add another floor to their house with a bedroom and a large dressing room. (...) Towards the end, she mentioned adding a bed in the dressing room. At first, I didn't understand and suggested solutions like a foldaway bed, as a bed there didn't make much sense. Ultimately, after trying to understand, I realized they were sleeping separately because the husband snored, and the wife was more comfortable that way. They shared this late, likely because it was very intimate. (...) It's about entering like a little mouse, learning everything without judging, so you can address everyone's particularities and find the best response. (Henri, architect)*

In analyzing these quotes, it becomes evident that the architect-client relationship is a multifaceted bond. While clients actively engage, architects must balance their expertise with client preferences, sometimes guiding them away from costly decisions. It is the architect's mission to enable a close relationship, allowing them access to intimate information essential to the project, while at the same time remaining distant enough to maintain a healthy relationship.

4.6 Time Management and Planning

Time management and planning play pivotal roles in the successful execution of projects. Valerie, an architect, shares an anecdote highlighting the challenge of managing client expectations regarding communication and response times:

> *She called at eight-thirty in the evening: 'Am I interrupting something ?' I answered that, if it wasn't too much to ask, we could speak tomorrow because it's eight-thirty in the evening, and well, I've stopped working. 'Ah, okay. Ah, but we've already had dinner.' I hadn't had dinner yet. 'Okay, I'll call you tomorrow.' she said. But she wasn't happy. So, the next day, she called me at eleven in the morning. She said: 'Is it okay now? Can I talk to you now?' (Valerie, architect)*

This illustrates the delicate balance architects must strike between client satisfaction and personal boundaries.

Kevin, another architect, discusses the evolving dynamics of managing time and deadlines as his practice has grown. He emphasizes the importance of setting realistic expectations with clients, acknowledging that not all aspects of a project are under an architect's control, such as building permits and external factors:

> *Previously, I tried to do everything to accommodate the client's wishes – working day and night to meet deadlines. Now I can't do it anymore. We have too many projects, and I can't spend my days and nights working. (...) Now, we inform clients about realistic deadlines. They are disappointed but must accept that moving into their house in six months is not possible – it may take a year and a half. (...) They often stress and ask if we can save time. I say no; with luck, we might save a month if someone else works faster, but that's it. What's most frustrating is delivering bad news about budgets and deadlines when we're not solely responsible. (...) If the permit takes six months at the municipality, I can't change that. I can save time on my end, but (...) I can't prioritize one project over all others. At some point, clients must understand that not everything is as compressible as they desire. (Kevin, architect)*

Florence, an architect, touches on the misconception that technology can expedite architectural work significantly. She highlights the need to educate clients about the time and effort required for tasks that appear simplified through modern tools:

VR sets give people the impression that they are in The Sims and can change the tiles, stuff, or things with the push of a button. (...) And that's the problem with working on a computer. People don't realize the work behind it, and they feel that by hitting Enter, we can give them 250 plans when they need to be drawn. Of course, it's faster than doing it by hand, but it still takes time. (Florence, architect)

Monique shares her frustration with what she perceives as delays in architectural work:

So, the architect tells me: 'Yes, but you know, since the lockdown, the price of wood has gone up by 40%.' OK, I get that, but my request dates back to June of last year. (...) I feel like with architects, time passes, and nothing happens. We don't know what they're doing. We follow up, and she says, 'Yes, I'll get back to you by the end of next week... I have two big projects...' And by the end of the following week, still nothing. For me, a 3D project like this shouldn't take more than half a day's work because the day before, on the phone, she asked a question that made it clear she was just starting. (...) That gave me the indication it shouldn't take more than half a day. (Monique, user-client)

Her experience underscores the importance of client expectations in terms of project timelines, and effective communication when trying to meet realistic timelines.

Aurelie discusses the importance of collaboration between an architect and an interior designer. Her account demonstrates the necessity of efficient coordination among professionals involved in a project to ensure smooth progress:

I insisted on having an interior designer along with my architect, and it wasn't always well-received. (...) I thought it was good to have another opinion, another perspective. He did comment, 'An architect is perfectly capable of handling interior architecture as well, so it's not necessary,' but he understood that each of us would have our own expertise. (...) On the construction site, that's where it started to drag. At one point, there were small timing issues, evolutions... so we started to communicate more as a trio, keeping everyone informed. (...) I could feel it was necessary for information to circulate within the trio. But it remained friendly, and people wanted it to go well. (Aurelie, user-client)

Charlotte, another user-client, recognizes the significance of a well-organized architect who effectively communicates with various stakeholders. Her experience showcases the benefits of clear planning and coordination in construction meetings:

He also had a Word document, with a series of points, but very, very long, and he kept sending it to all the [trades], so everyone knew all the time what needed to be done. He was organized and firm, in fact; each time he organized the construction meetings, he made sure everyone was there... (Charlotte, user-client)

On the one hand, architects often grapple with the challenge of setting boundaries while striving to meet client demands and explaining the complexities of their work. On the other hand, user-clients may expect faster results and may not fully grasp the intricacies of architectural processes. Effective communication and education about these aspects are essential to align expectations and ensure successful project outcomes.

4.7 Project alterations

Project alterations are a common aspect of architectural projects. User-clients often undergo a process of exploration and refinement of their vision, guided by architects who facilitate this journey. However, maintaining a balance between client flexibility and the need for a structured design process is essential to ensure the project's success and efficiency.

Pauline and Jerome, user-clients, describe their evolving project, emphasizing the role of intuition and on-site decision-making. Their experience highlights the fluid nature of architectural projects, with adjustments made during construction to accommodate practical considerations and personal preferences.

Catherine, a user-client, reflects on her initial scepticism about certain design details proposed by the architect. However, she later appreciates the meticulous attention to detail, realizing the significance of seemingly minor aspects in the overall design and functionality of the space:

> *I was really impressed by the 'quick sketches.' And also, something that I really appreciated during construction meetings, I didn't understand why he insisted on what seemed to be details to me. I thought, 'It's been three-quarters of an hour, and I want to leave.' Now that I live in the house, I notice these details. And I see that they are important. Alignment of the lights, for example. They are all aligned across several rooms. I used to think, 'This is silly.' But no! It's really good. (Catherine, user-client)*

Igor and Clementine, another pair of user-clients, share their journey of refining their architectural preferences with their architect. Their experience showcases how architects guide clients through a thoughtful and reflective decision-making process, allowing ideas to mature and align with the clients' vision:

> *Poor thing, she gave us a first proposal that, in fact, was the last, the final one. We said, 'No, this is not what we want; we want something else.' So, she came back with another proposal, which we had asked her to do. To tell her, 'Actually, no. You know what? We prefer your first proposal.' It took time to mature. That's what's crazy. An architect makes you think all the way to the end, to the very end. It takes time for it to emerge in your mind. And when you live in it, if it's different, you have time to see the places, the rooms, it's there... (Igor & Clementine, user-client)*

Kevin, an architect, expresses the challenges architects may face when clients repeatedly change their minds, leading to extensive design iterations:

Up to a certain point, they have the right to choose what they want in their home, but at some point, we feel like our added value is being exceeded. It's a bit tough with one client. They asked us to create thirteen versions of the bathroom only to return to the first one we had designed, you see. (Kevin, architect)

This highlights the delicate balance between accommodating client preferences and maintaining the project's integrity and efficiency.

Lionnel, an architect, discusses the impact of architectural references from external sources, such as social media, on client decision-making:

People who don't have many architectural references or a clear vision often look at images on Instagram. They see a railing, a material, or a window they like and try to combine everything, but it doesn't fit at all. (...) We've had clients show us many images, and we tried to incorporate them into the project, but it was a complete failure because we couldn't settle on anything. (...) While we were working on the project, she kept sending more images by email, often contradicting the direction we were taking. (Lionnel, architect)

This can sometimes lead to conflicting design choices and challenges in achieving a cohesive vision.

Geraldine, another architect, proposes a solution to manage project alterations by offering clients a flexible package of hours instead of fixed-price offers:

They kept changing their minds all the time. So now we're changing how we make offers to avoid that, because we still need some guardrails. (...) We like fixed-price offers because they reassure the client, but now we offer a package of hours, explaining that unless they change their mind 18 times, we can stay within that package and keep them updated. (...) You can be indecisive, but we also need respect for our work. (Geraldine, architect)

This approach aims to provide clients with creative freedom while establishing reasonable boundaries to ensure a smoother project progression. Nonetheless, the process of architectural project alterations can be a dynamic and evolving journey, with architects and user-clients often navigating changes and adaptations along the way.

4.8 The Building permit

The process of obtaining a building permit in architectural projects involves a complex interplay between architects and user-clients, as well as local authorities. The following quotes provide insights into the challenges and expectations related to building permits. Maxime and Sabrina, user-clients, express their disappointment with their architect's handling of the building permit process. They expected a more seamless experience but encountered issues with an incomplete dossier, leading to delays and additional efforts on their part:

> *I expected him to bring us much more into the relationship with the municipality, with the urban planning department. I expected him to submit a fully polished dossier... but in the end, we had to go back and forth to the municipality because the dossier was incomplete... in the end, we had to do everything ourselves. (Maxime, user-client)*

Sabrina, echoing this frustration, emphasizes the importance of the architect's role in dealing with municipal authorities. She questions whether the architect should bear more responsibility for addressing issues that arise during the permitting process:

> *And I wanted to stop the project... because we had two rejections... and for me, it was the last straw. I thought, 'Isn't this his job after all?' It added another 60 days of delay, and so I thought, 'Is this thing ever going to succeed in the end?' (Sabrina, user-client)*

Aurelie, a user-client, highlights the valuable role her architect played in navigating complex and inconsistent municipal regulations:

> *Since we are in a residential estate, there were many, let's say, silly and inconsistent rules. (...) Having an architect's opinion and proposals helped us quite a bit. At first, we weren't necessarily on board, but in the end, we thought, 'Maybe it's worth it after all.' (...) He handled a lot of the writing, and he's good at arguing and defending his case. (...) He's proactive, and we had solid support in the submission. Everything was well-argued, better than we could have done. (Aurelie, user-client)*

She acknowledges the architect's expertise in presenting persuasive arguments and handling the documentation effectively.

Sofia, another user-client, acknowledges the challenges architects face when dealing with municipal regulations, which often rely on a negative right approach. She expresses empathy for her architect and suggests that the appeal process may offer a solution:

> *The architect does what we ask, and I feel like the architect's work is caught between two fires… In urban planning, (...) anything not expressly allowed is forbidden... It's dangerous. I felt bad for the architect... I regret that he is not very confident. (Sofia, user-client)*

Kevin, an architect, discusses the often-complicated process of presenting projects to municipal consultation commissions. He highlights the architect's involvement in these proceedings and the importance of conveying feedback from authorities to clients.

Florence points out the lack of support from municipalities and professional associations when issues arise during the permit process. She suggests that architects may find themselves unsupported and facing challenges when unforeseen problems arise:

There is a real problem with municipalities. (...) In this case, we are not supported at all, with permit issuance delays and various procedures – it's an uphill battle. (...) I think we are not supported by the Architects' Association either, in relation to the client, who didn't ask for anything, nor did we. (...) We did the best we could, and when things go wrong, we are alone. There is no one to take responsibility – not the municipality, nor the Architects' Association. And that's a real issue. (Florence, architect)

Henri, an architect, emphasizes the need for prudent project management during the permit phase. He outlines the importance of waiting for permit issuance before proceeding with additional project stages to avoid potential setbacks:

So, once I've submitted the permit, I start the measurements to avoid being caught off guard when the permit is issued because, naturally, people want to build right away once they have it. Officially, we should wait for the issuance before starting to get offers or the architect's bidding process with execution and bidding plans. Why? Because there's always the risk of a rejection from the municipality, making all the work done useless. (Henri, architect)

User-clients often rely on architects to navigate municipal regulations and ensure a smooth permit issuance process. However, discrepancies in expectations, responsibilities, and support mechanisms can lead to frustrations and delays in project timelines. Architects play a crucial role in advocating for their clients and effectively managing the permit phase to minimize disruptions and setbacks.

4.9 Cutting ties

Contract-related issues, such as discrepancies between verbal assurances and written contracts, can lead to dissatisfaction and even the termination of architectural missions. Additionally, challenges may arise when clients are misinformed or change their project requirements, which can affect the project's progression and outcome.

Julie, a user-client, expresses her dissatisfaction with her architect's inability to provide feasible solutions to her requests. Her frustration and decision to discontinue the collaboration exemplify the conflict arising from unmet expectations and communication breakdown:

There were too many things I wanted but weren't feasible, and he had no solutions. He would tell me it wasn't possible, practical, or good, but no alternatives were offered. For example, he couldn't see how to incorporate dry toilets into my house. (...) It didn't progress, and at some point, it was too much. I didn't contact him again. I paid the final invoices and didn't follow up. (...) I let time pass and never called again. He didn't call or follow up either. (Julie, user-client)

Monique, another user-client, reflects on the stark differences between the promises made during initial meetings and the contractual terms. She raises concerns about architects' contracts, emphasizing that they seem to favour architects' interests over clients'. This underscores the power asymmetry often present in contractual relationships, where user-clients believe that architects draft agreements that favour their interests, leading to tensions between user-clients and architects.

Michele, an architect, highlights the challenges that arise when clients are over-informed but often misinformed, leading to a loss of trust in the architect's expertise. In such cases, she suggests that architects may choose to terminate their missions to protect their professional integrity:

> *Over-informed clients [are] sometimes misinformed. So, we spend a lot of time debunking their beliefs. And sometimes they will trust less (...) At some point, there is a loss of trust, you know. That is to say, they will go to great lengths to seek information from here and there to challenge our way of doing things, and [my] trust is broken. ... At some point, we tell them: we stop the mission when it has gone too far. (...) They don't want to do soil tests. At that point, I terminated my mission. Why? Because ultimately, they no longer trust me. (Michele, architect)*

Violette, an architect, describes her approach to preliminary studies and emphasizes the importance of mutual commitment. She shares an instance where a prolonged decision-making process led to a 16-months delay before the client agreed to the preliminary project:

> *I explain that we won't commit to a complete mission because we don't yet know the project, budget, or possibilities. It's a preliminary study with, sometimes, variant A and variant B. (...) Often, the deciding factor is whether the overall budget allows for their ideas. The estimate is divided into three columns: base, additions, and options. (...) At the end of this phase, they can commit – or me too. (...) I ended things once: after sixteen months between the first meeting and their agreement on the preliminary project (…) they didn't understand too much. (Violette, architect)*

Henri, an architect, narrates a situation where a client's changing requests led to significant discrepancies between the project's initial intent and the actual execution. This case illustrates the challenges architects face when clients modify their requirements mid-project:

> *I'm in the execution file. (...) Things are drawn precisely, including waterproofing, so I need to know if he wants a terrace. He finally tells me he wants to build cellars under the whole thing. I say, 'Okay, fine. (...) If the municipality bothers me, I'll say they are underground volumes.' (...) Then I get to the site meeting and see he puts everything at the same level. He tells me, 'It's because later I want to build a veranda on it.' So, from a terrace request, he's actually asking for foundations for an annex he plans to build illegally. (Henri, architect)*

Architects must navigate these complexities to maintain trust and professionalism in their client relationships.

4.10 Construction phase

The construction phase, where architectural projects come to life, is crucial but it is also a stage where conflicts, complexities, and collaboration intersect. This section offers insights into these intricate dynamics and underscores the vital role architects play in managing and addressing challenges that may arise during construction, ultimately contributing to the successful realization of architectural visions.

Laurence, a user-client, describes a situation where the collaboration started with issues in the excavation stage, including budget overruns and the need for last-minute adjustments. She highlights the importance of quality tradespeople and emphasizes her own active involvement in project management:

> *So, I work in customer service, so I know what it means to provide a service, and it's a real collaboration. (...) My mission was to get everyone to collaborate for the project's success. It started badly because, at the excavation stage, the architect said, 'We'll bury it,' forgetting that shale in the region is expansive. (...) From the first issue, we had exceeded the budget by €30,000. Then the mason pours the floor slab and says, 'Aren't you planning a water point in your garage?' I tell him, 'Yes!' but it wasn't in the plan. (...) We managed it just in time, thanks to the mason, not the architect. (...) Once the structural work finished, I felt little reaction from the architect. If I didn't ask for meetings myself, nothing would happen. (Laurence, user-client)*

Laurence further notes that there was a lack of coordination among tradespeople, and the architect did not fulfil his role effectively. She ended up taking on additional responsibilities to ensure the project's progress, including site supervision:

> *But there was a lack of coordination. The architect didn't coordinate the tradespeople or make meeting minutes, which always shocked me. Fortunately, we lived nearby, so the tradespeople called us directly, and we were more responsive than him. (...) In the end, I did part of his job. His mission wasn't really fulfilled. Site supervision is important – how could I know if it was well executed? I don't have an eye for construction. (...) I took care of everything to ensure progress. Luckily, during COVID, I was on partial unemployment and had time to manage it all. Otherwise, it would have been a disaster. (...) The architect couldn't have been happier that I was doing it all. At one point, he even told my husband, 'I'd hire your wife!' (Laurence, user-client)*

Maria, another user-client, acknowledges that architects often have access to a network of tradespeople that individual clients may not have. This network can be advantageous in facilitating smoother construction processes:

He has connections that we didn't have. Because initially, we had looked for a pool installer ourselves. And it was complicated, etc. People didn't call us back. We didn't get quotes, etc. So, we said, 'Okay, fine. Let's start from scratch'. We'll hire the architect. He built the house. He knows us. He knows our tastes exactly, etc. We are really not disappointed. (Maria, user-client)

Paloma, a user-client, points out issues with the quality of work, particularly regarding the window joints. This highlights the importance of quality control during the construction phase. She mentions a breaking point in trust with her architect, when her architect was telling her that the job was good enough when she could clearly see it was not.

Henri, an architect, emphasizes the need for fairness and equity on construction sites and occasionally acts as a mediator to ensure a balanced relationship between clients and contractors:

It's out of the question for a contractor to take advantage of a client or for a client to take advantage of a contractor. (...) A form of fairness has to be found. That's why I sometimes intervene as a judge on the site. (...) Being a judge doesn't mean always defending the client; it's more about equity. (Henri, architect)

Violette, an architect, highlights the challenges of clients living in the house during construction, as they may witness the day-to-day challenges and mistakes that occur on construction sites:

I refuse projects where clients plan to live in the house during construction: it's just hell. When clients live there, they see the workers' incompetence every minute. (...) If you visit weekly, you say, 'Oh, it's great, it's progressing,' but construction is trial and error. (...) Clients come, realize something wasn't measured, leave, and come back. Hour by hour, it feels like the site isn't progressing. (Violette, architect)

Baptiste, another architect, underscores the importance of clear communication throughout all project phases, particularly during the construction phase, where clients may be more involved and have specific requests or changes:

It's our duty to inform clients about everything a project entails and what they don't know. Support in all phases involves communication, especially on the site, where it's about 'who does what.' (...) When it's near their home, clients often visit the site daily, talk to the contractor, and request changes. (...) You have to explain the framework. (Baptiste, architect)

This analysis shows that the construction phase of architectural housing projects often involves various challenges, including budgetary issues, coordination problems, quality control concerns, and the need for effective communication between all stakeholders. Architects play a crucial role in facilitating successful construction processes and addressing issues that may arise during this phase.

5. Findings and Discussion

The architect / user-client relationship in housing projects is a dynamic and multifaceted partnership that often involves navigating diverse perspectives, backgrounds, and expectations. Within these intricate interactions, conflicts may arise due to differences in knowledge, preferences, communication styles, and priorities.

As a result of the analysis, ten key themes are revealed as significant to understand the nature of architect and user-client relationship. These themes are namely: (1) Personality compatibility, (2) (Mis)understandings, (3) Budget issues, (4) Bespoke designs, (5) Close proximity, (6) Time management and Planning, (7) Project alterations, (8) the Building permit, (9) Cutting ties and (10) Construction phase.

We summarize our findings in Table 8. We discuss what we see as the three most prominent issues in the following sections: Interpersonal relations, Knowledge disparities and misunderstandings, Management issues. We also reflect on our use of these interviews to support a co-design process aiming to facilitate the relationship between architects and user-clients.

Table 8. Summary of the Findings

Theme	Main Findings
Personality Compatibility	Results show that compatibility between client and architect is crucial. Strong connections enhance communication and understanding, but lack of attentiveness or differing priorities can lead to dissatisfaction.
(Mis)understandings	The architectural process can be complex for clients, leading to misunderstandings and trust erosion. Clear and transparent communication from architects is essential for effective collaboration.
Budget Issues	Budgeting is complex and often misunderstood by clients. Architects need to clarify costs, including additional expenses beyond construction. Transparency in budget management and follow-ups are vital.
Bespoke Designs	Tailored design solutions involve balancing client visions with architect expertise. Collaboration is key to creating designs that meet clients' unique needs while incorporating professional creativity.
Close Proximity	Architect-client relationships often extend beyond professional boundaries, involving personal life aspects and shared values. Architects sometimes navigate intimate client details to craft appropriate designs.
Time Management and Planning	Time management is challenging for architects. Setting realistic expectations and boundaries is important. Modern tools and technology impact perceptions of the architectural process's speed and complexity.
Project Alterations	Architectural projects often undergo changes and refinements. Balancing client flexibility with a structured design process is key. External influences like social media can impact design choices.
The Building Permit	Obtaining building permits involves navigating complex regulations. Discrepancies in expectations and support mechanisms can cause frustrations. Architects advocate for clients in this phase.
Cutting Ties	Contractual issues and misinformed clients can lead to conflicts and termination of collaborations. Architects sometimes face challenges in maintaining professional integrity amidst changing client requirements.
Construction Phase	The construction phase involves managing complexities, coordinating tradespeople, and ensuring quality. Architects play a crucial role in addressing challenges and facilitating successful project realization.

5.1 Interpersonal Relations

The interviews evidently suggest that successful architectural outcomes are not solely predicated by the technical proficiency of architects, but also hinge on interpersonal dynamics. The compatibility of personalities, effective communication, and mutual understanding significantly impact the satisfaction levels of both parties and the success of the project. These insights offer a deeper perspective into the relational aspects of architectural work, emphasizing the need for skills that transcend technical knowledge.

Architects and user-clients may hail from diverse cultural backgrounds, which can significantly influence design preferences and communication norms. Individual life experiences and personal histories shape clients' visions for their own homes and their expectations when it comes to their (future) architects.

Sensitivity to cultural diversity and respect for personal backgrounds are therefore essential. Cultural nuances may impact design choices, necessitating collaboration in a culturally inclusive manner. This underscores the importance of communication skills and empathy in the architect-client relationship. Successful projects often hinge on the architect's ability to step into the client's shoes, understanding lifestyle, preferences, and constraints. Similarly, client-users who appreciate the challenges and complexities of architectural work tend to have more fruitful collaborations with their architects. While conflicts may arise, they often present opportunities for architects and clients to learn from each other, adapt, and reach creative, mutually satisfying solutions. Understanding the other's perspective and demonstrating empathy for their concerns can enhance the overall working relationship, facilitating the trust-building process and addressing potential conflicts related to diverse backgrounds.

Effective communication, empathy, flexibility, and a shared commitment to the project's success are pivotal in achieving harmonious interactions and successful architectural outcomes. Further implications of this research suggest that the architectural education curriculum must evolve to include modules on client relations, psychology, and negotiation skills, preparing future architects for the realities of client interactions. For professionals, there is a clear indication that soft skills such as communication, empathy, and adaptability are as crucial as technical skills. This understanding should influence hiring practices, ongoing training, and professional development.

5.2 Knowledge Disparities and Misunderstandings

Architects need to be mindful of the limited understanding clients may have about architectural processes. Misunderstandings can arise when architects use technical jargon or assume clients are familiar with architectural procedures. Many user-clients embark on architectural projects with minimal prior knowledge and are often on a learning curve as they navigate the complexities of design. This learning process can result in questions, confusion, and misunderstandings. Architects can support this learning process by providing guidance and explanations, as clients' knowledge and understanding about the architectural process appear to be crucial factors for a successful project.

In housing contexts, architects must exert additional effort to clearly communicate various aspects of the design and construction processes, including concepts, potential delays, the roles of different parties involved, regulatory restrictions, unexpected costs, and other budget-related concerns. Typically, architects prioritize technical communication, which may not always align with clients' communication preferences. User-clients often seek regular updates, easy accessibility to architects, and a significant voice in decision-making processes. Architects should adjust their communication styles to accommodate these needs, emphasizing regular meetings, providing status

updates, and maintaining transparency throughout the project. User-clients, on the other hand, should express their communication preferences and expectations clearly to ensure effective interaction. Architects recognize the challenges of managing client expectations, given the diverse personalities and project requirements they encounter. They should offer guidance and encourage user-clients to ask questions freely. In this context, architects, almost assuming the role of educators, can alleviate friction and mistrust between parties stemming from knowledge disparities and misunderstandings.

5.3 Management issues

This research also underscores the significant role architects play in project management. They must navigate budget constraints, bespoke designs, and complex regulatory steps such as building permits. While architects may sometimes underestimate the importance of project management, management styles that do not consider user-clients' needs can result in unsatisfactory outcomes. For instance, failing to transparently communicate the economic impact of design decisions can lead to budgetary overruns. Clients operate within specific budget constraints, and architects must align their creative visions with these financial realities. Disagreements may arise when clients perceive design elements as exceeding their budgetary limits. Additionally, user-clients may not always have a realistic understanding of project costs, potentially demanding more than what is feasible within the current budget. Architects need to exercise caution regarding costs that user-clients may not be fully aware of. Transparent and realistic discussions about budget constraints are crucial from the project's inception. Architects must propose designs that accommodate budget limitations without compromising aesthetics or functionality. Effective cost management strategies and value engineering can help align the project with financial expectations.

The work of architects also entails coordinating multiple actors and experts throughout the design and construction process. They play a central role in supporting user-clients' communication with these various stakeholders. However, the roles of different actors and their own role may not always be evident to user-clients. In such situations, architects should serve as mediators, advisors, and creative thinkers. They need to be flexible, firstly to adapt to the profiles of user-clients, their level of involvement, and responsiveness to changing needs and contexts. Secondly, architects must navigate between the different roles they may need to assume throughout the design process, seamlessly transitioning between mediator, advisor, and creative collaborator as required.

5.4 Sharing the interviews' contents through a journey map

The analysis of these interviews is integrated into a larger co-design process, providing contextual information to the participants and serving as a resource for co-design. In this article, we shared the results of the thematic comparative analysis conducted from the interviews. Later, those results were integrated into a journey map-inspired visualization (Figure 18) and shared with architects and user-clients in an online "Restitution & Sharing" workshop, as the first workshop of our co-design process.

The journey-map-inspired interactive visualization is based on our comparative analysis, and represents how architects' testimonies resonated or diverged from those of user-clients. The visualization served as a tool to elucidate the personal realities of both parties, fostering empathy and understanding between architects and user-clients. It also enabled us to share researchers' knowledge and scientific knowledge from the very beginning of the co-design process, and to engage participants into further discussing the results of our analysis, enrich them and share new knowledge around the thematics.
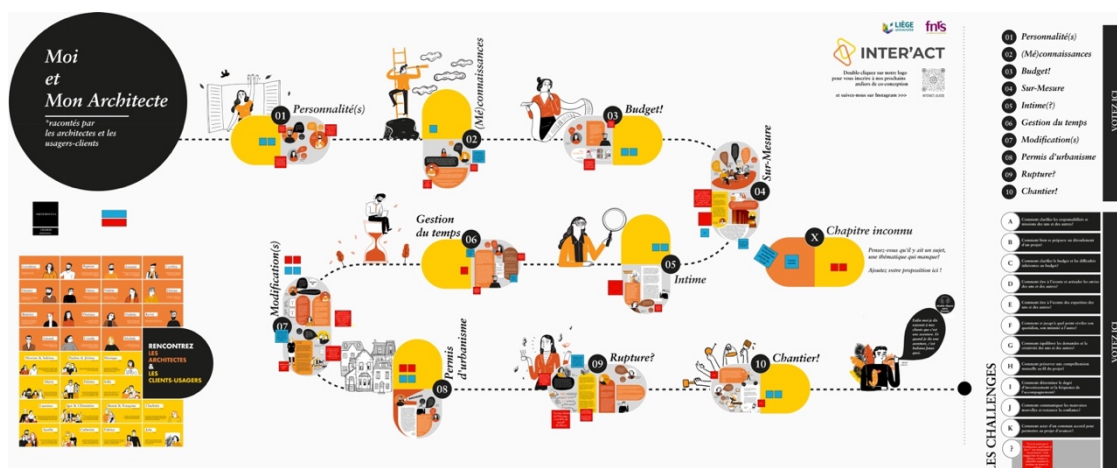
Figure 18. Journey map-inspired visualization of the interview results.

6. Conclusion

In this study we shared perspectives of architects and user-clients going through home design processes, as expressed during 29 semi-directive interviews. We identified ten key considerations preoccupying both architects and (future) homeowners: (1) Personality compatibility, (2) (Mis)understandings, (3) Budget issues, (4) Bespoke designs, (5) Close proximity, (6) Time management and Planning, (7) Project alterations, (8) the Building permit, (9) Cutting ties and (10) Construction phase.

Following these results, we argue that interpersonal relations, knowledge disparities, misunderstandings as well as management issues hold major implications for design outcomes and the satisfaction of both parties involved. These issues can be effectively addressed by implementing a more structured

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approach to collaboration, e.g., offered by processes such as participatory design or co-design methodologies. These approaches are well known for facilitating communication, knowledge sharing, creation of common understanding and collective decision making.

To illustrate our future steps, we provide an example of how such interviews can be integrated into a co-design process through a journey-map inspired visualization. This visualization not only facilitated the understanding of different perspectives between the two parties but also empowered participants to question, enrich, and share new knowledge surrounding the main themes.

By comparing the experiences and viewpoints of architects and user-clients, this research aims to shed light on the complexities shaping their interactions, specifically within the context of housing design projects. We share potential areas of improvement for a more satisfactory interaction between the two parties.

This paper is not published yet.

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Navigating Architectural Process: Tracking Architects' and User-Clients' Habitus Shock in Private Dwelling Design

Abstract

This article explores how *habitus shock* manifests and evolves in the relationship between architects and user-clients during private dwelling projects. Drawing from Bourdieu's theory of habitus, Adler's concept of culture shock, and Siva and London's habitus shock in architectural processes, we adapt these frameworks to describe the shock occurring when user-clients encounter architectural processes for their home, and it's equivalent on the architects' end. Based on two in-depth case studies of home renovations in Belgium, we identify key trajectories.

We use a set of indicators – comfort, discomfort, enthusiasm, and loss of enthusiasm – to characterize these interactions over time. These trajectories are visualized through habitus shock curves, co-validated with participants. Our findings reveal that adaptation is often non-linear, asymmetrical, and shaped by both interpersonal dynamics and systemic constraints. Rather than unfolding in fixed stages, habitus shock takes on cyclical or iterative forms, with moments of rupture and re-engagement. This refined model provides a more nuanced understanding of how alignment or misalignment between social dispositions impacts the design process.

The article offers practical and pedagogical insights for architectural practice, emphasizing the need to recognize, anticipate, and support these affective dynamics as part of user-centred design – especially in emotionally and financially invested residential contexts.

Keywords   architectural practice, user involvement, habitus shock, retrofitting

1. Introduction

Interactions between architects and user-clients[5] are a complex and dynamic process shaped by communication strategies and friction points. Luck and McDonnell (2006) emphasise that conversational strategies and contextual framing significantly influence the depth of user input. They advocate for structured meetings and targeted prompts to elicit richer insights. McDonnell and Lloyd (2014) explore how clients articulate experiential aspects of the design differently before and after construction. While architects use abstract, symbolic language early on, clients tend to engage more meaningfully with lived spaces after experiencing them, suggesting that architectural expertise

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[5] In the context of private dwelling design, *user-clients* is used to underscore the dual role of clients as both decision-makers and future users.

involves timing discussions to align with clients' cognitive readiness (McDonnell and Lloyd, 2014).

Ethnographic studies further reveal the socio-material nature of design knowledge. Van der Linden *et al.* (2019) describe architects' experiential knowledge as "fragile knowing"— implicit, situated, and rarely focused on symbolic meaning. They call for fostering shared references to enhance user-centredness.

Nevertheless, tensions and frictions[6] (Tsing, 2005) remain inherent to architectural practice. Issues such as personality mismatch, misunderstandings, budget constraints, and time management complicate collaboration (see Paper 5). Moreover, architects' peer orientation (Siva & London, 2011; Angral, 2019) and reliance on personal experience (Cuff, 1991; Heylighen & Dong, 2019) can alienate clients. These challenges can elicit emotional and cognitive responses, often culminating in 'habitus shock' (Siva & London, 2009; Siva & London, 2011), especially when user involvement dynamics blur boundaries and shared ownership must be negotiated (Casakin and Badke-Schaub, 2017).

This study builds on ethnographic research to explore how tensions and adaptations emerge when architects and user-clients encounter[7] one another, particularly in the context of private dwellings in Belgium. Looking into the notion of habitus shock, it investigates how the clash between professional and lay expectations manifests in the course of a project; how both user-clients and architects navigate and learn from these frictions, and what role the architect plays in mediating, amplifying, or softening this process of mutual adjustment.

2. Context

2.1 Specificities of the Belgian context

Architect–client interactions are central to project outcomes and client satisfaction, especially in Belgium where the engagement of an architect is mandatory under the Law of 20 February 1939, which regulates the title and profession. This law stipulates that any architectural project involving

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[6] Based on Tsing (2005), *friction* can be defined as the awkward, unequal, and transformative encounter that occurs when differing cultural logics, aspirations, and practices meet, generating both resistance and movement through their interaction. Tsing highlights "the importance of interaction in defining movement, cultural form, and agency. (…) The effects of encounters across difference can be compromising or empowering." (2005, p.6).

[7] understood as per Little (2016): "Social interaction is the process of reciprocal influence exercised by individuals over one another during social encounters. Usually, it refers to face-to-face encounters in which people are physically present with one another for a specified duration. However, in contemporary society we can think of social encounters that are technologically mediated" (p. 914).

structural alterations or requiring a building permit must be overseen by a registered architect, thereby legally embedding the architect's role in private construction processes. As a result, architects in Belgium are not only technical designers but also key intermediaries between regulatory authorities, construction stakeholders, and private clients. Enhancing these relationships can foster trust, knowledge sharing, and more informed design decisions (Yönder *et al.*, 2025; Mertens *et al.*, 2022).

2.2 Focus on Private Dwellings

Private residential projects offer a highly focused and emotionally charged context that brings to light key challenges in architect–client dynamics. User-clients are both personally and financially invested in these endeavours, often entering the process with high expectations and emotional stakes (Angral, 2019; Arora *et al.*, 2021), as they will ultimately inhabit the spaces being designed. Such projects tend to expose complex interpersonal dynamics, including power imbalances and struggles over authority between clients and professionals (Frimpong & Dansoh, 2018).

Adad (2004) emphasizes that user participation in housing design improves satisfaction, affordability, and architectural coherence. The author advocates a shift in professional attitudes, urging architects to act as facilitators who revive communication and empower users to shape their own living environments.

Huang and Wang (2012) argue that the client constitutes the starting point of any architectural design, yet their needs are rarely fully articulated at the outset. As the design process unfolds, new expectations and requirements emerge, often evolving throughout the project. This fluidity in client needs — understood by architects as design problems — necessitates ongoing dialogue (Huang & Wang, 2012). From the client's perspective, initial ideas frequently shift through conversations with the architect, who often possesses a more comprehensive understanding of what the project entails (Huang & Wang, 2012). For architects, this evolution can render proposed solutions obsolete, leading to frustration and wasted effort (Huang & Wang, 2012). Many clients must navigate a steep learning curve, grappling with unfamiliar architectural processes, terminology, and expectations (Siva *et al.*, 2012).

Given that private dwellings constitute the majority of architectural commissions in Belgium (ACE, 2024), these settings are both practically significant and analytically rich for examining architect/user-client interactions. Local survey data illustrate the friction inherent in such projects: a large-scale study of 1,330 individuals who built their own homes between 2000 and 2013 found that only half were satisfied with their architect at the end of the process. Nearly half reported experiencing considerable stress, with 27% describing irritability and anxiety during the project (Nauwelaers & Rossini, 2014). A complementary national survey revealed that architects themselves rank client

requests among the top five factors that complicate their day-to-day practice (Stals *et al.*, 2018).

3. Framework

3.1 Habitus Shock

Derived from Bourdieu's sociological theory of *habitus* (1977) and Adler's (1975) reconceptualization of culture shock as a developmental experience, the concept of *habitus shock* describes the disorientation or frustration clients may feel when their internalized dispositions and social expectations come into conflict with the unfamiliar logics and practices of the architectural field (Siva & London, 2009; Siva & London, 2011; Payne, 2015). This clash — akin to cross-cultural transition — may provoke emotional turbulence such as confusion, discomfort, and resistance. However, Adler (1975) frames these transitional shocks not merely as setbacks, but as necessary phases for developmental growth, provided they are appropriately supported, a perspective that proves valuable when transferred to the architect–client relationship.

Habitus shock resonates with the broader literature on adjustment curves, including the U-curve (Black & Mendenhall, 1991), Adler's own five-stage model of transitional experience. According to these models, clients often begin in a *honeymoon* phase, marked by curiosity and optimism, followed by *disintegration*, where unfamiliar norms become overwhelming. This may lead to *reintegration*, in which clients express frustration or retreat to familiar attitudes, before reaching *autonomy* and eventually *interdependence*, where new and old values are integrated (Adler, 1975; Black & Mendenhall, 1991; Siva & London, 2009).

Siva and London (2011) identify similar shifts in their five habitus shock profiles, drawn from empirical studies of architect–client interactions. Their work illustrates how clients, over time, transition through phases of expectation, confusion, resistance, and eventual adaptation.
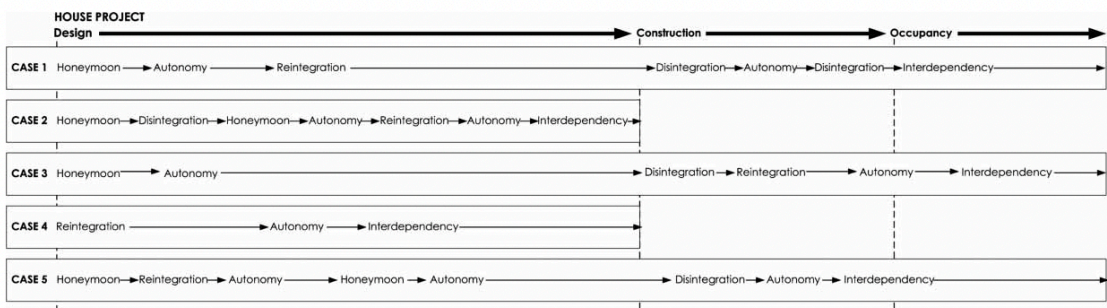

Figure 19. Siva and London's (2011, p.183) five case studies habitus shock profiles.

3.2 Architectural habitus

Ahuja *et al.* (2020) note the persistent portrayal of architects as 'spiritual leaders' of design projects—a notion reinforced by professional training and culture. Despite a steady decline in professional authority over clients (Waite & Braidwood, 2017), architectural education continues to valorize individual creativity and aesthetic originality (Winch & Schneider, 1993), frequently at the expense of client engagement (RIBA, 2015). While architects may occupy multiple roles (Cohen *et al.*, 2005), the dominant stereotype remains that of the passionate, solitary genius (Heynen, 2014), a view internalized by many emerging professionals (Ahuja *et al.*, 2019) and perpetuated by accolades such as the Pritzker Prize (Wiscombe, 2006; Cuff, 2012; Pelkonen, 2012; Heynen, 2014; Ahuja *et al.*, 2020). Gray (2013) underscores how *habitus* theory reveals how peer interactions and studio norms shape architectural identity from the earliest stages of training.

In this context, a clash arises from the collision of distinct habituses: clients and architects hold different social and cultural structures (Siva & London, 2011). When clients enter into a relationship with architects, their habitus may be ill-equipped to navigate the specialized and codified environment of architectural practice, resulting in a form of disorientation akin to culture shock (Siva & London, 2011). This misalignment is exacerbated by the way architects are socialized during formal education, which is often disconnected from the multi-organizational and collaborative contexts that now characterize much of contemporary practice (Dainty *et al.*, 2007; Caven & Diop, 2012; Ahuja *et al.*, 2020).

3.3 Translating into Curves

To understand how these encounters affect user-clients and architects, habitus shock can be mapped using trajectory models originally developed to describe cultural transitions.

One of the earliest and most influential frameworks is the U-curve, which outlines a three-stage adjustment pattern: initial excitement, followed by crisis and eventual recovery (Lysgaard, 1955; Black & Mendenhall, 1991). This trajectory is mirrored in many first-time engagements with architecture: early enthusiasm often gives way to confusion and dissatisfaction as clients encounter the technical, communicative, and procedural complexities of the design process.

Building upon this, Gullahorn and Gullahorn's (1963) *W-curve* extends the U-shaped trajectory by incorporating a second dip during re-entry, originally used to describe the resocialization shock experienced upon return to one's home culture. This model aligns closely with architectural projects, especially in private residential contexts, where clients face recurring cycles of excitement, disruption, partial adjustment, and renewed disillusionment as each project

phase unfolds. Notably, Gullahorn and Gullahorn (1963) emphasizes evaluating habitus shock through indicators such as *comfort*, *satisfaction*, and *effectiveness*, which are relevant to assessing the client's adaptation over time.

Zeller and Mosier (1993) later validated the W-curve in educational transitions, reinforcing its broader applicability to any emotionally significant new environment.

Complementing these cyclical models, Flynn and Feeney (2020) propose a *trust-over-time curve* to visualize the dynamic fluctuations of trust between architects and clients (Figure 20). Their research shows that trust levels rise and fall at each design stage, responding to moments of progress, misunderstanding, conflict, and resolution.
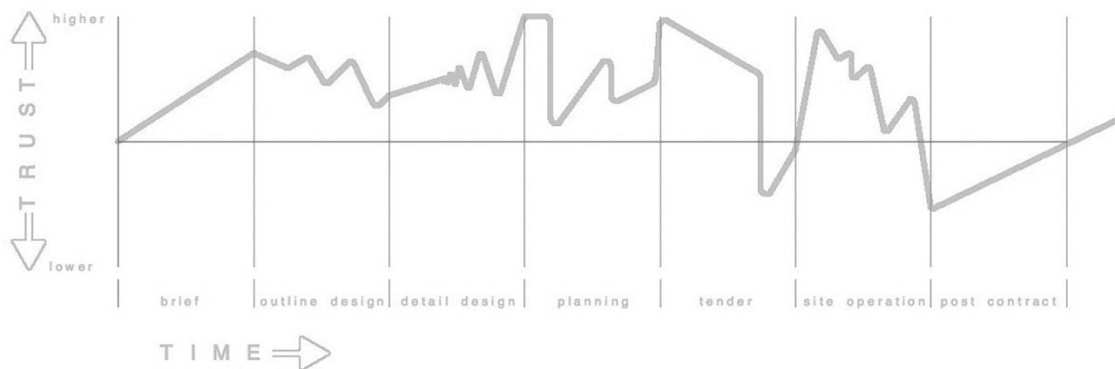
Figure 20. Flynn and Feeney's curve of trust over time (2020, p.21)

This non-linear trust trajectory captures the emotional intensity of architectural collaboration, mirroring the unpredictable rhythm of habitus adjustment. Similarly, Billiau's reinterpretation of the W-curve (Figure 20) humorously yet accurately illustrates how performance and positive feelings fluctuate in cycles driven by structural and contextual changes, underscoring the potential for recovery even after deep troughs (Billiau, 2021).

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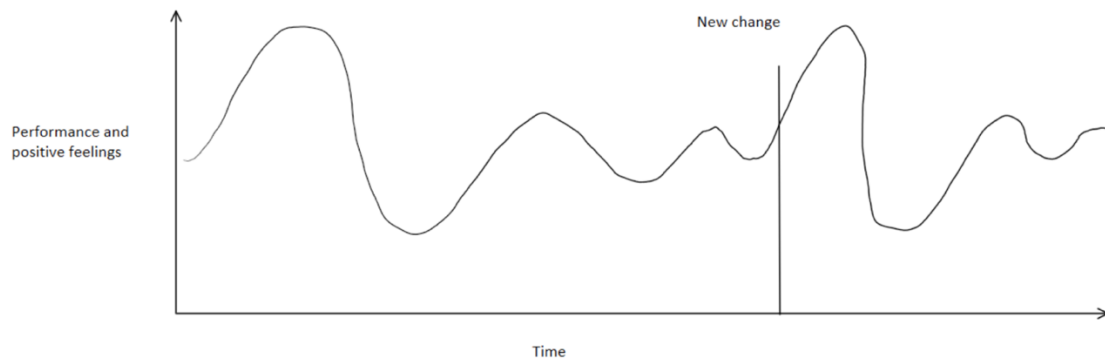
Figure 21. Billau's 2020 model of change (2021, para. 20)

Taken together, these models emphasize that habitus shock in architectural contexts is not a linear decline or recovery, but a cyclical and multi-peaked journey, deeply tied to expectations, interpersonal trust, and the emotional labour of navigating professional-cultural boundaries.

3.4 Indicators of Habitus Shock

Within this dynamic, several key indicators offer insight into how user-clients emotionally, cognitively, and behaviourally respond to architectural environments that misalign with their internalized dispositions. Drawing from Adler's (1975) model of cultural transition and its application to architectural settings by Siva and London (2009), habitus shock can be tracked through affective and performative cues, both positive and negative.

Indicator 1: Comfort and Discomfort

The most immediate signals of habitus alignment or misalignment are emotional and embodied states of comfort or discomfort. As theorized by Gullahorn and Gullahorn (1963) and more recently Dovey (2002), comfort emerges when clients' dispositions — social background, cultural capital, or communication style — resonate with the implicit rules and expectations of the architectural field. This alignment often results in smooth social interaction, confident participation, emotional equilibrium, and ease of navigation within project tasks or conversations.

Conversely, discomfort arises when the client's habitus clashes with the unfamiliar logics, language, or hierarchies of the architectural setting. Symptoms include over-awareness, anxiety, confusion, behavioural withdrawal, or social clumsiness, particularly in disintegration phases (Adler, 1975; Zeller & Mosier, 1993).

Siva and London (2009) found that discomfort is often exacerbated by cognitive overload, especially for clients when confronted with opaque jargon or complex design reasoning. Here, the architect's role in scaffolding understanding becomes critical to restoring agency.

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Indicator 2: Enthusiasm and Loss of Enthusiasm (or Withdrawal)

A second major indicator lies in the client's level of emotional engagement. Enthusiasm reflects not only excitement about novelty but also a form of curiosity and adaptive resilience. Often linked to the honeymoon or autonomy phases of transitional models, enthusiasm manifests as proactive engagement, joyful participation, and openness to unfamiliar ideas, sometimes even masking latent discomfort.

In contrast, a lack of enthusiasm can suggest a stalled or regressive adaptation. This may take the form of disengagement, passive participation, emotional flatness, sarcasm, or defensive critique. These responses frequently surface during problematic reintegration phases, indicating deeper resistance or coping mechanisms such as denial or stereotyping. Siva and London (2009) observed that such disengagement is not merely emotional withdrawal but a signal of arrested learning, one that architects must actively address to re-establish mutual understanding.

Ultimately, comfort/discomfort and enthusiasm/withdrawal are not merely surface emotions; they are embodied responses to the degree of alignment between the client's habitus and the architectural field. Monitoring these indicators throughout the project timeline allows architects to anticipate, interpret, and productively respond to habitus shock, fostering deeper collaboration and client learning.

3.5 Research questions

Building on these foundations, this study is guided by a main research question that aims to deepen our understanding of architect–client dynamics in private dwelling projects:

> How does *habitus shock* manifest in architectural processes, both for user-clients and architects?

Sub-research questions include:

(i) How do architects and user-clients perceive and interpret critical turning points differently throughout the design process?

(ii) What comfort or enthusiasm variations emerge in long-duration architectural collaborations, and how do these affect project engagement?

4. Materials and Methods

This study employs an ethnographic approach combining document analysis, semi-conducted interviews and non-participant observations (Ciesielska *et al.*, 2018). It is based on a two case studies of two private dwelling renovation projects in Belgium (Beaud et Weber, 2010). Both case studies involve urban renovations carried out under restrictive budgetary conditions. The projects were selected opportunistically (Strumińska-Kutra & Koładkiewicz, 2018; Flyvbjerg, 2006), based on the timing of the design phase's onset and the willingness of all parties to share data for research. Recruitment was conducted amongst architects previously interviewed in an earlier study (see Papers 3 & 4).

4.1 Ethical considerations and researcher positioning

This research adhered to ethical standards for qualitative inquiry, including informed consent, confidentiality, and the right to withdraw at any point. All participants were fully informed about the aims of the study and how their data would be used. Identifying details have been anonymized, and pseudonyms are used throughout to protect participant privacy. This study was granted with Ethical approval by the Human and Social Sciences Ethics Committee of the University of Liège on April 22, 2019. File number: 20200103.

The researcher in charge of collecting the data maintained a non-interventionist stance during observations, aiming to document rather than influence the project dynamics. However, prolonged engagement inevitably shaped trust between the participants and research in interviews, particularly in emotionally charged or uncertain project phases. The researchers' background in architecture and engineering informed their interpretations while requiring reflexivity to mitigate bias–especially when navigating moments of alignment or disagreement with either party. Participant validation interviews served to triangulate findings and to correct potential misinterpretations.

4.2 Data Collection and Analysis

The data, collected over 26 months (Case 1) and 31 months (Case 2), includes: transcripts of interviews with the various stakeholders; email correspondences; attachments to those emails (e.g., photographs, drawings, sketches, measurements); copies of documents exchanged or presented during meetings; audio recordings of meetings involving clients and architects. These recordings were primarily obtained through direct non-participant observation, but occasionally through indirect observation — when logistical constraints or scheduling conflicts arose — using audio recordings initiated by the participants themselves (Ciesielska *et al.*, 2018). In addition, progress reports

were written by the lead researcher (first author) following telephone conversations with participants, in order to document developments on both sides.

The data analysis was done through thematic analysis (Lejeune, 2019), focusing on episodes of interaction characterised by friction (Tsing, 2005) leading to variations of **comfort** and **enthusiasm**.

These indicators can be mapped as suggested in Figure 22 below.
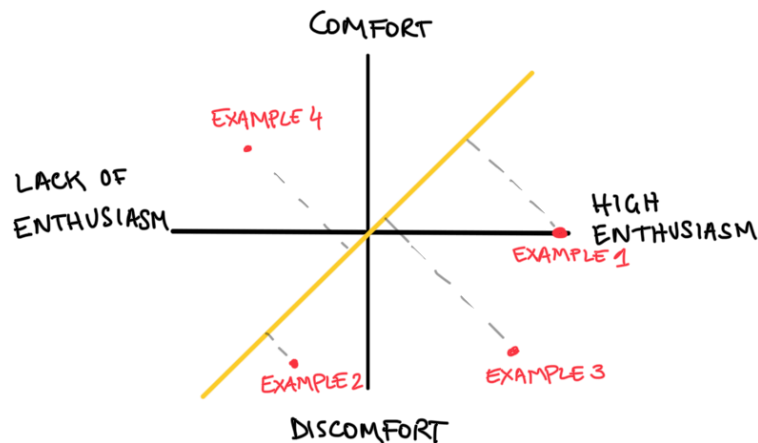
Figure 22. Habitus Shock Indicators (schematic depiction of the principle)

Someone highly enthusiastic, perhaps in the midst of the honeymoon phase, while neither particularly comfortable nor uncomfortable with the structure, can be represented as Example 1. In contrast, someone experiencing an intense habitus shock, characterized by high discomfort and a significant loss of enthusiasm, corresponds to Example 2. It is also possible for an individual to be uncomfortable yet highly enthusiastic, as illustrated by Example 3.

Example 4 represents a different configuration: someone relatively comfortable with the process — perhaps due to prior exposure to architectural projects — but displaying low enthusiasm. For instance, this may be a client who, occupied with professional responsibilities, prefers minimal involvement and finds frequent interaction with the architect intrusive or burdensome. Alternatively, Example 4 could describe an architect who is at ease with the process and accustomed to client interactions, yet lacks strong engagement with the project itself, which they may perceive as routine or uninspiring.

However, for the purpose of mapping habitus shock over time, we have chosen to simplify this multidimensional space by projecting these examples onto a single axis, represented by the (yellow) diagonal in Figure 22. Examples 1, 2, 3, and 4 can each be projected onto this axis (see Figure 22).

This principle serves as ground to merge these two indicators. Comfort and Enthusiasm levels are drafted over time, using a Likert scale (Tanujaya *et al.*, 2022). This method facilitates the qualification and visual representation of

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emotional and cognitive responses throughout the project. These temporal *habitus shock curves* (see Figure 23) allow us to trace how participants' levels of comfort and enthusiasm fluctuate over time in response to key project phases and interactions.
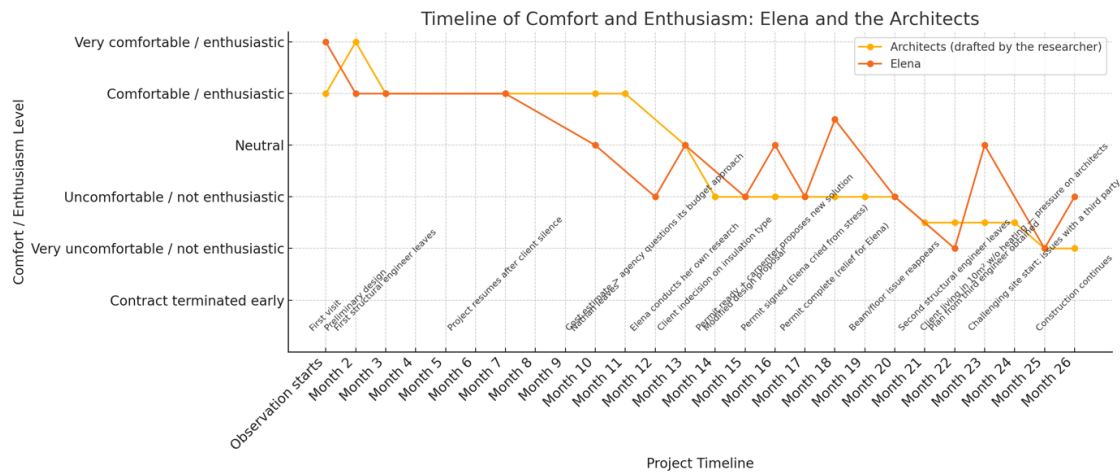
Figure 23. Diagram of enthusiasm/comfort – Case Study 2

These curves were developed collaboratively within the research team, using timeline-based mapping to trace how participants' engagement and comfort evolved. One researcher (first author) collected the data, a second organised these over a timeline. The first researcher, "familiarized with the field" (Lejeune, 2008, p.595, translated from French) analysed, coded and mapped the habitus shock. Particular attention was paid to transitions during phases such as design decisions, contractor engagement, or architectural turnover. A third researcher independently did the same coding and mapping process solely based on document analysis. Researchers 1 and 3 then compared and discussed their maps to discuss, converge and adjust their curves to form one curve draft.

A post-analysis validation phase was conducted with participants from both cases. Preliminary interpretations — including habitus curves and key observations — were presented and discussed in a final interview. Participants were invited to reflect on the process, on friction points and learning episodes, their impact on their own comfort and enthusiasm, and identifying if it was their responsibility or the other party's. The Likert scale enable intuitive and accessible interpretation of participants' subjective experiences (Tanujaya *et al.*, 2022). They were then asked to validate, nuance, or correct the curve drafts, which allowed for refinement and increased reliability of the findings.

4.3 Methodological Limitations

Despite the depth of analysis, several methodological limitations must be acknowledged:

- Small sample size, limiting generalizability;
- Potential desirability bias, especially during interviews;
- Politeness bias or reluctance to criticize architects (or researchers), counterbalanced by prolonged engagement and trust-building over time;
- Context-specificity: findings may not translate to larger-scale or non-residential projects.

5. Results

5.1 Presentation of the case studies

Case 1 – Chloe and Ben (data collected over 26 months, from 2021 to 2023)

Chloe inherited the house from her family. She held prior knowledge of the construction world and a clear interest in heritage preservation (e.g., defending the original windows and fireplaces). Ben, less confident with technical jargon, gradually became more involved, especially during site stages. His growing curiosity, particularly around reuse solutions, sparked new couple dynamics and collaborative decisions.

The architectural team was composed of Cedric, Clara, and Camille, whose complementary roles shaped the project trajectory in dynamic ways. Cedric had previously met Chloe through a professional encounter, and they got along quite well. As the lead architect of the firm, Cedric initially oversaw the project alongside Clara, who was in charge during the early phases. Together, Cedric and Clara conducted the first home visit to meet the clients and explore their needs. However, Clara's unexpected departure (due to an unrelated career shift) just before the building permit phase created a destabilising moment for the clients — especially Chloe, who only learned of the change belatedly and felt abandoned. Camille, a young intern architect, was hired to step in as Clara's replacement. She was initially overwhelmed, as Clara had left no transition support apart from a folder. Cedric, in his more senior role, intervened strategically during high-stakes moments, particularly for major decisions and to ensure continuity during the handover between architects.

Case 2 – Elena (data collected over 31 months, from 2021 to 2024)

Elena purchased her house with the intention of undertaking a self-renovation. She participated in hands-on workshops (e.g., clay plaster, lime techniques), engaged directly in demolition work, and actively sought meaningful, feasible ecological solutions. Although deeply involved, she faced several disappointments — some related to architectural turnover (such as an architect who never visited the site), others to unrealistic proposals or unexpected costs. Despite these challenges, Elena remained attentive throughout the process, documenting the project and striving to balance her ideals with practical constraints.

The architectural team consisted of Gabrielle, the lead architect of the firm, and two successive interns. Nathan was first entrusted with the day-to-day management of the project but withdrew early in the process due to a job change, without notifying the client. This lack of communication created the first rupture in the relationship and left Elena uncertain about continuity and accountability. Adrian then replaced Nathan, taking over the operational aspects of the project. Gabrielle delegated responsibility to him while continuing to supervise the project and attending meetings as needed. She stepped in as a stabilising figure, balancing technical oversight with a more relational posture. In her own words, she had to "bring out the very social and maternal side of the architect's role," particularly in managing Elena's emotional ups and downs. Gabrielle also developed coping strategies to maintain professional boundaries, later admitting that she had become more emotionally detached over time. The successive changes in project leads — Nathan to Adrian — combined with Gabrielle's partial presence, contributed to Elena's fragmented experience and her ongoing struggle to feel consistently supported and understood throughout the process.

Table 9. Case Studies Actor Overviews

Category	Case 1	Case 2
Project Type	Energy-focused retrofit of an urban house. Initially planned as two units (main house + rental duplex), but the duplex plan was later abandoned.	Ecological retrofit of an urban property, balancing sustainability goals with legal and technical constraints.
Client(s)	**Chloe** – Professional in sustainable construction and long-time acquaintance of the architect. Strong opinions on heritage and reuse. **Ben** – Her partner, a graphic designer. Less at ease with technical aspects but increasingly engaged and curious throughout the project.	**Elena** – Motivated project owner with DIY experience and interest in ecological materials. Pragmatic and rigorous in her involvement, prone to anxiety, marked by frustration, doubts.
Architects	**Cedric** (lead architect of the office), **Clara** (initial architect), **Camille** (took over after Clara's departure). Architecture office specializes in sustainable approaches.	**Gabrielle** (lead architect of the office), **Nathan** (initial architect, later left), **Adrian** (led final phases). Architecture office committed to natural materials and value alignment with clients.
Other Actors mentioned	Contractors, notaries, banks, reuse specialists, technical suppliers (e.g., reused insulation, bat boxes).	Elena's friend, engineers, a recommended carpenter.

5.2 Timelines of comfort and enthusiasm

The following timelines broadcast the curves drafted by researchers. Each diagram reflects the evolution of enthusiasm and comfort experienced by the project actors across key phases.

Case 1:
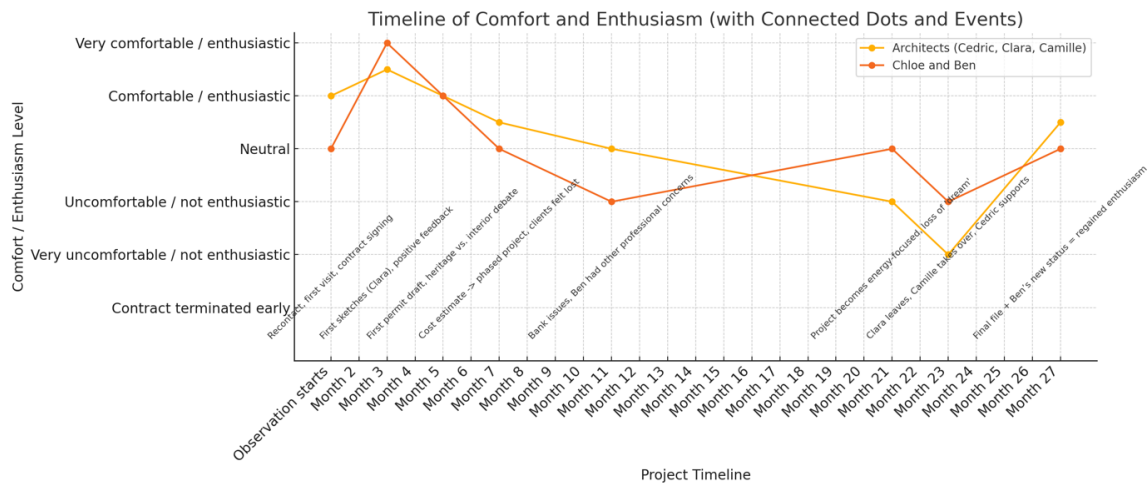
Figure 24. Diagram of enthusiasm/comfort as drafted by researchers and validated by the participants (Case Study 1)

Separately, Cedric and Camille (architects), and Chloe (user-client) were presented with a curve drafted by the researchers during post-analysis interviews to gather feedback and refine interpretations. They validated the proposed trajectory and did not request any corrections or modifications. Their comments confirmed the researchers' understanding of the emotional transitions throughout the project (Figure 24).

Chloe added nuance by distinguishing her own position from her partner's (Ben), noting that her technical background allowed her to navigate complexity more comfortably, whereas he often felt lost. The user-clients' curve should have been updated to reflect this differentiated experience between co-clients. However, Ben was not available for an interview in the timeframe of our study.

Case 2:

When presented with their diagram, Gabrielle and Adrian commented on the discontinuity of their involvement and the intensity of user engagement. Gabrielle emphasized how Elena's high level of questioning, sometimes extending beyond her actual involvement, created fatigue and led to professional changes. Adrian noted the irregular rhythm of decision-making and the cognitive load it imposed. These insights prompted several corrections to the original curve, especially in the post-permit and early construction phases.
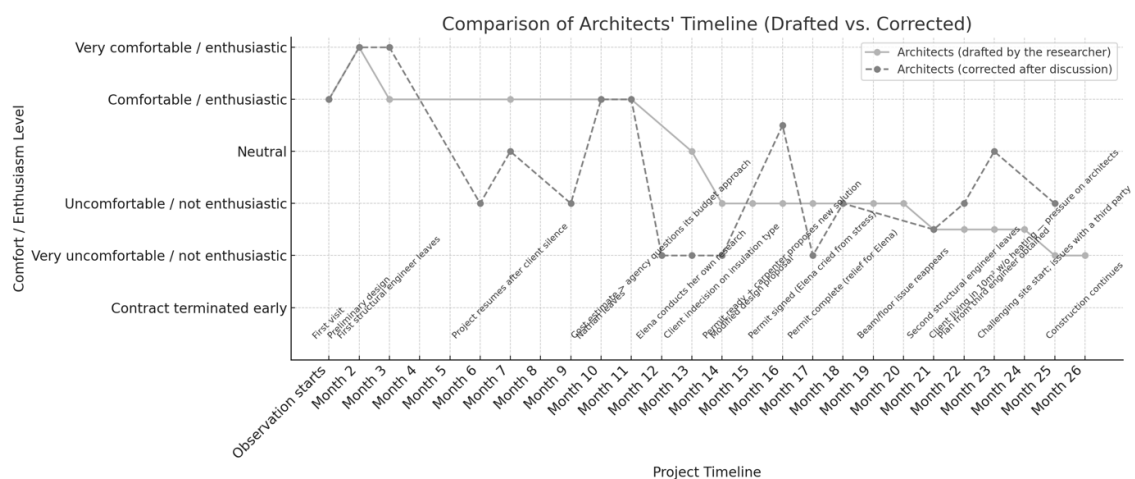
Figure 25. Diagram of enthusiasm/comfort – Case Study 2 (rectified after architects' feedback)

The revised timeline (Figure 25) reflects:

- A sharper decline in the architects' comfort/motivation curve during the period of high questioning and delayed responses.

- A longer adaptation period, where the architects adjusted their deliverables and billing methods in response to this project.
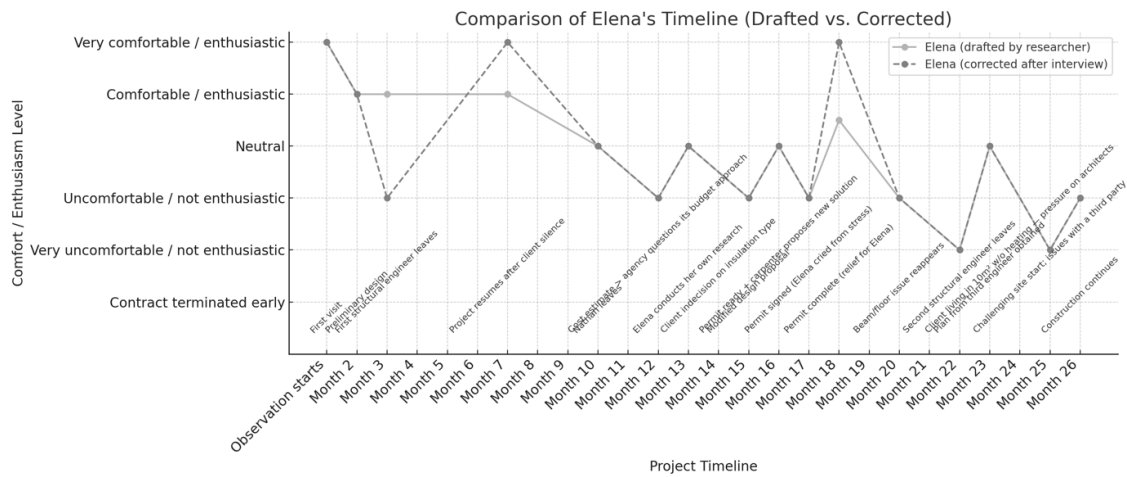
Figure 26. Diagram of enthusiasm/comfort – Case Study 2 (rectified after user-client's feedback)

When presented with her curve (Figure 26), Elena confirmed several key phases identified by the researchers but emphasized a deeper and more prolonged sense of solitude and burden, especially after the permit was granted. She said it felt like more of a rollercoaster than what researchers had drafted. She expressed frustration at having to take over coordination tasks and a sense of being left alone to handle highly technical decisions, despite not being a construction professional. Her attempts to introduce alternative materials were met with scepticism or confusion, intensifying her impression of disconnection with the architects. The revised curve reflects this, as well as the intermittent relief brought by contractors' inputs and the architects' on-site availability – though that support was felt as occasional rather than continuous.
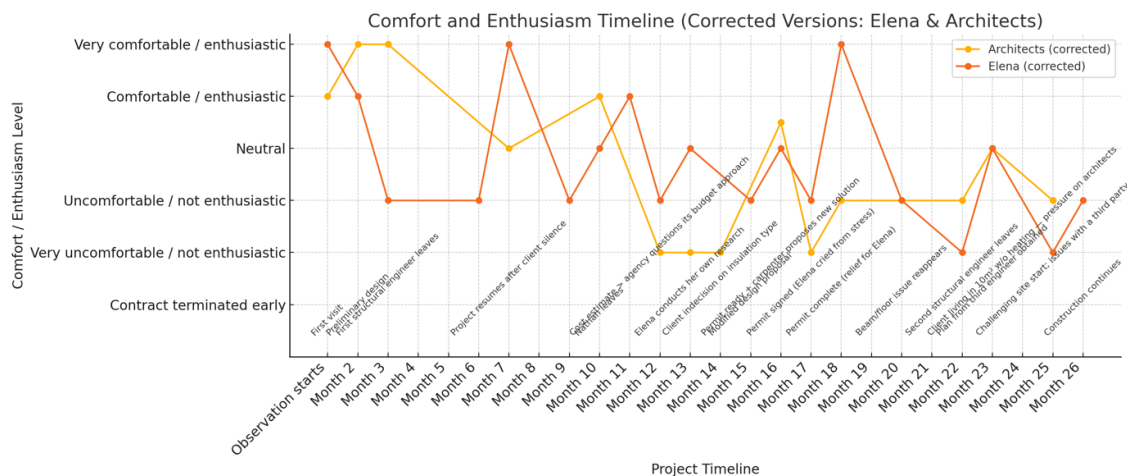
Figure 27. Diagram of enthusiasm/comfort – Case Study 2 synthesis
(rectified after participants' feedback)

Overall, Case 2 reveals a fragmented and fluctuating emotional trajectory (Figure 27), marked by high involvement of a user too distant from their architects (perhaps too autonomous), professional repositioning, and misaligned expectations. The architects began with enthusiasm but faced a

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growing sense of fatigue and discontinuity as the project unfolded. Gabrielle and Adrian experienced difficulty sustaining engagement due to Elena's extensive questioning, delayed decision-making, and redefinition of the mission scope. In parallel, Elena initially felt empowered by her involvement, but progressively entered a phase of isolation and cognitive overload, particularly when her proposals for alternative materials were poorly received or misunderstood, or when her demands were disregarded. The architects' flexibility – especially their willingness to adjust their estimation methods and scope – mitigated some tensions, but the emotional valleys were much more numerous than in Case 1. This case illustrates how intense user participation, without shared reference points or continuous mediation, can produce emotional wear and role confusion on both sides of the relationship.

6. Discussion

6.1 Interpreting the Curves Through Siva and London's Cycle (2011)

Across both case studies, we observe repeated episodes where expectations, values, and emotional registers clash between clients and architects, and between imagined futures and tangible constraints. These emotional trajectories can be aligned with the Habitus Shock model and are further enriched when viewed through the lens of Siva and London's four-stage cycle: Honeymoon, Shock, Adjustment, and Adaptation (2011).

In Case 1, the participants' curves align relatively closely with a linear version of Siva and London's model. The Honeymoon phase was marked by shared excitement and strong alignment between clients and architects during the early design phase. The Shock phase coincided with budget issues (external/loan rejected) and the need to downsize the ambition of the project. The Adjustment emerged when concerns were voiced and support was reactivated. A second shock was felt when Clara left the project. This shock is followed by Adjustment and Adaptation manifested as the project regained momentum and all actors re-engaged constructively.

By contrast, Case 2 reflects a more non-linear and fractured progression. The user-client (Elena) experienced a first decline as soon as the first design presentation, where she felt her concerns were not strictly met, and then a proper shock as the engineer withdrawed from the project. This shock is followed by a spike of enthusiasm (second honeymoon) quickly disturbed again by another shock. On the client's end, this cycle of Honeymoon-Shock (Disintegration, Reintegration) keeps happening.

On the architects' end, the enthusiasm fluctuated decreasingly until the shock when the estimated budget did not meet the clients' budget, then the client started making her own researches. After this episode, the rift/distance between architects and user-client slowly grew, with an small second

honeymoon for architects when Elena chose the insultation type. In time, architects detached themselves emotionally to stabilise to a rather uncomfortable/not enthusiastic stance — a fatigue stemming from intense client questioning and delayed decisions. In this case, the cycle was not strictly sequential: moments of Adaptation (e.g., Gabrielle adjusting her estimation methods) overlapped with repetitive Shocks for the client. This confirms Siva and London's proposition that the cycle can be non-linear and recursive.

6.2 Extending the Frameworks: Five Contributions

Our findings suggest six key extensions to existing theoretical frameworks of habitus shock, drawing attention to the nuanced dynamics at play in architect/user-client interactions over time.

6.2.1. Asymmetry of Experience

Architects and user-clients can experience "shocks" at different times and interpret events through distinct emotional and professional lenses. In Case 2, for instance, Elena's steep drop in comfort in Month 3, following the abrupt departure of the structural engineer, was a turning point for her — which was barely registered on the architects' radar. Time lags in affective perception highlight a possible desynchronization of professional and personal experiences, complicating design alignment.

In Case 1, by contrast, Chloe and the architects experienced a more synchronized dip in motivation and rhythm.

6.2.2. Emotional Ambiguity

Emotions across the project lifecycle are not unidimensional or neatly stage-bound. Instead, participants frequently reported layered and contradictory affective states: enthusiasm paired with exhaustion, or relief followed by anxiety. In Case 2, Elena expressed both empowerment through her deep involvement and fatigue from shouldering unexpected responsibility. These emotional paradoxes complicate the effort to map clean emotional transitions and invite a more granular, situated reading of habitus evolution.

6.2.3. Agency and Mutual Learning

Despite the tensions, both case studies revealed episodes of learning and adaptation on both sides. In Case 1, Chloe progressively gained autonomy, becoming a more assertive client who shaped design choices. In Case 2, Gabrielle, initially overwhelmed by the volume and type of client requests, revised her practice — shifting toward more flexible estimation models (e.g., hourly billing) and rethinking how she communicated technical information. These mutual learning loops often emerged through friction rather than harmony, suggesting that discomfort can catalyse professional evolution.

6.2.4. Structural Constraints

Many emotional valleys and disruptions in both cases stemmed not from interpersonal failure, but from external constraints: financial uncertainty, unexpected contractor changes, administrative delays, or unanticipated planning demands. In Case 2, the postponed façade painting, banks' reluctance to release funds, and inconsistent contractor availability shaped Elena's priorities more forcefully than any architectural dialogue. These findings challenge models that overemphasize internal habitus conflict, pointing instead to systemic and infrastructural pressures that often override personal learning or adjustment.

6.2.5. Presence and Withdrawal

Finally, we observed the significant emotional impact of architectural presence and its withdrawal. Periods of silence, staff turnover (e.g., Clara – Case 1/Nathan – Case 2 leaving), and infrequent communication were experienced by clients as abandonment. In Case 2, Elena felt left alone for long stretches or overwhelmed by highly technical emails with no support in decision-making. In contrast, presence — especially through site visits or informal check-ins — helped rebuild trust and motivation. These findings position strategic withdrawal or availability as critical variables in the emotional ecology of architectural collaboration, and underscore the need to account for rhythms of contact, attention, and continuity in long-duration projects.

7. Contributions and Perspectives

This study makes several key contributions—methodological, practical, educational, that open up new leads for understanding and supporting architect–client dynamics in private dwelling projects.

Methodological Contribution

A central contribution of this research lies in the development and use of comfort/enthusiasm trajectory curves, also described as habitus shock curves, co-constructed and validated with participants. These diagrams proved to be more than analytical devices: they functioned as relational tools that allowed architects and clients to visualize, reflect on, and discuss their evolving emotional states, misalignments, and learning moments throughout the project.

This method could perhaps facilitate a more empathetic and temporally sensitive reading of architectural collaboration, offering potential as a low-tech accompaniment tool in participatory or reflective practices. The curves encouraged a meta-dialogue during post-analysis interviews and prompted participants to identify turning points they had previously overlooked, thereby reinforcing the value of reflexive visualization in architectural ethnography.

Implications for Practice

For practitioners, the findings highlight the need to anticipate and actively manage discontinuities in team composition, particularly relevant in the Belgian context, where junior or freelance architects are often mobile. The emotional and operational consequences of staff mobility were significant, often interpreted by clients as abandonment or disengagement. Practices would benefit from protocols for transition and communication continuity, particularly during key phases such as permit acquisition, contractor negotiation, and early construction.

Implications for Architectural Education

Our results also call for the integration of client-centred competencies into architectural training. Beyond traditional design instruction, curricula should emphasize negotiation, conflict management, affective literacy, and regulatory pedagogy — the ability to guide clients through complex planning and legal frameworks. These competencies are essential for cultivating durable and transparent architect–client relationships, especially in self-promoted projects.

Perspectives for Future Research

This study opens several paths for future inquiry. First, expanding the analysis to larger comparative samples, across varied national and cultural contexts, could test the robustness of our five extensions and refine the habitus shock framework. Second, researchers should explore alternative tools to track affective trajectories, such as diaries, mobile apps, or collaborative mapping workshops, especially for longer-term or collective housing projects. Finally, there is value in further investigating the emotional implications of architectural absence and presence, particularly in contexts of precarious labour, time fragmentation, and post-pandemic hybrid work practices.

8. Data Availability Statement

Due to confidentiality agreements with participants, the datasets generated and analysed during the current study are not publicly available.

This paper is not published yet.

Mertens, A., & Elsen, C. (submitted). From Authorship to Stewardship: Adjustments Between Architects and User-Clients in Private Dwelling Design. *Submitted for publication, CoDesign.*

From Authorship to Stewardship: Adjustments Between Architects and User-Clients in Private Dwelling Design

Abstract

This article investigates the mutual learning processes that unfold between architects and user-clients during private dwelling renovations. Drawing on two long-term case studies in Belgium, it explores how architects adjust their postures and how both parties expand their skills, as they navigate communication gaps, shifting expectations, and moments of habitus shock. We build on theories of habitus, client learning, and professional reflexivity to analyse how architectural and user-client habituses interact.

For user-clients, learning emerges gradually through exposure to architectural norms, terminology, constraints, and sequencing. Initial confusion often gives way to greater agency, especially when architects adopt supportive, pedagogical postures and foster shared understanding through visual tools and clear language. For architects, the process entails moving beyond the role of technical expert, evolving into facilitator or mediator. These evolving roles reflect a dynamic negotiation of boundaries and responsibilities, driven by continuous relational and cognitive adjustments.

Our findings suggest that learning is mutual: user-clients develop technical vocabulary and decision-making capacity, while architects learn to decode user habitus, revise assumptions, and engage in more empathic, dialogic practices. When supported by relational continuity and iterative communication, the process yields deeper mutual understanding, better enthusiasm and comfort over the various stages of the process.

Keywords   architectural process, user involvement, client learning, mutual learning

1. Introduction

Architect–client interactions in residential design are shaped by a complex interplay of communication strategies (Luck & McDonnell, 2006; McDonnell & Lloyd, 2014), role negotiation (Golden, 2017; Van der Linden *et al.*, 2017; Van der Linden *et al.*, 2019) and points of friction[8]. Historically defined by an asymmetry of expertise (Abbott, 1988; Johnson, 1972), the architect's authority has increasingly come into question as clients demand greater involvement in

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[8] Based on Tsing (2005), *friction* refers to the unequal, transformative, and sometimes awkward interactions that arise when different cultural logics and practices meet. These encounters generate both resistance and movement, shaping cultural forms and agency. Such interactions can have either empowering or compromising effects.

shaping their living environments. Yet, the profession often struggles to accommodate this shift. Architects are traditionally trained to prioritize formal and design-centric skills over interpersonal, managerial, or client-centric abilities (Cuff, 1991; Frimpong & Dansoh, 2018; Angral, 2019). This fosters a professional culture that can view clients' contributions with condescension or discomfort, particularly when clients lack technical knowledge or, conversely, when they are unusually competent or assertive (Ahuja *et al.*, 2020).

Effective communication in architectural practice must therefore navigate not only technical complexity but also humanistic dimensions (Norouzi *et al.*, 2015). Empirical studies suggest that architectural conversations are framed by timing and cognitive readiness. For instance, Luck and McDonnell (2006) highlight the value of structured meetings and targeted prompts to elicit richer user input, while McDonnell and Lloyd (2014) note that clients often express spatial needs differently before and after inhabiting a space — moving from vague expectations to grounded feedback. This calls for a design process sensitive to clients' evolving experiential knowledge and readiness to contribute meaningfully.

Ethnographic research has illuminated how architectural knowledge itself is socio-material, situated, and fragile (Van der Linden *et al.*, 2019). Architects rarely operate through symbolic abstraction alone; rather, they navigate messy, intuitive knowledge that is often misaligned with clients' expectations. Tensions inevitably arise, rooted in personality mismatches, budget constraints, misunderstandings, and institutional norms (see Paper 5). These frictions may provoke emotional and cognitive dissonance on both sides, culminating in what Siva and London (2009) describe as "habitus shock," especially when project ownership and expertise boundaries become blurred.

While architects often resist sharing design agency with "unskilled" clients (see Paper 3), research also shows that client learning plays a central role in successful collaborations (Siva & London, 2012). This demands that architects support user-clients in navigating the project's complexity, not by sidelining them, but by scaffolding their engagement. However, many architects still consider relational and interpersonal competencies to be outside their scope of architectural expertise (Design Council, 2007; Siva & London, 2011; Zamenopoulos & Alexiou, 2018).

To support more effective communication, greater attention must be paid to the tools that mediate architect–client exchanges. Bogers *et al.* (2008) emphasize the briefing document as a vital communication tool — one that should be structured, readable, and co-developed with architects, rather than treated as a static deliverable. They underline that the brief is not only a transmission of technical specifications but also a "touchstone" for mutual understanding, iterative dialogue, and design alignment (Bogers *et al.*, 2008).

When treated as a shared space for negotiation and clarification, the briefing process can facilitate a more user-centred and collaborative trajectory.

This study builds on these insights through an ethnographic lens, focusing on self-promoted residential architecture in Belgium.

2. Context

2.1 Private dwelling

Clients who will personally inhabit the spaces being designed — referred to here as *user-clients* — tend to have particularly high expectations of architects, especially when working under tight budget constraints (Arora *et al.*, 2021). These expectations heighten the complexity of architect–client interactions, which are central to project outcomes and user satisfaction (Angral, 2019). In Belgium, such interactions are further shaped by legal frameworks: the Law of 20 February 1939 mandates the involvement of a registered architect for any project requiring a building permit or involving structural changes.

In this context, strengthening architect–user-client relationships is essential to fostering trust, improving communication, and supporting more informed design decisions (Yönder *et al.*, 2025; Mertens *et al.*, 2022).

Private residential projects, which dominate architectural practice in Belgium (ACE, 2024), offer a particularly rich context for studying these dynamics. User-clients are deeply invested, emotionally and financially, making empathy, clarity, and adaptability essential on the architect's part. However, such projects frequently reveal power imbalances, communication breakdowns, and steep learning curves for clients unfamiliar with architectural processes and terminology (Siva *et al.*, 2012; Frimpong & Dansoh, 2018).

A Belgian survey highlight this tension: only half of those who built homes between 2000 and 2013 were satisfied with their architect, and nearly a third reported stress or anxiety (Nauwelaers & Rossini, 2014). Architects, for their part, cite customers' demands as a major source of difficulty (Stals *et al.*, 2018).

Moreover, Huang & Wang (2012) demonstrated that client needs often shift over time. While architects may perceive this as a challenge to design coherence, it reflects the evolving understanding clients develop through dialogue and engagement. Yet many clients feel ill-equipped to fully participate in design discussions, especially when lacking familiarity with architectural tools or concepts (Huang & Wang, 2012). These dynamics call for more reflexive, client-sensitive modes of practice.

3. Theoretical Framework

3.1 Habitus, Habitus shock, and Learning

The concept of *habitus*, as theorized by Pierre Bourdieu (1977), refers to the system of durable, embodied dispositions through which individuals perceive, interpret, and act in the world. Far from being purely conscious or strategic, *habitus* is shaped by one's position within social structures and is internalized through everyday practices and experiences. It operates as a generative framework that guides behaviour without rigidly determining it — allowing individuals to navigate social fields in ways that feel natural, yet deeply structured by historical and cultural conditions. In the architectural field, *habitus* manifests in tacit norms, aesthetic preferences, and professional values that are acquired through formal education and reinforced through peer interactions (Bourdieu, 1977; Gray, 2013).

The notion of *habitus shock*, derived from Adler's (1975) reconceptualization of culture shock, captures the disorientation clients may experience when their ingrained dispositions come into conflict with the unfamiliar norms of architectural practice (Siva & London, 2009, 2011). Much like cross-cultural transitions, this clash can provoke confusion, discomfort, or resistance. However, Adler (1975) frames such transitional shocks not as mere disruptions but as potential catalysts for personal growth, provided they are appropriately supported.

In contrast, architectural *habitus* is shaped early, often beginning during studio settings through peer review and internalized norms (Gray, 2013). Ahuja *et al.* (2020) observe that the image of the architect as a 'spiritual leader' persists — sustained by educational environments that emphasize solitary creativity and aesthetic vision (Heynen, 2014; Winch & Schneider, 1993), despite waning professional authority in client relationships (Waite & Braidwood, 2017; Wiscombe, 2006; Pelkonen, 2012). While contemporary architects may act as facilitators, coordinators, or collaborators (Cohen *et al.*, 2005), the dominant cultural model remains that of the inspired genius, often at odds with participatory or user-centred approaches (Heynen, 2014).

Against this backdrop, *habitus shock* results from the collision of two distinct systems of dispositions: the architect's and the client's (Siva & London, 2011). Clients entering this specialized, codified environment may find their own logics and expectations misaligned with the architectural field's values and language. This mismatch is compounded by the way architects are trained, often with little attention to the interpersonal, multi-actor, and negotiated dimensions that characterize real-world practice (Dainty *et al.*, 2007; Caven & Diop, 2012). The resulting friction is not just procedural but deeply cultural.

This experience mirrors adjustment curve models such as Adler's (1975) five-stage framework and the U-curve (Black & Mendenhall, 1991), which chart transitions from initial optimism through disorientation and resistance to eventual integration.
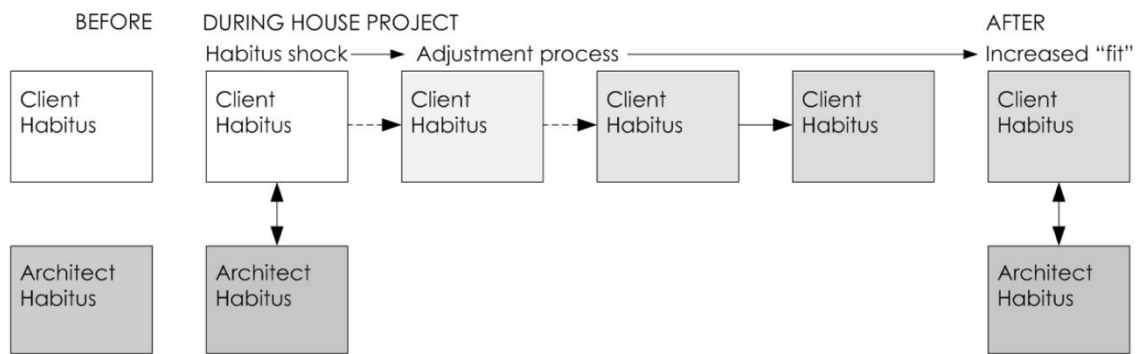
Figure 27. A model for successful architect-client relationships on house projects
(Siva and London, 2009, p.218)

Siva and London's model suggests that while clients undergo significant learning and transformation, the architect's own *habitus* remains largely static throughout the interaction (see Figure 28). This asymmetry raises important pedagogical questions: How might architects themselves be supported to reflect, (un)learn, and adapt their dispositions in response to user input?
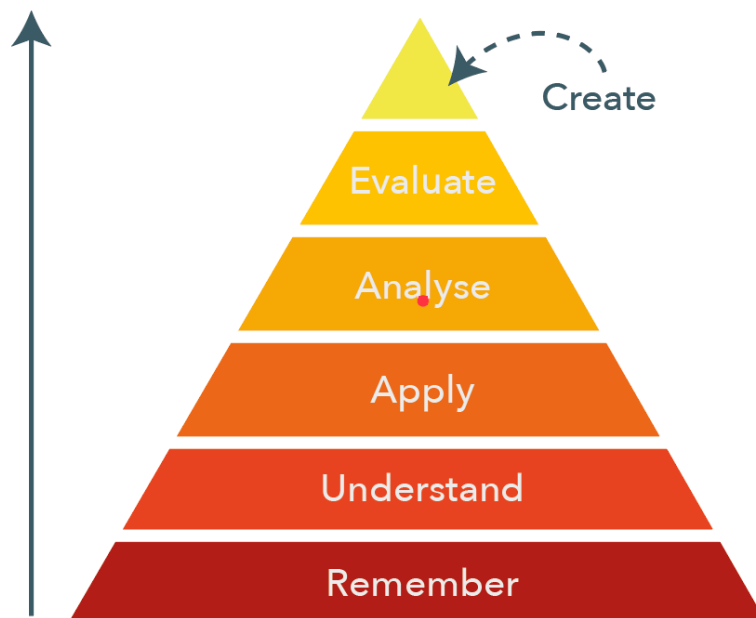
Figure 28. Reproduction of Bloom's revised taxonomy (Krathwohl, 2001)

From a pedagogical standpoint, this calls for not only technical skill development but also higher-order cognitive processes — such as *analysing*, *evaluating*, and *creating* — as defined in Bloom's revised taxonomy (Krathwohl, 2001; see Figure 29). Encouraging such reflexive capabilities may allow architects to move beyond habituated roles and co-evolve alongside their clients within the design process.

3.2 Architects' Roles and Postures

In private dwelling projects, architects adopt diverse roles that profoundly shape the client's experience, capacity for learning, and overall project dynamics. The *role* of the architect refers to the function they assume in the design and construction process. This includes the tasks they undertake, the authority they exercise, and the way they participate in decision-making (Duffy, 2004; Valkenburg & Dorst, 1998). The *posture*, by contrast, refers to the architect's relational and performative stance toward clients: whether directive, collaborative, facilitative, or neutral (Till, 2009). Together, these two dimensions not only influence how projects unfold, but also determine how power, knowledge, and agency are distributed within architect–client interactions.

The architectural profession has long cultivated an image of creative autonomy and aesthetic leadership. According to Ahuja (2020), architects have historically been perceived as the "spiritual leaders" of design teams, with education and professional culture reinforcing the image of the lone creative genius (Cuff, 1991; Heynen, 2014; Pelkonen, 2012). This model persists despite decades of critique and a growing fragmentation of architectural practice. Winch and Schneider (1993) observe that design teaching continues to emphasize theoretical creativity largely divorced from client concerns, while architectural awards such as the Pritzker Prize often celebrate individual brilliance over collective or participatory achievements.

Yet, this traditional posture increasingly clashes with clients' evolving expectations. As highlighted in the RIBA Client Survey (2015), private domestic clients value architects' creative design skills, but express lower satisfaction with process management, communication, and follow-up. The report reveals a significant gap between the architect's self-perception and the client's lived experience: many clients perceive architects as technically proficient but commercially naive, and some view them as arrogant or unapproachable (Frimpong & Dansoh, 2018). Moreover, clients consistently express greater satisfaction when architects are personally recommended or selected based on trust, rather than through impersonal procurement mechanisms.

This shift in expectations has sparked a critical re-evaluation of the architect's mission. According to Adad (2004), the architect's traditional role involved offering guidance and technical advice without imposing a personal vision. Today, however, architects often occupy a dominant role in decision-making, potentially reducing users to passive consumers. Abdirad and Nazari (2015) argue that architecture should be a service-oriented profession — responsive rather than prescriptive — where the architect orchestrates a network of stakeholder needs rather than unilaterally shaping the project. Siva and London (2011) further warn that the need to secure a steady flow of commissions can lead architects to prioritize client appeasement over genuine collaboration or user well-being.

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Golden (2017) offers a structured way to map these tensions by identifying four professional postures: creative problem-solver, social expert, strategic coordinator, and process facilitator. These categories help make sense of how architects reposition themselves in response to contemporary pressures. For example, in co-creative housing projects (Veeger *et al.*, 2017), architects must exhibit not only design expertise but also social and organizational competencies — traits aligned with the "social expert" or "facilitator" roles. In social housing renovations (Rahola *et al.*, 2016), the architect's position often shifts toward that of an advisor, echoing Golden's "strategic coordinator" mode, as architects support rather than drive participatory processes.

Beyond classification, recent scholarship advocates for deeper transformations in architectural ethos. Havik and Pllumbi (2020) describe a global rethinking of architecture's ethical and political role, urging a renewed focus on user participation. Authors such as Kosk (2016) and Treviño & Cobreros (2019) argue for continuous learning and interdisciplinary cooperation, especially with fields such as psychology and sociology. Similarly, Arboleda (2020) calls for an "ethno-architect" posture that draws on anthropology's emic perspective: one in which architects strive to understand users' lived experience from the inside, akin to ethnographers. Rather than being marginalized by participatory design, the architect becomes a mediator: facilitating dialogue, translating needs, and supporting those unable to draw or verbalize their spatial aspirations (Pressman, 2014 in Saghafi & Mirzaei, 2020).

Importantly, these emerging roles do not call for the erasure of architectural expertise but rather for its reconfiguration. As Champy (1997) reminds us, the role of the architect in participatory processes is not to relinquish agency, but to guide processes that clients cannot undertake alone. In this sense, architecture becomes less about authorship and more about stewardship, a shift from control to care.

As a summary, architects' roles refer to the functions and responsibilities assumed during the design and construction process. Based on our literature review, we propose the following list (Table 10), which is not exhaustive.

Table 10. Architects' Roles

ID	Role	Description
R1	Creative Designer / Author	- Leads the project's aesthetic and conceptual vision - Embodies the "lone genius" ideal (Ahuja, 2020; Cuff, 1991; Heynen, 2014) - Often detached from client constraints
R2	Expert Advisor / Technical Consultant	- Provides guidance on regulations, construction, and technical feasibility - Seen in Rahola *et al.* (2016) as a shift from lead designer to support role - Reflects traditional advisory function (Adad, 2004)
R3	Project Manager / Coordinator	- Oversees process, timeline, and team communication - Takes central responsibility in project delivery - Criticized by Adad (2004) for reducing user participation
R4	Business Person / Negotiator *(Cohen et al., 2005; Siva & London, 2011)*	- Manages budgets, client relationships, and commercial pressures - Balances quality with profitability — sometimes at the expense of ethics
R5	Ethno-Architect *(Arboleda, 2020)*	- Inspired by anthropological methods - Embeds user's emic perspective (from within their lived experience) - Acts as a translator between users' tacit knowledge and spatial solutions
R6	Process Facilitator *(Golden, 2017)*	- Supports participatory methods and decision-making - Enables clients to articulate and explore their needs - Role is to make the design process legible and inclusive
R7	Social Expert / Community Enabler *(Golden, 2017; Veeger et al., 2017)*	- Focuses on social dynamics, user engagement, and collective needs - Requires relational and organizational skills, not just design acumen

Architects' postures refer to the attitudes, stances, or dispositions they adopt toward clients and collaboration. Similarly, we propose the following non-exhaustive list in Table 11:

Table 11. Architects' postures

ID	Posture	Description
P1	Directive Expert	- Leads authoritatively, with minimal input from the client - Aligns with traditional or modernist ethos - Often perceived as arrogant or unapproachable (Frimpong & Dansoh, 2018)
P2	Responsive Guide	- Adapts to the client's evolving needs - Offers advice but lets the client steer decision-making - Encourages a learning and dialogue-oriented relationship
P3	Commercial Diplomat	- Carefully navigates between professional ethics and client satisfaction - Maintains diplomacy to secure future commissions
P4	Facilitator	- Creates space for user expression and co-design - Minimizes personal bias or imposition - Typical of participatory or community architecture settings
P5	Empathic Ethnographer	- Immerses in users' worldviews to understand unspoken needs - Actively suspends judgment (Arboleda, 2020) - Seeks co-produced knowledge rather than imposing solutions
P6	Continual Learner / Adaptive Actor	- Embraces shifting roles depending on context and project stage - Engages with interdisciplinary knowledge and uncertainty
P7	Service-Oriented Professional	- Prioritizes the client's experience, values, and comfort - Sees architecture as a support profession rather than a top-down art (Abdirad & Nazari, 2015)

These roles and postures are not mutually exclusive; architects often oscillate between them within a single project, depending on the phase, context, or client expectations. Their alignment — or misalignment — with the client's expectations can generate friction or trust, shape learning processes, and determine whether the architect is seen as an ally, adversary, or invisible technician.

3.3 Research questions

Building on these foundations, this study is guided by three research questions that aim to deepen our understanding of architect / user-client dynamics in private dwelling projects:

(i) How do architects come to understand and engage with the habitus of their user-clients in order to grasp their needs and expectations?

(ii) How do architects and user-clients learn and adjust throughout the design process?

> *Subquestion:* How do the interactions between architects and user-clients contribute to the development of new knowledge, skills, and forms of understanding?

(iii) What roles and postures do architects adopt to facilitate (or hinder) mutual adjustment with user-clients over the course of a project?

4. Methodology and Research Design

This study adopts an ethnographic approach combining document analysis, semi-structured interviews, and non-participant observation (Ciesielska *et al.*, 2018). It is based on a comparative analysis of two self-promoted single-housing design projects in Belgium, observed over 26 and 31 months respectively. Both involved urban renovations under tight budgetary constraints and strong ecological ambitions, providing fertile ground for examining learning dynamics and the evolution of architect–client roles. The case studies were selected opportunistically (Flyvbjerg, 2006; Strumińska-Kutra & Koładkiewicz, 2018) based on project timing, participant availability, and diversity in team composition, client profiles, and design trajectories.

The research complied with ethical standards, including informed consent, confidentiality, and the right to withdraw. Ethical approval was granted by the Human and Social Sciences Ethics Committee of the University of Liège (Comité d'éthique en Sciences Humaines et Sociales) on April 22, 2019. File number: 20200103.

To protect participant anonymity, all names are pseudonyms. The lead researcher maintained a non-interventionist stance during observations, though long-term engagement fostered trust — especially during emotionally charged or uncertain project phases. Participant validation interviews were used to triangulate findings and ensure accuracy.

Data included interview transcripts, email exchanges (with attachments such as sketches, drawings, and photos), meeting documents, and audio recordings of client–architect interactions. Most were gathered through direct non-participant observation; when this was not feasible, participants shared recordings themselves. In addition, the researcher kept progress logs following phone conversations to document ongoing developments. Thematic analysis (Lejeune, 2019) focused on episodes marked by tension or misunderstanding — conceptualized as *friction* (Tsing, 2005) — to investigate habitus shock, mutual learning, and shifts in professional roles and postures. Quotes in the results section are translated from French.

5. Results

5.1 Case 1 – Chloe & Ben's House Renovation

This project revolved around the renovation of a family-inherited house by Chloe and Ben, a couple with asymmetrical relationships to architecture. Chloe, with a background in the construction sector and a strong sensitivity to heritage, defended features like the original windows and fireplaces. Ben, initially less confident with architectural jargon, gradually became more involved — particularly around reuse strategies — transforming the couple's dynamic. As Chloe put it: "Ben sometimes felt a bit lost with the technical considerations", but his curiosity grew, and he contributed actively, especially during the site phases.

The architectural team was composed of Cedric (senior lead), Clara (early-stage coordinator), and Camille (junior intern, was hired when Clara left). The initial briefing involved Cedric and Clara visiting the house and exchanging detailed emails with Chloe, establishing a tone of attentiveness.

Chloe later recalled: "Our exchanges with Clara went really well (...) we now fully trust her". Yet, this emerging trust was shaken when Clara abruptly left the project: "We kind of found out at the last minute (…) I ran into her on the street and she said she was leaving the next day". This sudden transition, just before the building permit phase, was emotionally and logistically destabilizing. Camille stepped in without a proper handover — just a folder — leaving her "overwhelmed".

Throughout the process, some client expectations were missed or under-addressed. For example, exterior sun protection was discussed early on but never budgeted, as Chloe underlined: "The sun shades (…) we had to bring them up several times (…) and in the end, we found a solution ourselves". Chloe also questioned whether the architects truly understood their aspirations: "Did they really grasp our expectations? Are we on the same wavelength?"

Ben and Chloe were often in learning mode, navigating architectural jargon and a range of unforeseen decisions. Chloe described the emotional toll: "We felt a bit lost", especially when having to drop features due to budget constraints. Still, they acknowledged the architects' willingness to adapt: "They followed our wish to use reclaimed materials, even though it wasn't planned at the start"— a clear example of adaptive facilitation.

The project sparked learning within the architectural team. The reuse component and inclusion of bird shelters —introduced by the clients — led to new technical explorations: "We dropped the idea of reclaimed tiles (…) the contractor was hesitant (…) but then an opportunity arose to implement reclaimed insulation, right on time". This demonstrates how the process became a dynamic space for mutual learning.

The architects' roles evolved over time. Cedric, Clara, and later Camille each initially embodied the classic roles of R1 (Creative Designer/Author), R2 (Expert Advisor), and R3 (Project Manager/Coordinator), aligning with what appeared to be their most comfortable professional territory. These functions were tempered by a generally P2 (Responsive Guide) posture, which allowed for dialogue and helped maintain a constructive relationship despite the abrupt staff transition. This responsiveness proved crucial in cushioning the clients' disorientation and fostering continuity. As the project unfolded and financial constraints intensified, the architects also assumed R4 (Business Person/Negotiator), balancing design intentions with budgetary limitations. Through prolonged and repeated exchanges, their practice gradually expanded toward R6 (Process Facilitator), adopting a P4 posture (Facilitator) in supporting participatory decision-making. At certain moments, their stance even reflected P6 (Continual Learner/Adaptive Actor) as they learn from the clients original demands, and P7 (Service-Oriented Professional), particularly when responding to the clients' push for reuse and ecological concerns. This evolution illustrates how roles and postures are not static but can shift fluidly in response to user-client dynamics and external pressures, creating a more adaptive and learning-oriented professional practice.

5.2 Case 2 – Elena's "Self"-Renovation

This case study examined a self-renovation project led by Elena, a committed and hands-on user-client who sought to integrate ecological, meaningful solutions into the transformation of her home. From the beginning, she was actively involved in demolition of existing interior elements, such as wall cladding, and participated in lime and clay workshops. She thoroughly documented the process. While her investment was unwavering, she grew distant from the architects. Her journey was fraught with disappointments, particularly regarding inconsistent architectural support, shifting responsibilities, and a recurring struggle to balance ideals with practical constraints.

The briefing phase did not follow conventional procedures. It consisted of an on-site meeting, where Elena presented her ideas and wishes, followed by the visit of the house which was already undergoing some work, conducted by Elena. Gabrielle, the lead architect, reflected: "Initially, we had a very comprehensive contract… and I think she didn't realize that. Yet I always try to explain everything from the start". This initial disconnect led to a progressive mismatch between the level of architectural support and the user-client's expectations.

Some of Elena's core needs were misunderstood or overlooked. She wanted shutters on the front window and insisted on having them. The architects initially told her it wouldn't be possible, but later admitted it was for aesthetic

reasons — prompting Elena to comment: "As long as it's technically possible and legally feasible, I don't see why (the architects) are working against me".

She also expressed frustration that Adrian, who took over mid-project, "had never set foot on the site" and therefore missed key contextual elements, such as the location of the house: "If he had come, maybe he would have noticed it was more of a small alley". She often felt the need to insist in order for her ideas to be taken seriously: "If I propose something, they say it won't work. But if I insist, sometimes it goes through. So why not agree from the start?"

Elena also underwent a steep learning curve, grappling with architectural terminology and irreversible project milestones. She recalled moments of anxiety: "Getting to the permit, a stage where you can't go back (…) in case there was a misunderstanding, or I forgot to mention something important". Her stress was compounded by a sense of navigating unfamiliar territory "alone".

The learning process was mutual. Gabrielle acknowledged that increasingly involved clients like Elena were changing architectural practice: "Clients getting hands-on (…) is becoming more common, especially to reduce costs (…) and that really makes us rethink how we present offers and costs, and manage site supervision".

Gabrielle and later Adrian primarily positioned themselves within R2 (Expert Advisor/Technical Consultant) and R3 (Project Manager/Coordinator) roles, reflecting their emphasis on contractual clarity, technical feasibility, and regulatory oversight. They generally adopted a P2 (Responsive Guide) posture, but because Elena remained relatively discrete and distant in her exchanges, this responsiveness was never fully activated, creating a dynamic where attentiveness had little effect. Since Elena had already initiated work and developed her own sketches and ideas, the architects' engagement was not framed through R1 (Creative Designer/Author). Nevertheless, elements of P1 (Directive Expert) emerged when user-client proposals were dismissed on aesthetic grounds rather than openly negotiated. Their inability to assume R6 (Process Facilitator) constituted a critical shortcoming, as Elena's participatory energy and ecological aspirations lacked structured translation into the design process, leading to mounting frustrations and a rift in communication. Over time, the posture shifted: the architects leaned toward P3 (Commercial Diplomat) in navigating financial and contractual tensions, while Adrian occasionally displayed signs of P5 (Empathic Ethnographer) by recognizing Elena's stress and attempting to acknowledge her lived experience. These oscillations highlight how mismatched role – posture alignments can exacerbate habitus shock and hinder the potential for collaborative learning.

6. Discussion

(i) How do architects come to understand and engage with the habitus of their user-clients in order to grasp their needs and expectations?

The two case studies show how early-stage misalignments can sow the seeds of future tensions - particularly when architects fail to fully engage with the user-clients' *habitus*, that is, their embodied expectations, experiences, and values. In Case 1, despite Chloe's professional background and clear brief, the architectural team repeatedly overlooked key concerns, such as exterior sun protection, raising doubts about whether her knowledge was fully acknowledged. In Case 2, the briefing process was informal and clouded by diverging assumptions about autonomy and support. Gabrielle, the lead architect, explained that "we had a very comprehensive contract", yet this framing was not fully understood by Elena, who remained unsure of the scope of services. These early misunderstandings suggest that *habitus* is not passively revealed at the outset but must be actively interpreted, questioned, and continuously re-aligned through dialogue, empathy, and sustained presence.

To avoid such misunderstandings and more fully engage with the user-client's *habitus*, the briefing process itself must be revaluated as a systematised and iterative phase of the project. As Bogers *et al.* (2008) emphasize, the briefing document should not be treated as a static, one-off deliverable, but as a dynamic communication tool — structured, readable, and developed jointly with clients. The brief acts as a "touchstone" for mutual understanding, fostering iterative dialogue and aligning expectations over time. When reframed in this way, the briefing process becomes a critical site of learning and translation, enabling architects to better grasp the lived realities, values, priorities and constraints that shape user-clients' needs and expectations.

(ii) How do architects and user-clients learn and evolve throughout the design process?

Across both cases, the design process triggered profound transformations, not only in spatial outcomes but in epistemological postures and emotional dispositions.

For user-clients, learning occurred on multiple fronts. They acquired technical literacy, developed spatial agency, and reassessed their expectations. In Case 1, Ben, initially distant from the process, grew increasingly engaged through discussions around reuse, showing how interest can be nurtured through inclusive dialogue to increase agency.

Elena, by contrast, encountered more friction in her journey. Her learning was intertwined with resistance or alienating, depending on how mutual recognition unfolded. Elena was seeking solutions independently from the architect, more so gaining agency through contact with contractors rather than with architects. Elena highlighted the tension between learning and perceiving

architects as "working against her". Client learning is neither automatic when in contact with architects, nor is it always empowering.

From the architects' perspective, both projects prompted role recalibration and experiential learning. Camille in Case 1 took on unexpected responsibilities after Clara's abrupt departure, shifting to proactive facilitator, responsive guide and service provider and continual learner. Gabrielle in Case 2 acknowledged that clients like Elena were "making us rethink how we present offers and manage site supervision". These learning pathways highlight the porous boundary between professional and lay knowledge.

As a result, we propose an update to Siva and London's (2009) model of client learning and habitus adjustment during the architectural process, emphasizing that architects' habitus also evolves continuously throughout projects and interactions with user-clients (Figure 30).
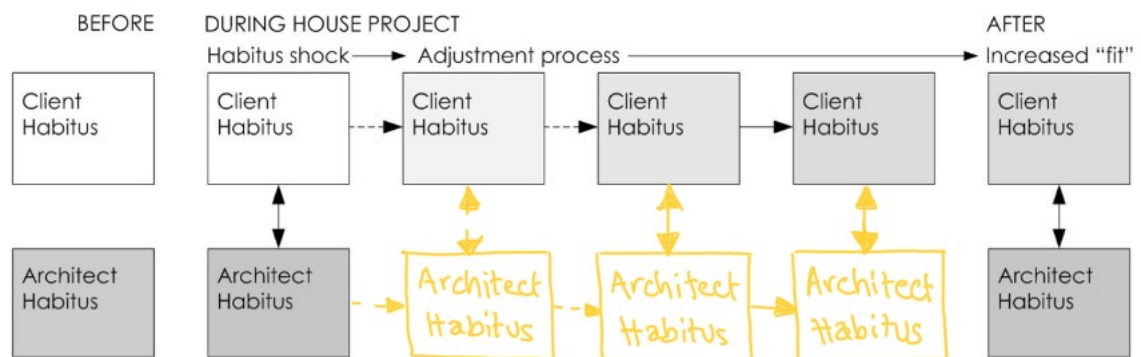
Figure 29. Updated model for successful architect-client relationships on house projects (based on Siva and London, 2009, p.218, revised)

Using Bloom's revised taxonomy (Figure 29; Krathwohl, 2001), we look into the development of new knowledge, skills, and forms of understanding. Clients and architects in both cases progress through a range of cognitive operations, from remembering and understanding to applying, analysing, evaluating, and, in some cases, creating. Clients recall terminology and stages (e.g., "building permit", "reclaimed materials"), while architects revisit client discussions and procedural steps. Understanding deepens as actors comprehend roles and constraints. Ben's confusion gives way to curiosity; Elena realizes the mismatch between her expectations and architectural services, and Gabrielle reflects on how she frames support. Clients then begin to apply their knowledge. Chloe and Ben choose reclaimed materials and propose bird shelters; Elena engages in demolition and ecological workshops. Analysis surfaces when actors reflect on inconsistencies, such as Elena questioning decisions or Chloe doubting alignment with her aspirations. Evaluation follows as clients and architects assess priorities, support structures, and emotional boundaries. Finally, creation emerges: Camille initiates coordination efforts, Chloe and Ben propose alternative solutions, and Elena innovates through self-led ecological

strategies, demonstrating how co-design can unfold in everyday project dynamics.

The interactions between architects and user-clients in these renovation projects generate a wide range of knowledge forms and cognitive processes. Clients move beyond simply remembering and understanding architectural terminology or technical constraints; they begin to apply concepts, analyse proposals, and critically evaluate design decisions. In some instances, they independently propose viable alternatives, demonstrating growing agency and strategic thinking. Architects, in turn, engage in reflective and adaptive learning — modifying their roles, communication styles, and relational posture in response to client input. They not only support user learning but also develop new professional reflexes and, at times, reconfigure their frameworks of practice. These findings affirm that architectural projects are fertile pedagogical spaces, where both lay and professional actors cultivate higher-order thinking, foster mutual understanding, and reshape their respective *habitus* through sustained collaboration.

Given the right tools and scaffolding, we argue that user-clients could also participate more fully at the creative level — joining architects not merely as informants but as active co-designers. Architects, for their part, demonstrate high-level cognitive engagement as well: they synthesize conflicting constraints, translate tacit needs into spatial strategies, and navigate shifting social dynamics, requiring evaluative judgment, emotional intelligence, and the creative reinvention of their professional roles.

> **(iii)** What roles and postures do architects adopt to facilitate (or hinder) mutual adjustment with user-clients over the course of a project?

Architectural roles and postures evolved over time, with trajectories that either opened possibilities for mutual learning or reinforced disconnection. In Case 1, Cedric initially embodied the Strategic Coordinator (R3) role, while Camille gradually grew into Process Facilitator (R6), supported by an adaptive P6 (Continual Learner) posture. Over time, Camille also approached P7 (Service-Oriented Professional), placing Chloe and Ben's values and lived experience at the centre of the process. These postures played a decisive role in rebuilding trust after the destabilizing departure of Clara, and in integrating reuse strategies initially proposed by the clients. Here, P6 and P7 made a tangible positive difference, enabling negotiation not only of technical solutions but also of expectations and emotions.

By contrast, in Case 2, Gabrielle oscillated between moments of empathy and professional detachment but remained largely anchored in R2 (Expert Advisor) and R3 (Project Manager) roles. Adrian similarly failed to move beyond technical and managerial functions. Crucially, they struggled to adopt R6 (Process Facilitator) and did not sustain postures such as P6 (Continual Learner) or P7 (Service-Oriented Professional). This inability to enter a stewardship mode weakened the relationship, as Elena's ecological ideals and hands-on engagement were met with partial

recognition but little structured facilitation. Moments of P1 (Directive Expert), where her suggestions were dismissed, further eroded trust.

These contrasting trajectories suggest that roles R5 (Ethno-Architect), R6 (Process Facilitator), and R7 (Social Expert/Community Enabler) hold particular potential for fostering productive architect–client relationships. Similarly, postures that roam between P4 (Facilitator), P5 (Empathic Ethnographer), P6 (Continual Learner), and P7 (Service-Oriented Professional) can be assimilated to forms of stewardship, where the architect acts less as an author and more as a mediator, translator, or even co-author of the project.

7. Limits and Perspectives

7.1 Limitations

Despite the depth of analysis, this study faces several limitations. First, the small sample size limits the generalizability of findings. Second, interviews may contain desirability bias, with participants potentially offering socially acceptable answers. Relatedly, politeness bias — especially towards architects or the researcher — may have tempered criticism; this was mitigated through prolonged engagement and trust-building. Lastly, the specificity of the studied contexts (self-promoted, small-scale residential renovations) constrains the applicability of findings to other settings, such as public, large-scale, or developer-led projects.

7.2 Perspectives

What emerges from these interactions is not only architectural form but situated knowledge: awareness of constraints, shifting values, and new collaborative ethics. These projects show that mutual understanding is not a precondition but a product of design. It unfolds through trials and errors, conflict, and recalibration.

Ultimately, both cases invite us to reconsider what architectural success entails. Beyond aesthetics or budgets, it hinges on the capacity to listen, to adapt, and to navigate ambiguity. When architects assume roles of facilitator, learner, responsive guide, and service provider, design becomes a shared inquiry — a fragile, messy, but potentially transformative process.

Future research could broaden the sample across geographic and project typologies to test the robustness of emerging patterns. Comparative studies involving multidisciplinary teams, or exploring digital communication's role in shaping understanding and negotiation, would enrich the current framework. Finally, further conceptual work could refine the architectural roles and postures into a more robust taxonomy.

Data Availability Statement

Due to confidentiality agreements with participants, the datasets generated and analysed during the current study are not publicly available.

Figure 31. Visual Summary of Chapter VI: "What's up with both of them?"

CHAPTER VII

Towards improvement of the interactions

FROM ANALYSIS TO ACTION
A Turning Point in Epistemic Positioning

Having completed the diagnostic phase through literature and ethnographic approaches — mapping key tensions, misunderstandings, and asymmetries within architect–user-client interactions in the context of private residential design — we now shift focus toward action and transformation. The previous chapters (IV to VI) offered a critical analysis of current practices, narrated from both professional and user perspectives, and brought to light the challenges that hinder meaningful collaboration. However, this thesis was not intended to remain at the level of observation. From the outset, our objective has been not only to understand, but also to explore concrete avenues for improving interactional dynamics.

This turning point also reflects a shift in my epistemic positioning. While the diagnostic phase was grounded in a constructionist paradigm, seeking to understand how meaning, expectations, and professional roles are socially constructed and negotiated, the co-design phase is closer to a participatory epistemology. Here, knowledge is not only interpreted but co-produced in collaboration with stakeholders. This paradigm shift reframes the researcher's role — from external observer to facilitator and co-learner — and positions architectural knowledge as situated, dialogical, and responsive to lived experience. It acknowledges the generative potential of co-design processes not just as methods of inquiry, but as interventions that can reshape practice itself.

Chapter VII thus marks a turning point: it presents an applied research trajectory that experiments with participatory methods and co-design practices. Through two complementary papers, this chapter documents the development and testing of tools created within the *My Architect and I* project.

The aim of this chapter is to explore the potential of co-design and of the co-created tools to impact professional postures, foster mutual learning, and better align expectations. In doing so, this chapter moves from critique to proposition, from analysis to engagement, from research *for* design to research *through* design.

This paper is under review.

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Argumentation in Co-Design for Architect–Client Interaction Tools

Abstract

This study investigates the role of argumentation in co-design workshops, to analyse how specific activities facilitate exchanges between architects and user-clients. The research focuses on four key questions: (i) Which activity generates the highest interaction and exchange? (ii) Which activity prompts the most argumentative expression? (iii) Do architects and user-clients rely more on abstract or concrete reasoning? (iv) Which themes provoke the most reactions or disagreements? Six "Ideation and Design" workshops, engaging ten architects and six user-clients, served as the empirical context. The workshops involved structured activities designed to define challenges, to critique inspirational tools, and to ideate new tools for improving architect-client collaboration. Data analysis revealed that ideation activities elicited the most interaction, while activities focused on testimonies fostered monological argumentative discourse. Architects predominantly started with abstract arguments, transitioning to more concrete reflections, whereas user-clients began with concrete statements and gradually incorporated broader conceptual considerations. Themes such as "Client-Architect Dynamics" provoked the most reactions and disagreements, highlighting key friction points. The findings emphasize co-design workshops' potential for fostering collaboration and gathering diverse experiential and conceptual knowledge.

1.Introduction

Design can be seen as a process of integrating and creating diverse knowledge — technical, social, and comparative — while aligning divergent values toward a shared goal, i.e., a design solution (Kleinsmann & Valkenburg, 2008; Carlisle & Dean, 1999; Darses, 2002). Co-design goes further by incorporating not only professional expertise (Kleinsmann & Valkenburg, 2008) but also of non-designers, such as users, as *experts of their experience* through participation (Steen, 2013; Steen *et al.*, 2011; Sanders & Stappers, 2008).

In collaborative settings, knowledge integration occurs through interactions between parties working together in a given context (Mengis & Eppler, 2006). Unlike knowledge transfer, which aims to close expertise gaps, knowledge integration maintains specialization while enabling combining and applying these types of knowledge to informed decisions (Eisenhardt & Santos, 2000). Its quality depends on richness of the knowledge sources (Carlisle & Dean, 1999), balanced participation, the ability to navigate between

big-picture and specific concerns, having a common ground and constructive conflict (Mengis & Eppler, 2006).

In design, knowledge integration supports both the exploration of the problem and the proposition and testing of solutions. This iterative, abductive process allows the problem and solution to co-evolve (Dorst & Cross, 2001; Hatchuel & Weil, 2009; Steen, 2013). Co-designers contribute by sharing experiences, perspectives, and knowledge to build arguments for defining the problem and proposing and evaluating design solutions (Le Bail *et al.*, 2022). Therefore, argumentation plays a key role in knowledge integration in co-design.

In this study, we examine the extent to which architects and their user-clients[9] engage in argumentation during six "Ideation and Design" workshop groups to co-design tools that enhance their interactions in the architectural design process. These "Ideation and Design" workshops are aimed at improving the architect-(user)client relationship, which requires both redefining and framing the problem and proposing a solution (based on inspirational tools). Architects and user-clients are positioned as end-users of the future tools, with both parties contributing insights based on their everyday experiences of the architect-(user)client relationship. Our analysis is framed by argumentation in design, focusing on how different types of knowledge are brought together in the co-design workshop sessions[10].

2. Argumentation in co-design

An argument can be understood as "a piece of reasoned discourse", which consists of a series of statements, at least one of which is used as a justification for the other(s) (Leitão, 2000, p. 333). People engage in argumentation as a "discursive and social activity" with the aim of "convincing" (Leitão, 2000, p. 333) and through communicative aims such as "clarifying, refuting and negotiating the meaning" (Le Bail *et al.*, 2022, p. 168). Arguments are not merely isolated statements but are part of a dynamic process involving interaction and exchange between participants (Leal & Marraud, p.39). This process includes presenting reasons, challenging premises and engaging in counterarguments, which collectively shape the argumentative discourse (Leal & Marraud, p. 287).

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[9] Here, we use the term "user-client" to refer to the dual identity of single-family house clients, who typically engage with architects for their principal residence and are thus also considered future users.

[10] Here we refer to our "Ideation & Design Workshops" as co-design workshop sessions based on various activities that we share in 3.1.

In co-design, participants engage in argumentative discourse following two goals: to collectively define and refine design problems, as well as to develop design solutions (Le Bail *et al.*, 2022, p. 167). In such contexts, some studies assign non-designer stakeholders to the problem definition phase, rather than problem solving (Cuppen, 2012, p. 25). Yet, when involved in problem solving, participants put forward design criteria by building up on their available knowledge around the design problem to guide their ideation and design decisions, which are defined as "any judgement of a solution that is supported by an argument" (Darses, 2002, p. 77). Argumentation moreover unfolds into several dimensions (summarized in Table 12), which will be developed in the next few sections.

Table 12. Schematic vision of different facets of "argumentation"

Argumentation in Co-Design	to define and refine design problems
	to develop design solutions
Differing perspectives in argumentation between expert and non-expert participants	technical, domain-specific knowledge for experts
	personal, emotional knowledge for non-experts
Epistemic Dimension in Argumentation	concrete
	abstract
Argumentation in Group Settings	dialog versus monolog
	dialectic roles (proponent, opponent, or neutral)
Argumentative dialogues	competitive and oriented to persuasion
	collaborative and oriented to consensus

2.1. Different profiles in argumentation process

The influence of expert versus non-expert participants on argumentation styles has been explored in various studies. Experts tend to use more technical language and structured reasoning, which often leads to more complex arguments. This reflects their reliance on domain-specific knowledge and deliberate practice, which allows them to articulate detailed, evidence-based arguments (Hinds, 1999; Moldovan, 2022). In contrast, non-experts often draw from personal experiences, using more informal or relatable language to make their points (Peffer & Niloofar, 2019).

According to Luck and McDonnell (2006), in early design conversations, architects and users predominantly discuss functional and structural aspects. Users rarely introduce perceptual, phenomenological, or symbolic aspects unless actively encouraged, which can limit the depth of the design conversation and overlook experiential qualities of space. By prompting users to discuss these higher-order aspects, designers can gain insights that contribute to a more comprehensive and user-centred design process. These differing perspectives from experts and non-experts help uncover overlooked needs and solutions, as non-expert contributions often introduce new angles that enhance the overall design process by focusing on practical usability and emotional engagement.

2.2. Epistemic dimension in argumentation: concrete and abstract

Arguments can be categorized by their underlying aim, or "discourse move", such as clarifying, accommodating, agreeing, or counter-arguing (Le Bail *et al.*, 2022; Felton *et al.*, 2015). They can also be categorized by epistemic dimensions, between logical (factual) and axiological (value-based) knowledge. In that case, factual arguments rely on logical reasoning (e.g., evidence-based arguments), while value-based arguments reflect ethical judgments (Le Bail *et al.*, 2022, p. 166).

We propose a revised terminology to address epistemic dimensions in our settings, recognizing the challenge of separating facts and values due to their intertwined nature in discourse. We distinguish between "concrete" arguments, grounded in specific facts or experiences, and "abstract" arguments, based on generalizations without clear origins. Our focus is to study how arguments shift between these forms, reflecting participants' reasoning and problem-solving approaches in design. This distinction is crucial in collaborative design, where practical knowledge and ethical considerations may guide decisions, for instance.

2.3. Dialogic and Dialectic Dimensions of Argumentation

The interactions between participants during argumentation involve two main forms of argumentation: dialogue and monologue. In dialogues, participants take turns speaking to exchange their thoughts, feelings, and judgments (Ziembowicz *et al.*, 2023), creating dynamic exchanges through questioning and answering that foster collaborative understanding (van Eemeren & Grootendorst, 2004). During argumentation, participants assume various dialectical roles at any point in the dialogue. For example, during co-design dialogues, when someone makes a design proposition, the others position themselves in relation to the argument by adopting roles such as proponent, opponent, or neutral (Le Bail *et al.*, 2022). The dialectical process can be disrupted when participants shift to new subjects.

Argumentation doesn't only refer to dialogic, it can also be monologic. Monologues involve individual reflection, where arguments develop without external input but may still simulate a dialogue by anticipating counterarguments (Johnson, 2012). Besides, monologues retain a dialogic dimension, guiding other individuals' thought processes (Leitão, 2000). During a co-design session, even monologues can enable participants to refine and reflect on their own arguments, while also enabling the other parties to learn more about each other's experiences, values and viewpoints. Thus, both forms are crucial for argumentation: dialogue promotes real-time negotiation of ideas, while monologue supports personal reflection and the development of coherent arguments.

2.4. Argumentative dialogues: Entanglements between persuasion, conflict, and consensus

The situational context and perceived goals influence the production of argumentative discourse, particularly affecting the complexity and use of justification and negotiation markers (Golder & Courier, 1996; Felton *et al.*, 2015). "Collaborative" discussions encourage more negotiation markers, while "competitive" settings prioritize justification (Golder & Courier, 1996).

When the goal is "persuasion", participants engage in shorter exchanges, offer unjustified criticism, engage in counterproductive meta-conversations, resist being persuaded, and overestimate their persuasive abilities. In contrast, when the goal is "consensus", participants have longer exchanges, build on others' claims, revise their arguments in response to valid criticism, and summarize key points to affirm understanding (Felton *et al.*, 2015). The "consensus" mode has been found to be more effective for idea elaboration and integration of opposing views (Felton *et al.*, 2015).

From our perspective, co-design relies on collaboration and consensus-oriented argumentative dialogue to converge on design solutions. However, achieving this goal requires "constructive conflict", which is essential for effective knowledge integration and decision-making (Mengis & Eppler, 2006). Constructive conflict involves the open exploration and evaluation of competing ideas, where participants confront each other's claims, challenge assumptions, and collaboratively develop more robust solutions (Cuppen, 2012). Unlike "affective conflict", which involves personal and relational tensions and tends to be destructive, constructive conflict refers to a "cognitive conflict" that focuses on idea-based disagreements, promoting creativity and problem-solving (Jenh, 1997; cited by Cuppen, 2012).

3.Methods

This study seeks to investigate argumentation in co-design workshops built around 3 main activities (Table 2). We aim to identify which activities most effectively facilitate exchange between participants. Specifically, we aim to explore four key questions:

(i) Which activity generates the highest level of interaction and exchange between participants?

(ii) Which activity prompts the most argumentative expression among the actors?

(iii) Do architects and user-clients rely more on abstract expressions or on concrete experiences?

(iv) Which are the themes provoking the most disagreements between the participants?

By exploring these questions, we hope to gain a deeper understanding of how co-design workshops promote dialogue and knowledge integration, and to identify which workshop activities are most conducive to constructive exchange.

3.1. Data Collection

Data is collected through six tables of "Ideation and Design" workshops, during which architects[11] and user-clients with prior experience[12] worked together to propose tools for improving architect and user-client relationship. Architects and user-clients were invited through a public call disseminated through digital (such as social media channels) and physical means (such as posters). At the beginning of the workshops, we verbally informed the participants and obtained their consent to participate in the research and data collection. Ten architects and six user-clients participated in the six workshops tables analysed here.

The workshop was based on our previous research, which included interviews with architects and user-clients to identify key challenges in their relationship. It also drew on insights from a prior "Restitution & Sharing" workshop, where both profiles prioritized five key challenges to be further addressed during the "Ideation and Design" workshops.

The "Ideation and Design" workshop activities are based on the idea of progressively discovering and refining the design problem (Activity 1); exploring potential tool solutions for inspiration (Activity 2) and ideating and proposing a new tool as the design solution (Activity 3). The workshop was planned for approximately two hours. Each workshop group was facilitated by a designated facilitator and observed by a researcher. The protocol of the workshop is summarized in Table 13.

3.2. Data Analysis

We transcribed the audio recordings and analysed six tables of workshop interactions. Transcriptions were divided in sentences, segmented by punctuation and with timestamps, in an excel sheet to enable coding fine items. Then, coding was performed phrase by phrase, to capture the dynamics of the exchanges. We worked on a total of 673 minutes of recordings, consisting of 7248 segmented phrases for coding. The following table (Table 14) presents coding criterion and the selectable items for each coding criterion.

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[11] Who are working extensively in private housing contexts.

[12] Experiences varied, such as being at the beginning, in the middle, or having completed their project.

Table 13. The protocol and activities of the workshop

	0. Welcome	- Brief Introduction of the overall project - Presentation of the workshop and its activities
Activity 1	**1.1. Presentation of the challenges**	- Facilitator presents 5 challenges
	1.2. Selection of a challenge	- Participants by table select a challenge to work on
	1.3. Enrichment of the testimonies	- Participants discover a few excerpts from previous in-depth interviews with architects and user-clients, linked to the selected challenge - Each participant shares one positive and one negative personal experience related to this challenge
Activity 2	**2.1. Presentation and selection of inspirational tools**	- Facilitator present inspirational tools - Participants select an inspirational tool (or more) to continue working on
	2.2. Evaluation of the selected inspirational tool	- Participants reflect on the advantages and disadvantages of the selected inspirational tool(s) - Meanwhile, the facilitator drafts improvement criteria
Activity 3	**3.1. Ideation for a new tool**	- Based on the critique, participants propose a new draft for a new tool (either inspired by inspirational tools or entirely new)
	3.2. Challenging the design with inspiring questions	- Proposal of inspiring questions by facilitator to challenge the tool under development (such as "for whom?", "advantages/disadvantages?")
	3.3. Evaluation of the new tool	- Participants reflect on the advantages and disadvantages of the new tool to further identify areas for improvement

Table 14. Coding criterion and item options

Criteria	Item Options
Argument/Other	Argument, Affirmation, Question, Explication, Other
Trigger	Activity (injunction, props), Reaction to comment, Answering a question, Context/no obvious trigger
Abstract/Concrete	Abstract, Concrete
Dialectic Roles	Opponent, Proponent, Neutral
Theme	Emotion & Communication, Budget & Financial Aspects, Project Planning & Execution, Client-Architect Dynamics, Architectural Practice & Context, Tools & Resources, Contract & Legal Aspects, Design & Materiality
Sub-theme	Trust; Flexibility; Dissonance Between Points of View; Joy and Frustration (ex: lack of respect); Project Management; Sharing Knowledge; Misinformation; Lack of Competence; Costs Estimated; Costs; Inflation; Evolution of the Budget; Inconsistency (Demand vs. Budget); Deposit Lost; Overspending; Transparency in Budget Matters; Timeframes; Delays; General Layout; Anticipation; Persistent Issues; Delays in Construction Work; Recent Flood Damages; Socio-economic Context; Public vs. Private Contracts; Client Expectations; Architect Expertise; Client's Taste; Architect's Way of Coping; Mutual Trust; Client Input; Architect's Role; Communication; User Input; Perception of Place; Type of Practice; Interest for Research; Unclear Responsibilities; Best Practices; Natural Hazards; Administration Barriers; Retrofitting; Site Analysis; Differences in Design and Architecture; Public Building Design vs. Private Projects; Existing Tools; Materiality of Props; Document and Information Management; Visual Support for Communication; Contractual Duties; Parameters Influencing Costs; Legal Boundaries in Architectural Briefs; Material Costs; Range of Prices; Materiality of Props for Architects; Design Constraints and Flexibility; Human Connection in Design; Environmental Impact.

The themes and subthemes were derived through a thematic analysis of one table, inductively. Analysing the discourse in that table, we identified key

patterns and recurring topics, allowing us to establish a comprehensive framework of possible themes and subthemes. This initial analysis provided a structured coding scheme that was then applied across the other tables to ensure consistency and depth in capturing the content of the interactions. We kept a category "other" in subthemes. When initially categorized as "other," the subtheme was then manually labelled by the researcher in the comment section, refining labels to better capture the nature of the discourse and further enrich the lists of sub-themes inductively. Additionally, frequent checkpoints were held among three researchers to validate the analysis protocol and address any coding doubts, ensuring the robustness and reliability of the coding process.

After coding the interactions, we analysed the data by calculating the time spent on each coded item and exploring the simultaneity of different items. Cross-analyses were conducted between various dimensions, including:

- Activity and triggers

- Activity and type of discourse

- Activity, actor, and abstract/concrete narratives

- Dialectic roles and themes

- Triggers and themes

4. Findings

4.1. Speaking times of participants

In most tables, architects spoke more frequently than user-clients, except in Table 1 (or "T1", Figure 32). Here, the "architect" was a representative from the Chamber of Architects, while the user-client was a mechanical engineer. His technical expertise and confidence, as reflected in one of his statements ("the technical aspects [of architecture] are not unknown" (User_T1)), contributed to his active participation alongside an expert.

In T2, the architect dominated the discussion (48,11%), with user-clients contributing significantly less (14% and 10,56%). Similarly, in T4 and T5, architects maintained a larger presence in the discussions (T4: 36,32% and 25,53%; T5: 44,24%), while user-clients participated less (T4: 18,43%; T5: 19,78%).

In T3, user-client participation (16,48%) was nearly equal to Arch1 (16,26%) and even exceeded that of Arch2 (10,6%). However, Arch3 spoke far more than any other participant (28,55%), often digressing from the discussion topic. This case illustrates that, beyond expert roles, personality traits may also influence participation, as certain profiles dominate discussions when paired with more reserved participants.

In T6, although both participants were practicing architects, one spoke twice as much as the other, despite having similar age and experience. One participant was female and the other male. This result again raises the question of whether differences in gender or personality may impact equal participation.

Facilitators' speaking time ranged from 41,33% to 18,15%, reflecting differences in facilitation styles. Some facilitators took a more active role in explaining and guiding, while others allowed participants to take more responsibility in managing activities. Researchers, positioned primarily as observers, participated minimally, only offering support to facilitators when needed.
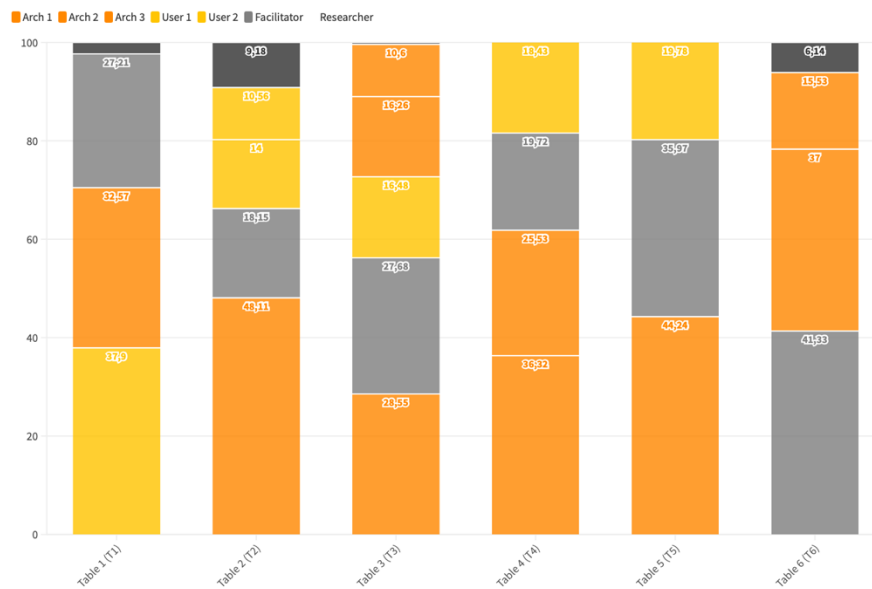
Figure 31. Percentage of each participant's speaking time in tables

4.2. Turn Taking During Activities

While all activities promoted interaction, analysis of turn-taking rates revealed that the "1.3. Enrichment of the testimonies" phase had lower turn-taking compared to activities requiring decision-making, critique, and ideation (Table 15). This is expected, as the activity encourages participants to share experiences through monologues, which offer limited opportunities for a more dynamic exchange.

In contrast, activities like "1.2. Selection of a challenge", "2.2. Evaluation of the selected inspirational tool", and ideation phases ("3.1. Ideation for a new tool", "3.2. Challenging the design with inspiring questions", and "3.3. Evaluation of the new tool") showed higher turn-taking rates, indicating more dialogic exchanges. This suggests that decision-making, critique, and ideation activities encourage richer interaction between participants.

Table 15. Turn taking rate by activity

		Total Duration	Total Turn Taking	Turn Taking Rate
	0. Welcome	1131	30	0,027
Activity 1	1.1. Presentation challenges	499	6	0,012
	1.2. Selection of a challenge	1250	125	0,100
	1.3. Enrichment of the testimonies	9140	549	0,060
	Total Activity 1	*10889*	*680*	*0,062*
Activity 2	2.1. Presentation and selection of inspirational tools	4165	215	0,052
	2.2. Evaluation of the selected inspirational tool	2382	233	0,098
	Total Activity 2	*11775*	*1012*	*0,086*
Activity 3	3.1. Ideation for a new tool	7870	887	0,113
	3.2. Challenging the design with inspiring questions	6011	540	0,090
	3.3. Evaluation of the new tool	2382	233	0,098
	Total Activity 3	*16263*	*1660*	*0,102*
	Total	**40058**	**3382**	**0,84**

4.3. Speaking types

Although architects speak more overall, the proportions of speaking types remain fairly consistent between architects and user-clients (Figure 33). Arguments and statements constitute the largest share for these two groups. Affirmation and negation — brief responses like "yes" and "no" — also play a significant role, even when measured by duration. This reflects moments of active listening captured through verbal expressions. While questions accounted for a smaller share of speaking time, they were more frequent among user-clients (5%) compared to architects (2%).

Facilitators' contributions primarily consisted of activity explanations (50%), where they adopted a more passive facilitation role focused on supporting the overall process. Affirmation and negation moments also stood out as signs of active listening. Additionally, facilitators used strategies to summarize participants' inputs and to ask clarifying questions to guide participants during ideation (19%). At times, facilitators engaged in argumentation (17%), similar to participants, by sharing their experiences, assumptions, or proposing potential solutions. In these instances, they took on the role of a co-designer.

While researchers participated minimally, they engaged in argumentative discussions more frequently than facilitators when they did speak (33%, Figure 33). This may be because, despite their primary role as observers and support for facilitators, their backgrounds as both researchers and designers compelled them to comment on participants' experiences or offer insights that could contribute to better design solutions.
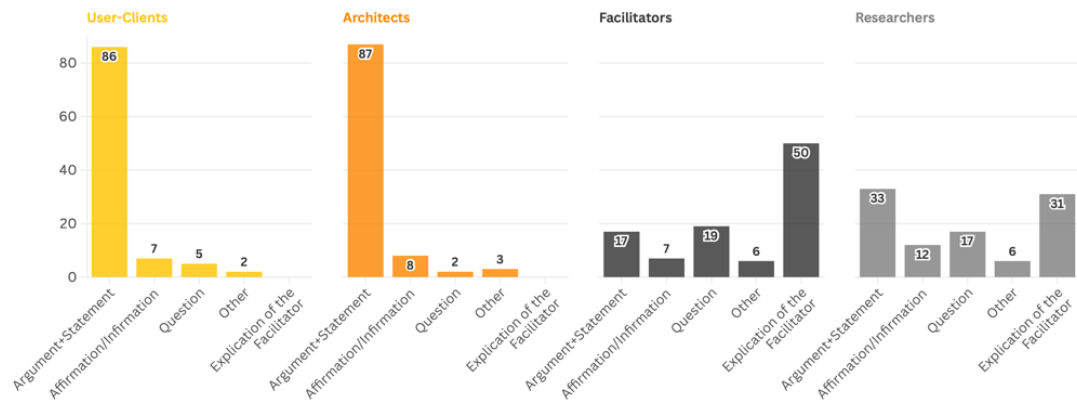
Figure 32. Speaking types by participant profiles
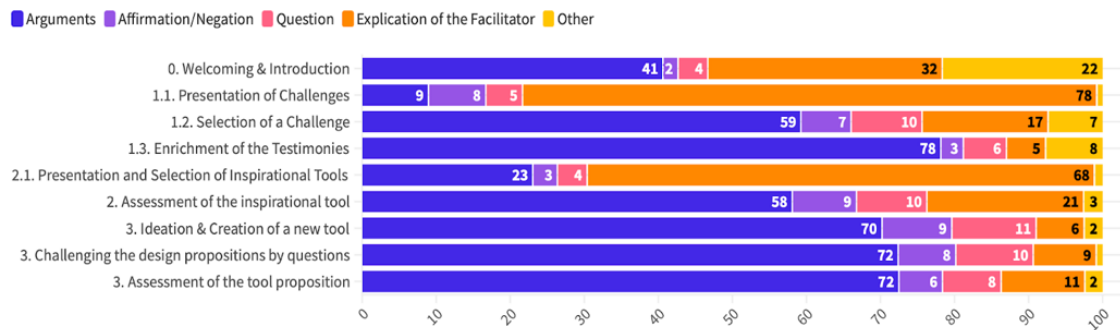
Figure 33. The percentage of sentence types by activity

When we analysed sentence types by activity (Figure 34), we found that the highest level of arguments and statements occurred during the "1.3. Enrichment of the testimonies" (78%), where participants were invited to share their experiences related to their selected challenges. This was expected as we asked participants to write a positive and negative experience related to the challenge individually and then share it with the group. However, it should be noted that the argumentation here was based on monologues rather than dialogues. So, even though it didn't allow for an extensive dialogue, it might be expected that these monologues would allow for participants' individual levels of reflection and contextualisation prior to ideation, as well as understanding others' perspectives.

Additionally, all the sub-activities of Activity 3, "3.1. Ideation & Creation of a Tool" (70%), "3.2. Challenging the Design Propositions by Questions" (72%) and "3.3. Assessment of the Tool Proposition" (72%) were highly argumentative. Meanwhile, "1.1. Presentation of Challenges" (9%) and "2.1. Presentation and Selection of Inspirational Tools" (23%) have the lowest levels of argumentative exchanges. This is explained as these two activities mainly aimed to present the materials to share contextual information and guide participants through the upcoming activities. Followingly, explanations from the facilitator play a larger role during "1.1. Presentation of Challenges" (78%) and "2.1. Presentation and Selection of Inspirational Tools" (68%).

4.4. Triggers per activity

When examining what triggered participants' speech by activity (Table 16), the identified triggers included: 1) activity/injunction; 2) activity/props; 3) answering/facilitator; 4) answering/participant; 5) reacting to another; 6) reflecting on self and 7) context.

In Activity 1, during "1.1. Presentation of Challenges", the activity itself was the dominant trigger (59.62%). In "1.2. Selection of Challenge", speech was driven by personal reflections (35.48%) and reacting to another (21.87%), fostering discussion to converge on a single challenge. The facilitator's guidance (18.11%) and activity props consisting of cards with written challenges (17.45%) also played roles. During "1.3. Enrichment of Testimonies", participants were expected to share one positive and one negative experience related to their challenge. As a result, this sub-activity followed a structure similar to a focus group discussion, primarily encouraging self-expression. Self-reflection (54.10%) was thus the primary driver, with some reactions to another (16.41%). Overall, Activity 1 featured more monological (self-reflective) than dialogical (reacting to another) argumentation, as participants focused on refining the design problem rather than entering ideation.

In Activity 2, during "2.1. Presentation and Selection of Inspirational Tools", props were the main trigger (39.79%), followed by self-reflection (27.47%) and reactions to others (17.52%). This suggests that participants majorly connected the proposed inspirational tools to their own perspectives, facilitating meaning-making while also allowing room for dialogue between perspectives to converge toward a selection. In "2.2. Evaluation of the Selected Tool", self-reflection (40.46%) remained dominant, with increased dialogue (22.80%) and interaction with props (19.33%). Self-reflection played a crucial role in the evaluation process, while personal perspectives were also opened up for dialogue through participants' reactions to each other's arguments. Compared to Activity 1, this activity showed a narrower gap between self-reflection and dialogue (reacting to another).

In Activity 3, during "3.1. Ideation for a New Tool" and "3.2. Challenging the Design with Inspiring Questions", participants engaged in self-reflection (42.76% and 41.63%) but also demonstrated higher dialogue by reacting to another (32.86% and 27.67%). In "3.3. Evaluation of the New Tool", self-reflection (34.22%) and dialogue (32.57%) were almost equal, indicating a more balanced exchange. This suggests that while self-reflection is crucial in co-design, ideation and evaluation activities foster greater dialogue as participants justify, refine, and converge on solutions. Additionally, an evaluation activity following collective ideation exhibited a more dialogical nature, likely due to the assessment of a shared output.

These results, when analysed alongside sentence types used in each activity (Figure 34), indicate that monologic argumentation was particularly effective in enriching testimonies by allowing participants to share personal perspectives and experiences. In contrast, ideation activities encouraged more dialogical argumentation, balancing self-reflection with engagement and responses to others.

Table 16. Triggers per activity

	Activity Injunction	Activity Probs	Answering Facilitator	Answering Participant	Reacting to another	Reflecting on self	Context
Activity 1	10,05	9,87	9,43	2,90	16,43	50,21	1,11
1.1. Presentation challenges	59,62	11,54	2,14	3,42	2,78	19,23	1,28
1.2. Selection of a challenge	3,01	17,45	18,11	2,67	21,87	35,48	1,42
1.3. Enrichment of the testimonies	8,26	8,68	8,58	2,91	16,41	54,10	1,05
Activity 2	8,93	25,92	4,66	2,41	21,10	36,28	0,70
2.1. Presentation and selection of inspirational tools	6,98	39,79	2,73	4,12	17,52	27,47	1,38
2.2. Evaluation of the selected inspirational tool	9,86	19,33	5,57	1,60	22,80	40,46	0,38
Activity 3	*7,55*	*4,98*	*11,38*	*2,24*	*30,78*	*41,00*	*2,06*
3.1. Ideation for a new tool	6,27	3,72	9,83	2,67	32,86	42,76	1,90
3.2. Challenging the design with inspiring questions	9,21	4,47	13,63	2,25	27,67	41,63	1,14
3.3. Evaluation of the new tool	7,12	10,01	10,24	0,92	32,57	34,22	4,92

4.5. Argumentation: Abstract/Concrete

Users' argumentation (statement and/or claims) are 63% concrete and 37% abstract, indicating a preference for personal experiences, practical examples and specific instances, grounding their contributions in real-life contexts. Architects show a balanced approach (Figure 35), with 59% concrete and 41% abstract arguments, alternating between professional experiences and theoretical or value-based reasoning. Facilitators are most concrete in their input (73% concrete, 27% abstract), aligning with their role in keeping discussions actionable and closely tied to the workshop process by referring to props, clear concepts, and reformulations to maintain practicality and clarity.
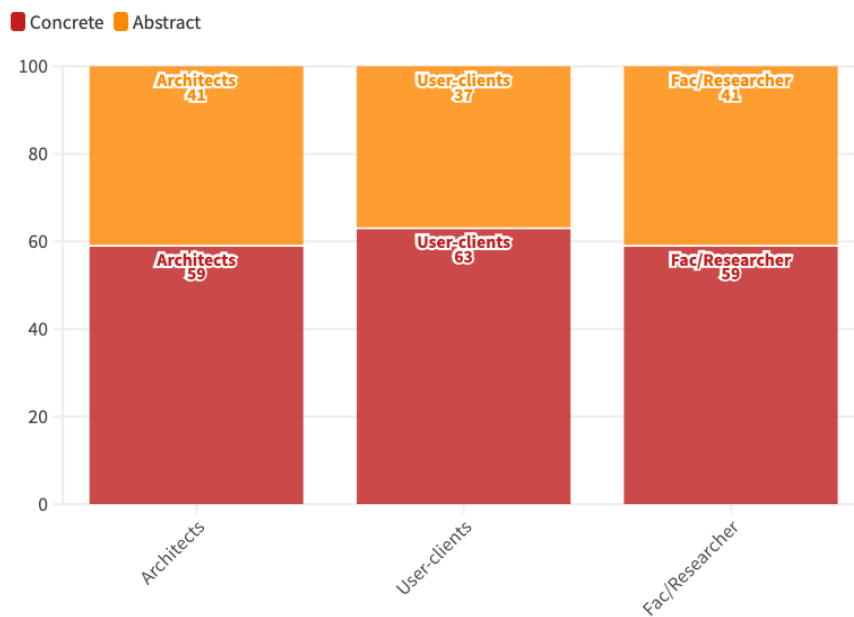
Figure 34. Distribution of abstract and concrete arguments among participants
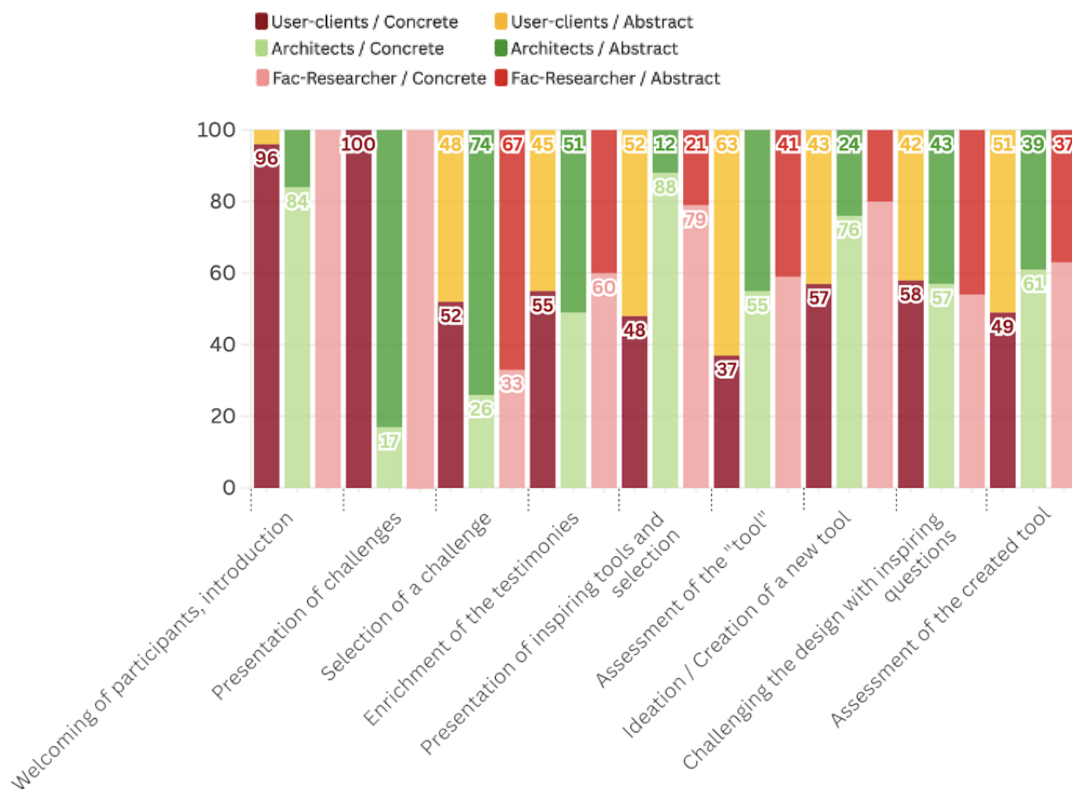
Figure 35. Distribution of abstract and concrete arguments of participants according to activities

These percentages vary by activity (Figure 36). During the challenge presentation, users are fully concrete, aligning with their focus on specific, tangible issues. Architects are largely abstract (83%), framing challenges at a broader conceptual level. Facilitators are 100% concrete as they welcome participants and explain the challenges. In the challenge selection phase, all participants shift to more abstract reasoning, especially architects (74%), suggesting a move toward general reflection rather than experience-based

input. Users are more balanced (52% concrete, 48% abstract), indicating that their choices may be informed by both specific issues and broader considerations. Facilitators are more abstract (67%), guiding a reflective process for selecting an appropriate challenge.

In the enrichment stage, where participants share personal experiences related to the challenge, users maintain a balance (55% concrete, 45% abstract), while architects and facilitators have a similar split. Although this stage might be expected to focus on concrete inputs, it combines practical experiences with abstract ideas to add depth and alternative viewpoints.

During the presentation and selection of inspirational tools, architects lean heavily on concrete arguments (88%), likely drawing on practical tools or past design experiences, as tool selection often relies on specific examples. Facilitators also focus on concrete inputs (79%) as they guide the tool-selection process. During tool critique, users (63%) and architects (55%) are more abstract, suggesting that tool critique leads to broader discussions about principles, general applicability, or ethics, while facilitators remain slightly more concrete (59%), grounding feedback in practicality.

The ideation phase, where participants create a new tool, sees all participants becoming more concrete. Architects (76%) and users (57%) rely heavily on practical inputs to contribute tangible ideas, while facilitators (80%) maintain a high level of concreteness, guiding toward actionable outcomes. When facilitators pose questions to refine the draft, both users and architects show a balanced approach (57-58% concrete, 43-42% abstract), blending specific suggestions with broader reasoning.

In the tool evaluation phase, eventually, architects (61%) and facilitators (63%) focus on concrete feedback, assessing the tool's functionality, while users (49%) also emphasize practical usability in their critique.

Overall, architects exhibit a tendency to begin predominantly with abstract statements during early activities, progressively transitioning toward more concrete and balanced reflections as the process advances. Conversely, user-clients typically start with concrete statements, emphasizing practical and tangible aspects. As the process unfolds, their contributions become balanced, incorporating more abstract reflections. This inverse trend underscores the evolving dynamic between the two profiles groups, with architects grounding their abstract ideas and user-clients expanding their conceptual engagement.

4.6. Themes addressed

Out of 7248 phrases, we were able to code a theme for 4946 phrases that inform us about the participants' perspectives on current or future practices between architects and user-clients. The most coded theme across all tables (Figure 37) is Tools & Resources (1701 occurrences out of 4946 labels), highlighting that this aspect sparked the most discussion and exchange in the workshops. This result was expected as the main, explicit goal of the workshops was to develop a tool to improve architect and user-client relationship, which obviously directed architects, user-clients and facilitators to focus on the practicalities and materials of the tools.

Themes: ■ Emotion & Communication ■ Budget & Financial Aspects ■ Project Planning & Execution
■ Client-Architect Dynamics ■ Architectural Practice & Context ■ Tools & Resources ■ Contract & Legal Aspects
■ Design & Materiality
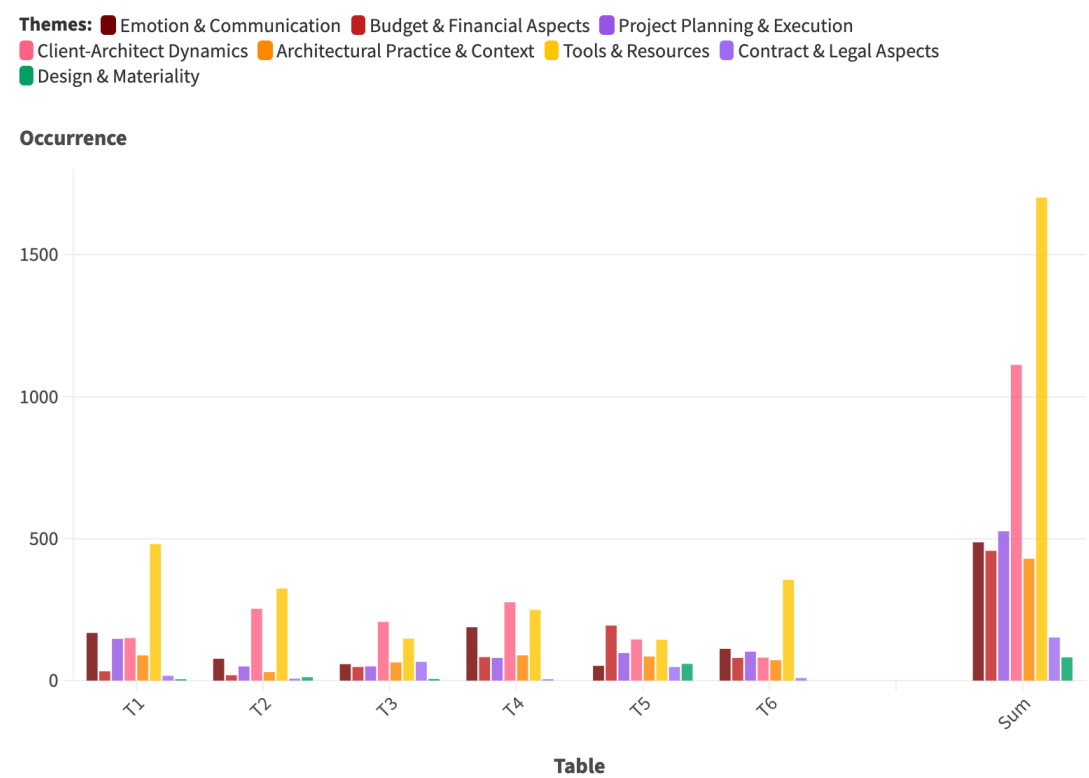
Figure 36. Distribution of themes between tables

Client-architect dynamics (1112 occurrences out of 4946 labels) also had a high number of mentions, reflecting the workshops' strong focus on improving their relationship and providing insights into the personal perspectives of architects and user-clients.

Project Planning & Execution (526 occurrences out of 4946 labels) emerged as another significant theme, indicating frequent discussions on the process and timeline of project implementation, underscoring the importance of managing project flow and efficiency.

Emotion & Communication (487) was also recurrent but to a lesser extent, highlighting how participants discussed the role of feelings, expectations, and dialogue in shaping project outcomes, indicating that beyond technical aspects, the relational dimension remains a crucial factor in collaboration.

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Similarly, Budget & Financial Aspects (457) suggests that while cost considerations were present, they did not dominate discussions, potentially reflecting either an assumed baseline understanding of financial constraints or a preference for focusing on conceptual and procedural matters over financial planning.

Contract & Legal Aspects (152) and Design & Materiality (82) were the least mentioned themes, suggesting that while relevant, they were not as central as tools, client relationships, and project management. This may imply that legal and material considerations were seen as secondary or well-understood, requiring less elaboration.

The Table 17 provides a quick overview of each table's primary focus areas, associated themes, and how these align with their chosen challenges. The results also show that while budget and legal aspects are important, they tend to take a backseat to more immediate concerns about planning, and the roles of architects and clients. The chosen challenges for each table heavily impact their thematic focus, demonstrating the consistency between the discussions and the goals of the workshop. We also observe that Client-Architect Dynamics and Emotion & Communication often intersect in discussions, as managing interpersonal relationships is tightly linked to how emotions are communicated and handled within the co-design process. While we do not delve into a detailed qualitative analysis of these themes in this study, our results support the potential of using co-design workshops as a data collection method.

Table 17. Table specific dynamics

Table	Main Themes (Occurrences)	Primary Challenge	Summary of Alignment between the Challenge Selected and the Main Themes discussed
T1	Tools & Resources (481/1090), Project Planning & Execution (147/1090)	"How to prepare for the project process and how to maintain mutual understanding throughout the project?"	Group focuses on practical and procedural dimensions, emphasizing the need for preparation and communication.
T2	Tools & Resources (324/772), Client-Architect Dynamics (253/772)	"How to determine the degree of investment and the frequency of accompaniment?"	Relationship-building and role definition, focusing on architect-client expectations.
T3	Client-Architect Dynamics (207/647), Contract & Legal Aspects (66/647)	"How to clarify responsibilities and missions for all parties?"	Responsibility and role clarification, with attention to legal aspects.
T4	Client-Architect Dynamics (276/970), Tools & Resources (249/970), Emotion & Communication (188/970)	"How to maintain mutual understanding throughout the project?"	Balances emotional and relational aspects with practical tool discussions.
T5	Budget & Financial Aspects (194/824), Client-Architect Dynamics (145/824), Tools & Resources (144/824)	"How to clarify the budget and the inherent difficulties with budgeting?"	Budgeting concerns, with a primary focus on financial clarity.
T6	Tools & Resources (355/811), Emotion & Communication (112/811), Project Planning & Execution (102/811)	"How to prepare for the project process and how to maintain mutual understanding throughout?"	Procedural focus with emphasis on practical planning and interpersonal aspects.

4.6.1. Cross-Analysis: Themes and Reactions/Opponent Reactions

To deepen our understanding of the dynamics within the workshops, we conducted a cross-analysis between themes and opponent reactions. This analysis involved dialectic roles coded as "opponent reactions" (as per Darses (2002); see Table 12), which highlighted themes generating disagreement. By intersecting this dimension with the themes, we identified themes stimulating active engagement by sparking divergence in perspectives.

Table 18. Theme occurrence and opponent reactions ratios

	Total	Opposition	Theme occurrence ratio (theme weight)	Opposition ratio within a specific theme
Tools & Resources	1701	89	34,39%	5,23%
Client-Architect Dynamics	1112	51	22,48%	4,59%
Project Planning & Execution	526	26	10,63%	4,94%
Budget & Financial Aspects	457	37	9,24%	8,10%
Emotion & Communication	487	26	9,85%	5,34%
Architectural Practice & Context	429	12	8,67%	2,80%
Contract & Legal Aspects	152	29	3,07%	19,08%
Design & Materiality	82	32	1,66%	39,02%
Total	4946			

Cross-analysing opponent reactions with overall theme frequencies (Table 18) reveals central workshop themes and points of interaction. Tools & Resources (1701 occurrences) was the most discussed theme, aligning with the workshops' primary objective of tool development. While it also sparked the most opposition (89 occurrences), its opposition ratio relative to the theme's overall weight (5,23%) remained low. This suggests that while participants engaged in discussions on tool functionality and implementation, disagreements did not dominate the exchange, indicating a general consensus on the importance and role of tools in the design process.

Architectural Practice & Context (429 occurrences) provoked minimal opposition (12 occurrences, 2,8%), likely due to its descriptive rather than prescriptive nature. Discussions on this theme primarily revolved around professional norms and practices rather than points of contention, explaining the low level of debate.

Client-Architect Dynamics (1112 occurrences) generated 51 oppositions, highlighting challenges in communication strategies and levels of client involvement. However, the relatively low opposition ratio (4,59%) suggests that while differences in expectations emerged, participants generally recognized the complexity of balancing roles.

Project Planning & Execution (526 occurrences) also exhibited a low opposition ratio (26 occurrences, 4,94%), indicating broad agreement on the procedural aspects of project management. Similarly, Emotion & Communication, while accounting for 9.85% of total mentions, generated limited opposition (26 occurrences, 5,34%), suggesting that interpersonal dynamics were generally acknowledged with understanding rather than dispute.

Budget & Financial Aspects (457 occurrences) showed a moderate level of opposition (37 occurrences, 8,10%), often tied to differing views on cost management. This higher ratio suggests that financial considerations were a persistent point of contention, reflecting the challenge of reconciling budget constraints with project expectations.

Although Contract & Legal Aspects (152 occurrences) was less frequently discussed, it elicited a relatively high proportion of opposition (29 occurrences, 19,08%). This indicates that when legal responsibilities were addressed, they often became points of disagreement, potentially due to differing interpretations of contractual obligations and accountability.

Design & Materiality, the least discussed theme (82 occurrences), nonetheless provoked significant opposition (32 occurrences, 39,02%). This high opposition ratio suggests that material choices and design preferences were contentious topics, potentially reflecting strong personal preferences or conflicting aesthetic and practical considerations among participants.

5. Discussion

5.1. Balancing Speaking Times

The workshops aimed to position both architects and user-clients as experts in their respective fields of experiences, with the goal of co-designing a tool to improve their relationship. However, results revealed that architects tended to dominate the conversations, while user-clients spoke less. An exception occurred when a user-client with professional experience as a mechanical engineer spoke more than the architect. His expertise in a related discipline, along with his habit of thorough research and a confident personality, allowed him to participate more actively. Although we did not conduct a formal personality test, our results, compared with our observations during the workshops, suggest that beside different "expert" profiles influencing participation (architects as professional experts, users/clients as experts through their experience), different personality traits also may influence it (also see: Villata *et al.*, 2017; Gronostay, 2019). In further studies, personality assessments run prior to workshops could offer insights around this issue (Cuppen, 2012).

To achieve "balanced participation" for knowledge integration (Mengis & Eppler, 2006), as well as enabling a symmetrical exchange between participants, we suggest that expert positions and personalities need to be

addressed in workshop settings. Taking both these aspects into account could help the facilitator in finding balance in participation rates.

5.2. Activity eliciting the most exchange and interaction between participants

We observed that the activity that encouraged more monologues and lengthy testimonies was "1.3. Enrichment of the Testimonies". While monologues may be seen as less interactive, they also provide participants with an opportunity to share and exchange their perspectives in a richer and more detailed manner. Our results indicate that decision-making, critique, and ideation activities foster richer interaction between participants. Activities such as "1.2. Selection of a Challenge", "2.2. Evaluation of the Selected Inspirational Tool", "3.1. Ideation for a New Tool", "3.2. Challenging the Design with Inspiring Questions", and "3.3. Evaluation of the New Tool" exhibited higher turn-taking rates, reflecting more dialogic exchanges. In addition to higher turn-taking rates, we observed that during all ideation activities (Activity 3), participants demonstrated greater interaction by reacting to each other's arguments. Based on these results, we argue that ideation activities elicit the most exchange and interaction between participants. Meanwhile we saw that during ideation, self-reflection stays as an important element even in collaborative ideation settings.

5.3. Activity eliciting the most argumentative expression

Some activities were planned specifically to collect perspectives and experiences from participants, such as "Enrichment of the testimonies". It was no surprise that during this activity we saw the highest rate of argumentation with 78%. However, as we highlighted before, here the nature of argumentation was monologic.

All the activities during ideation (Activity 3) also showed high rates of argumentation: 70% for "3.1. Ideation & Creation of a Tool"; 72% for "3.2. Challenging the Design Propositions by Questions" and 72% for "3.3. Assessment of the Tool Proposition". In ideation, argumentation gained a more dialogical nature. This shows that ideation activities can be useful to investigate participants' perspectives related to existing situations as well as their future-oriented aspirations. We argue that ideation workshops, in that regard, can be used as a data collection method.

Furthermore, it was observed that the facilitation style had an impact on the achievement of detailed and justified testimonies. Although this study did not focus on this aspect, it is important to note that if workshop settings are to be used for data collection, facilitators must be aware of their role as researchers seeking answers and explanations. Facilitator posture as a researcher, who tries to have deeper explanations and justifications for proposed ideas, can also facilitate ideation based on stronger reflection and argumentation in relation to past experiences as well as future-oriented aspirations.

5.4 Relying more on abstract or concrete experiences

Architects and user-clients have different starting points in terms of perspectives: architects are immersed daily in the construction field and multiple projects, while user-clients might only have their own construction project going on. The co-design process encourages a balance of abstract and concrete contributions. Comparing both profiles indeed shows no significant difference in reliance on abstract versus concrete arguments, as both shift between these modes depending on the workshop stage. The results reveal an overall balanced approach, with architects showing a balanced split (59% concrete, 41% abstract). They tend to predominantly express abstract statements in the early activities, gradually shifting toward more concrete and balanced reflections as the process unfolds. User-clients leaned more towards concrete arguments, with 63% of their input rooted in personal experiences. The latter often start with more concrete statements but eventually broaden their engagement with abstract reflections as they deepen their understanding of the design process. This inverted trend underscores how co-design workshops may foster this balance and a nuance to each profile, though it should be noted that achieving this balance takes time and requires activities specifically designed to support such equilibrium, such as ideation phases. During this phase, both profiles rely on more concrete arguments, likely due to the practical nature of generating solutions. This suggests that co-design workshops may foster a blend of intuitive reasoning and practical outcomes, especially in tool selection and creation. This fosters richer dialogue, allowing diverse participants to integrate both experiential and conceptual knowledge. Architects' concrete approach during phases like tool reaction and ideation highlights how co-design workshops effectively connect abstract visions with practical steps, supporting collaborative innovation. The co-design process creates opportunities for participants to bridge their different perspectives over time.

Facilitators focused on guiding discussions and show the highest proportion of concrete arguments (73%). This reflects their role in concretizing abstract discussions through their guidance.

5.5 Themes causing the most disagreements

Cross-analysis reveals that Tools & Resources (34,39% theme occurrence ratio) and Client-Architect Dynamics (22,48% theme occurrence ratio) are the most frequently discussed themes, highlighting concerns such as Existing Tools, Client Expectations, Architect's Role and Expertise, and Communication & Project Management as central to these co-design workshops. Client-Architect Dynamics (4.59% opposition ratio) is a point of discussion, particularly regarding communication strategies and client involvement, but is still proportionally limited compared to the overall occurrence of this theme. The relatively low opposition ratio suggests that while expectations diverge, discussions remain constructive rather than confrontational. While Tools & Resources recorded the highest number of opposition instances (89), Design &

Materiality and Contract & Legal Aspects exhibit the highest opposition ratios (39.02% and 19.08%). Design & Materiality thus emerges as the most contentious theme relative to its frequency, likely due to strong personal preferences, design constraints, flexibility of the designed tool, human connection in design, material costs, and feasibility concerns. Addressing these tensions may require visual decision-making tools, co-design props, and facilitation strategies to mediate diverging perspectives. Opposition within Contract & Legal Aspects stems from differing interpretations of contractual obligations, accountability concerns, external factors affecting costs and delays, and legal boundaries in architectural briefs. These discussions suggest that legal aspects are often overlooked until conflicts arise, intensifying disputes when addressed. Financial concerns are also significant, as reflected in Budget & Financial Aspects (8.10% opposition ratio). Debates center on estimated vs. actual costs, inflation, budget evolution, demand-budget inconsistencies, overspending, and financial transparency. These findings underscore the persistent challenge of cost management, emphasizing the need for structured financial planning tools or budget simulations to support decision-making. Emotion & Communication generated limited opposition (5.34%), indicating that interpersonal dynamics were generally understood rather than disputed. Discussions encompass trust, flexibility, dissonance between perspectives, enjoyment, frustration, knowledge sharing, misinformation, and competence gaps. Project Planning & Execution (4.94% opposition ratio) encounters some resistance but is broadly agreed upon. Challenges revolve around timeframes, delays, anticipation of setbacks, construction disruptions or socio-economic influences on execution. Public-private contract differences also shaped perceptions of feasibility and constraints.

These findings reinforce the importance of effective communication strategies in collaborative design, offering insights for managing architect-client tensions, particularly regarding tools, resources, and relational dynamics. Improved communication, collaboration, and decision-making strategies could help mitigate opposition and foster more productive co-design processes.

6. Conclusion

In this study we delve into argumentative expressions in co-design workshops by using a quantitative approach to analyse data that is inherently qualitative. Our workshop protocol consisted of three major activities. We looked into activities generating the highest level of interaction and exchange between participants; activities prompting the most argumentative expression among the actors; each profile's reliance on abstract expressions or on concrete experiences, as well as themes provoking the most disagreements between the participants. This approach allowed us to gain a macro-level view of six different co-design tables, providing valuable insights into speaking times, levels of interaction and exchange between participants, the nature of different activities, the concreteness or abstractness of arguments, and the issues that most frequently triggered reactions and disagreements among participants. In further research, this approach could be supported by qualitative analysis to

reach a more in-depth understanding of the exchanges between architects and user-clients; to understand their past and present experiences as well as future-oriented aspirations through the co-design of a tool.

We argue that ideation activities elicit the most exchange and interaction between participants, in terms of engaging paced dialogues. However, still self-reflection remains an important element even in collaborative ideation. Thus, before and during ideation it is important to support self-expression and self-reflection to contextualize design problems as well as to justify design choices. Besides, these moments of self-expression and self-reflection enable us to better understand not only future-oriented needs and aspirations but also current and past experiences. This put forward the possibilities of using co-design workshops and sessions as a data collection method.

This research has several limitations that should be acknowledged. The study is contextually bound, with findings primarily relevant to the specific co-design workshops analysed. Participant recruitment was constrained to a two-months period prior to the workshops, potentially limiting the diversity of recruited profiles. The workshops were time-restricted, with participants' presence announced for 2.5 hours. Data analysis focused solely on verbalized contributions, excluding non-verbal cues such as gestures, which could provide complementary insights into participants' interactions. The segmentation into coding units, while methodologically structured, remains imperfect, with variability in coding influenced by individual researchers, despite regular peer-review meetings to ensure consistency.

Future research could explore the following questions:

- What role do non-verbal elements play in shaping collaborative design dynamics?

- How does the figure of the facilitator or the type of facilitation employed impact workshop outcomes and the data collected?

Examining facilitation practices in greater depth could indeed shed light on their influence on participants' interactions and the overall co-design process. Addressing these questions could provide a deeper understanding of co-design dynamics and outcomes.

Transformative effects of co-design: the case of the "My Architect And I" project

Abstract

In this paper, we present a co-design process intended to develop tools to improve the experience of architectural design services for single-family housing projects in Belgium. Our main goal is to identify the transformative effects of this co-design process through the lens of the participants' experiences. This paper is based on focus groups conducted with architects and user-clients for post-evaluation of the process. Findings include insights on (i) their experiences during the co-design process; on (ii) transformative effects such as changes in perspective (including empathy) and practice; and on (iii) ownership of the project and its outputs. This paper shows that co-design processes can have a lingering effect on participants, even more so on the ones (N=4) showing up more than once (three or more events). These observations help inform co-design processes, and, more broadly, participatory design research and practices.

Keywords   co-design; evaluation; transformative effects

1. Introduction

It is commonly assumed that a co-design process — understood here as participatory, involving expert and non-expert profiles to the design process, including the ideation phase — not only provides relevant and meaningful design solutions for stakeholders but also holds transformative effects on participants (Blomkamp, 2018). Some examples of these effects are empathy (Tuomala & Baxter, 2019; Yuan & Dong, 2014), ownership (Broadley & Smith, 2018; van Rijn & Stappers, 2008), learning—which may result in changes in old practices and adoption of new ones (Hagen *et al.*, 2018), as well as psychological benefits such as a sense of personal growth (Corcoran *et al.*, 2018). These effects cannot be taken for granted. Researchers' perspectives and participants' accounts may differ but can be complementary for understanding the experience of participatory processes (Bowen, 2013). Having participants' feedback to evaluate participatory processes is a pressing necessity to further understand and report on the transformative effects of co-design, and to increase accountability of such processes.

In this article, we address the experience of participants in a co-design process and discuss its implications. This evaluation regards a project named *"My Architect and I"* (title translated from the French *"Moi et Mon Architecte"*). This project aimed to improve the interactions and social encounters between architects and user-clients during housing design. As a result of the project, four tools were co-designed (see Figure 4). Two of these tools are covered in other

papers (see Mertens *et al.*, 2023; Yönder *et al.*, 2023). This paper focuses on the transformative effects the process had on participants.

2. The case of *"My Architect and I"*

As the relationship between designers and end-users greatly impacts the overall process, user involvement during the design phase can enhance a project's success (Arboleda, 2020; Lawson, 2006; Sarkar & Gero, 2017). Specifically, in architecture, studies on the relationship between architects and their clients brought communication gaps to light. Misunderstandings and frustrations cause tensions (Defays & Elsen, 2018). Users' input is often limited to functional recommendations (Cuff, 1991; Sanders, 2005). Other studies have shown that when the interactions are correctly facilitated, clients and users are better able to engage (Luck, 2007; Van der Linden *et al.*, 2017).

The project focused on Belgian practices. High levels of dissatisfaction and anxiety have been revealed among house owners who had been through a construction or retrofit process with an architect (Nauwelaers & Rossini, 2014). Another Belgian study showed that the client stands among the top five factors that make architects' jobs more difficult on an everyday basis (Stals *et al.*, 2018). This friction between architects and end-users raises the question of how to support and facilitate interactions throughout the design process. Regarding this context, the *"My Architect and I"* project aimed to develop some tools to help architects and user-clients communicate effectively in single-family housing designs.

2.1 Project Overview

The project was divided into two phases (see Figure 38). The first phase consisted of research to better understand the current interactions between architects and user-clients in single-family housing contexts. It also tackled the understanding of co-design and human-centered design practices, and how designers and users interact throughout these practices. In this first diagnostic phase, we conducted interviews with architects (n=15), user-clients who had experienced an interaction with architects for a single-family housing project (n=14), and designers practicing human-centered design and co-design in various design fields (n=17). These interviews were conducted until saturation was reached in terms of themes and problematic friction points brought up by interviewees. A thematic analysis was conducted to delineate the main friction points and challenges encountered throughout the relationship between architects and user-clients during design processes. Interviews with designers nourished the researchers' methodology for the elaboration of the following workshops, as well as for their content.

The second phase was the co-design process itself and consisted of a series of workshops built around the knowledge gathered in the first research phase. The workshops are presented under three types: (1) Restitution & Sharing;

(2) Ideation & Design; (3) Tests of the Prototypes & Iterations. An overview of the conducted workshops and the corresponding planned activities can be found in the following sections. In between workshops, short reports circulated information to participants, reporting on the content and results of each workshop. By doing this, we aimed to ensure continuity of participation and awareness of the project's progression.

Phase #01 — Research & Planning

Interviews & Desk Research — starting from June '20

interviews
15 architects
14 user - clients
17 designers

desk research
on tools, techniques, strategies and methods for non-designer involvement in design and architecture

by 4 researchers of My Architect and I Project

Planning & Design of the Workshops

analysis
of interviews and desk research data

integration
of analysis results to workshop design and planning

preparation
of workshop protocols and materials

by 4 researchers of My Architect and I Project

Phase #02 — Workshops

Restitution & Sharing Workshop — 27 January '22

An online workshop
to sensitize the participants and prioritize challenges for the following workshops

duration: 2h

• 16 architects
• 8 user- clients

Ideation & Design Workshops — February - Mars '22

5 face-to-face workshops
in 4 different cities of Belgium to renew existing tools or to develop a brand-new tool

duration: 2hx5

• 12 architects (or acting members of the local association of architects)
• 9 user-clients

Test & Iteration Workshops — Mai - Juin '22

test in a public event
4 tests with 4 tool prototypes during a public event

duration: 2hx5

• 21 architects (including students, academics, representatives, other actors from industry)
• 9 user-clients

test in architectural agencies
2 tests with 2 tool prototypes in architectural agencies

duration: 1,5h x 2

• 4 architects
• 2 user-clients

test in a design conference
test of 2 tool prototypes in 4 tables

duration: 1,5h x 2

• 8 designers/researchers

Figure 37. Phases and related activities of the project.

2.2 Workshops' Structure

The overall workshop series was designed by the INTER'ACT lab researchers (n=4), building on the knowledge generated by the first phase. As some workshops built on the content of a previous workshop, researchers gathered between workshops to make sense of the data collected, simplifying, refining, or prototyping the outputs of previous workshops to inject into the next[13].

2.2.1 Restitution & Sharing

The first workshop launched the second phase of the project. Architects (n=16) and user-clients (n=8) participated to discover and interact with an online audio-visual "Mural" (see Figure 39). This exhibit recounted reported interactions between architects and user-clients, themed in 10 chapters. The two main activities were based on this online narrative. Architects and user-clients were separately gathered in groups of two to five. First, they were invited to discover some narratives of the other community. Next, they explored the narratives of their own community. The purpose was to share the results of the first phase to sensitize participants and build empathy between the two parties.

As a third activity, participants voted on the most pressing challenge in their opinion (among 12 challenges) regarding interactions between architects and user-clients. After completion of the workshop, the top-rated challenges were refined by researchers to be used in the next series of workshops (Ideation & Design).
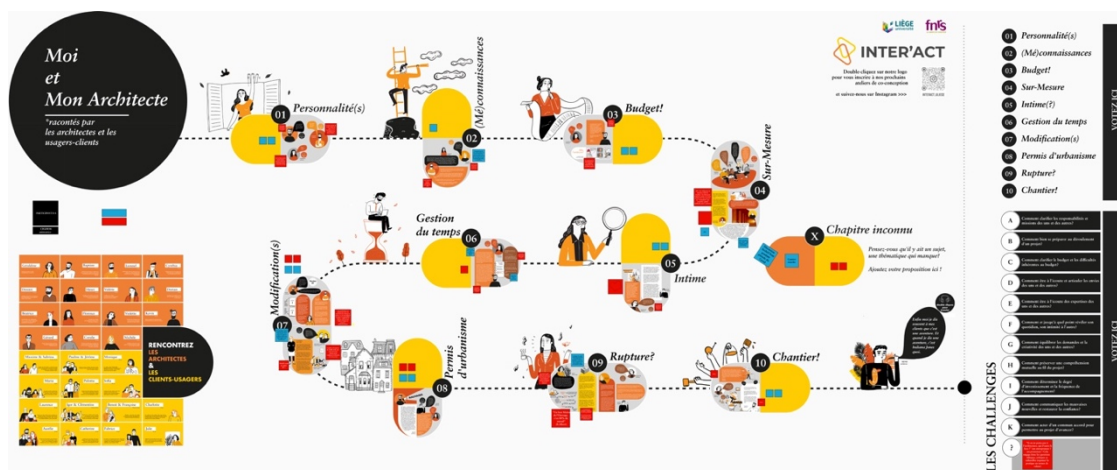

Figure 38. The online narrative designed for the Restitution & Sharing workshop.

2.2.2 Ideation & Design

The second phase of workshops focused on the development of concepts. A total of five workshops, each lasting two hours, were held in the cities of Brussels, Liège (n=2), Namur, and Arlon. A total of 12 architects (or acting members of the local association of architects) and nine user-clients participated in the workshops, working in mixed groups.

During the workshop, participants selected one of the five refined challenges to work on. They were presented with selected excerpts from the fieldwork data regarding that challenge. They were also invited to share personal experiences on this matter. This activity aimed to build empathy, framed the selected challenge, and prepared participants for the next activities. They were then presented with inspirational tools and evaluated the usefulness and transferability of these tools to address the challenge. Later, they revised the selected tool or developed a brand-new tool based on the inspirational tools (Figure 40).

Activity #01	Activity #02	Activity #03	Activity #04
Selection of challenge	*Discovering and sharing experiences*	*Discovering and analysing tools*	*Creation of a tool*
Participants chose one of the five challenges that were refined based on the results of previous workshop	+ Participants read excerpts shared by architects and user-clients during interviews regarding the challenge they chose + They shared their own experience	Participants discovered and analyzed three inspirational tools that might work for their challenge	Participants ideated for a new tool or revised inspirational tools

Figure 39. Activities held in Ideation & Design workshops

Once all five workshops were completed, researchers analyzed the workshops' content by reviewing the co-designed solutions and video recordings to refine design criteria and refine four tools (Figure 41). In the case of Tools 01 and 02, a feedback session with two architects was also conducted.

2.2.3 Tests of the prototypes

These four tools (Figure 41) ought to be tested in order to get further feedback to iterate and elaborate on them, building on actual practitioners' and user-clients' experiences as input. In order to implement these tests efficiently and quickly, we conducted role-playing sessions through which participants – architects and user-clients – would simulate and improvise a meeting. During this phase, three types of test sessions took place: (i) the tools were tested in

architectural agencies by architects and actual real-life clients; (ii) they were tested during a public event at the University of Liège, throughout small workshops sessions; (iii) the prototypes were also presented to and tested by architects and designers at the 2022 Design Research Society conference in Bilbao.

1. **Test in architectural agencies**

   These tools were brought to two architectural agencies to be tested. Firstly, architects were presented with the four prototypes and had to pick one to test. We invited new clients to a workshop session where they would play an hour-long scene of a first meeting using the provided tool, based on their real-life project demand. In both sessions, two architects and one user-client were present to test the tools. After the sessions, interviews with architects and user-clients were organised separately to collect feedback on the tools.

   The two prototypes selected by architects for the tests in agencies were analogue paper tools (e.g. Tool 01 & 02). These two prototypes were identified by agencies as more realistic to develop and implement in the short term, and given the limitations of the project, it was decided to keep the other two tools as concept designs.

2. **Test in dissemination event**

   A public one-day local conference was held gathering other researchers, architects, practitioners, former clients, as well as students and the general public interested in architectural design, and user-centred and participatory practices. This event included a short testing workshop session.

   During this session, four prototypes were tested within small groups using the same role-playing methodology and to obtain further feedback. Four sessions were held with a total of 29 participants: user-clients and architects (including students, academics, representatives of the local associations and professionals from the construction industry).

3. **Test with design researchers at a design conference**

   As we had received significant feedback from the Belgian communities of architects and user-clients on two prototypes (01. Questionnaire and 02. Journey Map + Guide), we limited this last test to these two tools. The participants consisted of designers and design researchers (n=8). We implemented this phase during the 2022 DRS conference in Bilbao. We used the same role-playing settings as during the dissemination event, only we had translated and adapted the tools to better fit an international audience. We provided the participants with role-playing kits, including two different scenarios tackling two different problematic situations (e.g. budget) created for two profiles: architects and user-clients. Both tools were tested in both scenarios (4 groups).
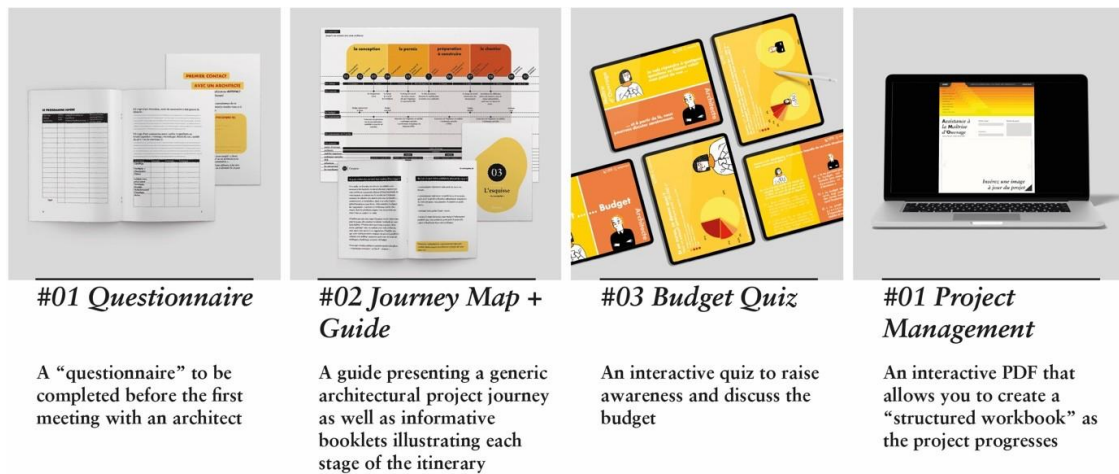
#01 Questionnaire

A "questionnaire" to be completed before the first meeting with an architect

#02 Journey Map + Guide

A guide presenting a generic architectural project journey as well as informative booklets illustrating each stage of the itinerary

#03 Budget Quiz

An interactive quiz to raise awareness and discuss the budget

#01 Project Management

An interactive PDF that allows you to create a "structured workbook" as the project progresses

Figure 40. Four prototypes developed and refined by "My Architect and I" team
after the Ideation & Design workshops

The role-playing kit was based on qualitative data and gathered a user's portrait, quotations, a scenario with a problematic situation, a solution, and an evaluation framework with four different sections. The role-play kits included issues and criteria that the players needed to defend and respect when debating and evaluating. This workshop offered a playful and dynamic activity to improve empathy and to share our applied research practices in design and architecture.

2.2.4 Limits and future stages of the project

Due to the timeframe of this project, test sessions were fictional role-plays putting participants in hypothetical scenarios. This allowed fast feedback on the prototyped tools. However, we acknowledge that this is not equivalent to a test in real-life settings. Further stages of the research call for testing in practices, in a concrete case of architect-client interactions around housing. Doing so will further improve the tools and reveal their relevance, in regard to the context. This could show some practical benefits of improved user-client versus designer relationships.

3 The Methodology

This paper aims to provide insights for future co-design processes and to highlight the value of the process beyond the workshops' outputs. We study the experience of participating in the "My Architect and I" project. We argue that participants' accounts may differ or can be complementary to researchers' observations and understanding. We conducted focus groups a posteriori with participants (Abrams & Gaiser, 2017).

We focus on the transformative effects that go beyond the design outputs brought by a co-design process, and more specifically on what triggers these effects. To do so, we track changes of perspective and practices in the participants' retrospective narrative.

3.1 Data Collection and Analysis

To understand participants' experiences, we conducted two online focus groups, separating two participant profiles (architects and user-clients). Among each focus group, we invited various profiles of participants, taking part in the whole process or only in some workshops (see Table 19). The participants of the co-design process were recruited with several strategies such as questionnaires (for interviews), social media announcements, posters, snowballing, etc. It was also possible to participate in all of the process or any workshop. We wanted to explore the possible effects of consistency that participation might have on the transformative effects of the co-design process.

The focus groups were held online, in October 2022, approximately 4 months after the completion of the last series of workshops. Both lasted 90 minutes. A total of six questions were answered by the group of architects and five by the group of user-clients.

Table 19. Participants of each focus group and the phases of the project they participated in.

	Participants	Phase I Research & Planning	Phase II Workshops		
		Interviews	Restitution & Sharing	Ideation & Design	Test & Iteration
F. Group User-Clients	Maxime & Sabrina	Yes	Yes	Yes	Yes
	Laurence	Yes	Yes	Yes	Yes
	Prisca	No	No	Yes	Yes
F. Group Architects	Gilles	No	No	No	Yes
	David	No	Yes	Yes	Yes
	Lionnel	Yes	Yes	Yes	No

The focus group questions were built around specific concerns such as (i) overall positive-negative experiences of participation; (ii) long-term effects; (iii) perceived benefits; (iv) changes of perspective; (v) changes of practice. The first question was asked during the greetings, introduction, and self-presentations, without reminding the participants of the co-design process.

Table 20. Structure of the focus group questions and their relation to investigated transformative effects.

	Introduction of the aim of the focus group and self-presentations	
Q1	What was the most memorable moment of the workshops for you?	experience of participation
	Introduction of textual visual material and recap of the co-design process	
Q1 (asked again after recap)	What was the most memorable moment of the workshops for you?	experience of participation
Q2	Did you feel any frustration or had an epiphany during the workshops?	experience of participation
Q3	Have you had an experience, since, where you thought of the workshops?	long-term effects, widerscale repercussions
Q4	In your opinion, has there been any other value added by this project and/or this process?	perceived benefits
Q5	Have you noticed a change in your outlook on your practice during or after the workshops? If yes, which? (only for architects)	changes in practice
Q6	Have you noticed a change in your view of the user-client or architect during or after the workshops? If yes, describe it.	change of perspective

After the introduction and self-presentations, the design process was summarized to refresh the participants' memory, using supporting text and visuals. From this point on, we asked the first question one more time. The questions and discussions continued to be supported by slides displaying an overview of the process' steps (see Figure 42). The protocol of the focus groups and the questions are provided in Table 20. The questions were general and not specified for different workshops. Participants were expected to answer based on their previous workshop participation.

After the focus groups were completed, transcripts of the recordings were thematically analyzed (Braun & Clarke, 2006). The analysis was initiated deductively by coding excerpts related to our concerns in the previously displayed categories. Moving forward, we also coded additional themes and subthemes related to the transformative effects of co-design. Our approach was therefore closer to abductive analysis (Thompson, 2022).

Figure 41. Focus group slides displaying an overview of the process' steps (Translated from French).

4 Results and Discussion

In this section, we present our findings and discuss the transformative effects and impacts of co-design.

4.1 General Experience of Participation

Focusing on the experience of the participants in this research-driven co-design project, we question the perceived value they had of their own implication as well as the overall project's.

Laurence (user-client) highlighted the added value of shedding light on the testimonies of both architects and user-clients. She also emphasized the practical value for those who try to find solutions to the problems and difficulties inherent in the architectural process for both parties. This shows the project is understood both as a research project and as a practical project.

The problem-solving approach based on stories reported by practitioners was particularly appreciated by architects. For instance, David, one of the architects who was present at most of the workshops, expressed that even though the overall co-design process takes time, it also adds value by creating space for reflection and discovery:

> *Even if it takes time, I think it might be time saved afterwards.*

Mentioning the time-consuming drawback, this still advocates in favor of this kind of longitudinal co-design process, suggesting that a deeper understanding of user-clients could be profitable in terms of overall efficiency.

All the user-client participants defined their role as to be there to find solutions to help architects improve their practices, as well as to prevent future users from encountering problems going through the architectural process.

Prisca, a user-client in the early phases of her project, described her overall experience with the co-designed tool as satisfactory. Yet, she felt disregarded by the two other participants (architects) at the table during ideation and design workshops (see section 2.2.2). This aligns with Siva and London (2011), who suggest that architects tend to be peer-oriented rather than client-oriented, alienating user-clients. Prisca reports that she was shocked by their comments towards user-clients. This further suggests a need to create empathic bonds between architects and user-clients.

For Sabrina (user-client), seeing similar problems discussed in different tables during the ideation and design workshop (see section 2.2.2) was really remarkable:

> *We [she and her partner] were on 2 separate tables and the ideas were the same. So, in fact, the same problems came out and it really struck me because we say to ourselves, we didn't consult (with others), everyone shared their ideas and on the contrary, it was the same problems that came up on both sides. (Sabrina, user-client)*

The architects also mentioned a consistency, repetitions, or a certain familiarity with the other architects' testimonies. As Gilles (architect) puts it:

> *I think that all the architects who were present found themselves in the same situation and said exactly the same thing, i.e. that we find ourselves in complicated situations, telling ourselves at the beginning that the client is great. Then, we realize that the budget estimation that was put forward is not at all feasible and we should change our plans when it is no longer possible. (Gilles, architect)*

These echoed similar observations made during research phase interviews, as the interviews brought up budget as among the recurrent issues in the relationship between architects and end-users. The workshops, however, brought these testimonies together and gave people a place to realize that they were not alone in the situation, giving them a sense of validation through shared experience (Jung & Ro, 2019).

The stakes on the architects' side are, of course, different from the user-clients' input. In their case, it could potentially affect their day-to-day habits. Gilles (architect) and Lionnel (architect) expressed a frustration with the process as they would have wanted to participate in the other workshops too, to give inputs at other stages of the co-design and follow the evolution of the tools. However, they mention the lack of time to do so, being very busy given their architectural practices.

4.3 Empathy

As mentioned earlier, one of the goals of the workshop was to build empathy. Our main strategy was to share past experiences of architects and user-clients, integrate excerpts from interviews into the activities, and encourage participants to share their own experiences in group settings. We did this consistently throughout the project.

David's (architect) feedback on the online journey that we used during the Restitution & Sharing workshop (see 2.2.1 and Figure 39) confirmed to a certain extent our strategy. As he mentioned, it helped him to understand the experience of the user-client. However, some user-clients expressed their willingness to have more moments of encounter with architects. For Sabrina (user-client), the planning of the Restitution & Sharing workshop didn't allow it:

> *I might have just liked to hear the architects a little more because from time to time, we were all clients, users and we didn't see the architect's opinion. I find that at times, having their opinion on certain points might have been more constructive during the first online workshop, (...) we were online again and so we were separated on different questions and we saw only what was happening with us and not what was happening with the architects. (Sabrina, user-client)*

Although during this online event, David (architect) and Sabrina (user-client) went through the same protocol (see 2.2.1 and Figure 39), their opinions and experiences were very different. However, both valued the importance of understanding the experience of the other. Maxime (user-client) similarly expressed this:

> *Finally, the feedback that we are giving here. Now, we've never had the opportunity to give it to architects to hear their point of view. (Maxime, user-client)*

On the other hand, as a response to Maxime's remark, Laurence (user-client) expressed another point of view. It was valuable for her that the project opened up a meeting space for sharing perspectives. She realized during the "Ideation & Design" workshop that the view of the architect and the user-client on the same subject could conflict with each other and cause misunderstandings. The workshops gave her space to reassess what she might have done wrong. She realized what should have been taken upon by her architect, interrogating the roles of each, and the lack of clear explanation on the responsibilities and range of action of the stakeholders.

Similarly, David (architect) highlights the test in dissemination event, observing how he realized that priorities regarding information sharing of architects and user-clients are dramatically different during the design process:

> *It was very interesting to have their (the clients') point of view, which is actually quite different from that of the architects who were present. They were asking (...) things that were totally different from what we were expecting and they wanted to respond to things that were to come much*

*later, or that we hadn't expected that clients would already want to talk
about right now. (David, architect)*

However, we noticed through the remarks of one architect and one user-client
a phenomenon we are calling the "marginalization of experiences," which
shows that an attempt of building empathy can also create a contrary effect.
For example, Lionnel (architect) expressed that, as he was listening to
experiences of a user-client who was at the same table during ideation, he
thought:

*Well in fact, I understand that she is there because in my opinion, her
experience was very bad and everything she said I said to myself 'but who
is this bungler on which she fell on!' (Lionnel, architect)*

Prisca (user-client) similarly found that the experiences of two architects on the
availability that they had were extreme:

*I spoke about it to other people, but they said: 'but who were these
architects!'. It was mainly in relation to availability, they said, we're tired of
being called incessantly day and night, and so on. So, I was really shocked,
as I'm not contacting mine… But, yes, I would also like to say that I know
other architects who are really extraordinary. And that unfortunately,
perhaps, all the testimonies that you have had for your project are
negative or that you did not have the right architects? I don't know, I
volunteered for your project and it's perhaps a shame because I still don't
have the impression that they're all like that… (Prisca, user-client)*

In these two cases, we did not observe an opening toward the experience of
the other, nor questioning of existing practices. It was rather a rejection of their
validity by positioning these examples as marginal ones. However, these
marginalized experiences were referring to commonly mentioned problems
and concerns, previously traced in interviews with architects and user-clients.
This questions the effect of long-term participation on building empathy, as
these remarks were expressed by two participants who rather momentarily
participated in the project.

4.4 Change of Practice

Beyond a change in perspective, we asked participants if they had noticed any
change in their practice since the workshops. David (architect) expressed a
change in his way of presenting the information to his clients, by paying closer
attention to what information to share or withhold, as he gained a better
understanding of the user-clients' perspective during the workshops:

*Of course, it changed my way of doing things a bit. First of all, by reading
the feedback from the user-clients at the first workshop, and then also after
having discussed with other architects. Well, we realize that our
experience is not unique and that everyone is more or less struggling with
the same concerns of communication. So, yeah, to be able to share and
to have feedback from clients (…), it is not quantifiable in my practice, but
I'm sure that I bring things differently than before. I discuss things*

differently, I'm perhaps more careful about what I say, what to say and what not to say. I also try to encourage the client to communicate with me more than I used to. (David, architect)

We see this mentioned effect of the co-design process as an actual added value of the process to his architectural practice. Indeed, communication and knowledge sharing has been pointed out as being an essential aspect for a smooth collaboration, relationship and overall experience around the journey of an architect and user-client interacting (Luck & McDonnell, 2006).

Lionnel (architect), while mentioning earlier that his perspective on user-clients had not evolved with his participation in the phases 1 and 2 workshops, did however mention that he might have slightly changed his communication habits:

Perhaps the discussions we heard or the examples we read etc. induced that there are indeed small adaptations. It may be in certain words that we choose or a certain formulation. (...) Why do we make these adaptations? For my part, I'm under the impression that it's (...) to say things in the right way and, above all, to write stuff down in a small summary email (...) not especially to better inform, but sometimes, it's perhaps to better protect ourselves from possible unforeseen events or prejudice that could happen to us, so it's perhaps not the desired effect on your part. (Lionnel, architect)

This ripple effect of architects learning new communication skills and strategies to avoid being held responsible for bad communication was indeed not a pursued goal of the co-design workshops but still is an interesting outcome to highlight. This was also supported in Gilles'(architect) testimony.

Gilles (architect) explains that he actually "clicked" during the workshop he participated in, on the necessity to approach important questions about the project, the expectations, and the budget, in order to assess, together with the client, the overall feasibility of the demand and avoid further misunderstandings. He even goes further to explain that he has since implemented a systematic request to every new client to write down their demand, wishes, and budget beforehand. This is a concrete transformative effect of participating in the workshop.

We argue that this will have a beneficial impact on the interactions with user-clients as an actual writing assignment will empower the clients to reflect on their project and formulate their needs. In the end, this will help the architect assess the strengths and weak points of the demand, in order to address the feasibility of the project and guide the user-clients towards realistic options straight away, avoiding further disappointments and frustrations.

Gilles (architect), halfway between Lionnel (architect) and David's (architect) postures, argues that he will be doing so to both ensure a smoother relationship and overall experience of his user-clients but also to protect himself and have

written proof of the early demands of clients to come back to, if communication problems occur further in the process.

4.5 Ownership

During the focus groups, the sense of ownership manifested in two ways: (i) as curiosity & demands for information on the final state of co-designed tools, as well as their use and benefits; (ii) as attachment towards the tools. For example, Laurence (user-client) expressed that she would like to be kept informed about the outcomes of the project, if the tools are used and if so "if it leads to something." Similarly, Sabrina (user-client) asked if and when they would receive emails on how the tools were used in architectural agencies and whether they had a positive impact. She emphasised that "that way we will see the project through to the end, that's really great." David (architect) mentioned his willingness to test the final tools further with the clients who are open to it. He also expressed a frustration regarding his participation in the workshops, which can be interpreted as dedication to the developed tools:

> *In fact, there were 3 workshops where we really got into the tools. But each time it was almost a different one and therefore... In any case, for my part, I may want to have the same tool each time and follow its evolution. (David, architect)*

We further asked if he wanted to join a further step: real-life agency tests. He expressed his interest in testing the tool that he developed in his first two workshops and which he wasn't able to test in the last public event, as he was in another tool testing session.

This sense of commitment to a specific final product and its outcomes was expressed by the participants who participated in most stages of the co-design process. This highlights the possible effect of long-term participation on ownership. However, as our sample size is limited, this is a hypothesis which requires further investigation.

5 Conclusion

A series of co-design workshops were conducted to co-create tools to support the interactions between architects and user-clients. People shared their stories and co-created tools to tackle communicative issues and misunderstandings.

Focus groups highlighted participants' experiences of the co-design process and transformative effects it had on their perspectives and practices. Some of the benefits were validated. Sharing testimonies and stories about the past was confirmed as a powerful strategy to change perspectives and learn. While the primary purpose of future-oriented activities was ideation, these activities also brought people together and fostered change of perspectives and learning.

Another of the targeted outcomes was to build an empathic bond between architects and user-clients. This was mainly observed with participants (David, Laurence, Maxime, and Sabrina) who took part in numerous workshops over a longer period of time. They showed deeper nuance and better understanding

of the other party. Those who were seldom present for activities did not seem to build empathy, marginalising the negative experiences of others. This suggests that building empathy may require longer-term engagement.

Similarly, participants with longer-term engagement in the co-design process expressed higher ownership of the project and its outcomes.

Architects found that taking part in the co-design process helped them improve their communicative practices. This supports knowledge sharing, which is key to an overall positive experience between architects and user-clients. While some architects did so to improve user experiences, others were more interested in using these as strategies to avoid potential liability issues. Regardless of the purpose, this change in their practices still puts focus on communication issues with user-clients.

User-clients defined their own role in this process as helping architects improve their practices. Architects wanted to take part in the overall process and some were eager to implement operational tools in their practices. A major drawback mentioned was the time-consuming aspect of it, as architects are already overworked.

The workshops not only underlined the recurrent issues in the relationship between architects and end-users, they also brought stories together and gave people the space needed to realise that they were not alone through tough situations, validating their experiences.

This paper highlighted a set of exploratory findings on the transformative effects of participation in this co-design process. These findings cannot be considered as absolute as the sample is small. They are still compelling and could nourish future research on the subject.

So what?

Co-design

Cross-Cutting Takes:
- Co-design workshops are valuable research tools and intervention methods for improving professional-client dynamics;
- Ideation activities are the most productive for eliciting dialogue, argumentation, and shared understanding;
- Balanced participation, between architects and clients, requires attentive facilitation, awareness of personality traits, and mitigation of power asymmetries;
- Self-reflection and storytelling support deeper individual engagement, while dialogue enables collective convergence;
- Co-design is not just about making better tools—it transforms relationships.

CHAPTER VIII
Discussion

UNDERSTANDING CURRENT PRACTICES

RQ1. How do architects and user-clients interact throughout contemporary dwelling projects?

In this thesis, we showed that architect–user-client interactions in contemporary Belgian dwelling projects are neither linear nor harmonious. Rather, they are experienced as dynamic, negotiated, and often emotionally charged encounters, embedded within broader structural, professional, and cultural asymmetries. Drawing on a rich empirical corpus — comprising interviews, case studies, co-design workshops, and the iterative development of design tools — a key insight is brought to light: friction should not be interpreted as a sign of failure, but rather as a generative force, provided it is named, acknowledged, and worked through collectively. Far from being incidental, these frictions appear to be constitutive of the interaction itself. Through them, value conflicts (e.g. between spatial aesthetics and ecological priorities), communication mismatches (e.g. visual vs. narrative modes), and asymmetries of power and expertise are revealed, elements that are often left implicit or unattended in conventional design processes. When surfaced through participatory mechanisms such as co-design workshops or narrative briefing tools, such tensions may act as catalysts for mutual understanding, and design refinement. In this view, conflict — when made visible and negotiated — ceases to be an obstacle and can instead become an opportunity for a more situated and responsive architectural practice, a perspective supported by authors like Sanders and Stappers (2008) and Bogers *et al.* (2008), who call for users to be seen as experts of their own experience.

At the heart of these complex dynamics, a persistent habitus mismatch can be identified. Architects and user-clients tend to enter the design process with markedly different cultural dispositions, communication styles, temporalities, and expectations. Architects are typically socialized into a professional habitus that emphasizes symbolic abstraction, formal autonomy, and peer validation — a pattern echoed in the broader architectural culture (Cuff, 1991; Ahuja *et al.*, 2020; Angral, 2019). Spatial logic, aesthetic coherence, and mastery of representational tools are often prioritized in their practice. In contrast, user-clients engage with the project through embodied and experiential knowledge, grounded in everyday routines, lived memories, and projected futures. Their concerns are relational, practical, and emotional, frequently difficult to express using conventional architectural formats.

This clash gives rise to what may be described, following Bourdieu, as habitus shock: a rupture in mutual intelligibility that destabilizes roles, expectations, and trust. Yet, as is demonstrated throughout this dissertation and its associated publications, such shocks may also serve as productive sites of transformation. When adequately supported—through tools (e.g. narrative-

based briefing forms), time (e.g. iterative workshops), and a reconfiguration of professional posture (e.g. stepping down from the author role) — these moments can open spaces for co-learning, deeper empathy, and more meaningful collaboration. In this reframed view, the architect–user-client relationship is not treated as a neutral transaction, but as a transformative encounter, in which both parties may be invited — or at times compelled — to reconsider their assumptions, roles, and priorities.

Friction and Mutual Adjustment

Three major indicators have been identified as central to the frictions that characterize interactions between architects and user-clients in contemporary Belgian dwelling projects: communication breakdowns, value conflicts, and power asymmetries. These tensions are not incidental but symptomatic of deeper structural and cultural misalignments between professional architectural practice and users' everyday habitus.

When user-clients enter into a relationship with an architect, they confront a new "environment" whose values and norms may not align with their familiar ones. We referred to this as habitus shock. Habitus shock can manifest negatively—through strain, stress, or instability—or positively, as a process of learning and growth. Adjustment is not one-sided. Architects, too, may experience friction when confronted with user-clients whose expectations and everyday practices diverge from the professional architectural habitus. The architectural habitus, built through academic training and socialisation in professional milieus, privileges particular forms of knowledge, aesthetics, and authority. When architects camp on this inherited doxa – peer-oriented and reinforced by disciplinary norms – they risk failing to understand user-clients' expectations, needs, and priorities. Yet, in practice, architects must negotiate and occasionally adapt their own assumptions in order to make sense of user-clients' heterogeneous logics and demands. Over time, this may even alter architects' habitus, as prolonged contact with user-clients has shown to change their ways, practices, and priorities.

It is also important to stress that there is no single, unified user-client habitus. Instead, architects engage with multiple and diverse dispositions shaped by social background, family history, cultural capital, and prior exposure to architecture or construction — possibly other dimensions of the construction field rarely addressed in architectural curricula. User-clients may bring vernacular knowledge, expertise from other fields, or alternative visions of construction, all of which shape their expectations and interactions. This plurality makes the adjustment process rarely predictable for either architects or user-clients.

Adjustment is thus a mutual and negotiated process, typically involving sustained interaction over the course of a project. When oriented toward growth, adjustment is complex, dynamic, and long-term: it entails acquiring situation-appropriate knowledge and skills, negotiating value conflicts when a "fit" is not achieved, and progressively building trust.

More adjusted actors may still experience fluctuations in comfort, enthusiasm, or confidence - the ups and downs we identified as indicators of habitus shock - but these tend to be shorter and less destabilising. Learning is visible in the growing familiarity of architects and user-clients with one another's frames of reference. A closer fit between user-client dispositions and the architectural habitus, as seen in Case Study 1, facilitated smoother adjustments, allowing both parties to "ride the curve" together. By contrast, Case Study 2 revealed persistent misalignment: the divergence between the architectural habitus and the user-client habituses remained pronounced throughout the project. Limited adjustments on either side prevented the emergence of shared codes, leaving frictions unresolved and resulting in enduring dissatisfaction with both the process and its outcomes.

Drawing on empirical evidence collected through interviews, case studies, co-design workshops, and tool prototyping, we argue that such frictions, when surfaced and worked through, can serve as productive spaces for mutual learning and design innovation.

1. Communication Breakdowns

A first layer of tension emerges from the communicative gap between the visual, technical, and symbolic language used by architects, and the more experiential, narrative-driven modes of expression preferred by user-clients. Architectural drawings, plans, or 3D models often assume a level of visual literacy that many clients do not possess. Simultaneously, temporal misalignments frequently occur: architects tend to work within fast-paced design cycles and expect quick decisions, while clients require more time for reflection, negotiation, and affective engagement These mismatches are exacerbated by the absence of shared tools for dialogue, particularly in the early stages of the project.

2. Value Conflicts

A second domain of interactional friction arises from divergences in underlying value systems. Architects often prioritize spatial purity, design innovation, or material experimentation, whereas user-clients may value affordability, environmental responsibility, or domestic routines. These are not superficial preferences but deeply embedded priorities shaped by social class, lifestyle, and life-stage. The thesis documents several cases in which architects failed to

uncover latent or affective values, leading to designs or processes that did not meet user expectations.

One such example is the case of Henri, an interviewed architect who misinterpreted a couple's request for two bedrooms as excessive, substituting it with a temporary bed in an office, a decision rooted in normative assumptions about sleeping arrangements and projection of his own way of life. The emotional significance of spatial separation was overlooked, leading to a "design error", in Henri's words.

Another example lies in the second long-term case study, with Elena demanding shutters and the architects resisting, prioritising aesthetic coherence, urban integration, and the preservation of the façade's heritage over the user's perceived need for security.

These value conflicts call for architectural decisions to be better negotiated rather than imposed. Participatory approaches such as co-design workshops, empathy mapping, or narrative tools help uncover these silent divergences and enable more situated design responses.

3. Power Asymmetries

Finally, power imbalances remain a persistent undercurrent in architect–user-client interactions. Belgian regulation formally requires clients to work with an architect for any structural transformation, and user-clients often feel sidelined in the actual design process. Many architects maintain an authorial or expert-centric posture, inviting clients for consultation but retaining ultimate decision-making authority. Even among architects open to participatory practices, expressions of discomfort were frequently observed. These reactions reflect enduring professional norms that continue to valorise individual authorship and aesthetic mastery (Cuff, 1991; Ahuja *et al.*, 2020).

One might expect the financial dependency of architects on user-clients—the latter being those who commission and fund the projects—to invert this power relation in favour of the client. However, the results indicate that architectural agency and technical literacy often reinforce the architect's position of authority. Several testimonies reveal user-clients feeling "left out," "alone," or "lost" in the process, as if their projects were not "high end enough to be worth the architects' full attention." Others described feeling "disregarded," suggesting that financial leverage alone does not translate into influence when asymmetries in knowledge, expertise, and symbolic capital persist (cf. Bourdieu, 1977).

Yet, we also documented moments when architects deliberately adopt more facilitative roles. These practitioners actively solicit user feedback, adapt their postures to match client rhythms, and embrace alternative interpretations of space.

If such approaches are supported by dedicated tools and long-term dialogue, co-authorship becomes possible. Architects begin to act not as authors, but as stewards, caring for user-clients, interpreters, mediators, or co-pilots, aligning with what Sanders and Stappers (2008) describe as the shift from designing "for" to designing "with". The result is often higher levels of client satisfaction, improved relational dynamics, and design outcomes that are both more liveable and meaningful.

Emotional Trajectories and Habitus Shock Curves

We tracked *comfort* and *enthusiasm* as key affective indicators to construct the emotional trajectories of both user-clients and architects. Comfort reflects the degree of ease, security, and clarity experienced in the design process, while enthusiasm captures levels of motivation, engagement, and anticipation. Taken together, these indicators provide a dynamic picture of how actors respond emotionally to frictions, moments of uncertainty, negotiation, and learning moments. These trajectories were then assimilated into what we term habitus shock curves. The curves function as a heuristic visualisation of the cyclical rise and fall, ups and downs, of affective states across a project timeline, showing how initial excitement may give way to confusion, tension, or stress before gradually stabilising or transforming into renewed confidence and satisfaction. By plotting comfort and enthusiasm together, we are able to represent not only moments of friction but also phases of growth, adjustment, and alignment between architect and client. This approach complements Bourdieu's notion of habitus as a set of durable yet permeable dispositions (Bourdieu, 1977) by highlighting the *affective dimension* of habitus transformation. The habitus shock curve thus offers a way to visualise how misalignments and negotiations within the architect–client relationship are experienced emotionally, and how they may open opportunities for change in both parties' dispositions (Friedmann, 2002).

The concept of habitus shock has been shown to be a non-linear, affective trajectory that captures the evolving emotional and cognitive states experienced by user-clients and architects throughout the architectural design process. These visualisations are supported by data from interview transcripts, document analysis, and observational notes where repeated cyclical fluctuations in trust, discomfort, and affective engagement appear over the course of the project timeline.

Importantly, this affective trajectory is not experienced by clients alone. The shock is bidirectional. Architects, too, encounter moments of cognitive dissonance, particularly when confronted with user feedback that challenges their assumptions, aesthetic intentions, or normative professional practices. For instance, when user-clients articulate needs or values that do not align with an architect's design logic or visual vocabulary, a form of professional vulnerability

is triggered, eliciting reactions that range from defensiveness to reflection and, in some cases, transformation.

Thus, we argue that mutual adaptation — rather than unilateral adjustment by either the user-client or the architect — is essential for meaningful collaboration. This reframing aligns with perspectives in participatory design and design anthropology, which emphasize the co-evolution of knowledge, roles, and expectations over time. When architects are willing to question their default postures and when clients are empowered to express their experiential knowledge, habitus shock can serve as a productive rupture — a threshold for learning and co-construction rather than a barrier to be resolved. As demonstrated throughout our research, design outcomes are significantly enriched when these emotional dynamics are recognized, discussed, and intentionally supported through time, empathy, and facilitative tools.

Architect Postures and the Double Bind

Architects operating within contemporary residential projects are increasingly confronted with what we identify as a double bind: they are expected not only to deliver bespoke, creative design solutions, but also to engage in relational, pedagogical, and emotional labour that far exceeds the formal scope of the architectural contract. As our observations and interviews reveal — particularly in Paper 7 — user-clients frequently project expanded roles onto the architect, casting them as confidant, mediator, therapist, or life coach, especially during moments of doubt, disagreement, or personal transition. These relational expectations—though often implicit—shape the affective climate of the project and place architects in a position where professional boundaries must be carefully navigated: too much distance may be perceived as detachment or even abandonment, yet too much involvement may lead to burnout or role confusion.

In this thesis, we intentionally avoid romanticizing participatory or co-design approaches. While much of the literature on user-centred design celebrates collaboration (Sanders & Stappers, 2008), our empirical findings highlight the emotional and temporal toll such engagements can entail — particularly when roles and expectations remain unspoken. Co-design does not simply demand new tools or methods; it requires time, patience, and a reconfiguration of professional identity. If this relational labour is left unacknowledged—if no space is made to discuss emotional availability, limits, and pacing—then even well-intentioned participatory processes risk collapsing under the weight of unsustainable expectations.

Furthermore, Paper 7 demonstrates that architects adopt diverse postures in response to this bind. Some strategically withdraw, relying on visual authority and distancing themselves emotionally from user concerns. Others attempt to

negotiate the middle ground, balancing authorship with responsiveness, often using tools or workshop formats as buffers. A smaller group fully embraces a facilitative posture, actively listening, reframing user narratives, and redistributing design agency—despite the personal and professional effort this entails, that often goes unrecognised and unpaid. This diversity of responses reflects not only individual disposition, but also broader tensions within architectural culture, which continues to valorise the autonomous designer while increasingly demanding collaborative competence (Cuff, 1991; Ahuja *et al.*, 2020; Angral, 2019).

Ultimately, we argue that if participation is to become a sustainable practice rather than a performative gesture, then its emotional, cognitive, and time-based costs must be explicitly negotiated within both project planning and architectural education. Only then can co-design become a space of mutual care, rather than unilateral burden.

Learning and Transformation

One of the most profound insights to emerge from this doctoral research is that learning within architect–user-client interactions is inherently reciprocal. Architects are not the sole experts in the room; rather, expertise is distributed, situated, and constantly negotiated throughout the process. Through prolonged engagement, architects gain access to tacit, embodied knowledge — learning about family rhythms, spatial rituals, emotional attachments, and the unspoken meanings embedded in everyday environments. These dimensions often elude formal tools of representation but prove critical to the success and resonance of the project.

Conversely, user-clients undergo their own pedagogical trajectory: they become more attuned to technical constraints, regulatory frameworks, spatial sequencing, and material trade-offs. Many gradually revise their expectations in light of structural realities, temporal limitations, and financial feasibility. When these parallel learning processes are supported by trust, continuity, and structured participation, the architectural project is redefined — not merely as a transactional delivery of a building, but as a shared journey of understanding and transformation.

These findings are aligned with literature in human-centred design, which challenge the traditional expert–user dichotomy. Following Sanders and Stappers (2008), we adopt the view that clients should be treated as experts of their own experience — possessing a form of situated and embodied knowledge that is neither anecdotal nor irrational but central to any meaningful co-design process. Out studies showed that when user narratives are taken seriously, project decisions become more contextually responsive, emotionally attuned, and functionally adaptive.

Throughout this dissertation, we have argued that contemporary architect–user-client interactions are best understood as negotiated, affective, and epistemically complex encounters. They are shaped by habitus shocks, structural asymmetries, evolving roles, and emotional turbulence — but they also hold immense potential for mutual understanding and mutual learning. This calls for a redefinition of architectural expertise — not its abandonment. Architects need not relinquish their professional competencies; instead, those competencies must be expanded to include relational, interpretive, and pedagogical dimensions (Cuff, 1991; Ahuja *et al.*, 2020). These skills are not ancillary but essential for navigating the complexities of participatory, user-involved design.

However, we also observed that despite growing rhetorical support for participation, actual uptake remains limited. Few architectural practices systematically integrate tools or methods that scaffold co-learning and user empowerment. This research thus advocates for the broader dissemination of low-threshold, context-sensitive instruments—such as the briefing tool developed and tested during our fieldwork, or comfort/enthusiasm curves — which democratize design dialogue and help surface latent expectations before they escalate into conflict. Without such tools and the skills to implement them, participatory design risks remaining an aspirational concept rather than a lived practice.

RQ2. How can these interactions between architects and user-clients be facilitated or improved?

This thesis strongly advocates for institutional and curricular transformation. Skills such as empathy, dialogue facilitation, and participatory ethics must be integrated into the core of architectural education—not as supplementary "soft" skills, but as essential components of contemporary practice. Just as technical drawing once revolutionized architectural production, we argue that dialogic competence — the capacity to engage meaningfully with diverse stakeholders — must now become a foundational pillar of the profession. Without such a shift, architecture risks falling out of step with evolving societal expectations and user agency in the built environment (Sanders & Stappers, 2008; Cuff, 1991).

Reconsidering the Role and Posture of Architects

A critical axis of transformation lies in the redefinition of architectural posture. Architects must transition from the traditional author model toward roles as facilitators, interpreters, and mediators of user knowledge. Our field data reveals that user-clients are more likely to trust and collaborate meaningfully with architects who step down from their pedestal, opening space for relational and dialogic design practices. While resistance persists — often linked to anxieties about the dilution of creative control or loss of professional identity — our findings suggest that posture shifts do not diminish architectural agency. Rather, they redistribute it, anchoring it more deeply in mutual recognition and situated responsiveness. As illustrated by David, an architect participant: "*Even if it takes time, I think it might be time saved afterwards*".

Such testimonials point to a reframing of time and value: short-term complexities introduced by co-design may result in long-term clarity, trust, and project alignment. This resonates with studies emphasizing the transformative potential of participatory design processes for both users and professionals (Ehn, 2008; Ahuja *et al.*, 2020).

Stepping Up on the SKL Model

To support this reconfiguration of roles, the SKL ladder of participation—originally developed for municipal planning and adapted in this thesis—offers a graduated path from consultation to co-decision. We argue that architects should move beyond the lower rungs of *Information*, *Consultation*, and *Dialogue*, which they too often rely upon, and progressively embrace more engaged modes of collaboration, such as *Involvement* and perhaps even *Delegation*.

Involvement would mean that architects and user-clients collaboratively define problems and explore design options. While final decisions remain architect-led, user input is integral to shaping the outcome.

Through delegation, user-clients would be entrusted with decision-making power within specific domains or parameters. The architect becomes a mediator or "scaffolder" of the process—not relinquishing control, but guiding it through professional judgement.

The SKL ladder thus serves as a reflective tool for professional development, enabling practitioners to critically examine their own posture and identify where deeper engagement with clients is both possible and productive.

Tools for Facilitation: From Briefing to Empowerment

A cornerstone of our contribution lies in the iterative development of a low-tech, paper-based briefing tool, co-designed and tested with user-clients. Inspired by Donnell and Day (2020) and Bogers *et al*. (2008), the tool was designed to move beyond functional checklists, inviting user-clients to articulate core values and lifestyle preferences; emotional priorities and spatial comfort zones; future-oriented scenarios and desired rituals of use; concerns and aspirations not easily conveyed in architectural drawings.

By giving voice to qualitative, affective, and tacit forms of knowledge, this tool democratizes the briefing process and reframes the initial dialogue as a shared inquiry rather than a unilateral extraction of requirements. This helped prevent misunderstandings, surfaced latent frictions early, and established a vocabulary for dialogue that could be revisited throughout the project.

Several pedagogical tools were also tested across the fieldwork corpus:

- Mural-style narrative mapping: Enabled architects and clients to share biographical or experiential spatial memories, generating affective resonance and empathic alignment.

- Role-play and journey mapping: Simulated key project moments (e.g., budget crises, material choices), revealing interactional blind spots and helping both parties prepare emotionally for critical junctures.

- Thematic co-design workshops: Allowed user-clients and architects to co-create tools and frameworks, fostering not only design solutions but a deeper mutual legitimacy.

These instruments, modest in appearance, functioned as catalysts of mutual learning and boundary negotiation, and offer replicable formats for other participatory settings (Appendix 6).

Training and Professional Development

To embed these postures and tools into long-term professional practice, it is essential to develop targeted training initiatives that systematically cultivate relational and participatory competencies. Such initiatives should encompass:

- Active listening and dialogue facilitation;

- Non-violent communication techniques and value clarification exercises;

- Ethical engagement with participation and the navigation of power dynamics;

- Human-centered design strategies rooted in lived experience.

These competencies must not be relegated to "soft skills" or optional electives, but rather treated as core knowledge integral to the architectural curriculum. As architects are increasingly called upon to mediate between diverse and often conflicting needs, as well as between distinct life-worlds, relational expertise must be afforded the same importance as structural integrity or environmental performance (Cuff, 1991; Sanders & Stappers, 2008).

The findings of this research point to concrete pathways for integrating these insights into both academic training:

- Studio-based design exercises that foreground user narratives and co-design processes;

- Internship placements that immerse students in participatory frameworks and on-the-ground negotiation;

- Reflexive tools (such as the revised SKL ladder) to support self-assessment of professional posture and ethical orientation.

Pedagogical reform and field-based experimentation must progress in tandem. Without structural support from institutions and deliberate curricular transformation, even the most compelling participatory approaches risk remaining isolated innovations rather than becoming systemic practice.

What are the key take-aways?

Consider the shock

Comfortable/Enthusiast

Bye!

month 0

month 26

● Architects
● User-clients

Systematise Briefing

Step up!

Delegation
(to decide)

Involvement
(to participate)

Dialogue
(to reason)

Consulation
(to opine)
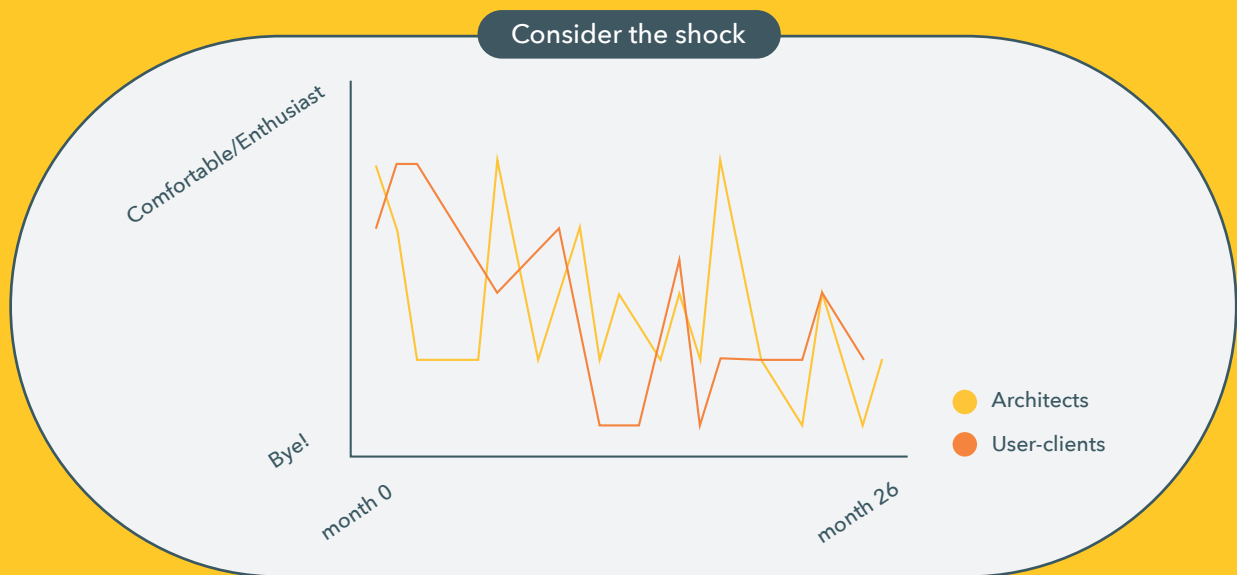
Information
(to know)

Figure 44. What are the key take-aways?

Limits

While this thesis offers rich, empirically grounded and context-sensitive insights, several limitations must be acknowledged:

Contextual Specificity

The research was conducted within the framework of the "My Architect & I" project, situated in the French-speaking regions of Belgium and focused exclusively on single-family housing. As such, the findings may not be directly generalizable to other housing typologies, geographical contexts, or regulatory and cultural environments where architectural practices differ.

Sampling Bias

Participation in the studies was voluntary and unpaid, resulting in a self-selected sample primarily composed of individuals already inclined toward dialogue and participation. This led to an overrepresentation of motivated user-clients and architects receptive to co-design, occasionally producing an imbalance between professional and lay participants.

Socioeconomic Homogeneity

The participant pool was predominantly composed of individuals from middle-class backgrounds, limiting the representation of more vulnerable or diverse user profiles — including elderly persons, non-native speakers, individuals with disabilities, or lower-income households. This constrains the transferability of findings to more heterogeneous populations.

Tool Evaluation

While the research focused on the iterative development and validation of the briefing tool's final content, it did not systematically track discarded elements or evaluate the tool's long-term effects on completed architectural projects. As a result, conclusions regarding its sustained impact remain limited.

Perspectives

Toward Broader Inclusion

Future studies should actively engage marginalized or underrepresented populations — such as social housing tenants, elderly users, individuals with reduced mobility, people living in precarity, vulnerable populations. Their involvement would not only broaden the socio-demographic scope of participatory design research but also highlight critical issues related to **accessibility, spatial and social justice, and equity** in current architectural practices.

Beyond Single-Family Housing

Applying and adapting co-design practices and tools in more complex typologies — such as collective housing or institutional buildings — would deepen our understanding of architect–client–user dynamics in **multi-stakeholder environments**, where conflicting agendas and layered governance structures further complicate participation.

Sustainability and Empowerment

A promising intersection lies in exploring how **environmental responsibility** can be effectively coupled with **user empowerment**. Participatory retrofitting offers fertile ground for aligning **climate action with social inclusion**, and merits dedicated methodological and design exploration.

Architectural Training

Finally, we advocate for the integration of more co-design and user-centered methods into **architectural education**. Pilot programs and design studios should be developed and studied to assess how such approaches shape **student postures**, perceptions of professional identity and responsibility, and capacities for **empathy, reflexivity, and mediation**. Comparative studies could track student evolution across multiple iterations and institutional contexts, offering insight into how future professionals can be better prepared for participatory and relational practices.

CHAPTER IX
Concluding remarks

CONTRIBUTIONS

The following table synthesises the main contributions of this thesis, grouped into four broad categories: empirical/practical, theoretical, methodological, and pedagogical. Each contribution is situated within the relevant chapters, highlighting how the research combines analytical depth with actionable insights. Together, these contributions offer a multi-layered understanding of architect–user-client interactions in private residential design.

Table 21. Summary of thesis contributions

	Contribution	Chapter
Empirical / Practical	Broad insights of architect–user-client interactions in private housing projects in Wallonia-Brussels, case studies, interviews, focus groups, and co-design workshops.	Chapters IV–VI
	Analysis of roles and professional postures adopted by architects and the tensions experienced in renovation and self-promoted housing projects.	Chapter V
	Study of the transformative effects of co-design tools, especially within the *My Architect and I* project, showing impacts on satisfaction, mutual learning, and role adjustment.	Chapter VII
	Concrete recommendations to improve interactions in housing projects: expectation management, mediation tools, and soft skill development.	Chapter VIII
Theoretical	Glossary	Glossary
	Development of the concept of habitus shock in architecture: how mismatches between architects' and clients' social dispositions affect communication and decision-making.	Chapter VI
	Definition of architectural posture as a conceptual tool to analyze role negotiation and responsibility in housing design.	Chapter V
	Integration of interdisciplinary frameworks: symbolic interactionism, participatory design, and Bourdieu's sociology applied to architecture.	Chapter III
Methodological	Multi-method qualitative approach (systematic review, interviews, ethnography, co-design, focus groups) grounded in constructionist and participatory epistemologies.	Chapter III
	Habitus shock adaptation, curve modelling with comfort and enthusiasm	Chapter VI
	Development of a protocol to evaluate co-design impacts in architectural settings (e.g., levels of argumentation, mutual adjustment, reliance on concrete vs abstract reasoning).	Chapter VII
Pedagogical	Critical reflection on architectural education: advocating for the integration of soft skills, mediation, participation, and reflexivity in curricula.	Chapter VIII
	Knowledge transfer toward teaching: design of tools and case narratives to train future architects in relational and participatory dimensions of practice.	Chapter IX

Addressing communication and interactional challenges holds significant potential for long-term improvements in architectural practice. This thesis has shown that improving architect–user-client relationships in private housing not only enhances project outcomes and user satisfaction, but also contributes to reducing anxiety, misunderstandings, and inefficiencies throughout the process. Clearer dialogue and mutual understanding foster trust, ease decision-making, and can ultimately revalorize the role of architects as facilitators of complex, meaningful, and deeply personal housing projects.

Through a multi-method qualitative approach, this thesis mapped interactional frictions across the design process, analysed emotional trajectories and role dynamics, and tested co-design tools to facilitate these interactions. It showed how conflicts often emerge not from bad will but from mismatched habitus, unclear responsibilities, and unvoiced expectations. It also demonstrated that mutual learning and long-term adjustment are possible, especially when architects adopt mediative postures and embrace participatory tools. This research thus repositions architectural design as an ongoing negotiation of values, experiences, and projections, not a one-time creative act.

Yet, to fully embrace this shift, architectural practice and education must reconsider their self-image.

This thesis calls for a paradigm shift toward more inclusive, dialogical, and collaborative forms of practice. Despite growing interest in user-centred design, architectural culture and education continue to valorise the figure of the autonomous, creative professional. The image of the architect as a 'spiritual leader' (Ahuja *et al.*, 2020), whose artistic vision overrides all else, is still deeply embedded in the profession and reinforced from the earliest stages of training. As Adad (2004) notes, students are taught to treat the house as an art object. Studio teaching prioritizes originality and personal expression (Winch & Schneider, 1993; RIBA, 2015). Cuff (1991, p. 154) captured this tension by describing the architect as "a peculiar kind of artist who stays within certain boundaries".

This culture, as Arboleda (2020) and Angral (2019) argue, continues to celebrate large, iconic projects and peer-oriented recognition, distancing itself from everyday domestic needs. Architects tend to rely on their own experience as design reference (Cuff, 1991; Imrie, 2003; Heylighen & Dong, 2019), which can lead to disconnection, arrogance, or inflexibility in the eyes of clients (Siva & London, 2011). Angral (2019, p. 59) warns against an "allegiance culture" that neglects moral responsibilities and reproduces outdated educational models.

Such models, as this research demonstrates, are no longer sustainable. The complexity of today's projects, especially in private housing, demands a different kind of engagement. Architects must reconcile their creative identity with facilitative, ethical, and responsive postures. The shift is already underway

— from author to service integrator (McNeill, 2009), from master-designer to co-constructor of meaning and space.

To initiate this cultural transformation in Belgium, architectural institutions must value not only functionality, technique, and aesthetics but also empathy, adaptability, and mutual learning. Studio formats should be revised to foster collaboration with real users, critical reflection, and design mediation. Tools developed in this thesis — such as those tested in My Architect and I — can provide concrete pathways for such reforms.

Meanwhile, clients' expectations are also evolving. User-clients expect more than drawings and permits: they seek reassurance, clarity, and partnership (Arora *et al.*, 2021; Angral, 2019). Yet, they often misunderstand architects' roles, leading to friction and frustration. As shown in this thesis, expectations shift throughout the process. Architects must learn to accommodate this fluidity without losing sight of feasibility, cost, and coherence. Helping clients navigate uncertainty is part of the job — yet few tools exist to support this role.

Historically, the disconnect between practice and user experience was fuelled by the shift from self-built, user-led housing to top-down, developer-led models (Vanzande, 2020; Halleux, 2005). Today, as ecological and social concerns drive a return to bottom-up initiatives, the time is ripe to reconfigure the architect–client relationship. Empowering users does not mean disempowering architects. On the contrary, it offers a chance to reclaim the true value of architectural accompaniment — a value rooted not in authorship but in care, translation, and shared meaning-making.

Architects should not have to choose between being "Robin Hood" or "a piece of shit," as Mouffe (2025) provocatively puts it. Nor should they feel, like Verdique (2021), that their profession has become absurd, bureaucratic, or thankless. This thesis answers the two authors not with satire or resignation, but with tools, frameworks, and hope: it acknowledges the emotional labour of practice, the weight of asymmetries, but also the immense potential of truly shared architectural processes.

In short, it invites architects to design the conditions for better user involvement.

Not by silencing tensions, but by listening to them.

Not by giving up authorship, but by sharing it.

Not by dreaming less, but by dreaming together.

Not by building emotional barriers, but by building bridges.

Figure 45. Illustration of an architect "having many hats".

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APPENDICES

Available upon request or in the online PDF version of the thesis.

APPENDIX 1: Systematic literature review process

APPENDIX 2: Grey literature tools

APPENDIX 3: Consent forms

APPENDIX 4: Methodological materials for in-depth interviews

APPENDIX 5: Methodological materials for case studies

APPENDIX 6: Workshop materials

APPENDIX 7: Workshop reports

APPENDIX 8: Tools developed through the "My architect and I" project