

Futurizing “Good Construction(s)”: ‘low-carbon’ and ‘labor’ futures in the construction sector in Belgium

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Abstract: This paper explores, through a foresight exercise, how the construction sector in Belgium imagines its transition by 2050. Drawing on the notion of the ‘good economy’ (Asdal et al. 2021), which addresses the relationship between normativity and economic practices, our approach considers both ‘low-carbon’ and ‘quality of work’ as two forms of good that are troubled by the participants. Envisioning the transition of the construction sector in Belgium in terms of ‘good economy’ shows that there is an asymmetry between the two forms of good explored. Priority is given to the assessment of what ‘good’ environmental problems and ‘good’ material futures should be. Materials ought to be reintroduced into the policy and economic perspectives of the transition, while a sustainable and circular approach to the (re)use of materials ought to be strengthened. Quality of work is expected to depend on the new knowledge and training that a structurally scarce workforce should ideally possess.

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Introduction

Although mainstream policy discourses underscore the necessity for the construction sector to reduce its GHG emissions, the ways in which this will be operationalized remains opaque. Moreover, the implications of this transition for prospective and desirable trajectories within the sector remain uncertain. Indeed, determining whether an economic activity is beneficial to society involves a variety of factors that go beyond purely economic considerations. These include the choice of materials, the quality of work and the definition of what constitutes ‘sustainability’. These factors are valued through the use of various socio-technical tools, including future visions and discourses on practices, which serve to the center the economy’s relationship to normativity. In this article, we draw upon recent research from the field of Valuation Studies (Adal & al. 2021; Asdal & Huse 2023) to pose the following question: What are the processes through which the construction sector in Belgium is constituted as a desirable and sustainable economic sector of the future? Responding to TATuP’s special topic on the material transition in architecture and construction, we aim to provide an empirical contribution to the understanding of what it means to futurize an economic sector in terms of a ‘good economy’, as articulated by Asdal et al. (2021), who define it “as an analytical tool for investigating how economic practice is entangled in versions of the good” (p.1). To do so, we analyze how two potentially conflicting political priorities – namely, ‘low carbon’ and ‘quality of work’ – are understood and articulated as different notions of the ‘good’ within the construction sector in French-speaking Belgium. We build our analysis on a number of sources of qualitative data, including exploratory interviews conducted between May and December 2023, policy documents analysis, and a foresight workshop. Our particular focus is on how materials are made part of the envisioned transformation of the sector, resulting in a valued transformative relationship of the sector in relation to them, as well as the quality of work.

Literature

From the perspective of social studies of market, economy is not a mere given; rather, it is a construct shaped by socio-technical agencements (Callon 1998). Empirically, this means that the economy can be investigated as something that is achieved rather than “a pre-existing reality that can simply be

revealed and acted upon” (Çalışkan and Callon 2009, p. 370). Çalışkan and Callon (2009; 2010) have put forth the conceptualization of economization processes, which are defined as “the processes through which behaviours, organizations, institutions and, more generally, objects are constituted as being ‘economic’” (Çalışkan and Callon 2010, p.1). Extending the study of economization toward that of valuations, Asdal & al. (2021) and Adsal & Huse (2023) investigate the ways in which other dimensions, beyond the economic, are intertwined in processes of economization. In particular, they draw on classic work on the relationship between normativity and the economy to argue that the notion of ‘the good’ has always been embedded in and through the economy (and vice versa), enacting specific relations between the good and the economy, while economies have their specific ways of valuing, through what the authors call ‘tools of valuations’. In their work, they inquire into the nature of the ‘good’ within the economic context and examine the ways in which distinct versions of the good can be distinguished and contrasted. Asdal and Huse (2023) elaborate on the notion of a ‘good economy,’ emphasizing that their research is “multi-sited and multi-timed” (p. 8). In this context, the term ‘multi-sited’ is used to describe a methodology that extends the concept of a ‘site’ beyond the traditional ethnographic locations where research subjects can be observed, interacted with, or perceived directly. It also encompasses documents that are regarded as equally valuable social realities in their own right. In addition, the term ‘multi-timed’ is employed to signify that the research in question pertains to a multiplicity of temporalities, encompassing the past, the present, and the future.

Our novel contribution to the conceptualization of a good economy is to introduce a distinct site, neither a pre-existing physical location nor a document site, into the analytical framework. Instead, it is a foresight workshop, meticulously designed based on and incorporating interactions with key actors and documents within a given sector. The objective is to engage in a collaborative process of envisioning and shaping the future of the sector in question. This would entail capturing, balancing, and valuing the diverse forms of goods that are in tension with one another, including ‘low-carbon’ and ‘quality of work’. Our approach draws inspiration from the well-known Constructive Technology Assessment (CTA) methodology, as developed by Arie Rip and colleagues (Rip et al., 1995). In particular, we find the use of socio-technical scenarios to be a valuable tool for broadening technological development and incorporating a diverse range of perspectives (Rip & te Kulve, 2008).

The combination of an understanding of dynamics of an economic sector and the actual construction of socio-technical scenarios, along with their subsequent use, represents a powerful tool for advancing our understanding of good economies. By approaching the notion of the ‘good economy’ in this manner, it is possible to gain a deeper understanding of the discourse surrounding the practices of sectorial actors and their perceived value in the present and future contexts. This approach enables the identification of desired practices that align with key political priorities, such as those related to ‘low-carbon’ and ‘quality of work,’ which are crucial for the transition and require further operationalization and coordination.

Methods and materials

To empirically explore the labor, material, economic and environmental dimensions at stake in the transition of the construction sector in Belgium, its present state and the envisioned futures, an exploratory phase involving semi-structured interviews, a document analysis and a prospective

phase involving a foresight exercise were developed and carried out. The latter involved two main methodological steps.

The first step involved nine exploratory interviews with representatives of the construction sector (e.g. unions, federation of companies, training centers, competitiveness clusters, universities and research centers, sub-sectors working with specific materials, administrations). More specifically, since the construction sector in Belgium is a regionalized competence and therefore subject to three different sets of legislation, we focused our analysis on two regions: the Brussels-Capital Region and in the Walloon Region. The aim of the interview was to explore and understand, based on the experience of the interviewee, the current state, the perceived changes in the sector (both past and envisioned changes), the visions, expectations and needs for the sector for the transition to low-carbon and quality of work in Belgium. The data collected through the interviews allowed us to gather relevant knowledge about the current state of the construction sector. Based on the results of the interviews and a thematic analysis of policy documents at the EU and Belgian regional level on low carbon and work in the construction sector, we designed a set of 58 cards (32 ‘givens’, representing the system as it is according to participants, and 26 ‘drivers’, representing levers of change to transform the sector) that were used as tools of valuation during the foresight workshop.

The second step was to build a foresight workshop using the scenario method. The scenario method provides an initial structuring of possibilities with the goal of plausibly preparing - not predicting - the evolution of important variables and levers over time (Moniz 2006; Wilkinson 2016). A foresight exercise involves dealing with “testable and contestable hypotheses” rather than (just) facts (Wilkinson 2016). The workshop welcomed 18 participants coming from different sub-sectors of the construction sector in both regions, who were divided into three heterogeneous groups. The general objective was to reflect on existing and envisioned practices in the construction sector, taking care to consider both a ‘low-carbon transition’ and a ‘quality of work’. Our approach considers both dimensions as two forms of good that are troubled by the participants and seeks to understand how both versions of good are valued and by what means. This choice of framing is derived from the framing of the research project on which this paper is based. The specific objective was to confirm and critique the initial diagnosis of the state of the sector as perceived by the actors interviewed and to consider potential future scenarios for the sector. Participants were asked to project themselves on a time scale from 2023 to 2050. To achieve this goal, the workshop itself consisted of two main phases. During the first phase, participants were invited to work together towards a common diagnosis of the sector *as it is today* regarding ‘low-carbon’ and ‘quality of work’. In the second phase, participants were invited to reflect together on how their diagnosis could move towards an optimum ‘low-carbon’ and ‘labor/work quality’ with the chosen drivers and the possible paths to reach the optimum.

Futurizing ‘good construction(s)’ at the intersection of low-carbon and labor transitions

This section presents the findings of our study and offers insights that allow for a deeper examination of the ways in which the future of construction is imagined differently. The analysis is structured around two key dimensions of the future of construction in Belgium: the transition to a low-carbon economy and the pursuit of enhanced quality of work. The presentation of the results begins with an overview of the policy landscape, introducing the notion of ‘lenses’ as a means of identifying and

categorizing dominant policy perspectives and interpretations. This is followed by an analysis of the different visions that emerged from the workshop.

Low-carbon transition

Policy initiatives to move the construction sector towards a ‘low-carbon’ transition started with measures to mitigate climate change, mostly through an approach to reduce greenhouse gas emissions. In 2002, the Federal Government and the three Regions adopted their first Air-Climate Plan (2002-2012), which included the energy efficiency of buildings as a priority to meet the objectives of the Kyoto Protocol (Federal Public Service Public Health, Food chain Security and Environment 2002). At the level of the European Union (EU), the first directive related to the energy performance of buildings dates to 2002 implementing measures to comply with the Kyoto Protocol to reduce carbon dioxide emissions, for which the residential and tertiary sector accounted for 40% of final energy consumption in the EU and was expected to rise at the time (Directive 2002/91/EC).

This directive laid out the first obligations of Member States to develop a calculation methodology to assess the energy performance of buildings and to introduce a certification mechanism. Since then, the energy performance of buildings became part of the umbrella term ‘energy efficiency’ in a broader energy and climate policy package called *2020 Climate and Energy Package* (European Commission 2008). It had the threefold objectives to reduce 20% of greenhouse gas emissions compared to 1990s levels, a 20% increase in the share of renewable energy and an improvement of 20% of energy efficiency by 2020. The first two targets were legally binding. The latest package *Fit for 55* (European Commission 2021), which aims to reduce greenhouse gas emissions by 55% at the horizon 2030 compared to 1990s levels was adopted by the European Commission in 2021, and recently revised both the energy efficiency directive (Directive EU/2023/1791) and the directive on efficiency of buildings. In this ‘energy lens’, it is the reduction of energy consumption and emissions that are valued, appealing to energy modelling and energy scenarios as the knowledge basis to assess the targets. We see this energy lens as a way to re-politicize the way energy is consumed and managed by users.

A more recent ‘resource lens’ has been taking roots since the European Commission adopted its first *Circular Economy Action Plan* (2015-2019). In Belgium, regional circular economy action plans were adopted by the Brussels-Capital Government on March 10, 2016, and on February 4th, 2021, by the Walloon Government. Both the EU and the two Regions include the construction sector as one of the priority ‘value chains’ to deploy a circular economy. This ‘resource lens’ envisions the materials as the main focal point through which a transition of the construction sector ought to be about and appeals to a new form of thinking that takes the lifecycle of materials as the basis to envision their coming about and their becoming, including their end of life. This resource lens, we suggest, is a way to re-politicize materiality in the economy, what our material world is made of, produced from, destined to become, and cared for.

More recent strategies in the construction sector increasingly see the premises of the entanglement of the two lenses. Indeed, at the regional level, energy efficiency is deployed through the *Long-Term Renovation Strategies* which are strategies that Member States must adopt in order to comply with Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 on energy efficiency. The *Renovation Strategy Renolution* (2030-2050) (SP Brussels Environnement 2019) was adopted by the government of the Brussels-Capital on April 25, 2019, and includes ‘a circular vision’, considering “environmental impacts of the building: the energy consumption, but also production and the transport of materials necessary to the renovation. The renovation will be thought through to maintain to the maximum the existing building, valorizing the existing materials” (SP

Brussels Environment, 2024). The *Walloon Long Term Strategy for the Energy Renovation of Buildings* (SPW Territoire Logement Patrimoine Energie, 2020) was adopted by the Walloon Government on November 24, 2020, and includes measures to deploy the circular economy both in the renovation and in the quality and use of resources. From an analytical perspective, it can be argued that the two lenses, namely the ‘energy lens’ and the ‘resource lens,’ represent two versions of ‘good construction’ that have become equally valued within the policy landscape. These lenses rely on different tools for assessing the optimal trajectory of the construction sector, appeal to disparate forms of knowledge production about the transition and give rise to divergent conceptualizations and visions of material futures for the construction sector. However, it remained to investigate how workshop participants would operationalize these two salient perspectives (the energy and the resource lenses) and arbitrate between competing options for shaping the future of their practices in the construction sector.

During the workshop, no specific definition of the term ‘low-carbon’ was provided to the participants. Instead, they were encouraged to define the term for themselves and to contest its usage. The term was debated vigorously, with participants offering a range of interpretations. These included understanding low-carbon as measures to make buildings more energy efficient, as materials that store CO₂ emissions and use as little energy as possible in the production process, or as recyclable materials that are considered low carbon because they avoid the extraction of new materials.

Some favored the term ‘reduction of environmental impacts’. The goal of reducing CO₂ emissions was contested by some participants, who argued that it is an ‘accounting or engineering vision’ that relies on compensation mechanisms. For them, the aspect of energy consumption of matter remains important, but what is central in the discussion of the transition of the construction sector, and what should be valued, is the question of depletion and (future) access to material resources, which, in their opinion, is missing from the discussions on energy efficiency. Some participants emphasize that the construction systems that have led to such a vision have resulted in buildings that are hermetic to their external environment, leading to problems such as humidity or poor indoor air quality for the occupants. In this sense, for some participants, the means to achieve good performance of buildings are not discussed enough.

“Standards are imposed on us, but we don't really care how we get there. I can get my house to a good level of energy performance of buildings, but by doing stupid things.” (A Group 1 participant)

However, all participants concurred that to envisage the prospective trajectory of the construction sector, it is imperative to conceptualize and execute a project in unison, and to cultivate strategies that promote sobriety, defined as the intentional curtailment of energy and material consumption. It was agreed that our relationship with materials should undergo a transformation. While the new building was valued and normalized as the good, the participants asked to also consider the good in the existing and recycled materials. Each material has a role to play in a circular future, but must be optimized, *“putting the right material in the right place and in the right quantity”* (a participant of group 1). While this perspective on resource optimization offers the potential for a more diverse range of materials, including those derived from biological sources, recycled materials, and reused materials, it should not preclude the necessity for informed decision-making regarding material selection and the assessment of the safety of the constructed buildings.

Labor transition

Policy initiatives addressing the problem of the labor side of the construction sector have been imagined by regional authorities as an adaptive response to societal, material and market demands, with the objective of addressing environmental concerns. These initiatives have been valued in terms of job creation that can be enabled by the transformation of the construction sector, and potentially of ‘new jobs’ (Bruxelles Environnement 2017). The Employment-Environment Alliance was launched by the Brussels government in 2009 as part of the 20-20-20 Climate-Energy Package, with the aim of discussing different issues such as employment, training, water, waste, construction, and food, and how these different issues can create economic and employment opportunities while solving environmental problems (interview with a representative of the Confédération de la Construction Bruxelles). The same initiative was launched by Wallonia in 2009 as part of the Climate-Energy Package. The construction sector was identified as a key sector to “focus on the potential of energy and environmental improvements in buildings to generate jobs, create economic opportunities and increase training, especially in sustainable construction jobs” (IWEPS 2017, p. 3). The objective of this newly constituted alliance, designated as the Alliance Climate Employment Renovation (ACER), is to pursue collaborative initiatives in the implementation of a long-term strategy for the renovation of buildings.

Despite the political priority of creating new jobs in the construction sector to achieve CO₂ reduction objectives, the nature of the jobs envisaged in a ‘low-carbon’ future remained unclear. This was therefore an area that we wished to investigate with the participants in our foresight workshop. No precise definition of the term ‘quality of work’ was provided to them, but it was left to the participants to define it. They found the term challenging to define and raised a number of questions, including whether it refers to job security, a fair wage, the quality of skills, or support in the difficulty of the tasks. Across all groups, the quality of work was linked to values such as personal fulfillment. This was conceptualized as the pursuit of one’s own sense of purpose and the ability to freely choose one’s professional path, including the option of pursuing a career in the construction sector. Additionally, the quality of work was associated with aligning one’s work with personal values and a sense of responsibility towards one’s actions. ‘Quality of work’ was also valued in terms of promoting the health and well-being of workers. Indeed, it was linked to the use of healthy materials, as opposed to those that may pose health risks, such as asbestos or materials derived from petroleum. All groups viewed eco-construction as a promising material future that fosters meaningful work through the use of bio-based materials and a healthy working environment when working with nature-based materials. In contrast, there was no discussion of quality work in relation to health in relation to more polluting sectors, such as cement. The issue of assembly line work was addressed, yet participants expressed skepticism that the advancement of eco-construction would result in less repetitive work.

In imagining the prospective trajectory of the construction industry in light of these ‘quality of work’ values, training emerges as a pivotal concern for stakeholders, serving as a foundational element in realizing an environmentally sustainable and cradle-to-cradle future. The assumption that the new knowledge generated will drive circular thinking is not subject to debate. Circular thinking is perceived as inherently beneficial and desirable for both the environment and its people in terms of training, meaning at work, health and ‘non-displaceable jobs’. It is seen as a catalyst for a change in mindset towards circular thinking and in the perception of our relationship with materials (e.g. biosourced, used materials). The implementation of materials in a circular thinking process is also reported to require an ‘art of noticing,’ which can be defined as the ability to perceive the building

and the matter that needs to be learned through training. Training is also associated with promotion of environmentally preferable materials, particularly those derived from biological sources. One participant offers the following observation:

"It seems logical to me. If training has to do with valorizing materials, the valorization of materials, it makes sense that training will generate a lower-carbon society." (A Group 2 participant).

However, technical execution jobs, such as those found in the construction industry, are often undervalued from both a structural and cultural perspective when compared to higher education and university pathways, which are often perceived as being more conducive to socio-economic advancement. All participants concur that the jobs in the sector are still culturally perceived as inferior and that the sector encounters difficulties in recruiting personnel. The eco-construction sector stands to benefit from enhanced image and reduced recruitment difficulties. However, participants stress that without the capacity to recruit, the sector's transition will remain elusive. Some argue that the current focus on the material and energy transition of the sector has resulted in a disregard for labor. They call for a shift in attention that values labor more than the object, its energy, and materiality. One participant makes the following observation:

"[Training], it's not a nice to have. We're going to do some nice training, it's an imperative because our goal is to get to low carbon, but with the current state of labor market, we're not going to get there. We can have all the good intentions in the world, but if you don't have the people to do it, it's not going to work." (A Group 1 participant).

Conclusion

This paper examined two forms of 'good' – 'low-carbon' and 'quality of work' – in the construction sector in French-speaking Belgium. Our analysis shows that the policy landscape concerned with the transition of that economic sector has valued sustainable construction through two main lenses, an 'energy lens' associated with and a 'resource lens' that are progressively becoming more intertwined, while the focus has been on job creation rather than quality of work, an aspect that we wished to further explore during the foresight workshop. Furthermore, our original approach to the concept of a 'good economy' involved the design and implementation of a foresight workshop, which demonstrated the capacity of participants to imagine futures that are already embedded in dominant ways of conceiving transition. For example, the narrowing of the term 'low-carbon' is contested by the participants of our foresight workshop, who propose a broadening of the term to encompass what they refer to as 'reducing environmental impacts'. According to the participants of our foresight workshop, the latter term would facilitate the reintroduction of materials into the political and economic perspectives of the transition, as well as the reinforcement of a 'resource lens' based on a sustainable and circular approach to the (re)use of materials, facilitating a material turn in the transition of the construction sector. A central finding from the participants' insights is also the reintroduction of the issue of good labor into the discourse and its linkage to the other questions of the good economy. Indeed, according to them the transition to biologically sourced materials promises to restore meaning and health to the workplace, while envisaging minimal change in the daily tasks. If the role of training and the production of knowledge about circular thinking is identified as the key to achieving 'good construction(s)', the structural undervaluation of the jobs within the sector represents a significant obstacle to a cultural change. The transition of the

construction sector in Belgium in terms of a “good economy” therefore reveals an asymmetry between the two forms of ‘good’ explored thus far, namely ‘low carbon’ and ‘quality of work.’ While priority is given to the assessment of what ‘good’ environmental problems and ‘good’ material futures should be, while quality of work is expected to depend on the new knowledge and training that a structurally scarce workforce should ideally possess.

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Competing interests

The authors declare no competing interests.

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