

# The House of the Future

Redefining modern living

**Prof. Catherine Elsen — 18.01.2025 — Belgian Bone Club — 2025 Clinical Update Symposium**  
From Past Milestones to Future Innovations: 40 years of the Belgian Bone Club in Osteoporosis

# Housing architecture and... bones ?

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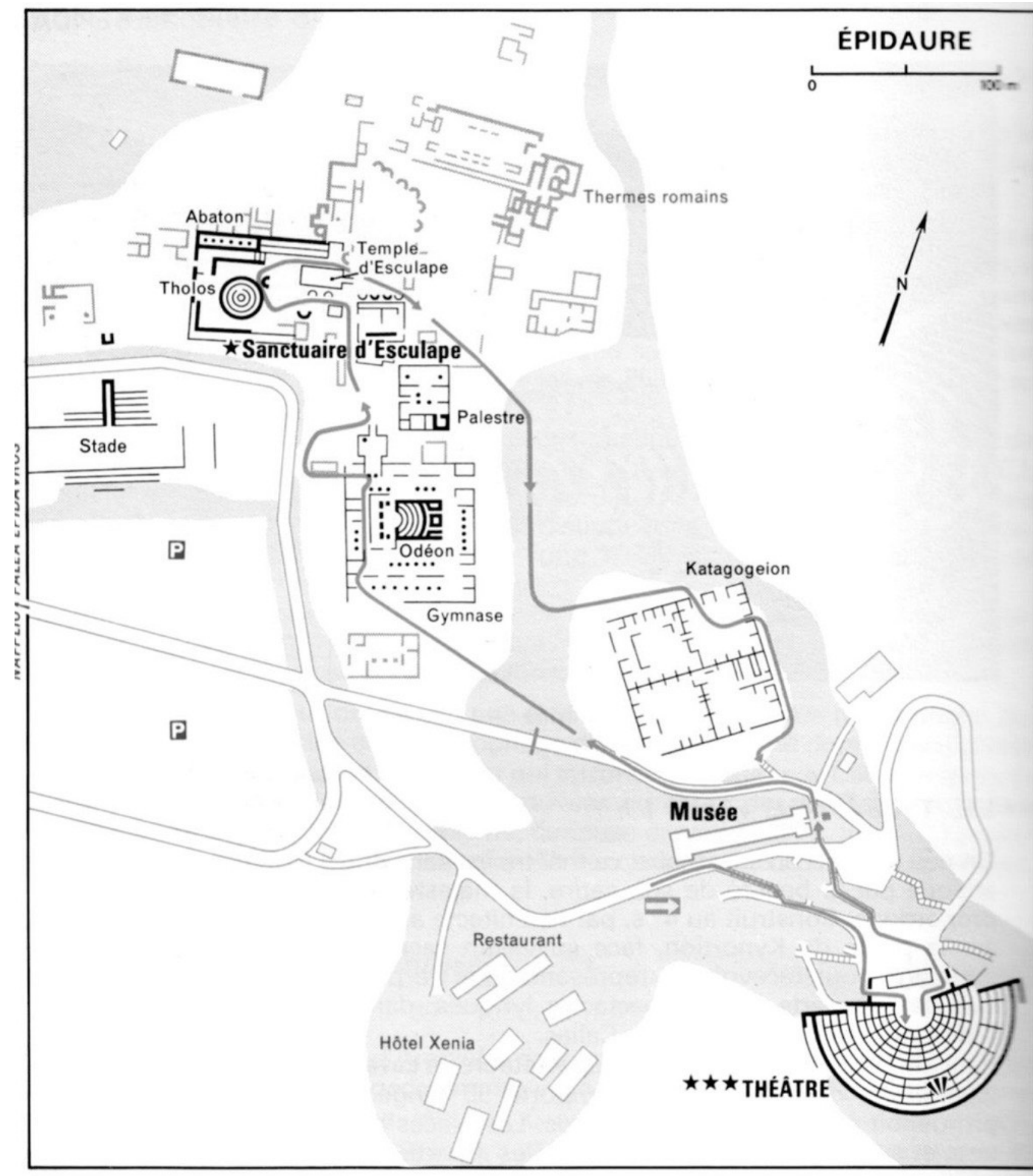
# Housing architecture and... bones ?



Oval hut, open-air settlement of the Middle Paleolithic period - Moldova, Ukraine (ca. 15.000 BC) - (Demay, Péan, Patou-Mathis, 2012)

**Architecture & Human health**

# Architecture and Health



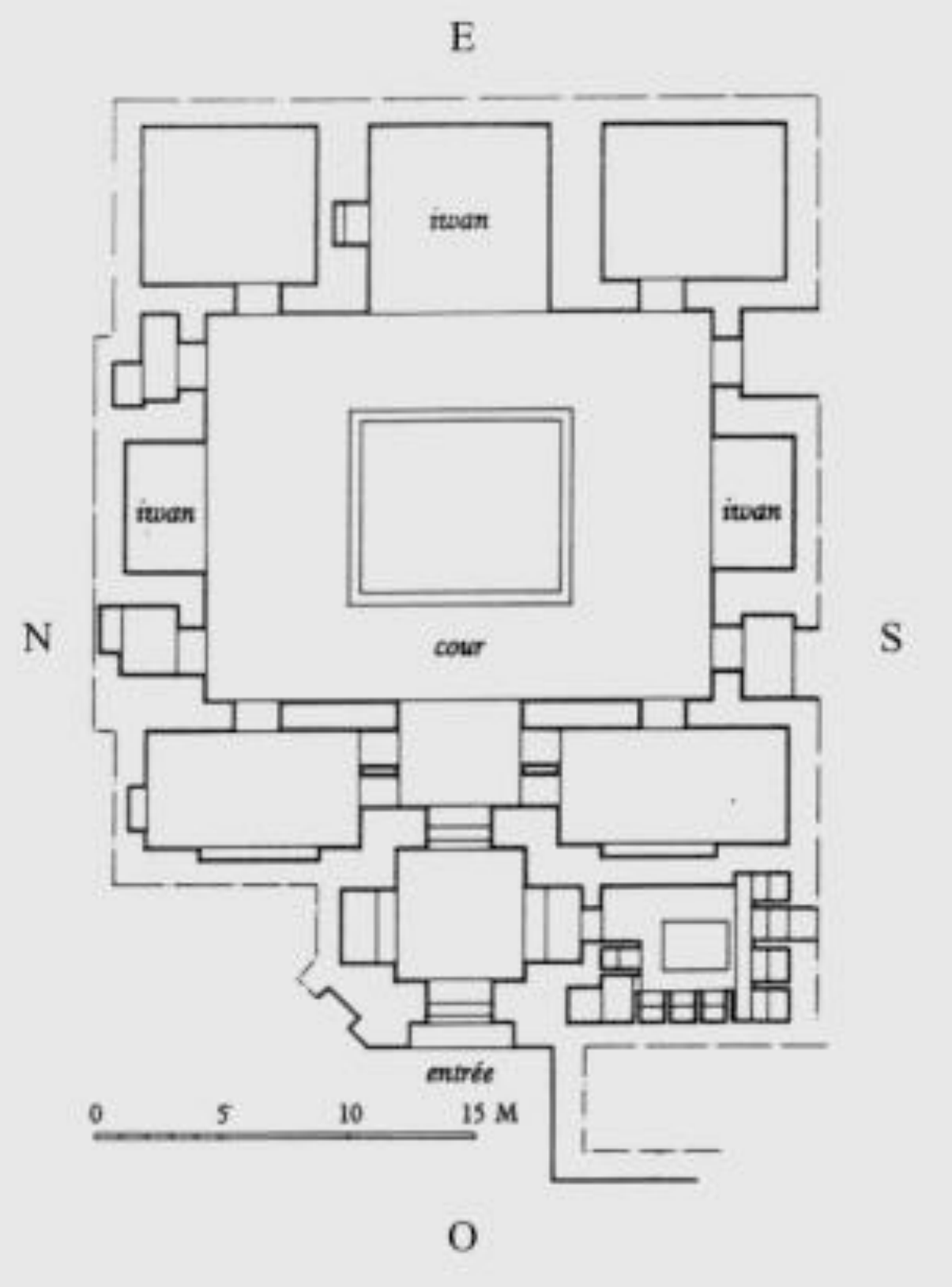
Sanctuary of Asclepius and theatre of Epidaurus (4th - 3rd century BC)

# Architecture and Health



Valetudinarium, Novae fortress, Bulgaria, 1st century

# Architecture and Health



Nur al-Din Bimaristan, Syria (1154)

# Architecture and Health



Spedale degli Innocenti, Florence (1424 to 1445, Brunelleschi)

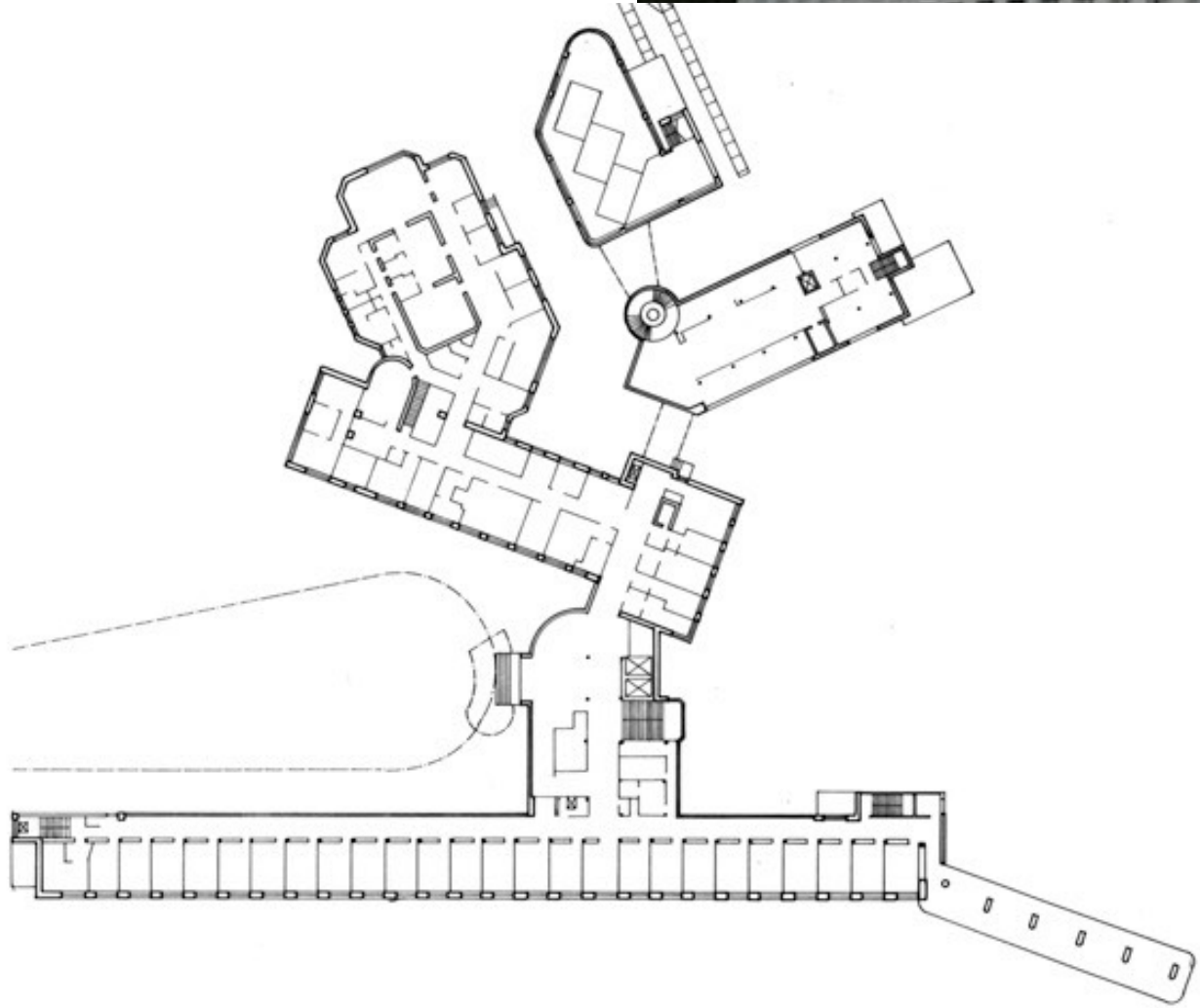


# Architecture and Health



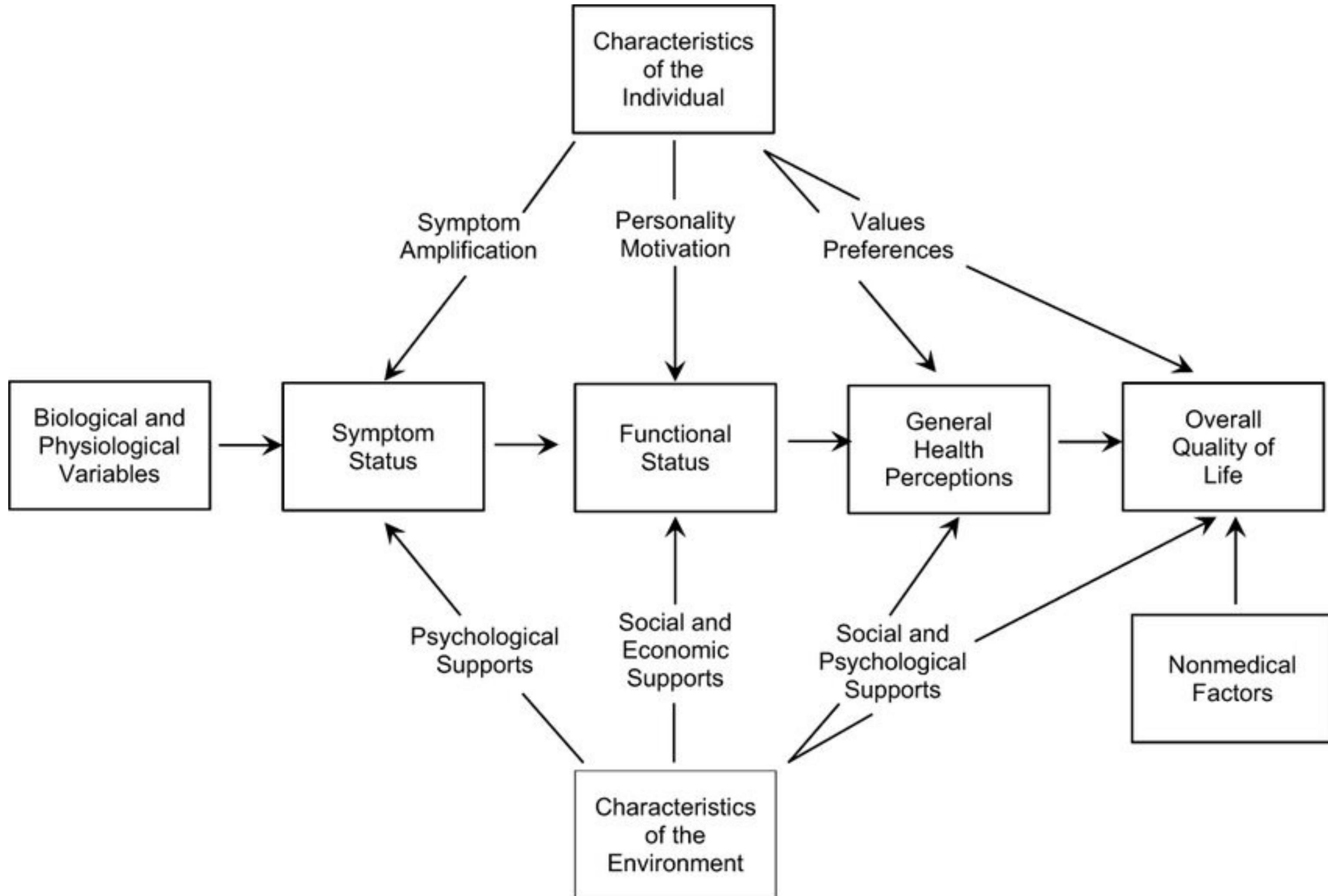
Purkersdorf Sanatorium, Josef Hoffmann (1904)

# Architecture and Health



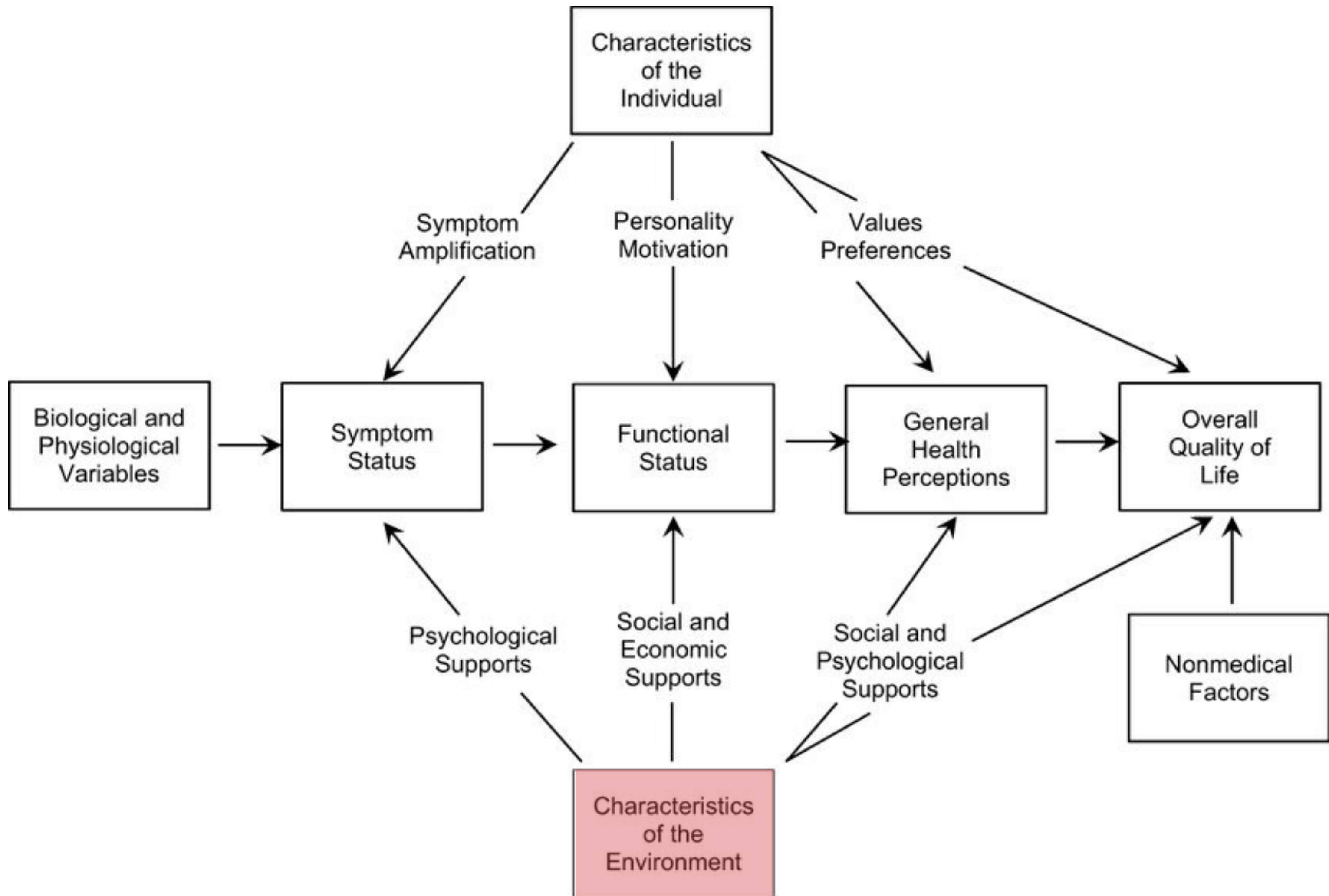
Sanatorium de Paimio, Alvar Aalto (1933)

# Architecture and Health



Wilson & Cleary theoretical framework of Health-related factors impacting Quality of Life (1995)

# Architecture and Health



Wilson & Cleary theoretical framework of Health-related factors impacting Quality of Life (1995)

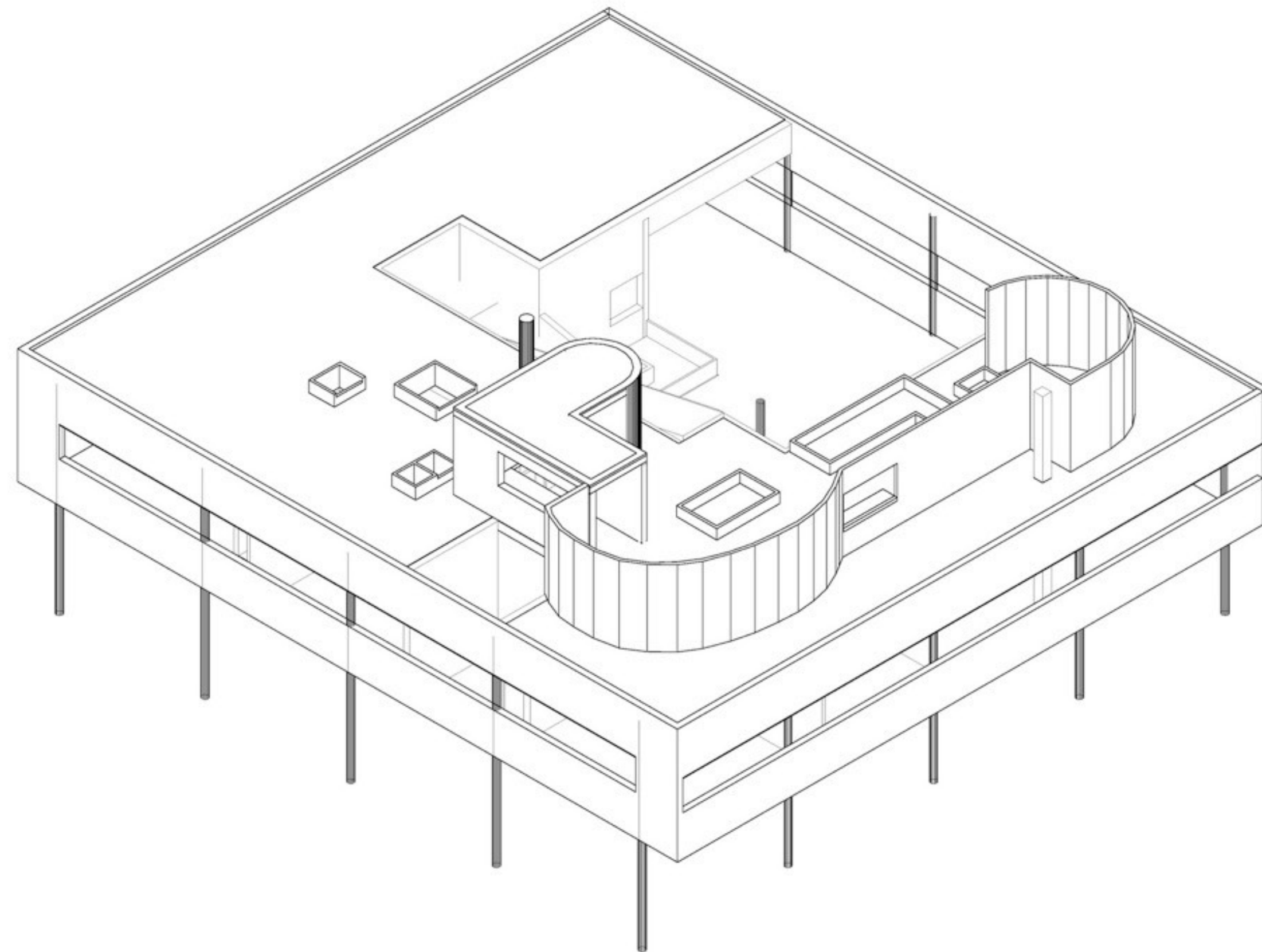
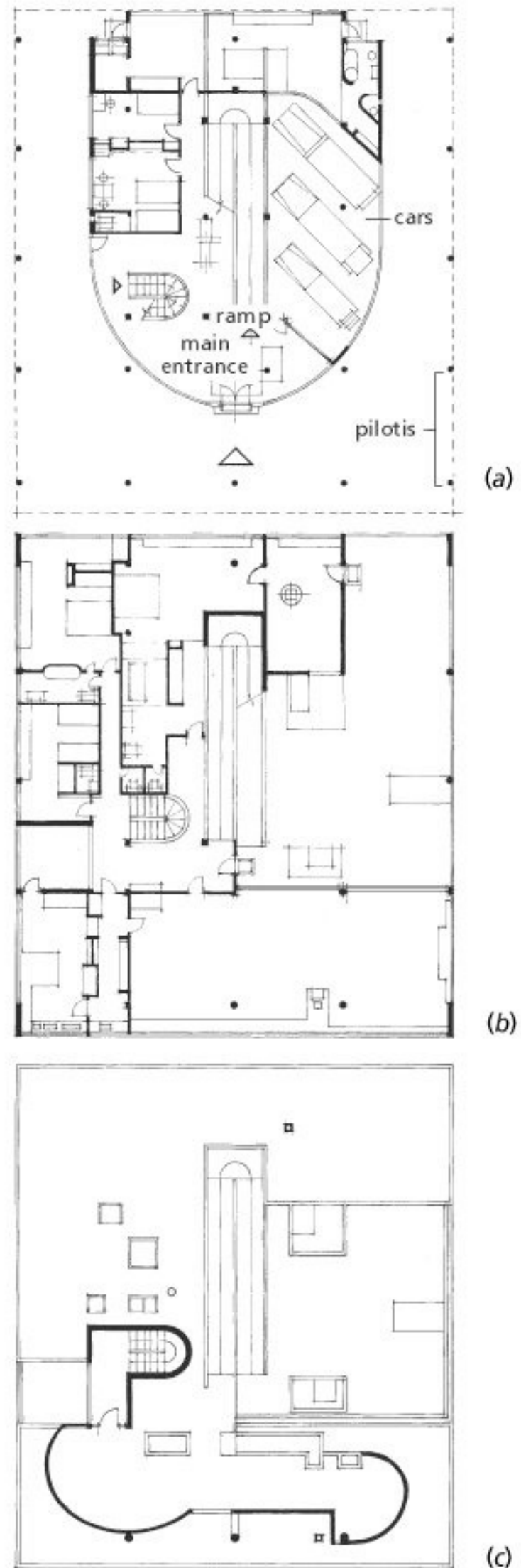
Architecture for a « good health »

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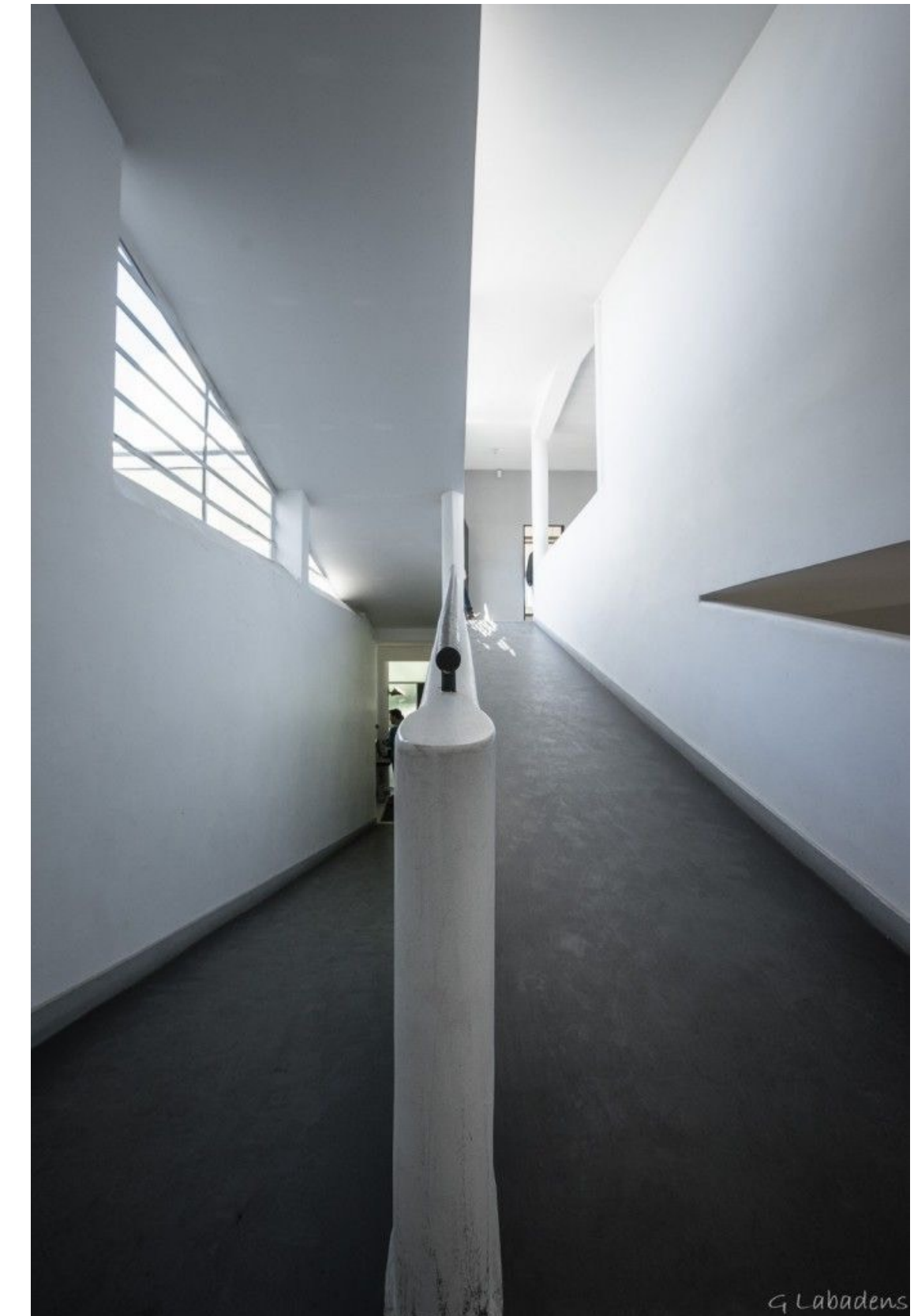
Hygienist, safe, accessible architecture; Evidence-based Design processes

**(Senior) Housing architecture & Human health**

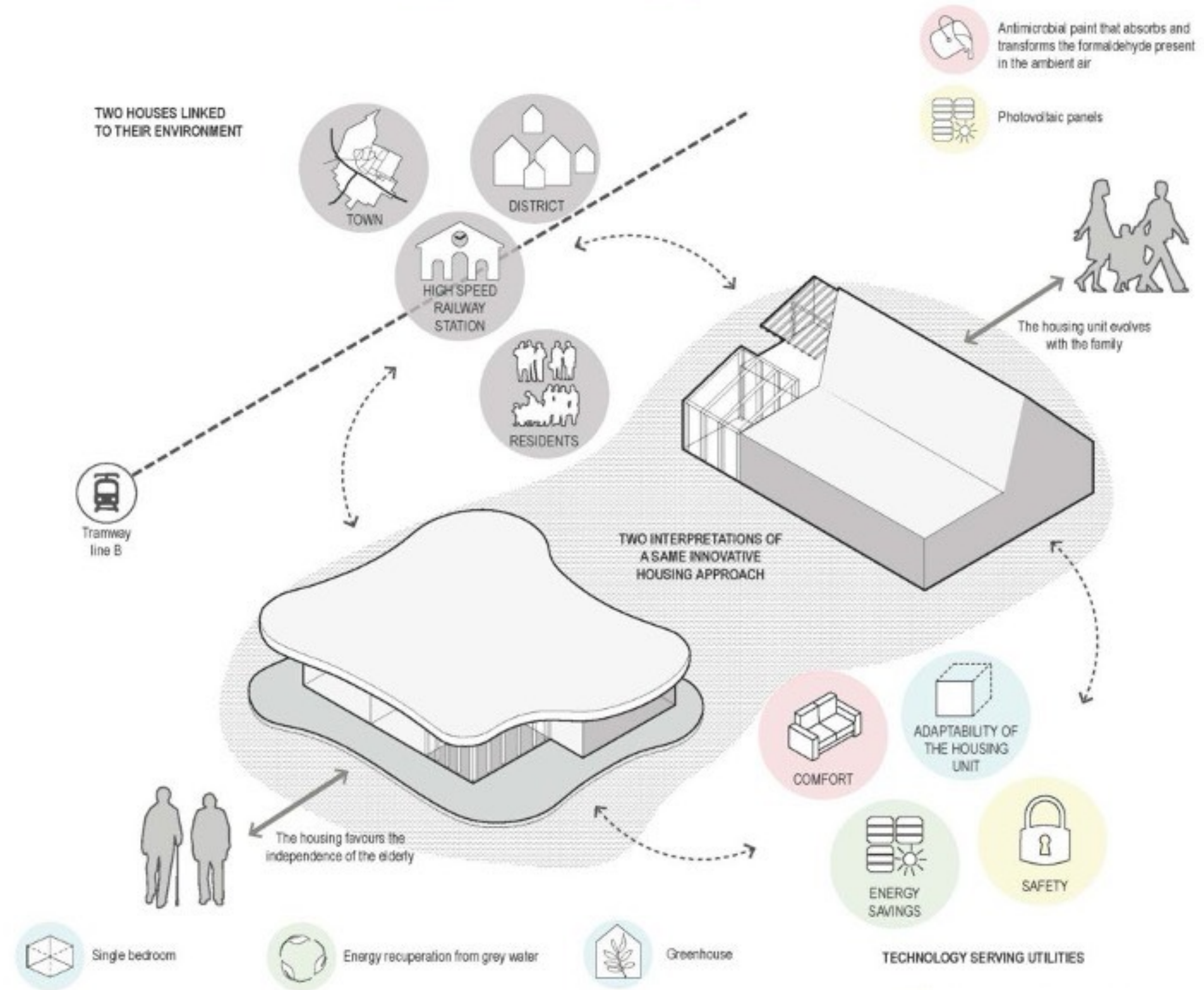
# (Senior) Housing Architecture and Health



Villa Savoye, Poissy, Le Corbusier (1931)



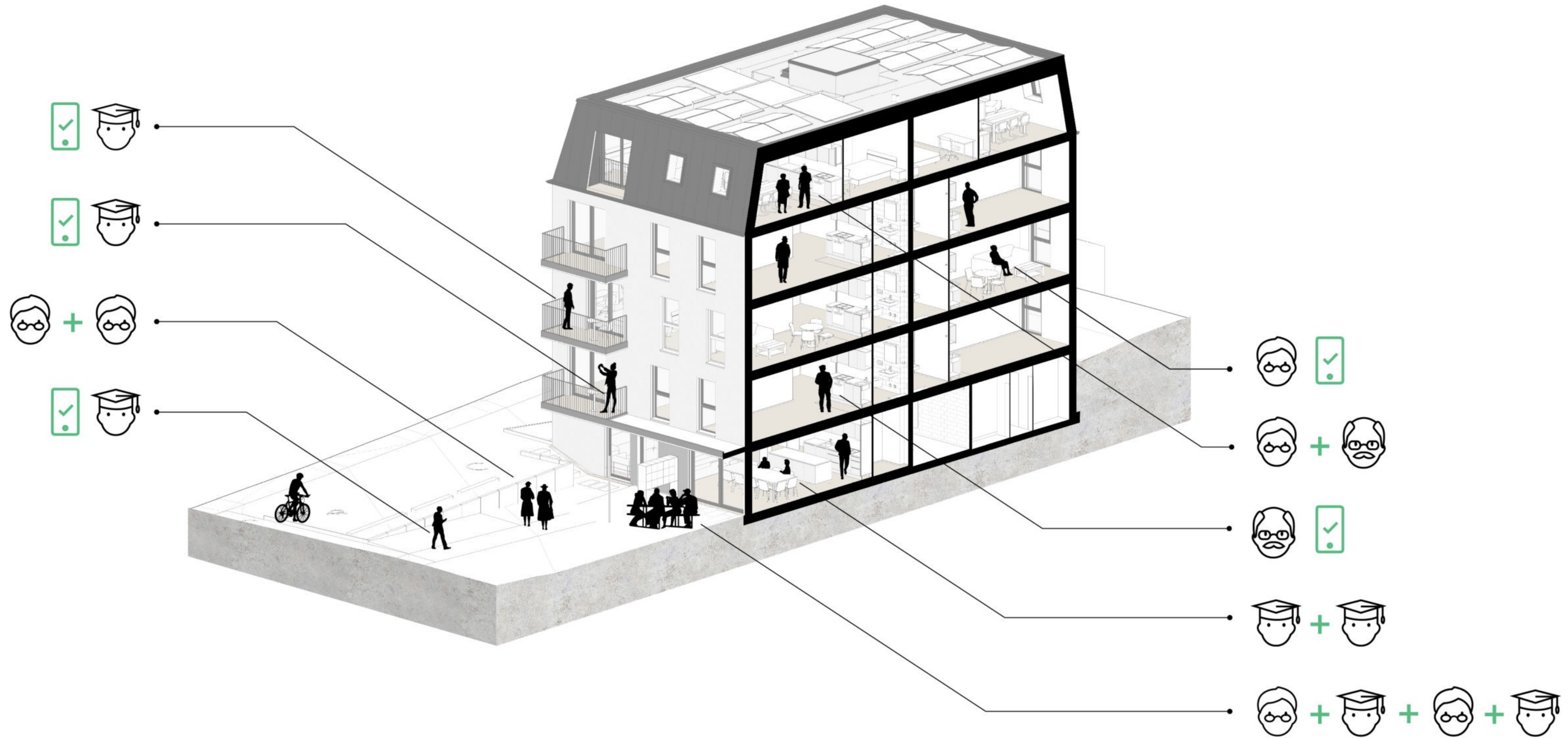
# (Senior) Housing Architecture and Health



Habitat Konekti, Arch. Bruno Rollet (project)

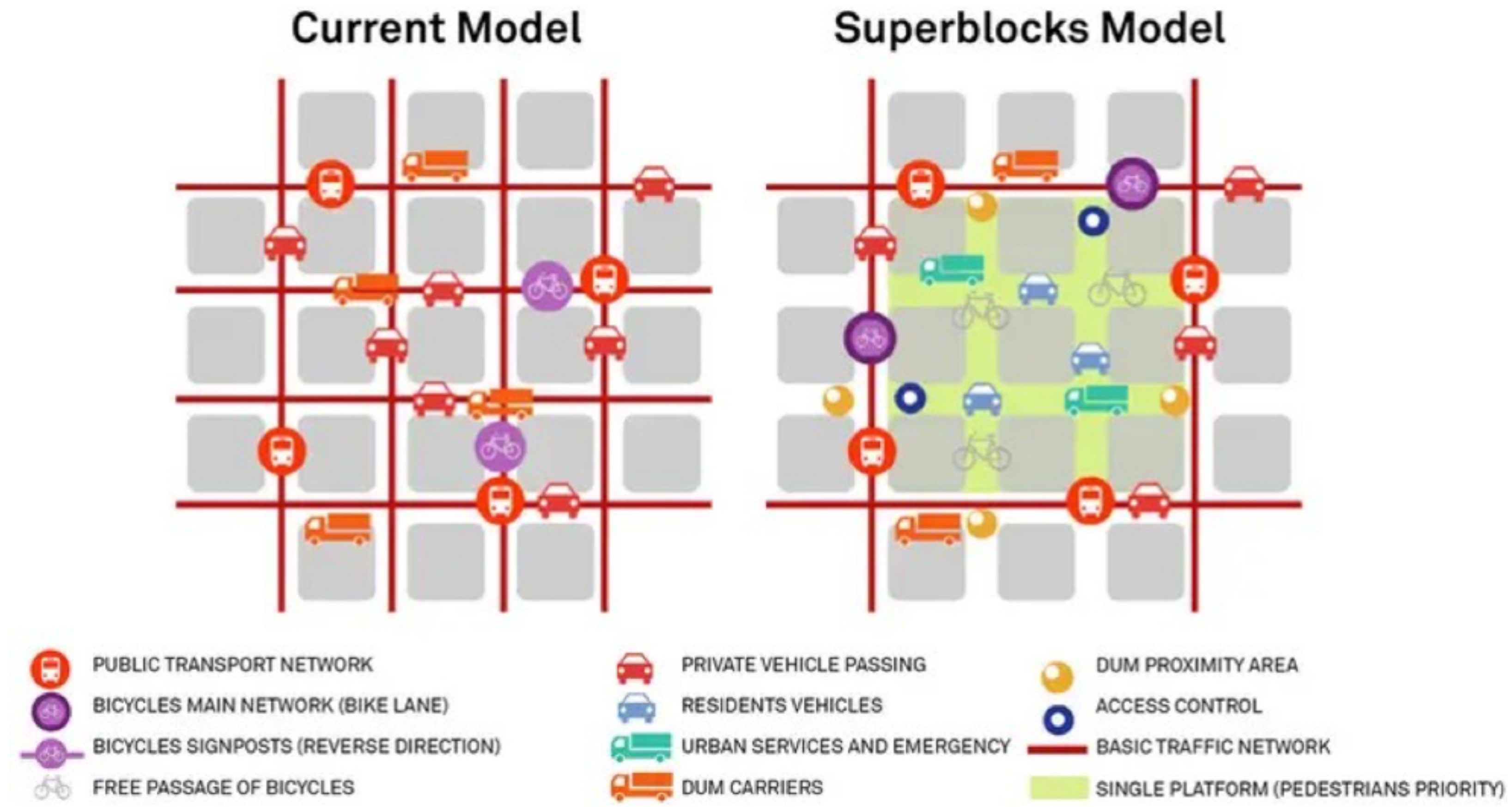


# (Senior) Housing Architecture and Health



ABA Partners, Intergenerational Housing (students / seniors), Lausanne (2024)

# (Senior) Urban Design and Health



« Supermanzana », Barcelona, S. Rueda

1. Architecture needs to approach senior housing in a holistic way and move beyond hygienist design

2.

3.

4.

# A holistic approach of senior housing



A 5-axis model to support « ageing well in place » in a holistic way (Schaff, Petermans, Vanrie, Courtejoie & Elsen, 2022)

# A holistic approach of senior housing

« **Happy square meters**, appropriable, used in an intense and relational way »

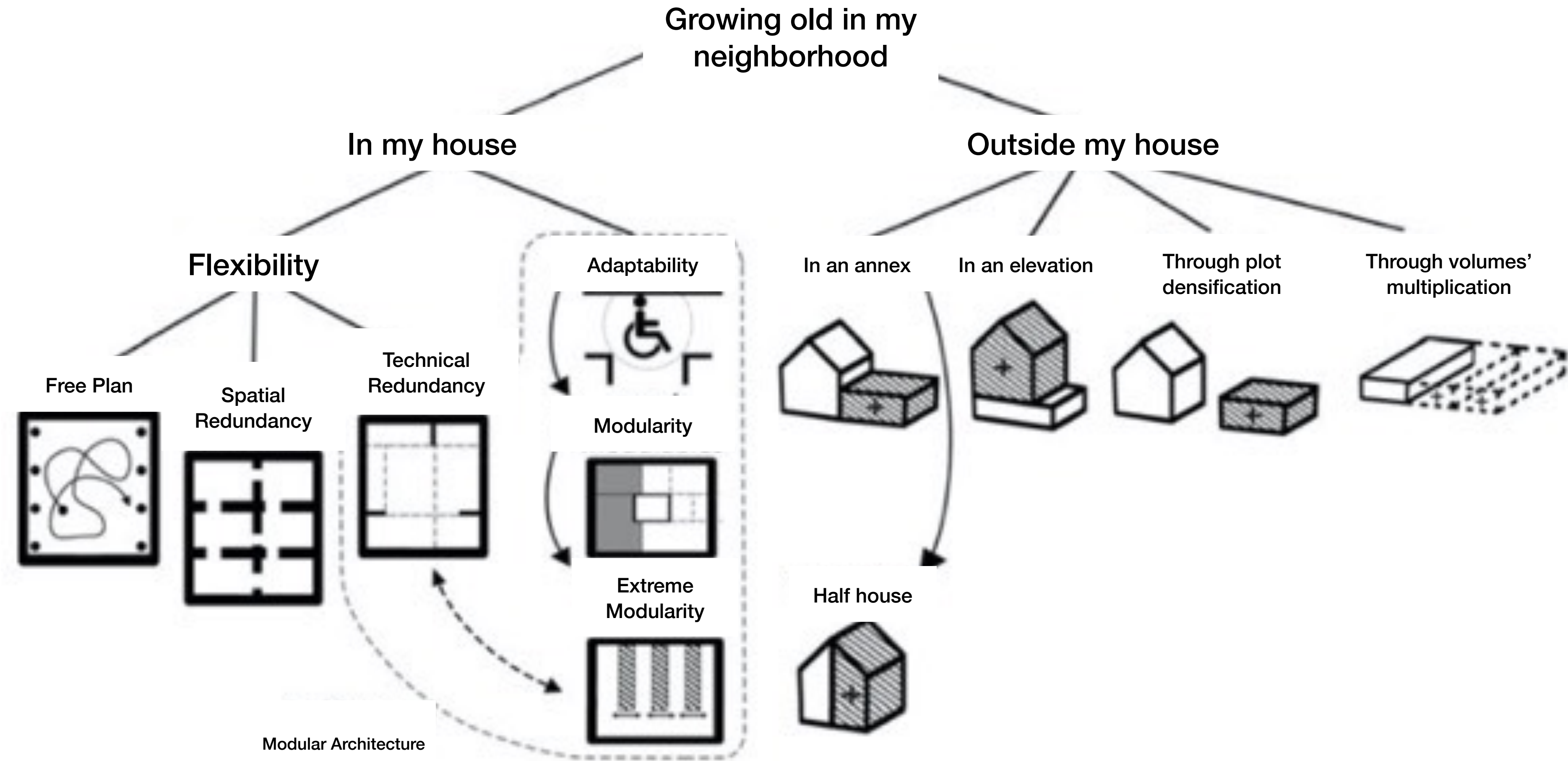
(Lavadinho, 2021)

« ... where a sense of **domesticity** is key to facilitate aging well»

(Elsen, 2022)

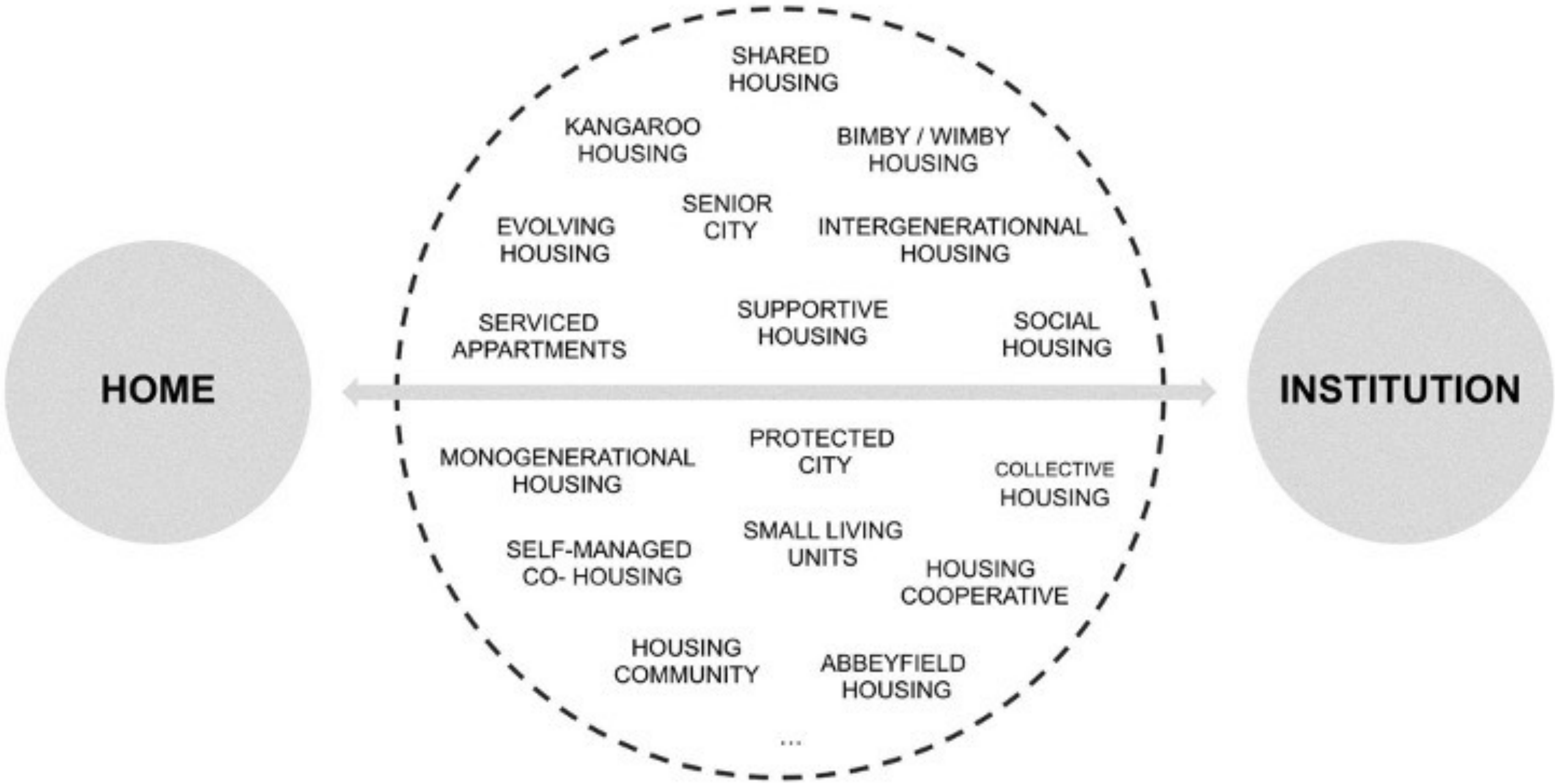
1. Architecture needs to approach senior housing in a holistic way and move beyond hygienist design
2. Senior citizens must continue to make their own housing choices throughout their lives
- 3.
- 4.

# Self-determination



Architectural alternatives to grow old while remaining in close contact with existing neighborhood  
(Servais, Elsen, 2019)

# Self-determination



Examples of alternatives dedicated to ageing well.  
(Schaff, Petermans, Vanrie, Courtejoie & Elsen, 2022).



# Self-determination



Participatory processes organized together with senior participants to co-design « ideal » spaces to grow old  
(*Servais, Elsen, 2019*)

1. Architecture needs to approach senior housing in a holistic way and move beyond hygienist design
2. Senior citizens must continue to make their own housing choices throughout their lives
3. Zero risk does not exist
- 4.

# Zero risk does not exist

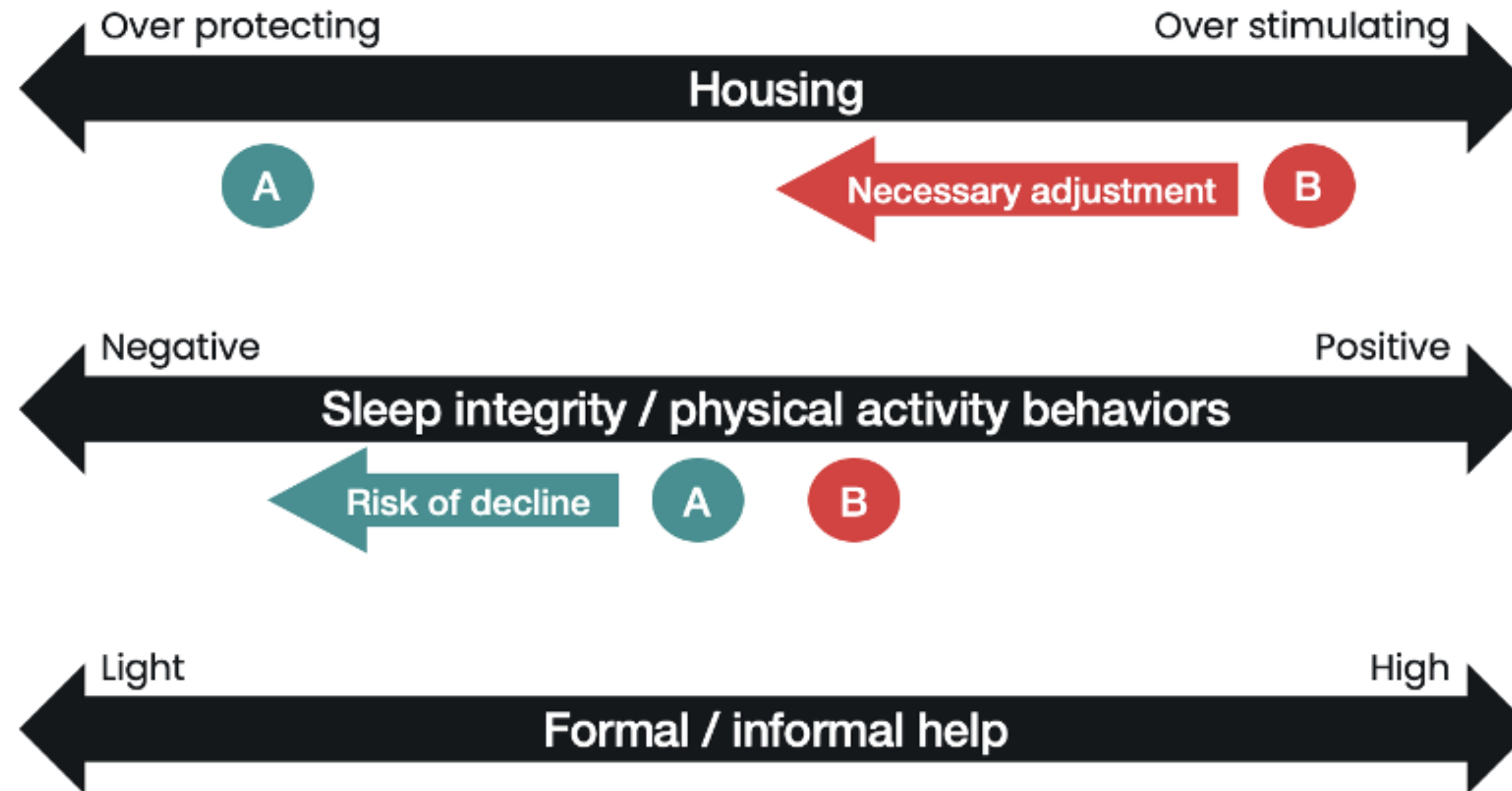
« When an elderly person becomes physically dependent, we end up denying him or her his or her autonomy, that is, his or her ability to **decide for himself or herself**, to choose his or her way of life; it is a **violence done** to him or her. By taking charge of all the acts of the daily life of the elderly person, the risk of accelerating the slide towards regressive disorders evoking senility is real.

**To promote autonomy is to accept another type of risk**, that of letting the elderly person confront insecure situations. A destabilizing postulate for our society **in search of zero risk.** »

(Djaoui, 2016)

1. Architecture needs to approach senior housing in a holistic way and move beyond hygienist design
2. Senior citizens must continue to make their own housing choices throughout their lives
3. Zero risk does not exist
4. The single-storey archetype needs to be reconsidered in the light of evidence

# Questioning the single-storey archetype



ARC « HabitAge » research framework

S. Adam (Fac. of Psychology); O. Bruyère (Fac. of Medicine, Public Health); C. Schmidt (GIGA CRC, Sleep & Chronobiology); C. Elsen (Fac. of Applied Sciences, Architectural engineering)

**« Have we overlooked the fact that to maintain our bodies in good health well into old age, a certain level of physical effort is necessary in our everyday lives ? »** (Gilroy & Townshend, 2024, p.1).