

# Exercises

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This chapter has 2 purposes. It gives the opportunity to revisit the most important thoughts presented in this book, to reflect on them, and to set them in relation with other topics. It also gives the opportunity to project the lessons learnt into the future: by following the trends established over the previous years, decades or centuries; or by developing quantitatively well founded or speculative design scenarios. Those might become parts of successive editions of this book.





# Exercise 1

## BUILDING SCALE

Buildings contain information we do not see, but which can be made visible. This information might be important. It could, for example tell us about the energy embodiment of the material, its toxic components, the energy needed to mine the materials, to ship them, to process them, and to assemble them into components for a construction object.

The exercise might also demonstrate how little we know about the materials we are using in design and that surround us on a daily basis. As architects, we should know about the big picture and be able to make suggestions to clients on the basis of knowledge.

A third effect of the exercise will be that we shall try to identify the most CO2 intensive and the most sustainable object or material in the building.

## Making the invisible visible - Information

Consider the HIT building at the ETH Zürich Science City campus. Choose a building component from the exterior or the interior of the building. Try to go as deeply as possible into the history, the presence, and the future of this component and show its impact on the past, the presence and the future in terms of different criteria. This could be the stocks and flows of material, of energy, of water, of finances, of landscape, or of information. Take a photograph, make a sketch and answer precisely the following questions:

- Which information in terms of stocks and flows is inside the material that you cannot see, but which you know is important?
- Propose the most appropriate and effective way to visualize this information
- Describe the most important information in the room or building that you cannot visualize

As an alternative, describe qualitatively and quantitatively the closest relation between an INFORMATION architecture structure, such as a data warehouse, and physical INFORMATION ARCHITECTURE and/or INFORMATION CITY planning, and show the limits of the analogy.

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# Exercise 2

## URBAN DESIGN SCALE

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**The liveability of a city describes one of its main qualities. The urban design scale contains many characteristics for the liveability of a city. International organisations have established criteria that measure and compare cities and their liveability. Examples are:**

- **The Global Liveable Cities Index**
- **The EIU's Global Liveability Report**
- **Mercer's Quality of Living Survey**
- **Monocle's Most Liveable Cities Index**
- **Ranking the Liveability of the World's Major Cities**

## Factors of liveability

Livability is one of the key characteristics that every city and urban system is struggling for. The exercise has 3 parts:

- I. List the most liveable cities that you know, building on your own experience and judgement, with the most liveable city at the top of the list
- II. Describe in your own words 5 characteristics for the livability of a city and order them with the most important at the top of the list 5th
- III. Draw a diagram depicting the connections between those characteristics. Express the importance of the connections by graphical means

See this as a personal design exercise. You do not have to follow the official rankings for the livability of cities, but you should know the criteria they apply.

# Exercise 3

## TERRITORIAL SCALE

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**Territories interact with cities and urban systems, if we consider them as entities with a metabolism and that they are functioning in the analogy to the stocks and flows model. Territories contain cities, cities contain buildings. Yet they do not form a hierarchical system any more, as the interaction between buildings influences the city as much as the interaction between cities influences the territory.**

**We must question the traditional definitions of buildings, cities and territories, as the novel non-urbanised high-density settlements will significantly influence our future habitat, as well as the architectural and urban design profession.**

## Thinking against the current - non-urban cities

In the past, there were strong boundaries between the city and its surrounding territory, the so-called hinterland. The separation between the city, the villages and the countryside was clear, and so was the hierarchy between them.

This situation has changed drastically with the ubiquitous distribution of information technology, particularly the mobile phone and its associated services. Interestingly, the possibility to work at home has changed the life of Swiss citizens, as well as Indian citizens. As the boundaries of the city have disappeared, urbanized systems without cities, non-urbanised, high-density settlements and other unconventional forms of habitat are emerging rapidly throughout the world. Prepare the following:

- Identify and describe two attractive non-urban, non-city settlements which nevertheless show characteristics of an urban settlement
- Identify and describe the most important stocks and flows entering and leaving this area
- Describe the special quality and potential of these settlements for architects and urban designers