



An open approach to architecture:
design in the 4th dimension

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A multi-year integrated research/teaching project

Alternative housing strategies

Reconsidering funding and delivery mechanisms
Investigating policy

**Alternatives to current approaches that are
perceived to be unsustainable**

OPEN BUILDING

An OPEN way of designing
OB as thinking
OB as application
Relevance to SA

Rethinking process

Rethinking product

Teaching of design

(beyond the design studio)
Workshop approach
Learning by doing
Sharing of technical know-how
Action research

Local knowledge informing design City as laboratory

A multi-year integrated research/teaching project

Intimate understanding of the setting and the identification of potential catalysts in the form of people and projects:

Catalysts: Individuals as institutions and champions

Catalysts: Small projects as vehicles for collaboration,
development and learning



interface

Housing – Environment
Professional – Community
Technology – Society
Control – Emergence



Diagram : Cennette Swart

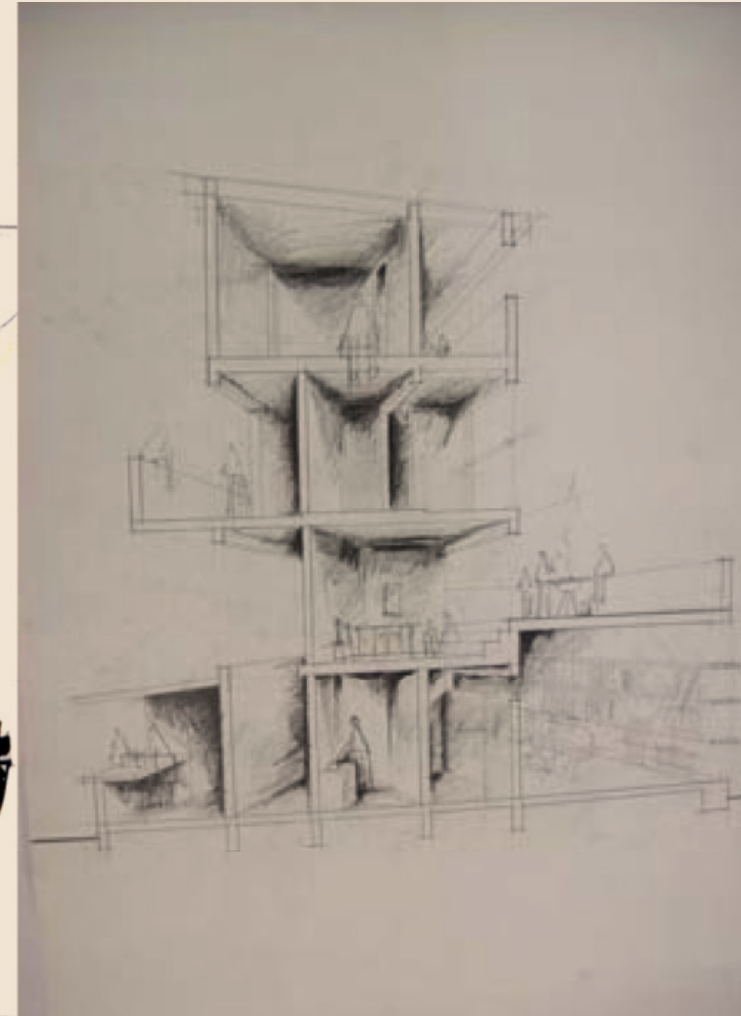
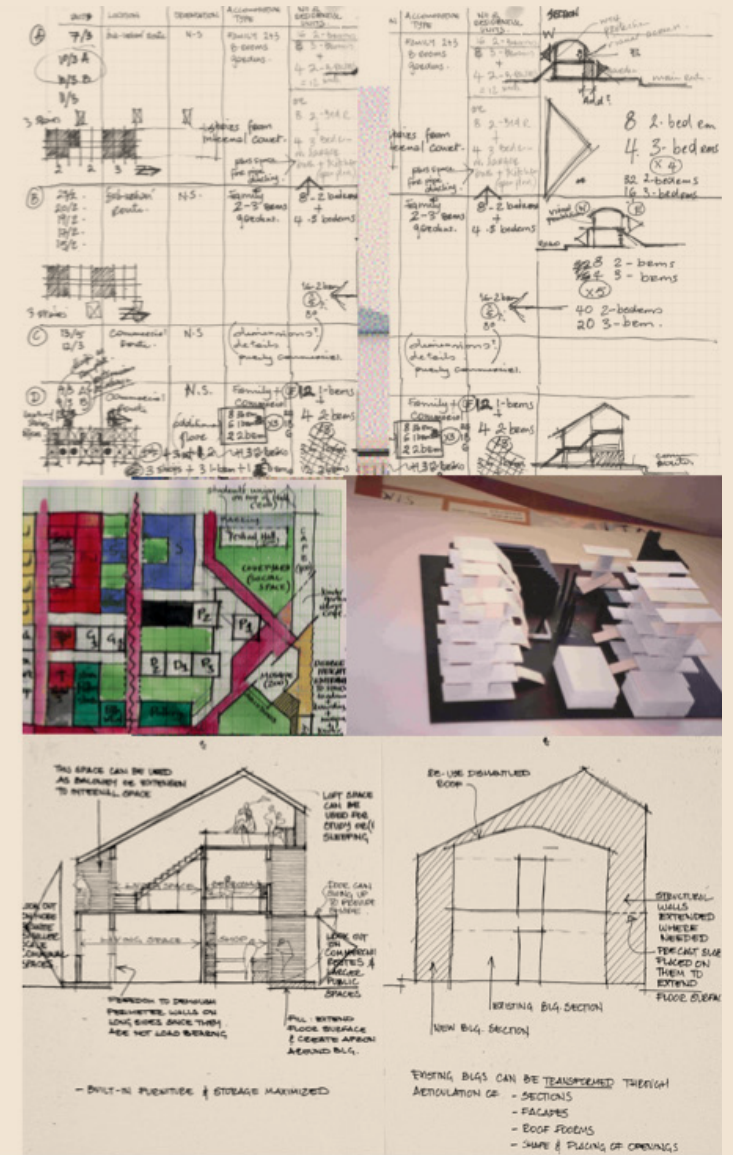
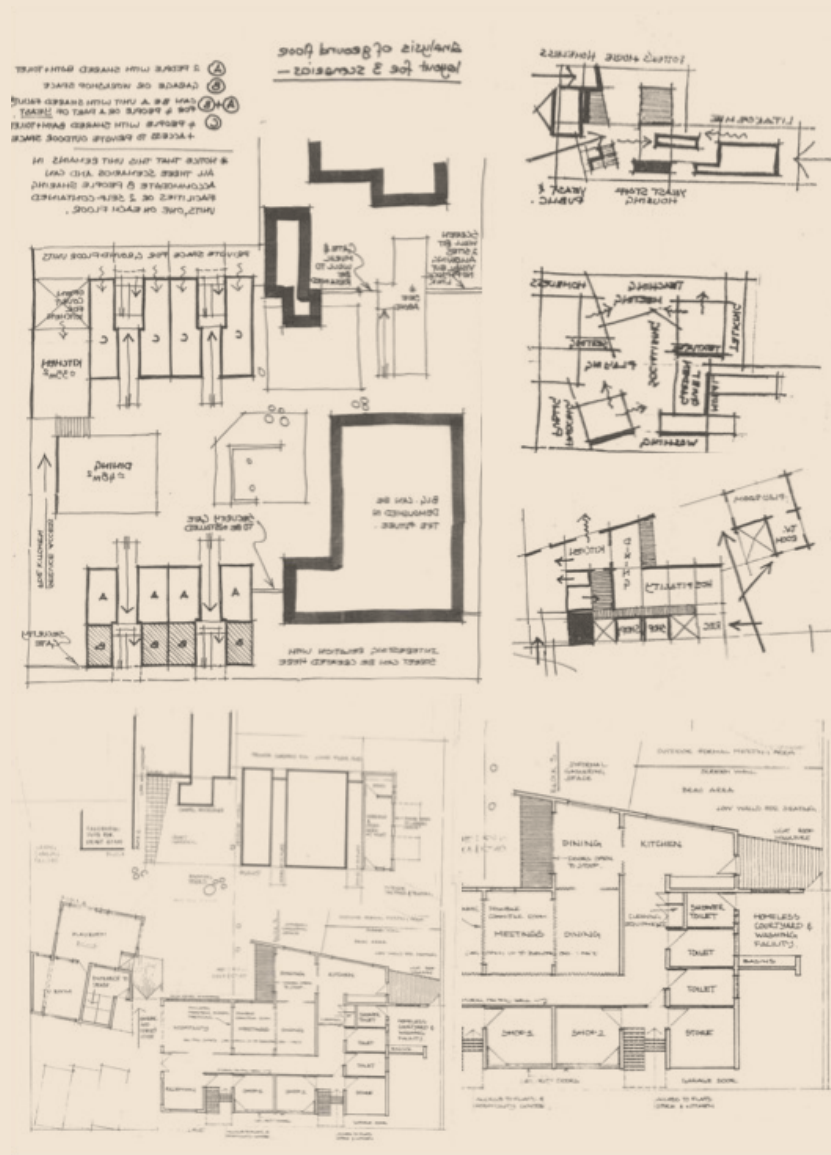


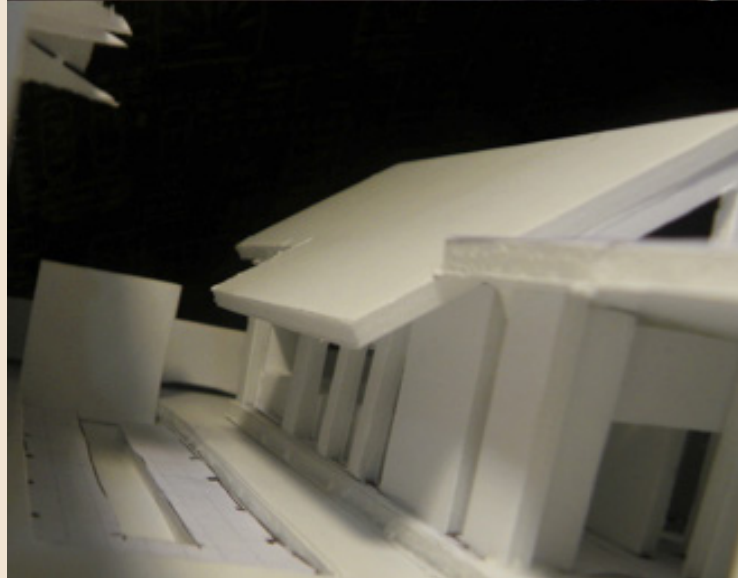
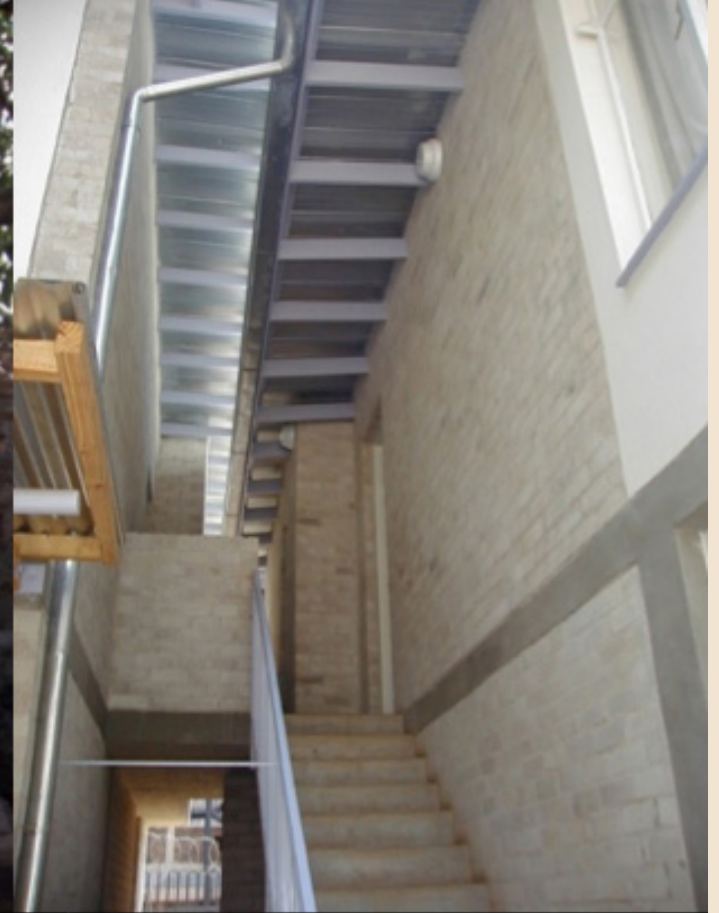
Diagram: Emmanuel Nkambule

interface



An open approach to architecture: Design in the 4th dimension by Amira Osman

interface



built environment eco system and Open Building relevance to SA

Consider how the built environment functions as a complete and integrated eco-system while at the same time having many layers under the control of different agents

Envision solutions for low cost housing and informal settlement upgrading within strategies that address the development of complete housing eco-systems rather than isolating housing for the poor



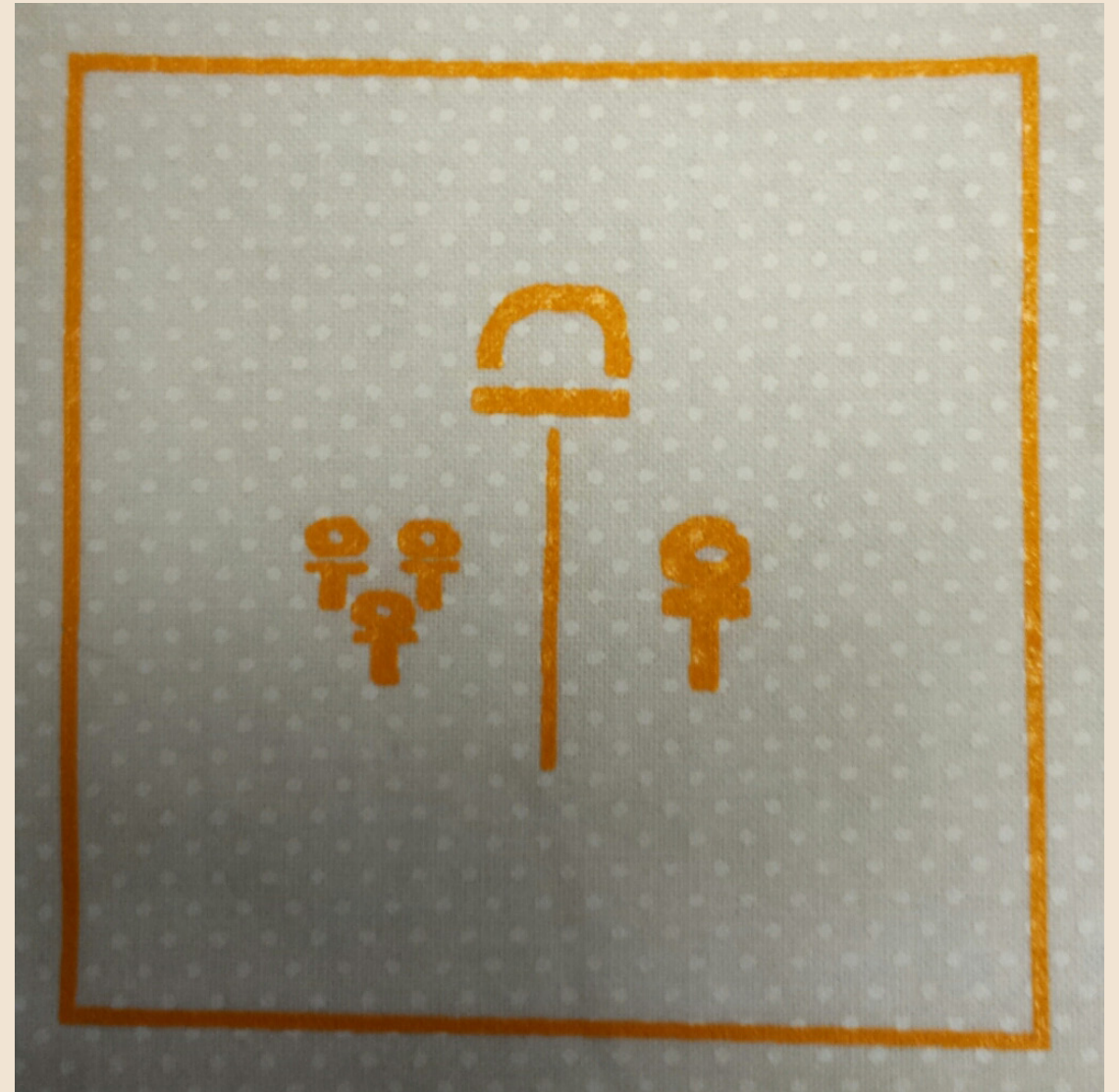
open building relevance to SA

This approach is highly relevant to South Africa where we need to achieve more equity, access and offer more opportunity.

It would mean a complete re-think in terms of how the built environment is conceptualized, designed, funded, implemented and managed.



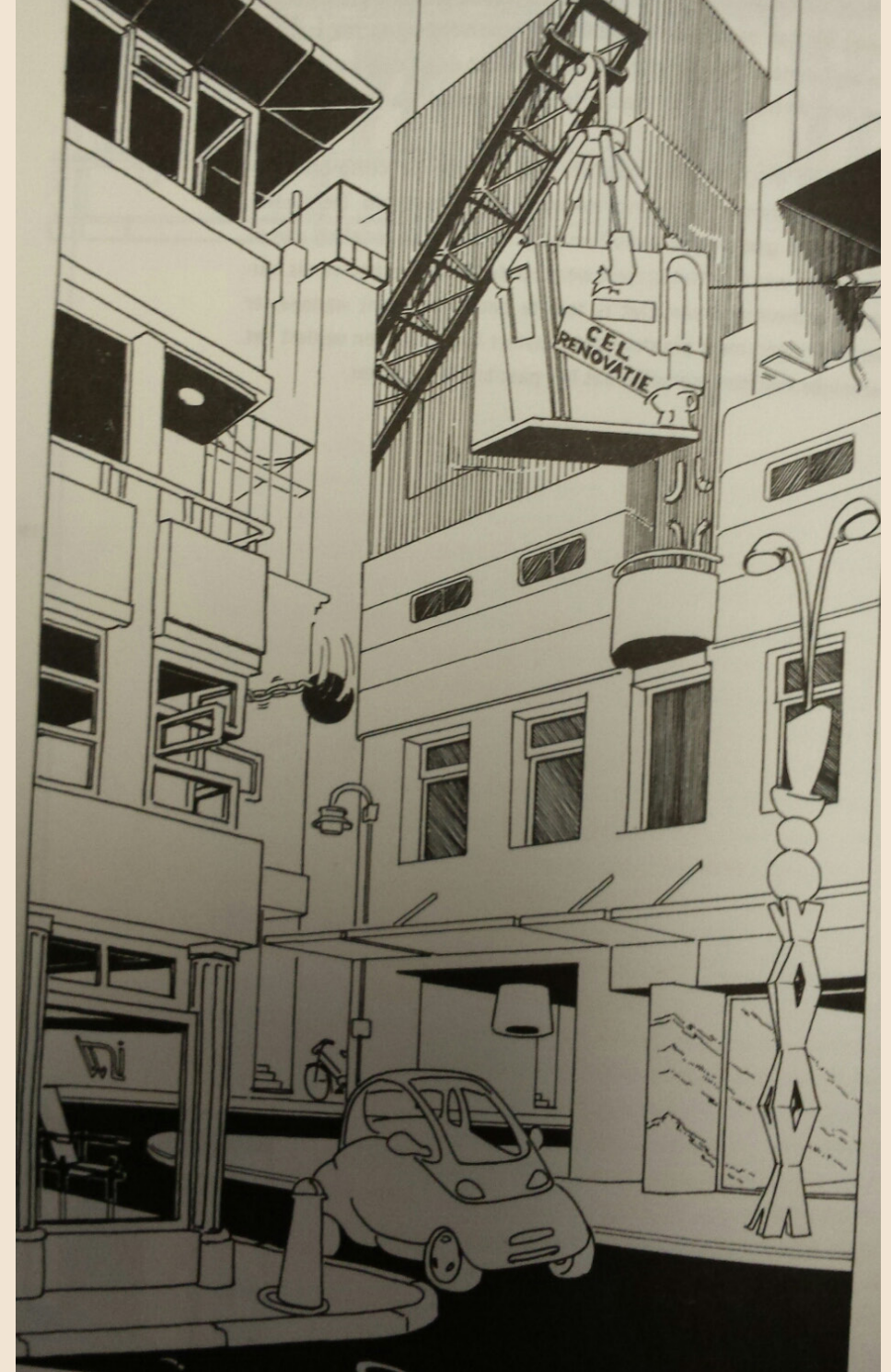
4th dimension in design



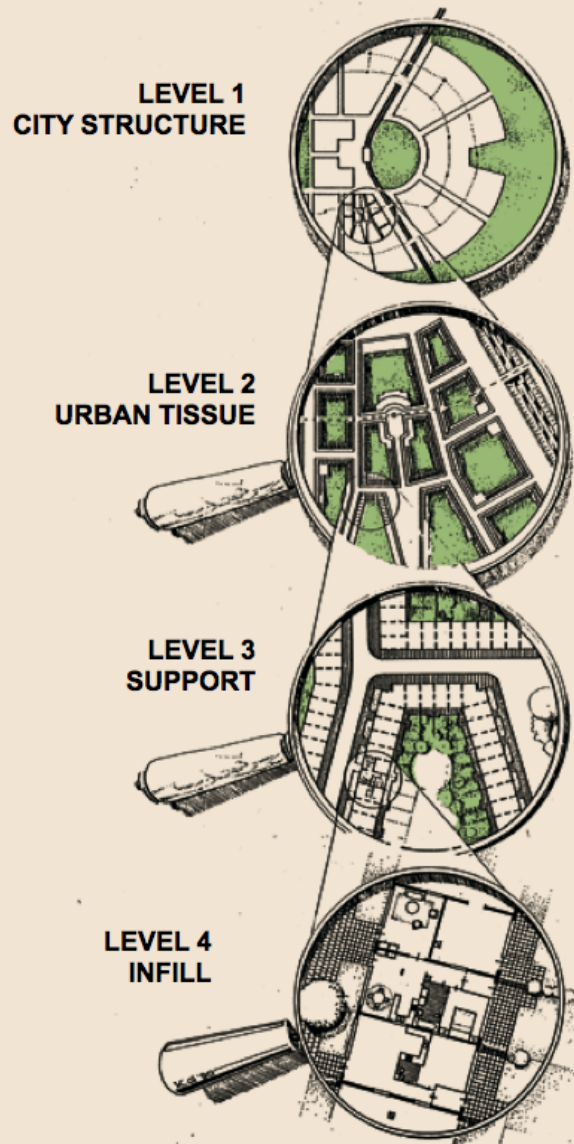
built environment levels and decision making systems

Identification of distinct levels of intervention within the urban fabric means that different types of “infill” could be achieved within a permanent “support” system.

Such an approach allows for distributed decision-making in the built environment, mixed use, mixed income as well accommodation of organic processes of human intervention.



built environment levels and decision making systems



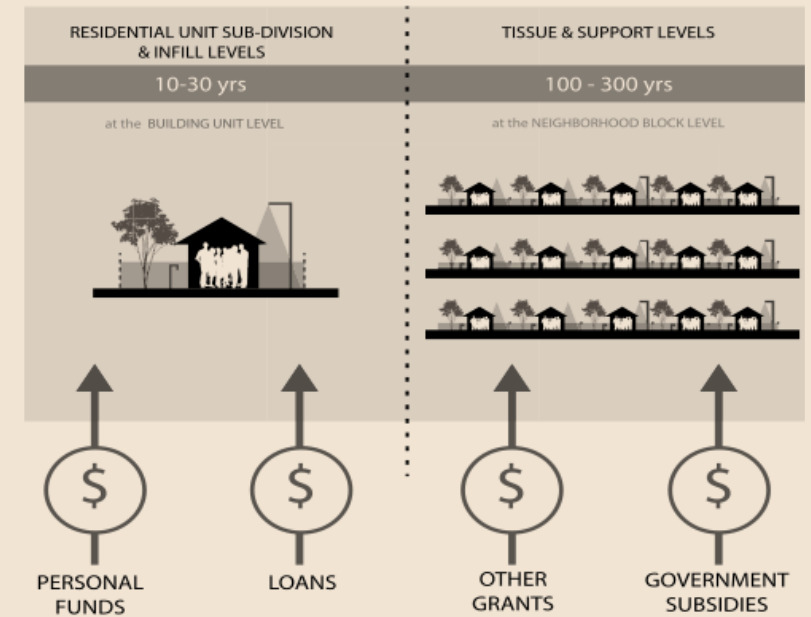
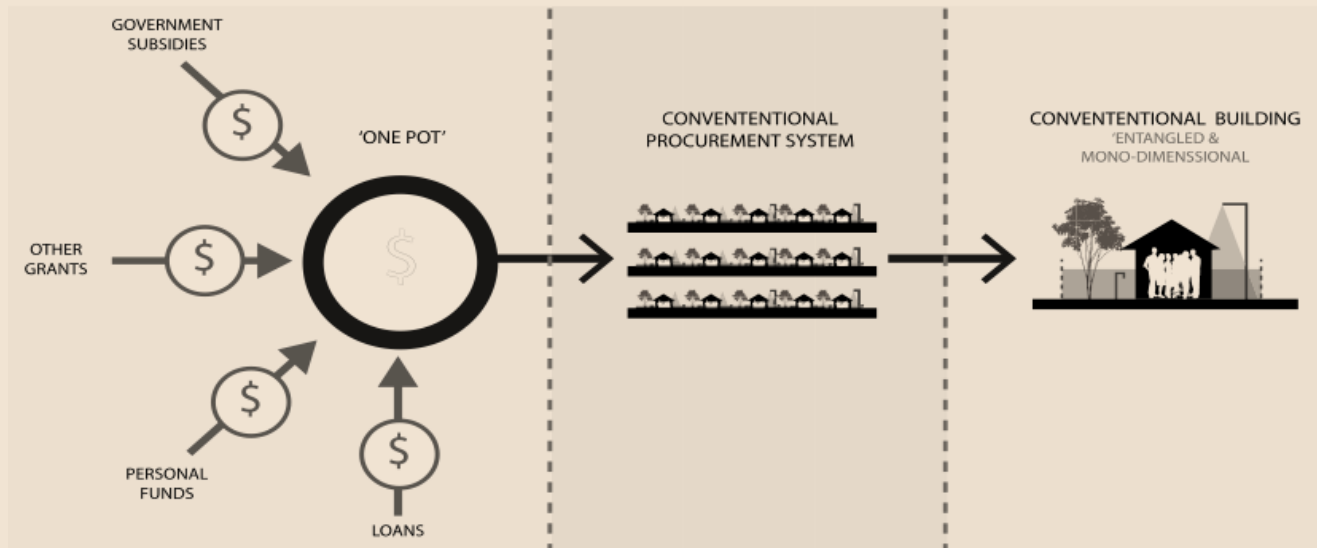
Area: the total territory of the city
Final decisions: city authority
Design elements: roads, public transport, district boundaries and programmes, city centre, university, city park, stadium
Designer: city planning teams
Scale of plan: 1: 10 000

Area: one of the city districts
Final decisions: city authority
Design elements: outdoor spaces, streets, courtyards, parks, building zones, market square, social cultural centre, schools
Designer: city planning teams
Scale of plan: 1: 1 000

Area: a building lot, a part of the building zone of the tissue
Final decisions: housing association, developer
Design elements: foundations, walls, floors, roofs, facades, stairs, ducts, pipes
Designer: architect
Scale of plan: 1: 100

Area: a dwelling, an office unit
Final decisions: users
Design elements: partitions, doors, fittings, pipes, facades
Designer: consultants to users
Scale of plan: 1: 50 and 1: 20

built environment levels and decision making systems



open building definitions and tools

Dynamic societies require agile architecture. Two alternatives face clients with dynamic requirements:

Scrap and build practices

Stock maintenance practices

The later is called “open building” among some practitioners internationally.



open building is not a new concept

Systemic principles are at work, even if they are not appreciated or are largely invisible at any given time. This living fabric regenerates itself naturally and regularly, if unevenly. There is a certain order to the process.

Parts can be replaced without excessively disturbing other parts.

In a healthy living fabric, there are no winners or losers but rather a dynamic balance in time.

(Habraken)



open building is not a new concept

Hierarchical structuring helps us to manage complexity. It also allows distribution of responsibility with minimal fuss and conflict.

Some of the buildings we appreciate most those suited to **agile regeneration**.

The reason they are being adapted is not only because of their style.

They are valuable because they are lovable and because they have **accommodation capacity**.

GEISER



open building is not a new concept

Modernist ideology did not know architecture in relation to levels

Indeed, Modernist environment, for all its novelty, can be understood to a large extent as the reduction of complex urban fabric to a coarse single level product

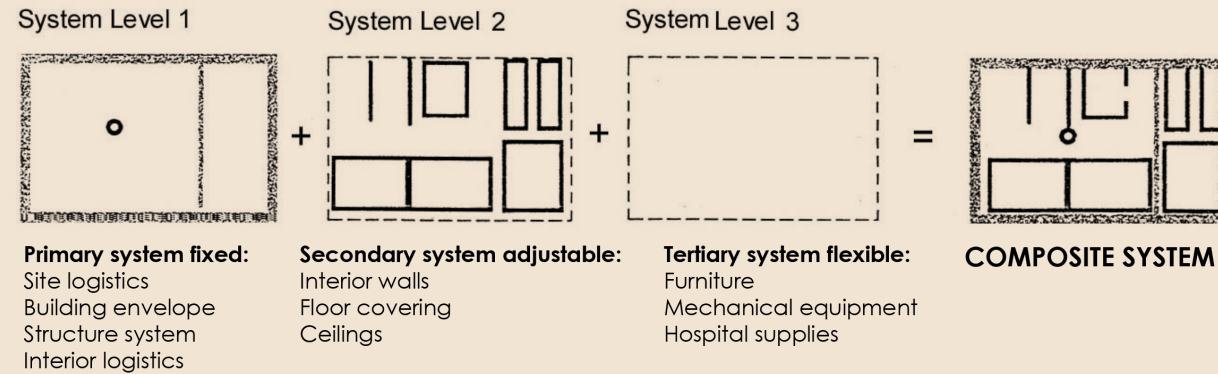
In this respect the avant-garde movement was a regressive movement

We have not yet abandoned the modernist opinion that such distribution [of design responsibility] is a dilution of the architect's role.

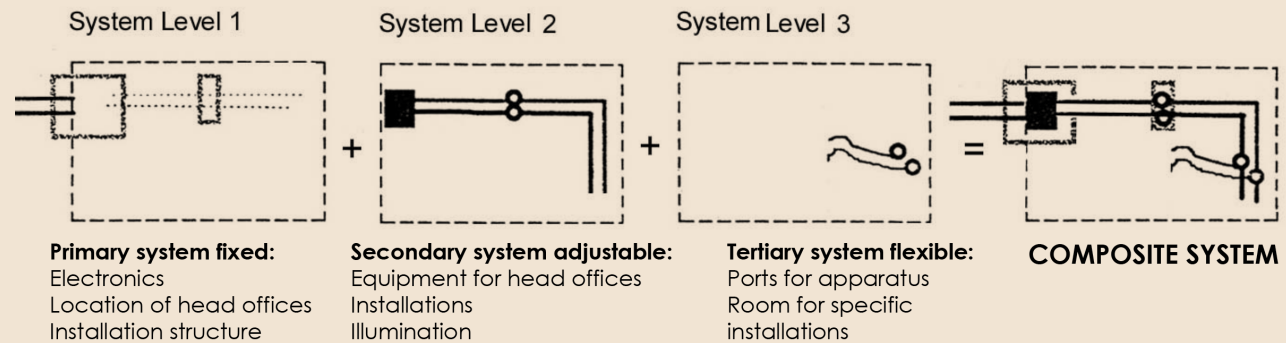
HABRAKEN

technical implications of Open Building

SPATIAL ORGANIZATION



TECHNICAL SYSTEM ORGANIZATION



ORGANIZATION OF DESIGN ON LEVELS INO HOSPITAL . BERN, SWITZERLAND

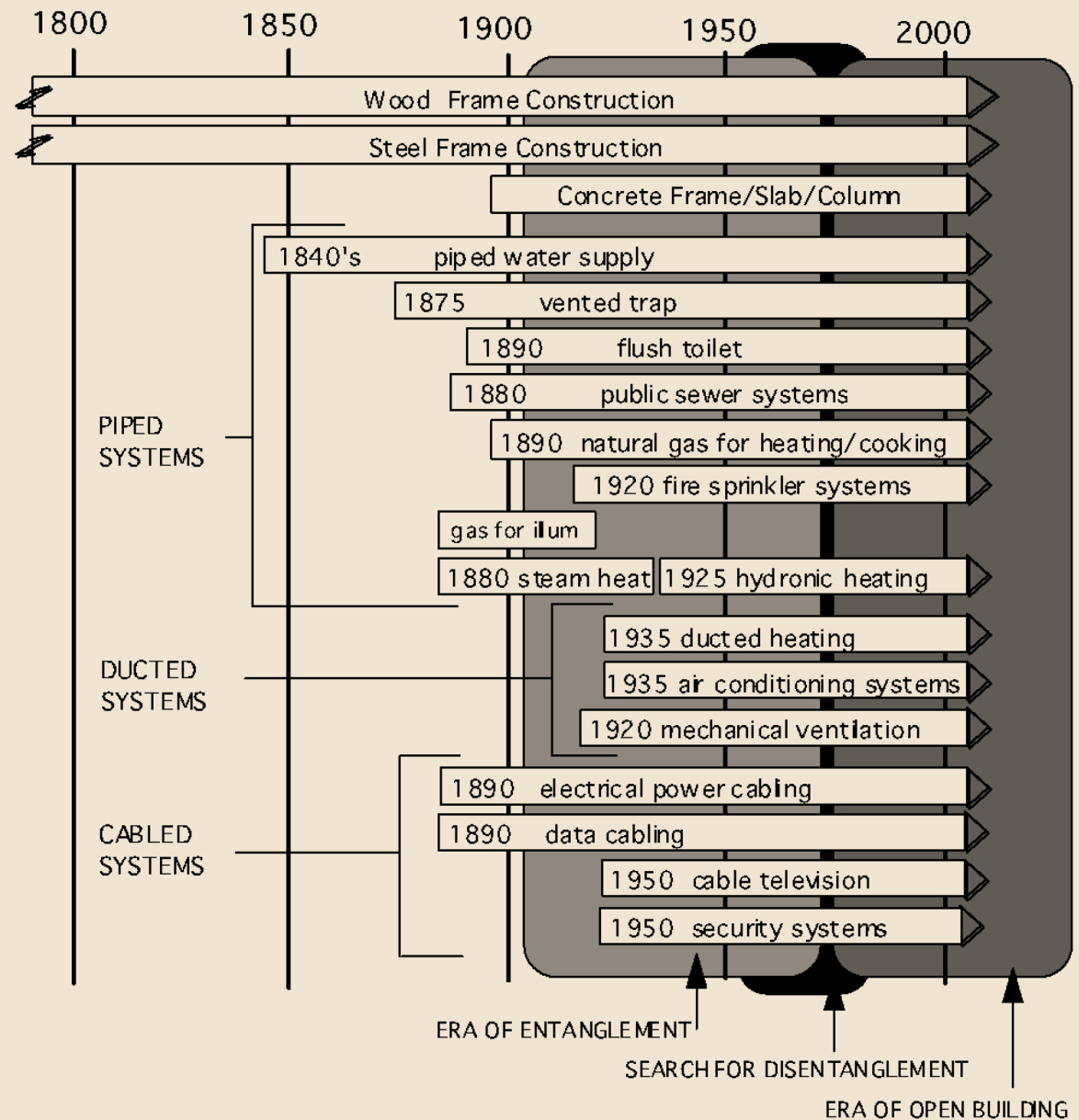
technical implications of Open Building

An assembly of elements can only reach the age of its shortest-living component.

The notion of separation or “disentanglement” contradicts the usual conventions of the planning and construction process.

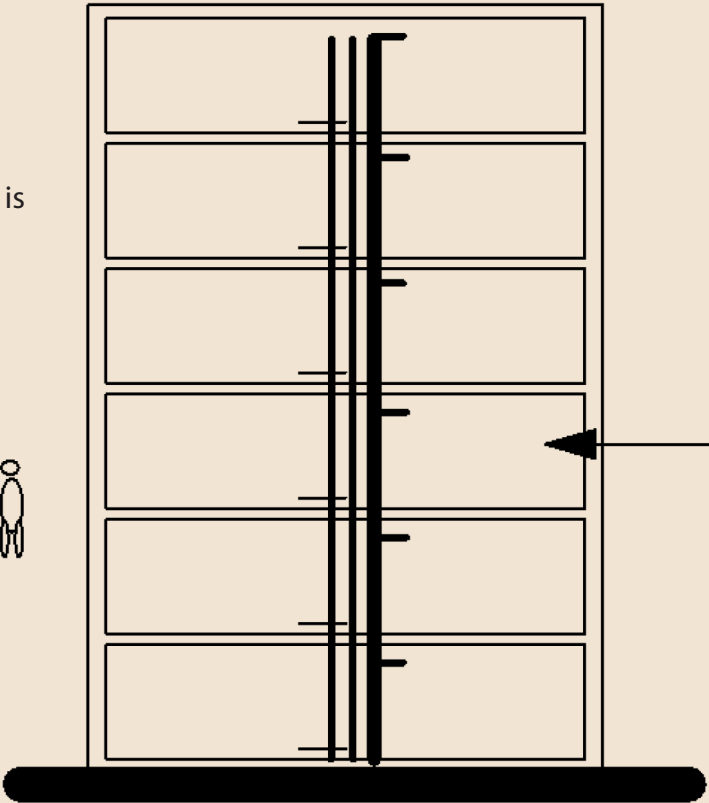
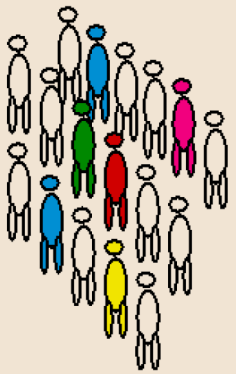
GEISER

Introduction of Technical Systems into Building Construction



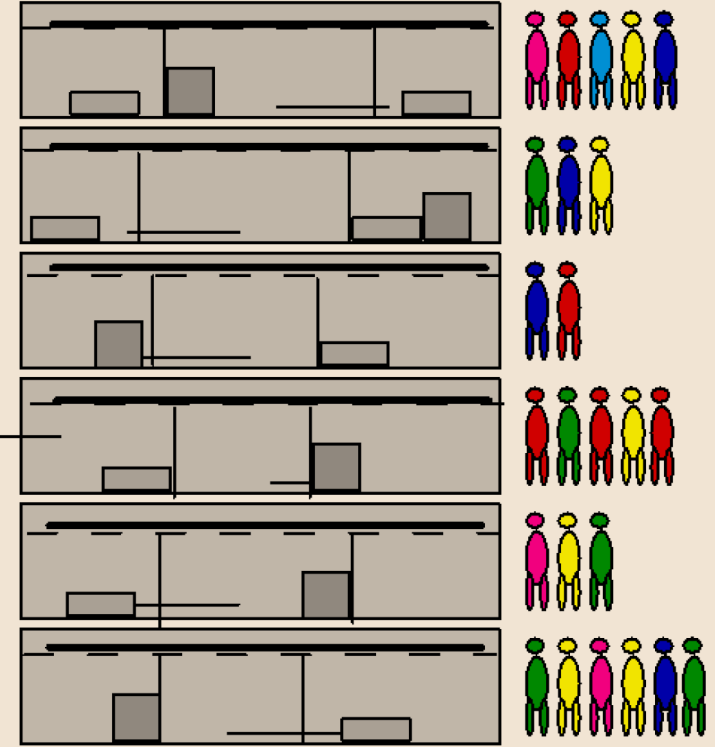
technical implications of Open Building

the base building concerns what is shared by everyone



Base Building Level
ARCHITECTURE

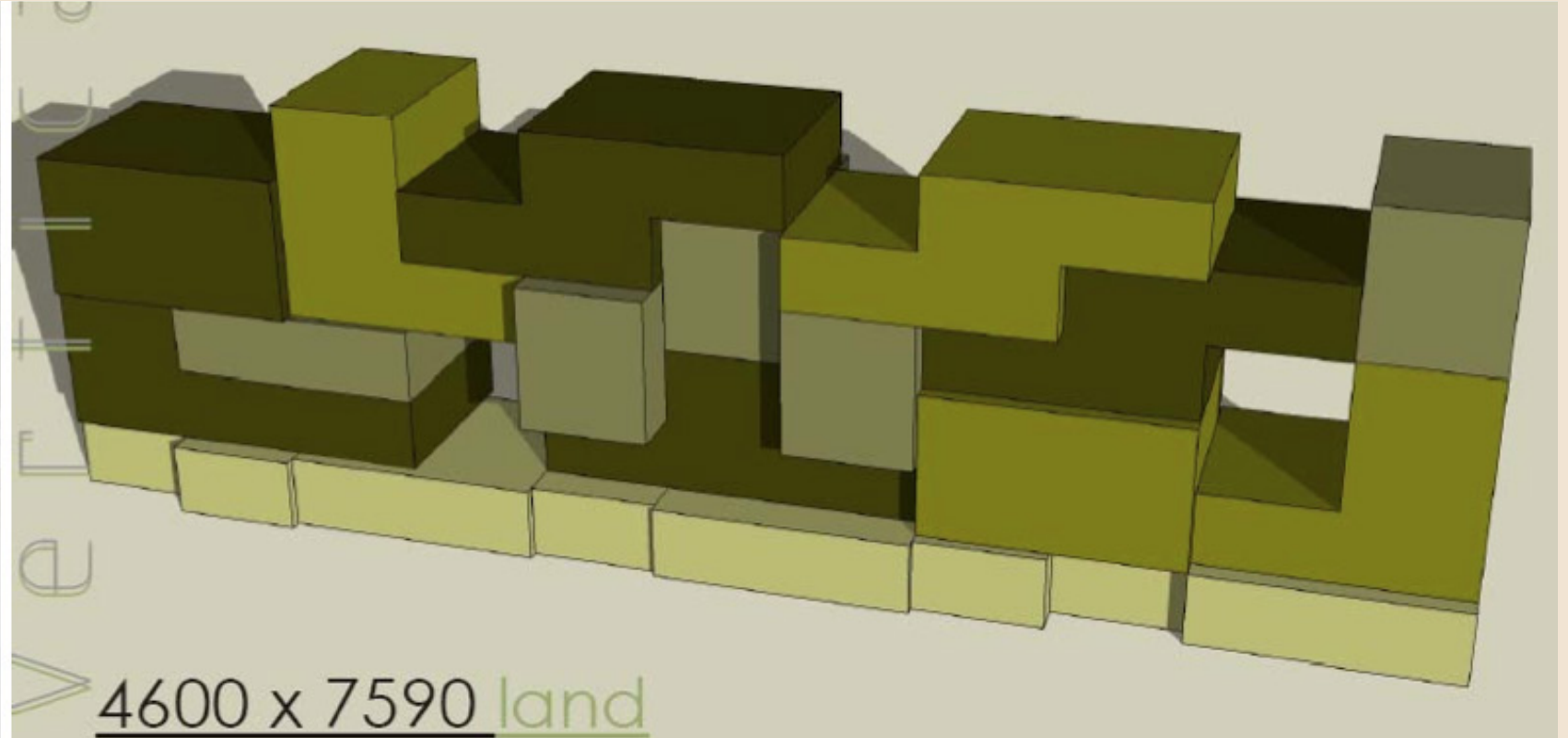
the fit-out concerns what is decided by each tenant independantly



Fit-out Level
BUILDING

KENDALL

equilibrium and transformation

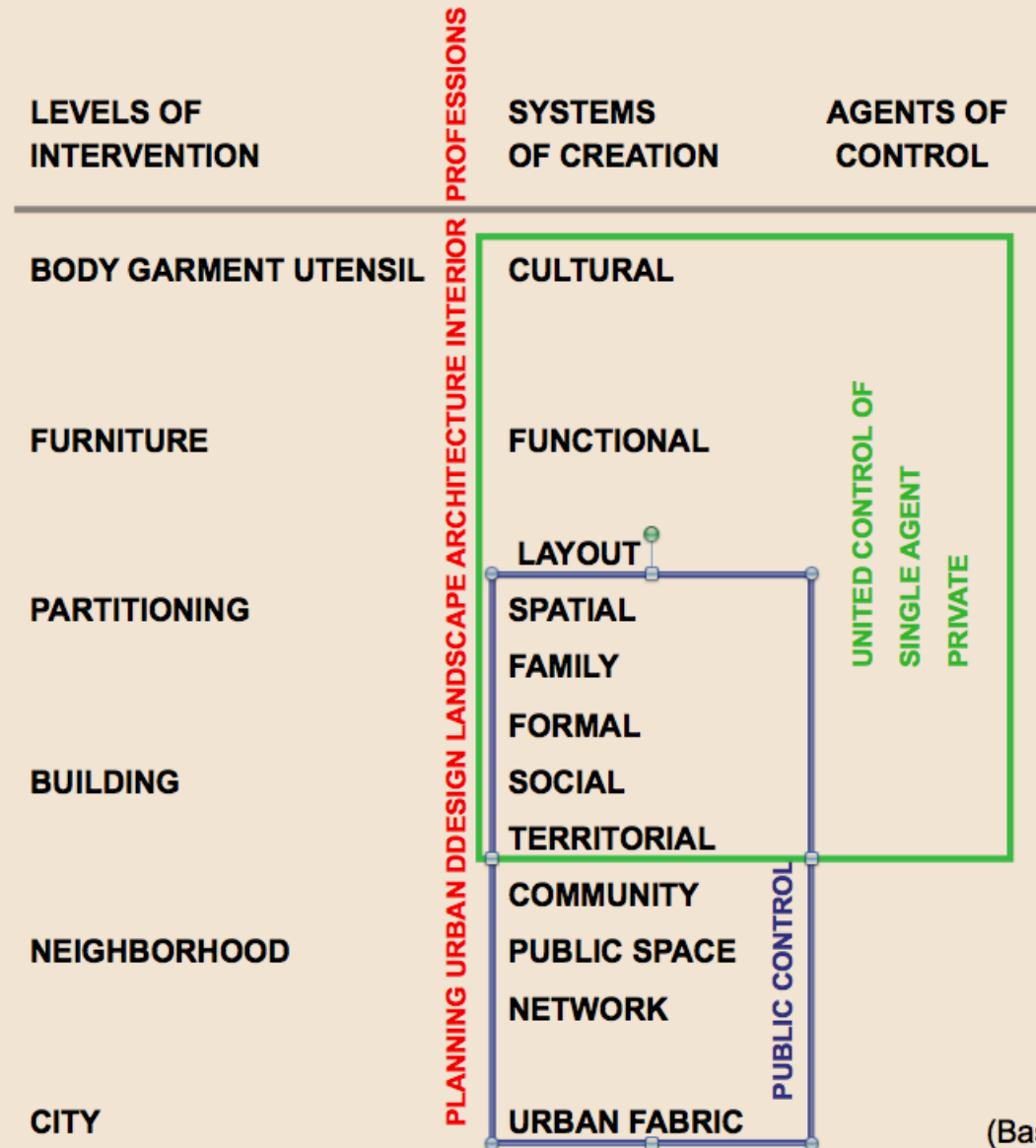


Projects by Elana van der Watt, Mirella Bandini and Ryno Dreyer

**A SUCCESSFUL ENVIROMENT = EQUILIBRIUM IN SYSTEM
+
CONTINUOUS TRANSFORMATION**

(Habraken)

equilibrium and transformation

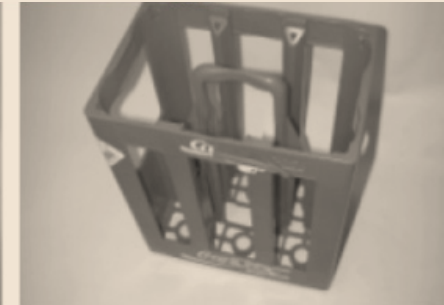


(Based on John Habraken)

distributed decision making



Crate with bottles (system levels)



Empty crate (primary system)



Bottles (secondary system)

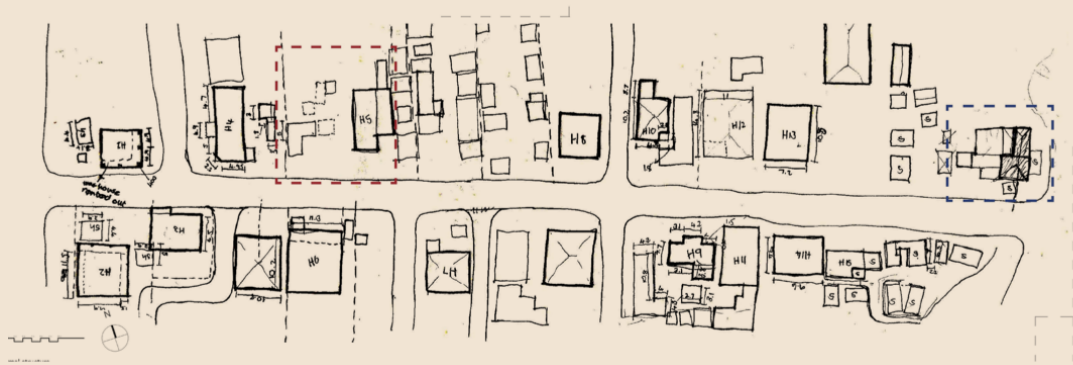


Liquid (tertiary system)

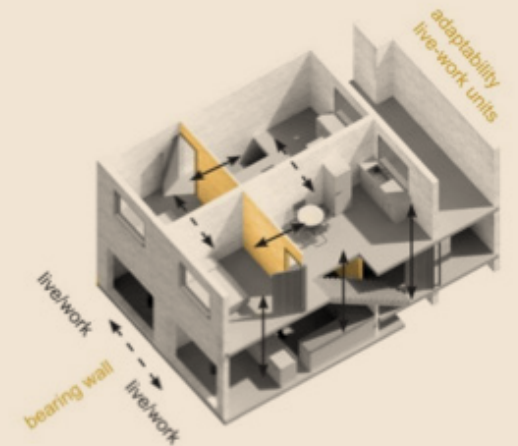
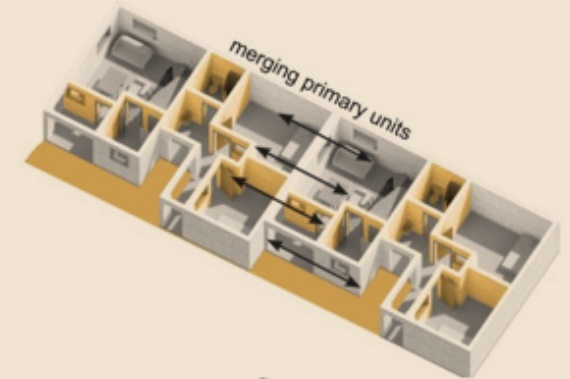
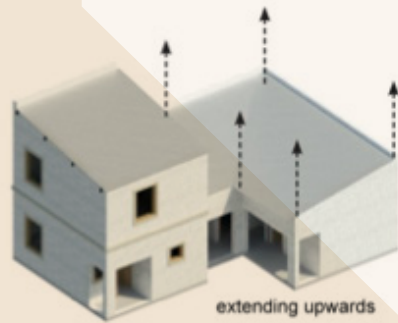
thinking systems: housing, houses, informality

A CRITIQUE ON CURRENT
INFORMAL SETTLEMENT
UPGRADE PRACTICE

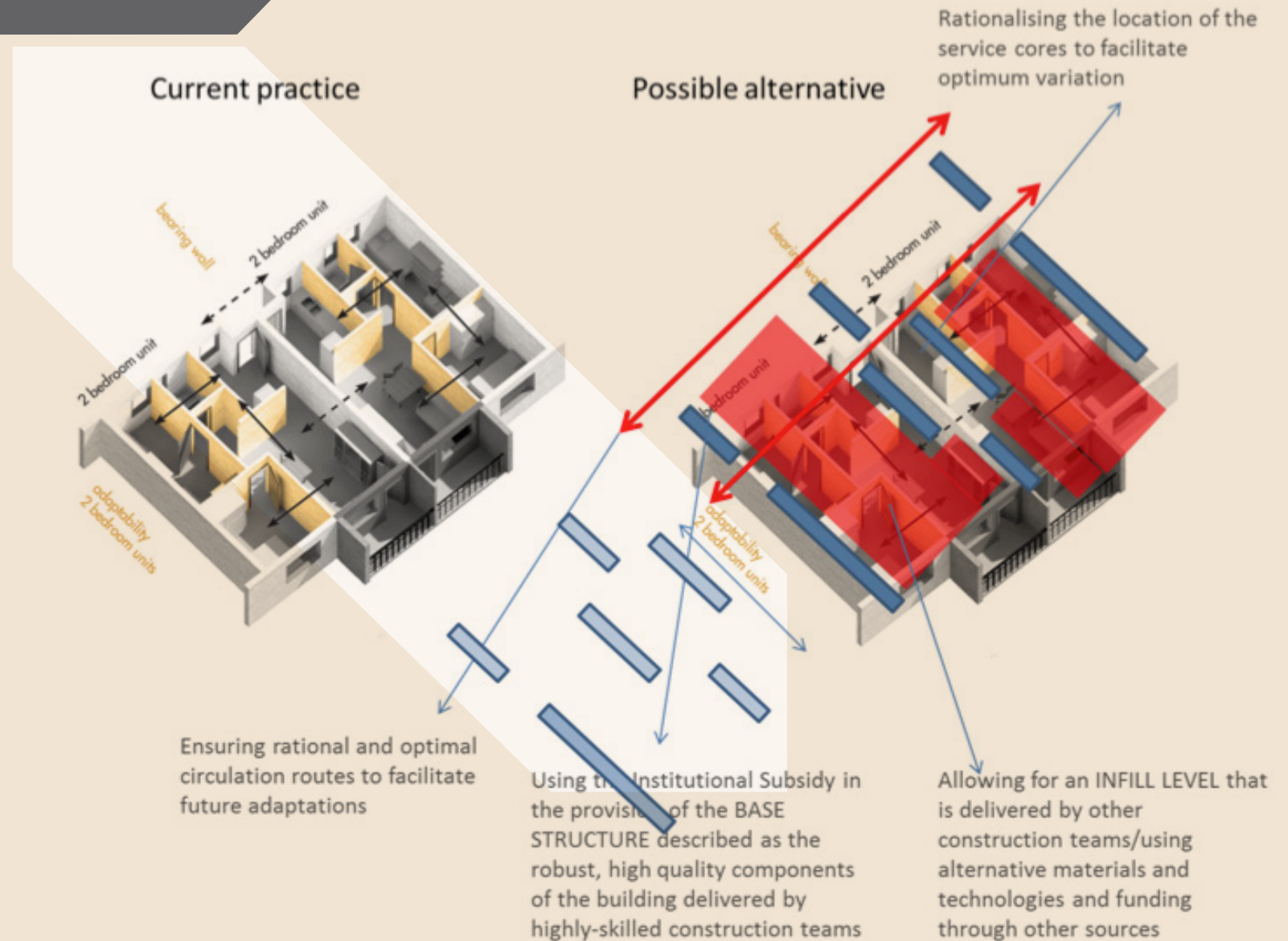
**Community takes all the
decisions?**



thinking systems: rental housing



thinking systems: rental housing



re-direct funding

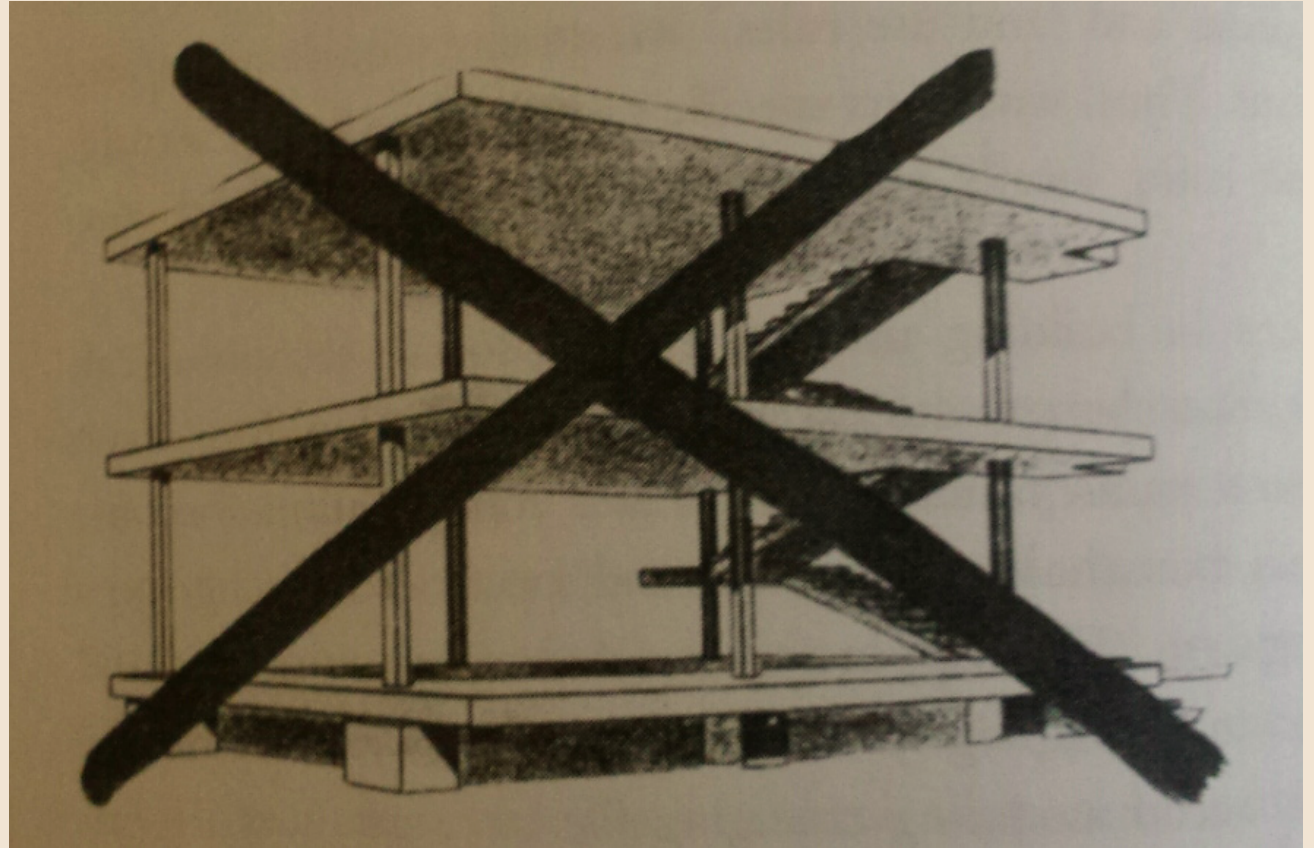


base building infrastructure

Broaden the definition of INFRASTRUCTURE

to include Base Buildings delivered through government subsidies via the various housing programmes, or by the introduction of a new subsidy programme

This allows the poor to get onto the first rung of the hypothetical housing ladder



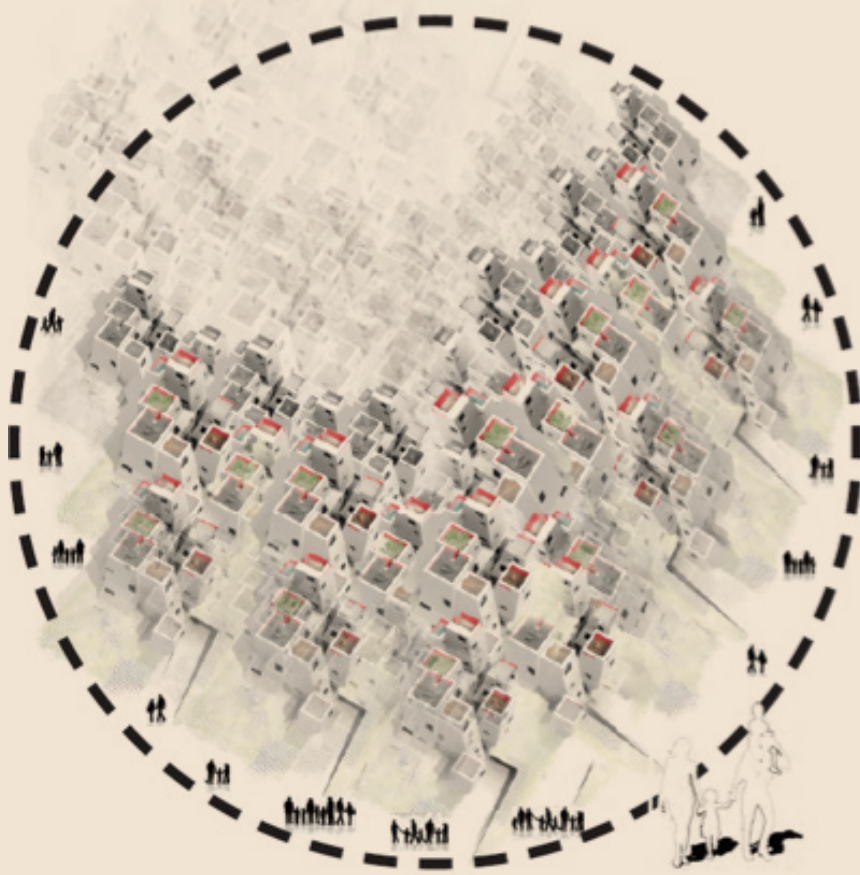
base building infrastructure

By providing Base Buildings, it is possible to address the disparity in infrastructure in different parts of the country and within cities

Base buildings achieve equity by injecting government funding in structures, which are shared by everyone, irrespective of income level. This would surely reduce the discrimination that arises from the distinctly located, designed and built housing for the poor?

LIVABLE STREETS

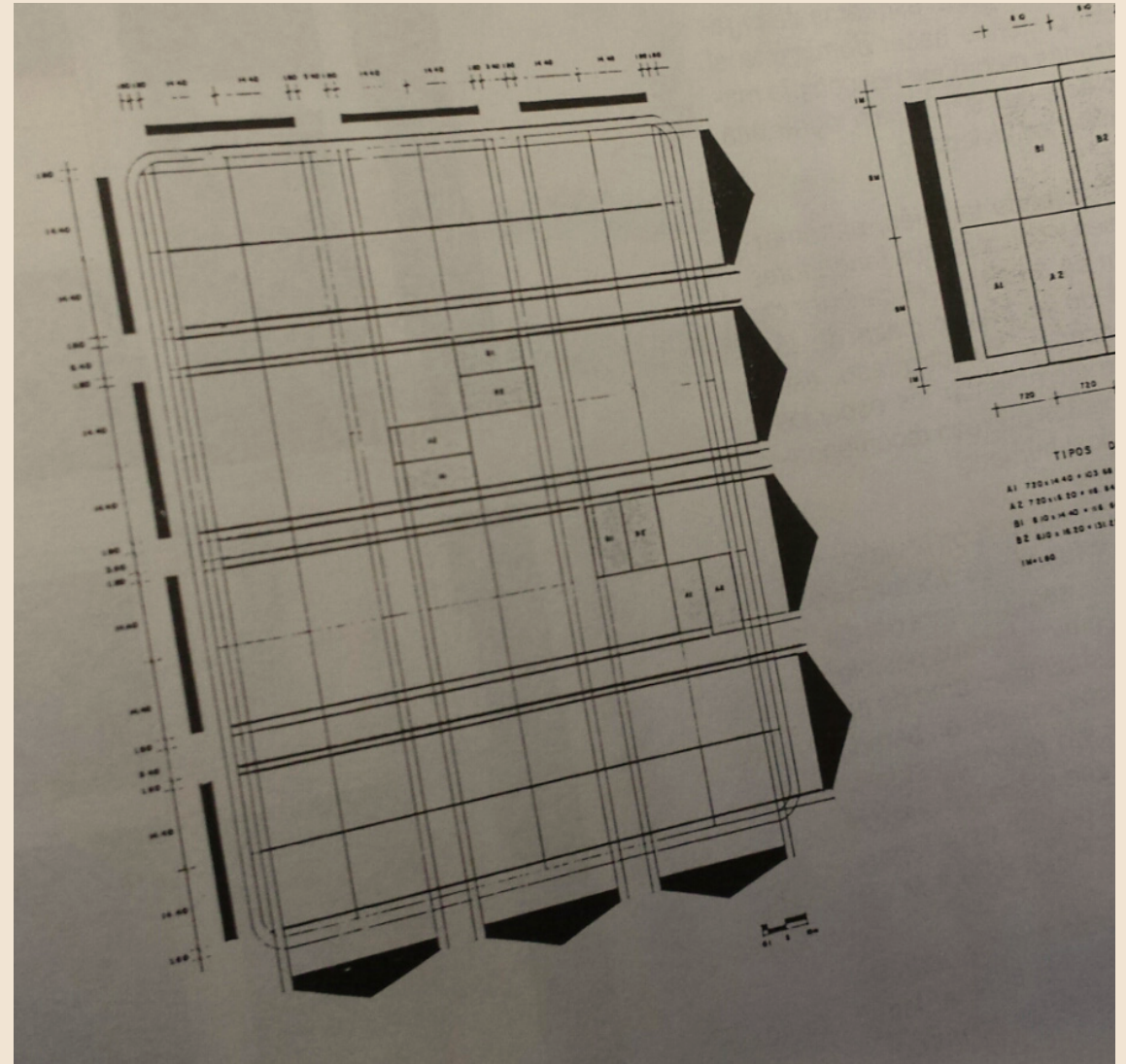
THE 1 HOUR WALKABLE COMMUNITY



addressing myths about OB

An Open Building project is NOT an incomplete project. There is much negativity (shared by the author) towards projects that deliver a wet core, roof and asks that the owners complete the unit themselves. However, Open Building allows for a diverse group to contribute in the process of design and building – in a manner that is carefully coordinated and managed. This implies the careful coordination of different construction teams at different phases of construction.

An Open Building project does NOT have to look different. However, the design and construction/procurement process is very different from conventional practice. The buildings would be structured differently



be levels and decision making systems

A time-based design approach allows for the unexpected and is inherently democratic