Structural and spatial relations

Henrik Valeur, 2019

The structural system of a building may relate to the shape of the building – and vice versa. However, in my collaborations with Ole it is the relationship between the structural system and the spatial organization which is of interest.

U97

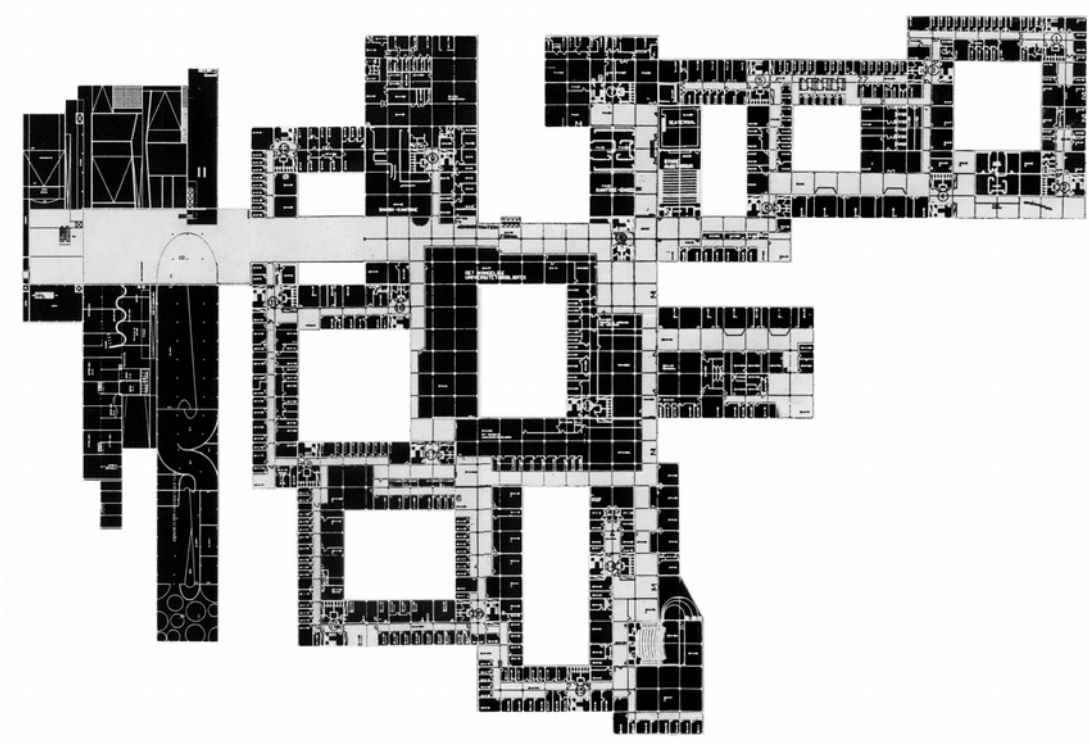
Open competition in 2 stages on the University of Copenhagen – Faculty of Humanities in the Ørestad, Copenhagen. Proposal by UiD/Henrik Valeur, Fredrik Fritzson, Bjarke Ingels, Bent Johan Poulsen and Uwe Wuetherich, Barcelona in collaboration with landscape architect Camilla Hjerl, Copenhagen and consulting engineers Ole Vanggaard, Copenhagen and Buro Happold, London, 1997. Prize and selected for second stage.

The Faculty of Humanities is part of the Copenhagen University. It has 13 units, subdivided into 25 departments, offering 50 different subjects for 15,000 daily users. The users are distributed into hundreds of identical cells in a labyrinthine complex, counteractive to internal communication, outside influence and any assessment of local performances. In this environment informations accumulate within restricted circles, which mainly seem to exist for the sake of their own existence.

In the shock waves of the 68' student revolt and in order to accommodate the equally shocking growth of babyboomer students the new faculty installation was constructed in haste and panic, on a deserted field on the outskirts of the city. It is an anonymous complex of module systems of standard pre-fab elements, effectively suppressing all differences and literally letting all energy ooze out of the endless and monotonous corridors.

The late modernist idea that uniform spaces guarantee flexibility has proven wrong, not only because the building systems have become obsolete, but simply because nobody wants to use them. Like Christiania, a contemporary but contrary fall-out of *flower power* less than a kilometer away, the facility for the Faculty of Humanities has been considered fit for demolition ever since it came into existence.

The new university is a 135.000 m2 complex to be realised in 5 phases, by different architects. We envision a simultaneous process of construction and demolition in which the new complex is to gradually superimpose itself upon the old. Throughout this process both complexes are to be fully operational as a single entity.



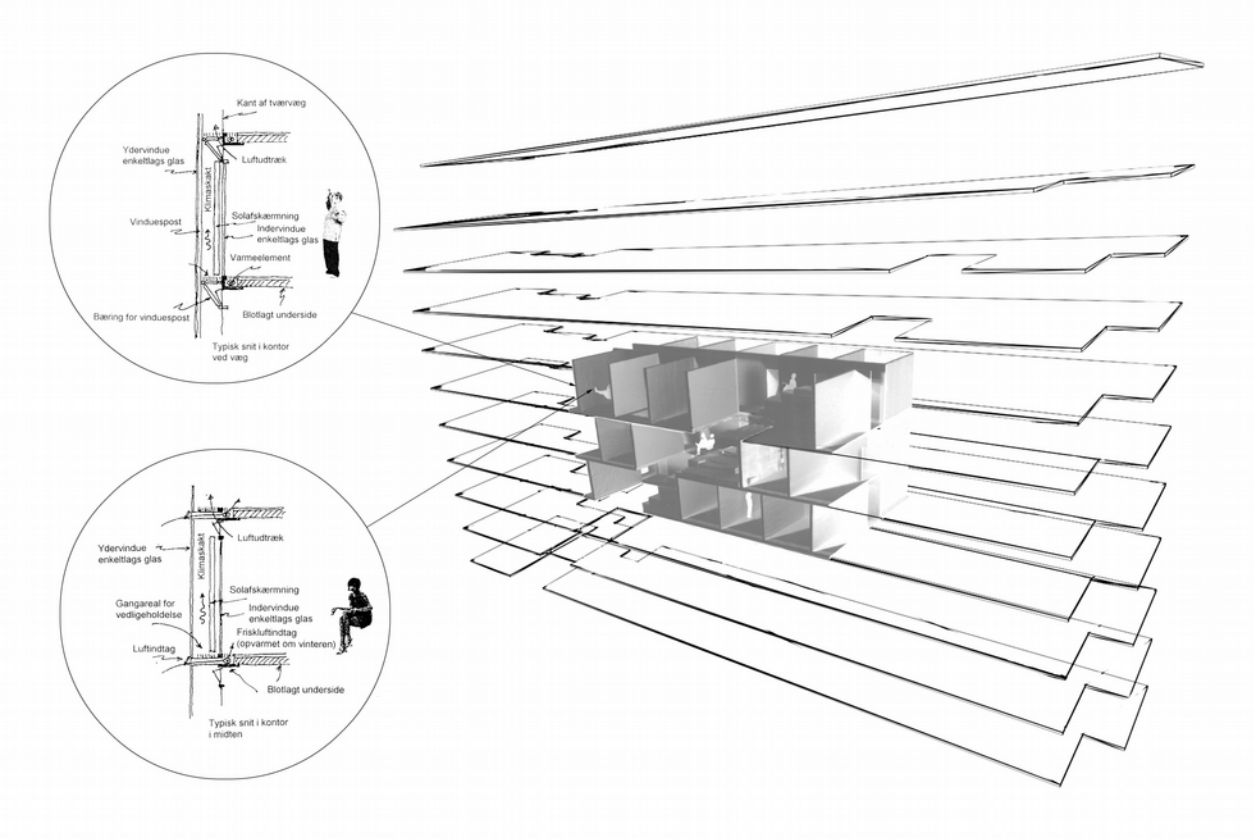
Plan drawing of the first phase of the new university and the existing labyrinthine complex.

The first phase of the new university is a 25.000 m2 structure, meant to initially function as an appendix to the already existing complex and later serve as an integrated part of the new. The organisational principle of this and subsequent phases is that of a transit area, a non-constructed linear space emerging as an opening in the existing labyrinthine structure and as a joining of the components of the new.

The individually designed components are assembled by a monolithic concrete structure, which is optimised ad hoc by secondary structural systems, adjusted to local conditions. The components exhibit their contents at the interfaces with the transit area.

One of these components is the Slab – a high-rise structure containing a giant staircase, an anti-thesis to the low frictional forms of communication, permitting the offices of various departments to be randomly spread out over the vertical surface.

Common facilities are placed on the huge stairs and from the transit area you can look up into the social interior of this otherwise secluded area.



Model of the giant staircase and details of the natural ventilation system in the Slab.

Flex-bo

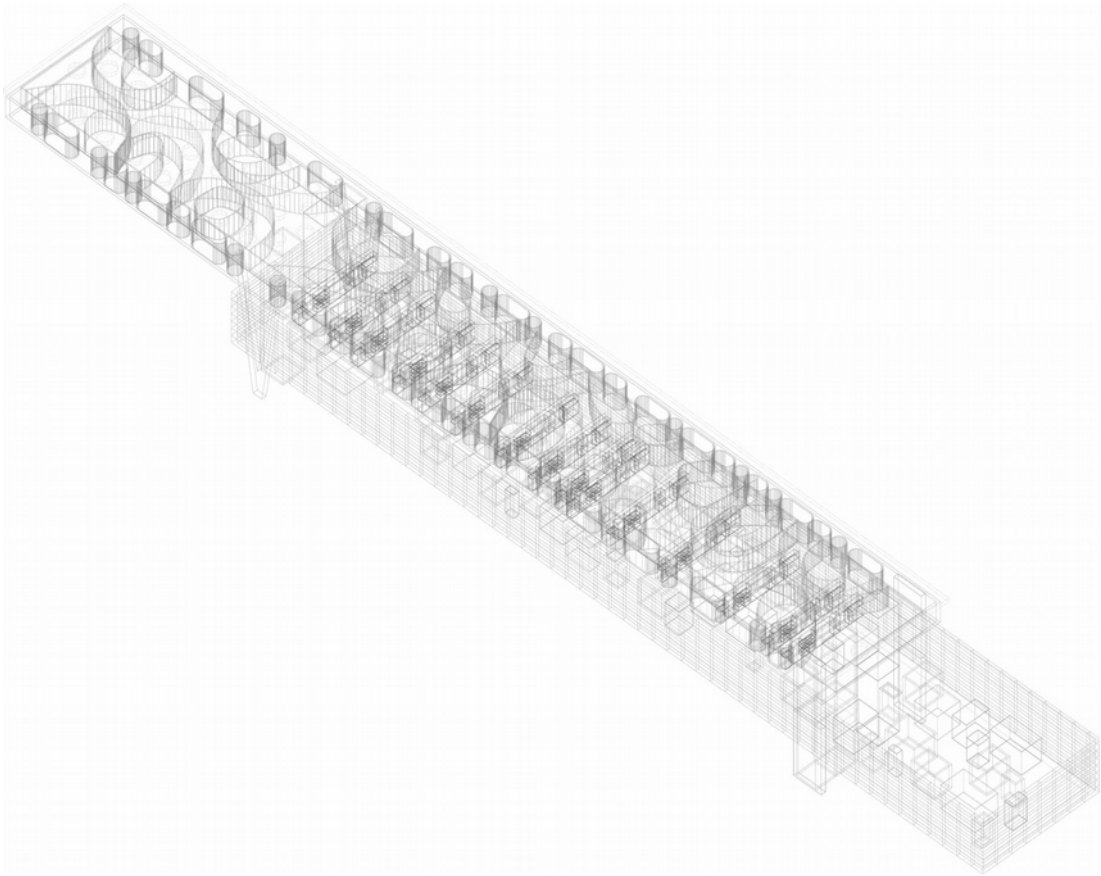
Open competition on flexible housing in the Ørestad, Copenhagen. Proposal by Henrik Valeur and Ole Vanggaard, 1998. Honorable mention.

Flex-bo is a housing project for a culture of accelerated consumption. It is aimed at contemporary youth, for whom the lack of constants, safety and order is not a loss, but a cause to explore and test new forms of freedom. This individual lives an easy, unsettled life in loose networks, soon to be amplified with weekend children and frequent changes in career and of partners.

The devaluation of many former connotations associated with the dwelling is experienced as an expansion of its potentials. Today the dwelling is a space that acquires meaning through active use, with a repertoire spanning from an occasional overnight stay to an everyday workspace. It has become a base that can be left for shorter or longer periods of time, or be completely given up on an impulse.

To satisfy a broad spectrum of individual lifestyles the contemporary housing project should provide a varied supply of living conditions, with living units being adaptable to the users fleeting mood and taste.

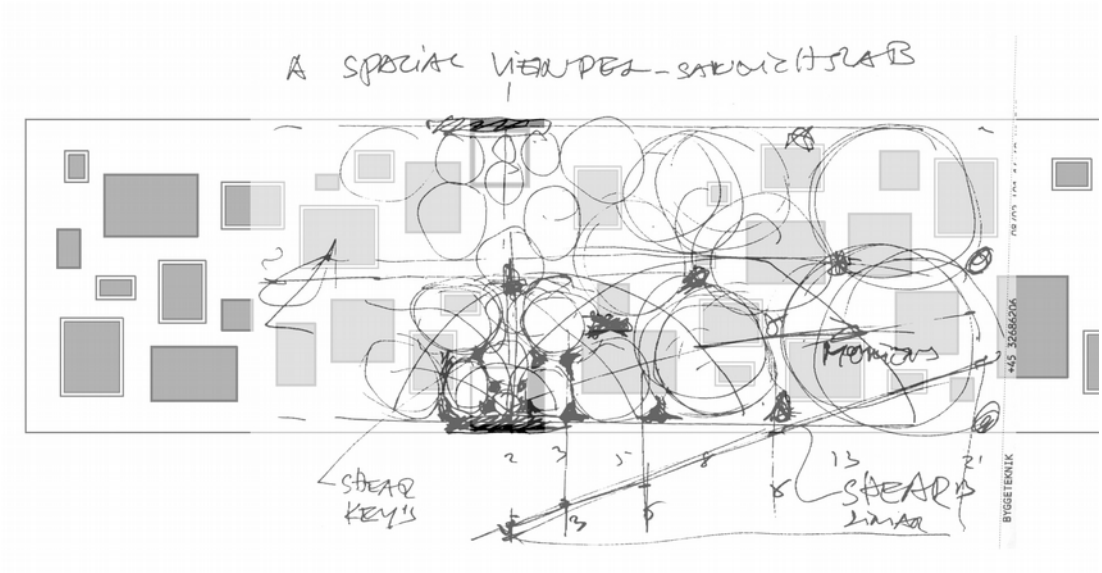
To enable experiments with new forms of individualised life and of social co-existence, this project is based on open spatial frameworks that necessitate large spans and result in large structural elevations. At the expense of resemblance to traditional house building, the structural dimensions make the building an equal “partner” among the large-scale enterprises in Ørestad North, a new development zone in Copenhagen. Moreover the size of the structures makes it a job for contractors who can handle big monolithic structures, rather than putting together small and repetitious elements.



Axonometric drawing of the 3 levels of the building.

The building consists of 3 open plans that can be freely furnished with dwellings ... in the same way as the open plan of the dwelling can be freely furnished with furniture. In order for this to be possible the service installations do not run vertically from the ground up, but rather side to side, allowing for plug-ins almost everywhere.

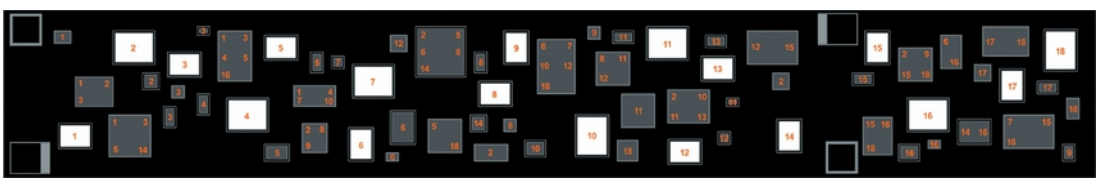
The large free span and cantilever is made possible on the upper floor (level 3) by the facade walls functioning as giant girders of steel and the floor separations as cross beams in a composite construction with a steel lattice structure between the concrete decks. And on the lower floor (level 1) by a number of box-like structural elements binding together the two decks to form a single 3 dimensional Virendel slab.



Sketch by Ole Vanggaard of the structural principle superimposed on a plan drawing of a section of level 1.

Service installations, heating systems and insulation are situated in the hollow space, also accessible for maintenance, in the deck between level 1 and 2, and in the perimeter walls on level 3.

At level 1 each of the functionally determined rooms of the conventional dwelling are randomly spread out in one large space. Each room can be leased by one or more tenants for periods of time adjusted to their individual needs and financial capabilities. Since the individually composed living units of the 18 tenants are physically interspersed among each other, the tenant will at the same time be living everywhere and nowhere.

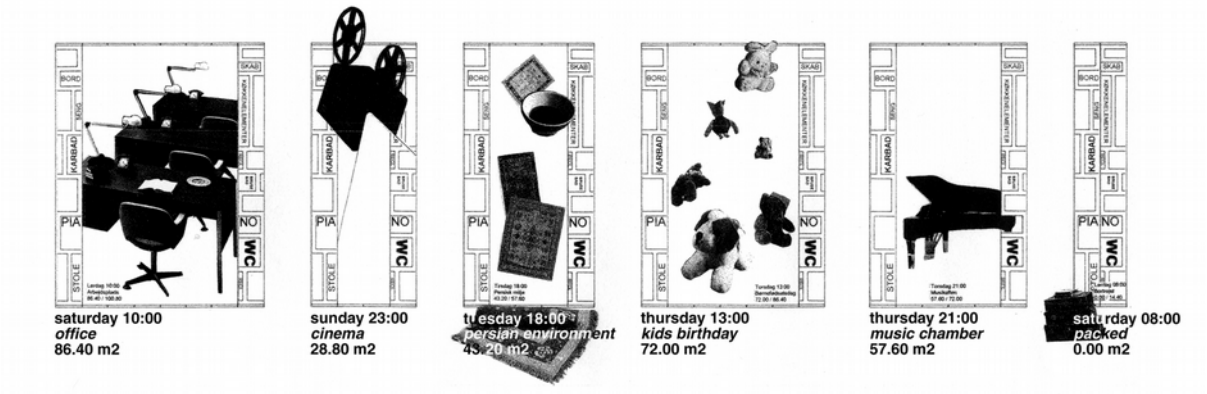


Plan drawing of level 1 with individual and shared rooms.

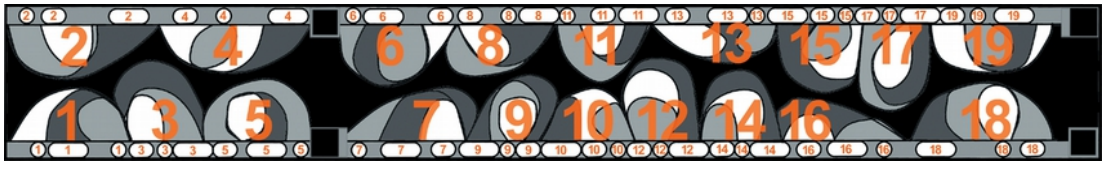
Level 2 is the void between the two structural systems of the building. It contains 15 dwellings defined as the voids between 2 deep partition walls that can be shifted sideways and where all the tenant's items, devices and equipment can be deposited. The system operates via a central computer, co-ordinating - on a daily basis - the user's request for more or less space. This system makes the change of living condition an everyday experience.

Plan drawing of level 2.

Instead of many smaller spaces with specific functions, these living units are singular, dynamic spaces with a function momentarily determined by the equipment selected from the walls. Pull out the bathtub and the TV set on a Sunday afternoon and the dwelling is a TV bath.



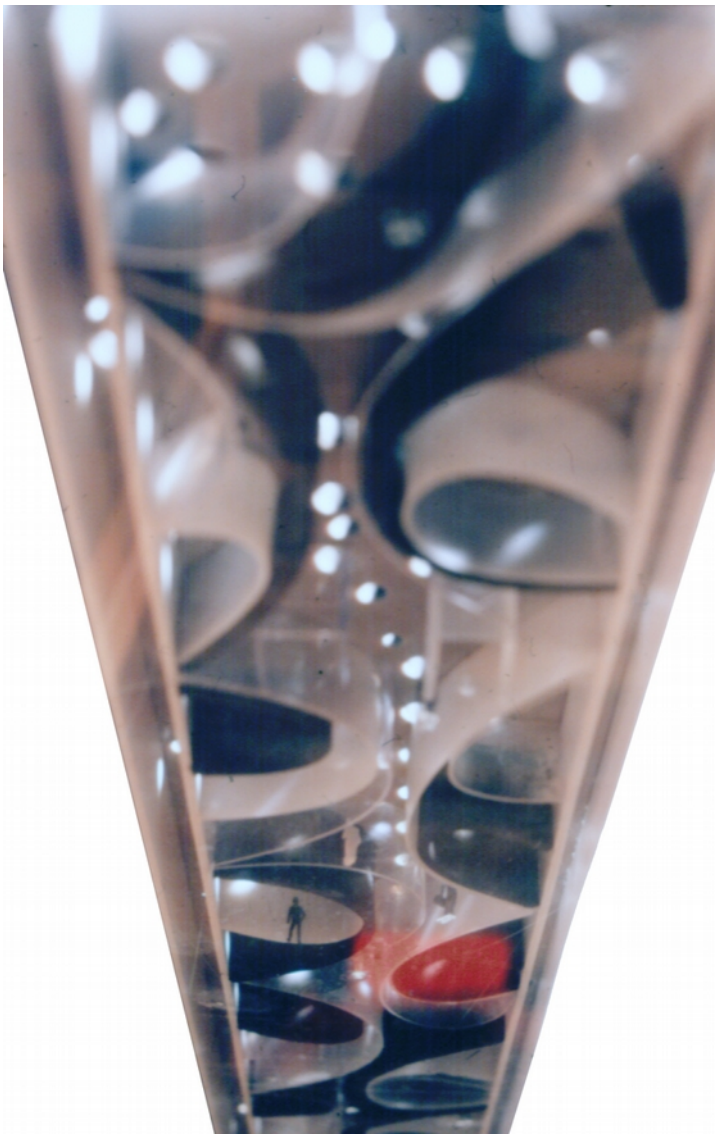
Collage of level 2 illustrating how one dwelling on may change during the week.



Plan drawing of level 3.

Level 3 is an open space between 2 perimeter walls filled with kitchen, bath and toilet facilities. By wrapping transparent, translucent, opaque and sound insulated membranes around them, the 19 tenants can create individual hybrids of light, noise

and visibility. The membranes are constructed of light-weight materials making it easy to change their positions. The individual occupations of the open space leave an amorph corridor open for collective purposes.



Model of level 3 seen from below.

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