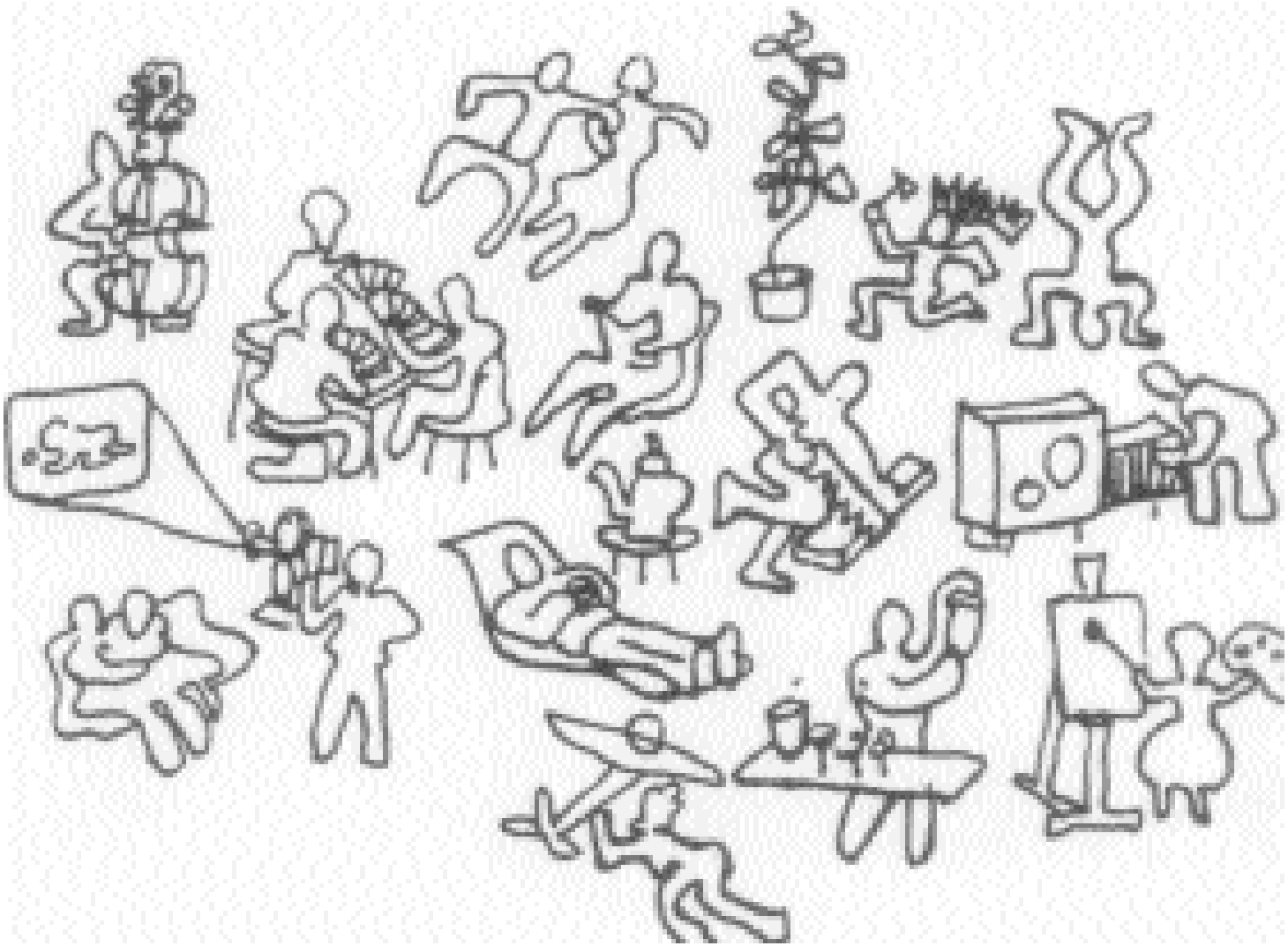
NEW NEEDS IN HOUSING - A REPORT by ROBERT BARNES ARCHITECTS - 2000



An Urban Theory

As is discussed by Habraken (1961)* et al, the production of mass housing is conditioned by factors such as floor area, number of units and efficient layout of internal spaces rather than considerations of the exterior urban space. There is also the presumption of mono-zonal use for such schemes.

We therefore propose an architecture that engages with these external issues as well as proposing mixed use especially at ground level. When we consider mixed use we do not mean to fix a variety of uses at particular locations or fix the relationships between them, rather we intend to provide an open framework within which changing uses can be accommodated. These should encourage complimentary commercial and communal uses.

Social and professional mobility brings a new relationship to work and live space. This mobility is increasingly shared by the a couple. An adaptation of the house to different uses could help to adapt to this new way of working and living. People spend less time in one home, if the house does not fit anymore to the way of life, a new child, a child who left home, a divorce, a new job, etc, it is easier to change house. The life and the needs of people evolve very quickly.

An evolution of the way of life and the architecture of housing.

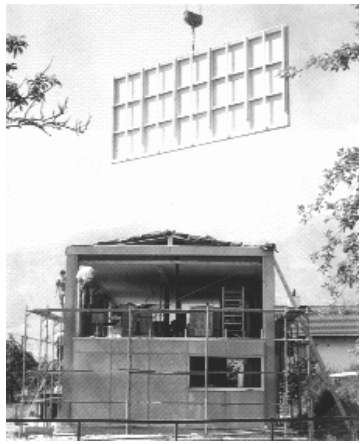
The changing of the traditional family into a diversity of family groups suggest also new situations and new specific needs. Couples increasingly do not marry, they stay in the same house, but are very independent and want their autonomy. Young people may leave their parents' house but still keep a room there. All these new relations between people living together have direct consequences on the partition and planning of houses.
The typical English house answers the need of a traditional family, two adults and two children, but it is not the only solution to housing. The dream of an individual house will always exist, but other sets of the population have other needs.

A Proposal

The approach outlined in this report is characterised by containing architecture with simple rigour, eschewing complication in favour of harmony of primary structure and servicing networks.

The project investigates the economic relationships between best practice both from public and private sectors. The nature of the type of sites suitable for both public and private housing as well as communal, commercial and residential uses must be identified, with ‘brownland’ sites given priority over suburban or rural locations. The project must try to bring together communal housing as a new building typology within the current evolving fragmentary state of the contemporary city.

The economic strictures currently applied to Housing Association schemes is applied throughout to gauge the overall financial viability. Standards of space as well as construction are, however, not fixed or standardised to allow for a wider flexibility of approach.



The proposal can be summarised as

1 The best way of building flexible structures efficiently at low cost.
2 The provision of a robust external fabric with high performance at low cost.
3 The integration of service networks with simple prefabricated service units for kitchens and bathrooms.
4 The maximisation of both internal and external space for the inhabitants,
5 The use of low energy materials throughout.
6 The integration of sophisticated electronic control systems to reduce energy consumption.
7 The flexibility of internal planning to allow for user fit-out options within a simple envelope.
8 The examination of residential and commercial rating systems to allow work/live space and reduce transport costs associated with travel to work.

Sustainable principles will be used to select the appropriate materials and method of manufacture and a total energy in production/in use analysis will be performed for all aspects of the construction.

1 Efficient Structure

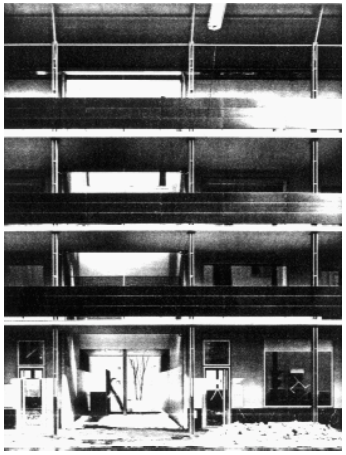
The idea of commercial office shell and core principles, by specialist sub-contractors, will be used to arrive at a flexible and speedy method of construction. Dry construction wherever possible with the shortest periods for construction in the open will eliminate as far as possible the vagaries of building in Northern Climates.

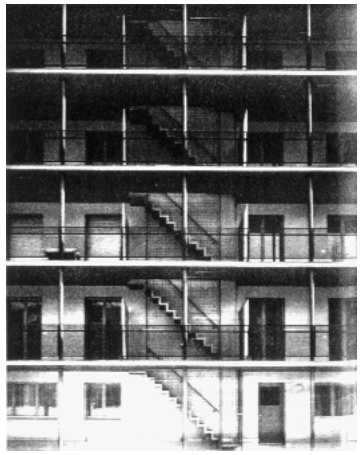
The relationships between the structure, services, vertical circulation and envelope will be re-established in this new context to bring the best of both traditions to bear on housing construction issues.

The external envelope will be developed from looking at comparative panel glazing technologies in the commercial sector with performance criteria set for the housing market. Cladding and glazing manufacturers will be involved from the earliest stage in refining products to meet strict monetary and performance requirements.

Experience from North America will lead the development of this approach and lead further to a re-evaluation of traditional methods of house building, replacing where possible with faster cheaper methods.

Design considerations throughout the process will address the issues of speed of construction for each building element - the direct design responsibility of the sub-contractor for each element - with overall design control exerted by the architect.





2 - External Fabric/Elements

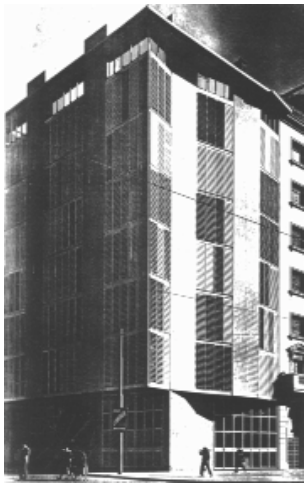
Repetitive constructional elements create a sense of order within the architecture and reveal the manner of the building's making.

Materials are chosen both for their economic, as well as their aesthetic sensibility, with wood, brick, stone, metal selected where materials are touched or rubbed against, and grp and concrete where they are not.

The tactile quality of surfaces is more important to the occupants than other more practical solutions in many cases.

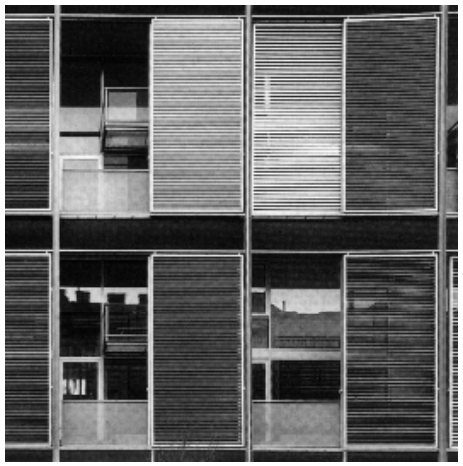
Innovation in the recent past has forgotten some of these intangible qualities, in pursuit of faster and cheaper technologies. This has had resultant negative effects upon the buildings and their occupants perception of them.

The view from the inside



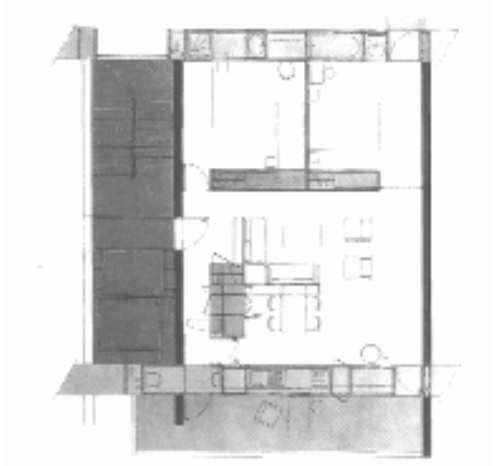
The way one looks through a window can be very different. The classical opening of a window in a wall, is unambiguous, the light comes in directly, the view is seen completely, constantly. The louvres give a flexible screen to the outside world. The quantity of light, or sun, let in is adjustable. The elevation reveals the changes that the inhabitants give to their own space.

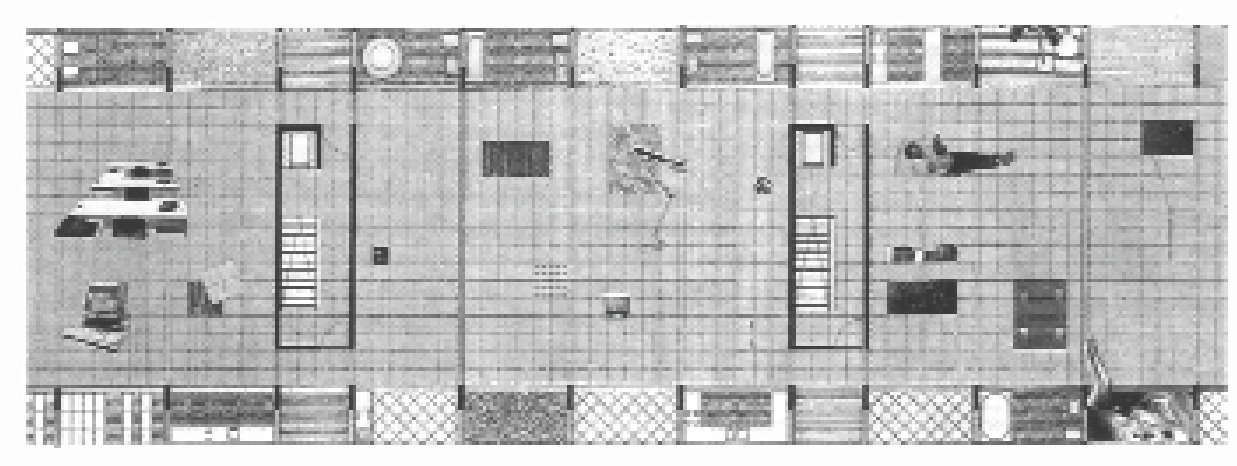
The inside / outside



The living spaces should open to a protected space, sometimes an outside terrace or sometimes a “jardin d’hiver”. By using the cavity between two skins of the building, opening panels could give the opportunity to control and modify the air, the light, the cold, the outside view.

The Thickness of the Elevation - the Building Elements

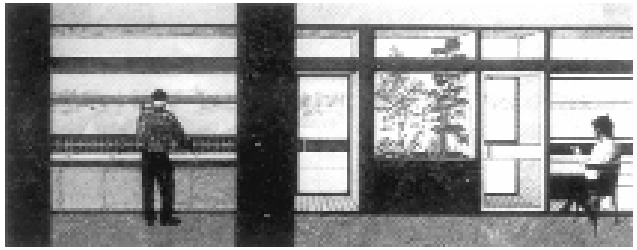




The development of new technologies should not be abandoned however, with appropriate use there are benefits to all in the adoption of new methods of construction and and materials for use. Pre-casting and other pre-fabrication techniques of all kinds should be encouraged at all levels to ensure high quality and low cost.

This idea can be seen in a few buildings where careful design and imaginative layout, together with limited palates of materials have resulted in buildings of refined elegance. In the modern idiom this is realised generally by making elements as delicate as possible and composing or layering the building elevation as a series of independent pieces. This produces an openness to the facade quite different from traditional house building.

The Thickness of the Elevation - The Activities in the Space

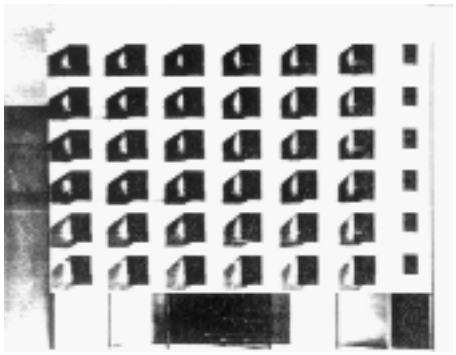


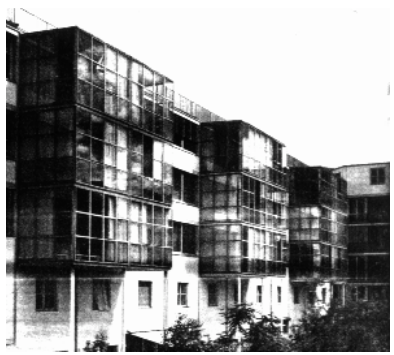
The layering of space at the edge of the building often accompanied with the creation of balconies and terraces which are used in a variety of ways by the occupants creates the architectural opportunity to exploit the potential of the facade as never before.

High performance transparent and translucent materials are available at reasonable cost to perform in conditions where traditional materials cannot. Their lightness and thinness contrast with traditional notions of heaviness and thickness to allow the external envelope of the building to take on a new life, both for the inhabitants as well as for the city outside.

Animated facades with activities relating to occupation, the time of day or night, the season and time of year. The building exposes its activity to the surroundings and enhances the urban situation.

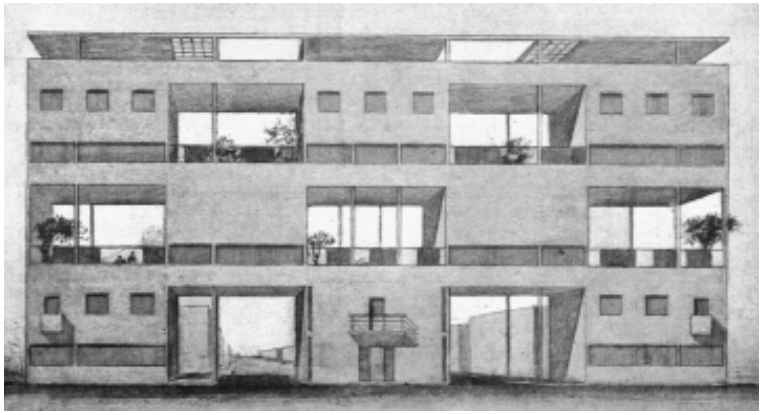
The Bay Window





A traditional element such as this one can be reinterpreted to allow a contemporary feel to the elevations as well as exploit the potentialities of the new materials. This element either at an individual scale and therefore quite private, or at an enlarged scale can provide a diversity to the elevations with new types of accommodation behind reflecting new ways of living.

Terraces



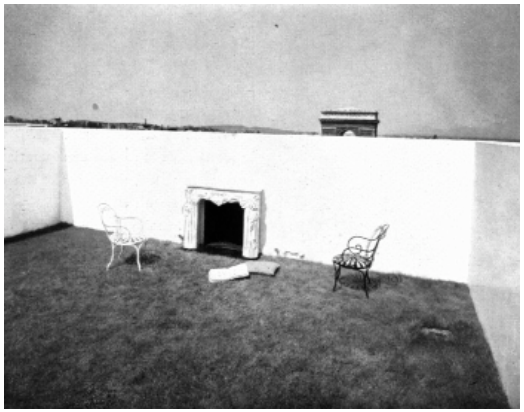
The incorporation of terraces in northern climates has always been compromised by their poor performance relative to the traditional garden, which is generally considered to be better. This is because they are always made too small so that simple communal affairs are made impossible, such as eating outside.

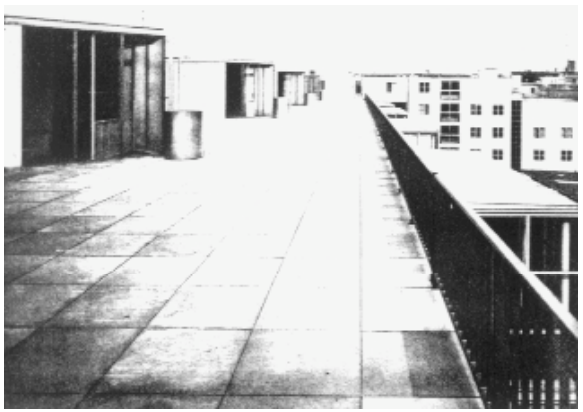
The adoption of more continental lifestyles is resulting in recognition that eating and living outside on a generous terrace can have benefits that more then make up for its lack of space when compared to a garden.

The careful incorporation of these spaces into the overall design can lead to a breaking down of the slab-like qualities of continuous rows of apartments over many floors as provide for light and air to penetrate deep into each flat but also into interior courtyards which can be released from a state of dampness and darkness.

Again the envelope of the building is opened up to the sky and sunshine providing living space in the air, but outside.

The Roof and Garden in The Air





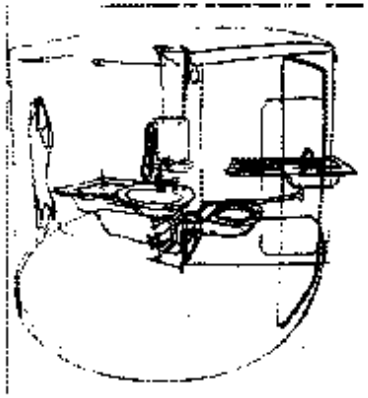
The worth of the roof terrace have been boasted all along the story of modern architecture, individual gardens, collectives functions. It is still very much improving the quality of living.

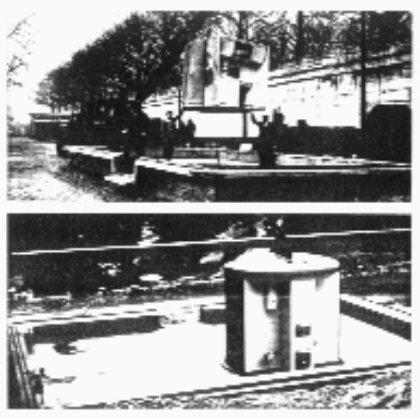
Allotments, easy gardening for the disabled, play spaces for small children, quiet areas for sunbathing, a private place for a barbecue. This simple idea would transform the ecology and environment of city centres everywhere.

3 - Service Units

New services


Une maison construite
en moins de sept heures



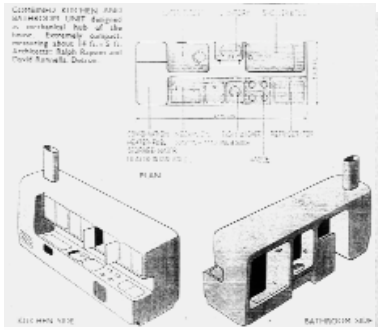


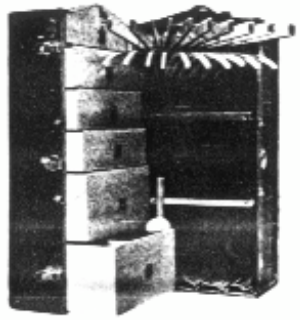
Since the 1950's (Prouvé, Le Corbusier, Smithsons...), people have tried to standardize a prefabricated service units for kitchens and bathrooms. It is exactly this part of the house which has kept evolving and accumulating new objects and technologies, which adds one to the other. From the water in the stream to computer networking, the house has a big capacity to welcome the innovations.

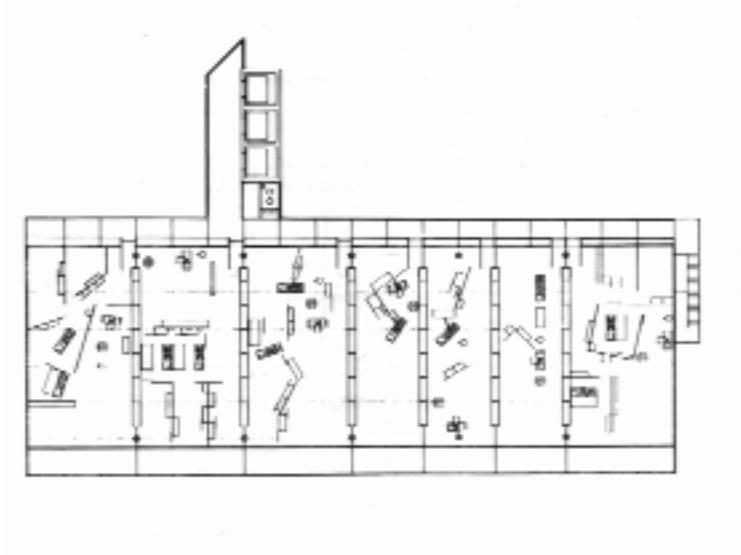
We imagine a sort of prefabricated piece of furniture which could integrate all the classical services and still allow for new technical needs.The house should be provided with all needs for a domestic as well as a professional life. This part of the house, would be the standardize part of the house, the rest of the spaces would be furnished very much as houses always have been, with a majority of movable and placeable objects. This piece of furniture could be pivoting around a central point, the vertical connection, it could be part of the flexibility of the house, by be in a movable division between spaces.

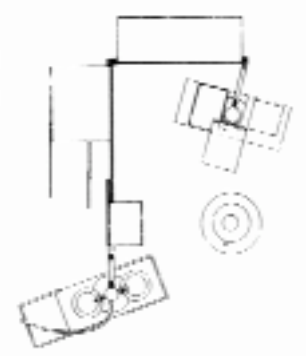
An alternative to the concept of the piece of furniture approach, would be the robotic / dynamic / service / screening mechanism designed either as 'room -divider-with-optional-extras' or 'all-purpose-storage-wall-kitchen-and-office-desk' providing in all cases maximum flexibility with minimum space and material. Optional parts could be purchased from stores just like hi-fi.

The Location in Plan



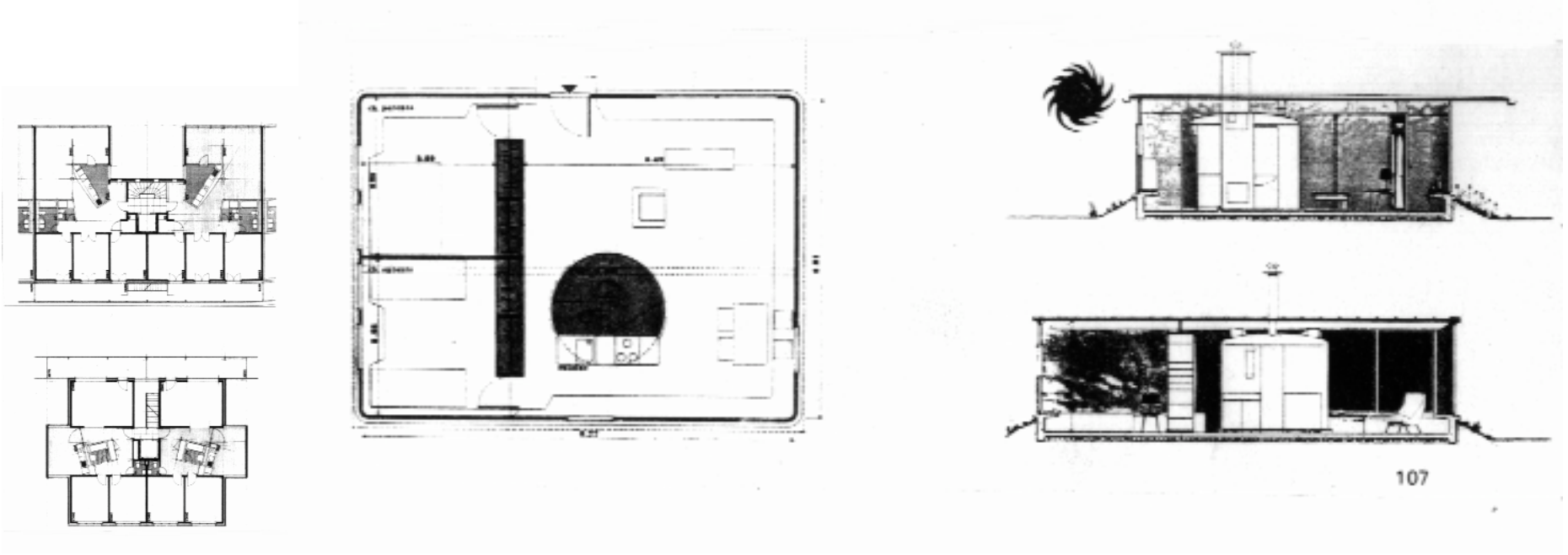






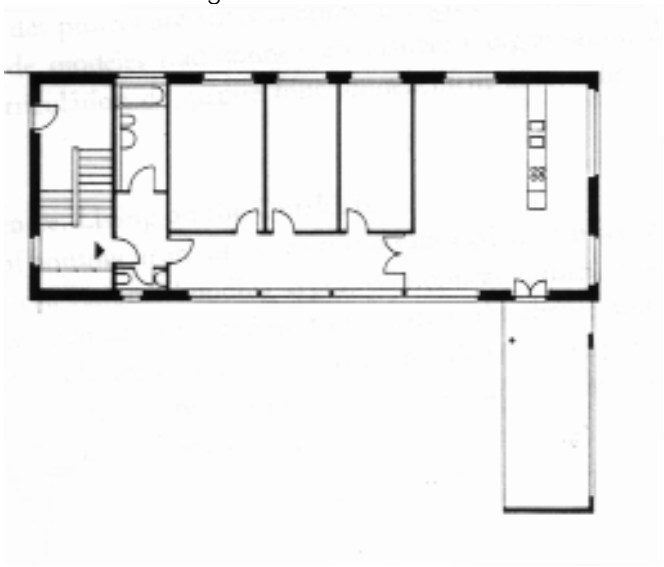
The fixed service unit, when strategically placed into the plan, can provide spatial organisation with reduced space for circulation. When considering this element as a piece of furniture or the space needed to use it as belonging as well to an adjoining space reductions in the amount of traditional circulation space can be expected. This requires the inhabitant to accept a different definition of space, as well the statutory authorities.

4 - A Maximum Space House



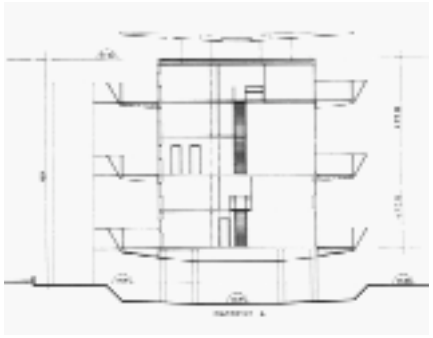
The plan shown above left incorporates quite normal flat plans around a conventional courtyard, what separates this housing scheme from others is it's use of the individual terraces to define to communal space of the courtyard. Not withstanding the comments made regarding the 'perforation' of the apartment building with terraces and balconies this scheme suggests that multiple addition of this element into a fourth faced for the courtyard provides for a 'screening' at the urban scale similar to the Terragni scheme illustrated below. Again it is tempting to draw a parallel between these elements and their use as devices for bringing the internal activities of the inhabitants out into the public realm, thus animating the architecture.

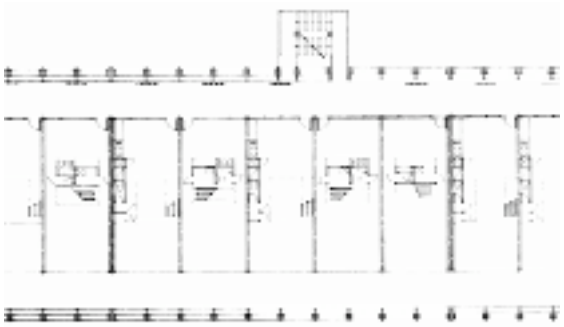
A nice home is a big home

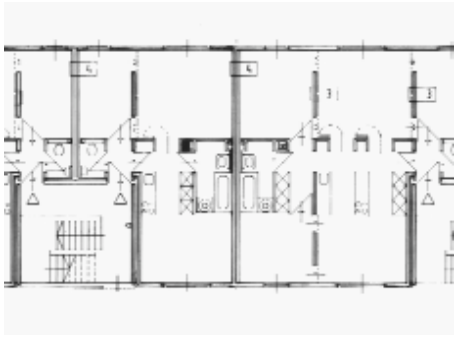


Often the todays houses have a space problem, the size of the rooms are too small or wrongly shared. We are convinced to find a higher quality of comfort with more generous spaces, bigger rooms by suppressing the useless transition spaces. Some rooms can support to be circulation as well (rooms en enfilade), an open plan kitchen, dinning, living room feels bigger than a partition plan, and allows to cook and socialise with the friends or family sitting in the living.

In searching the collectivity into one home, the roll of the individual shouldn't be neglected. People living in the same house have always the need to concentrate themselves, to feel alone and quite. The scale of intimacy have to find a place in the house.







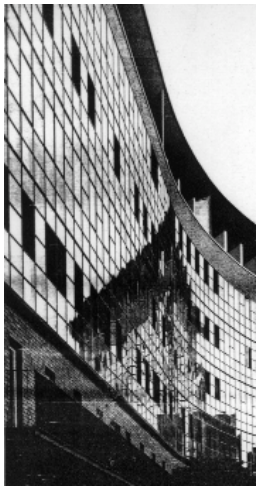
Description of Plans

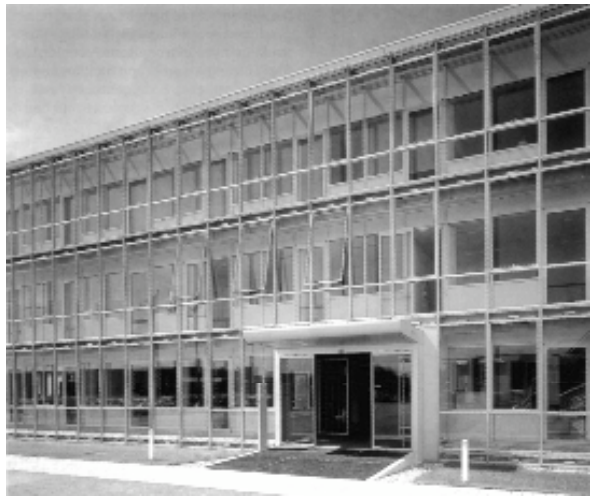
‘Abundance of space (surface and volume) as the main criterion: a wide variety of plans on offer (17 models for 114 dwellings) with single levels, split-levels and tri-levels, all double sided; minimising of covered collective areas; distribution by external stairs and landings on the north facades: spacious terrace-balconies on the south facade; simple construction in thin concrete with aluminium cladding..... As such the dwellings shake up quite a few standard ideas: entrances and traditional distribution corridors have disappeared, natural lighting to all rooms including bathrooms, semi-transparent partitions are borrowed from office design and stairways from industrial architecture.’ from Jean Nouvel - El Croquis 1987-1994

Similar examples are shown above of plans which concentrate the services into a central section eliminating much superfluous circulation and enlarging living areas.

Alternatively they concentrate the services into the facade zone or along the party wall to reduce circulation (or at least absorb it into the general usable space), or the design seeks to provide large external spaces incorporating them on upper levels into circulation routes and entrance areas so that space is used to maximum effect.

5 - Low Energy



Technique

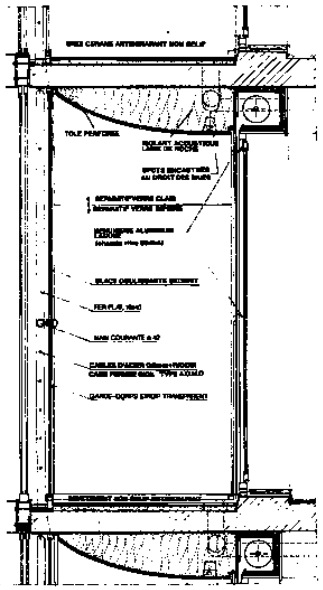
The facades are treated as an animated surface both in terms of activity of the occupants as well as energy gathering / dispersion. The effects of the day and night on the use of the space will condition the elevations. Also the changing conditions related to the seasons will determine the appearance of the elevations, with a ‘closed’ appearance in winter and ‘open’ in summer. These changes will signify the annual life-cycle of the building and it’s occupants rather than the mute response of traditional housing.

Sustainable principles

Sustainable principles will be used to select the appropriate materials and methods of manufacture and a total energy in production. Producing building components under controlled factory conditions to high standards.

In the inner urban setting noise as well as air pollution needs to be addressed and multiple layering of facades can achieve much that more traditional external envelope design. External ‘buffer’ zones utilising concepts of acoustic separation, isolation and absorption, Trombe Wall and passive solar collection traditionally known as winter gardens, all allow the ‘buffer’ zone to contribute not only to the spatial and organisational layout of the interior spaces but also to the environmental quality of the internal space. Security and sun control is offered by the use of perforated roller and Venetian blinds.

6 - Control Systems



Coupe verticale
sur la façade.
Une technologie
reflétée pour
une architecture
d'élégance.

An invisible system of integrated controls is specifically designed for this proposal to reduced the plethora of independent systems normally required in the home. New methods of switching by infrared rather than cable are employed to reduce the use of non-sustainable and expensive materials.

We propose to develop as part of this strategy a simple building management system for domestic users which can monitor energy flows and provide optimal control of space heating, cooling and ventilation performance related to individual needs and energy consumption, as well as the ubiquitous computer modem connection for remote monitoring.

7 - Internal Planning

Flexibility

The design of the Barcelona Pavilion by Mies van der Rohe in 1929 configured space in an entirely new fashion. Here for probably the first time space was conceived of and built as a continuum. Without the constraint of walls and doors space flowed freely in and around the German Exhibition Pavilion, which was itself the exhibit. The designation of space for a particular function or use was ignored in this, most eloquent of designs.

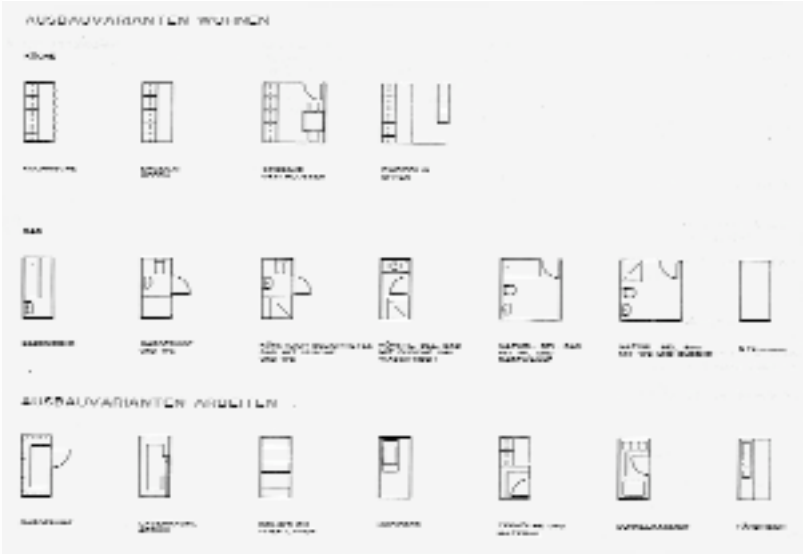
The challenge that this building proposed was a critique of traditional concepts of space. IN the intervening 67 years whilst we have realised a modern version of this idiom in some areas, namely public or communal areas, in offices as 'burolandschaft', we have been reluctant to accept it's full impact in housing other than in 'open-plan' living rooms. The proposal seeks to further promote it's use for the entire living / working domain, offering increased flexibility, for the diverse occupants, well as opportunity for establishing new lifestyles.

A house has to provide flexible spaces, that the occupants can change and adapt according to their uses or preferences, in which they can feel relaxed. The use of moving, mobile partitions, which consist of panels reaching from floor to ceiling, pivoting and sliding panels, which make it possible to separate one space from another or to leave it open. It brings the choice to divide the space in various ways. These panels can be plane or translucent to provide light in an inner room if necessary.

This way of adapting the spaces and to change them following the needs of the moment allows each of us to personalise the living spaces. The home becomes a reflection of our own identity.

A same room can have changing occupations, different ways of living in it, according to the person of the house, and according to the moment of the day. For example the computer is sometime a game or leisure instrument and sometimes it is needed for work or communicating. Every activity according with one object asks for different atmospheres.

The texture inside and outside will be carefully thought in terms of aging, cleaning and use (how will the material affect the contents, how will it look as the sun reflects on its surface...) The finishing will be minimal to allow financial economies, and to be able to have bigger houses as well as for the future occupants to have more choice.



The scheme of Zwimpfer Partners shown above tries to combine work and live spaces. Proposing three levels for each service zone, bathroom, kitchen or workfacilities, each level has a big open room (200 sq m) which can be divided as needed with easily built partition walls. Each unit has a cellar, a terrace and a parking space. The houses are left as lofts, which in this context means high ceiling (3m), big windows and open space that can be used as a workshop, an office or a living zone. The drawings show two different ways of providing living space with a variable percentage split between the work space and the living space.

8 - Mixing

The development of consumption and of communications bring more and more objects and new technology into the house. To consider these needs into the planning of the house could rationalise this invasion. The dwelling must be thought of as a series of spaces appropriate to various and changing conditions, so as to be adaptable to the composition and decomposition of families and to the new uses.

The spaces will be provided with all services but open to interpretation, to reflect the interchangeable uses of rooms, to provide a context for the individual to realise himself in.

On the ground floor, we intend to provide an open frame work within which changing uses can be accommodated, this should encourage both commercial and communal uses complementary to each other. The more communal spaces like bicycles sheds, wine cellars, laundry, garden could be shared (to the limit of comfort), the more the home itself can be cleared from obstructing objects, then living spaces can be more spacious.

We propose to offer different sizes and different topologies of apartments to therefore attract a mixed population into the housing (families, couples, flat sharing, old peoples...) through this variety, the housing can have the richness of different ways of living, different generations.

The architecture itself will not impose a style, a way of living, it will be silent and strong enough to support everybody’s tastes and furniture.

CONCLUSION

The Pleasures of Life

SPACE-WARMTH-CONVENIENCE-CONVIVIALITY-PRIVACY-HORIZON-SKY

To be able to play your music without annoying anybody else.

Answering a business call within the home without revealing your location.

To allow every body their own privacy in their own space.

Sitting reading the newspaper in the sunshine.

Bathing alone in the sunshine.

Looking out of the window and watching the snow melt slowly on the ground.

Being near the kitchen to talk to others whilst cooking.

Having all the spaces on one level and being able to wander inside and outside with a cup of tea.

Having a proper front door and welcoming space covered from the weather.

Having a workspace separate from home but close to it.

Having lots of cupboards and a workbench in the warm.

Seeing greenery from your window.