Hellmutstrasse

Zurich, Switzerland, 1990
Architecture Design Planning, ADP

The four-storied building with 32 flats (at present) is owed by a housing-cooperative and self-management community (WOGENO). The tenant association (Hausverein) was formed in 1984 and began to develop a building program together with invited architects. Envisioned an adaptable system as a way to accommodate the different wishes of the tenants. Adaptability is achieved by three measures: introducing a plan divided into three zones, locating fixed openings in...
load-bearing walls, and providing movable wall cabinets. The installation zone in the center of the building gives any apartment unit several possibilities in changing size with few restrictions from the position of the kitchen and the bath. Openings in the load-bearing walls which throughout the whole zone of the rooms can be closed or opened. Allow the apartment size and room relations to be changed. Wall openings were filled with gypsum-panels constructed carefully to meet sound insulation standards. Dimensions of rooms are either 4.0m or 4.5m, which are anticipated to adapt to different ways of furnishing.

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This apartment block surrounding a semi-public courtyard was built in an old industrial quarter in Basel in 1991. A tenant self-management and adaptability concept was given as a program requirement in a competition held by the Basel Christoph-Morian-Foundation (CMS) and Patris, an insurance company. In the part of the building which belongs to CMS the tenant association and a participatory design process.
were carried out with the help of two social workers and the building manager. The potential adaptability works on two levels. First, apartment combinations are possible among the flats on the same floor and accessed by the same staircase. Second, the interior of each flat provides the greater extent of flexibility. The partition walls, kitchens, and a part of the bathrooms are changeable. They were built after the major structural construction using tenant participation. The partition walls are made of gypsum-board.

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Überbauung “Neuwil”

Wohlen, Switzerland, 1966
Maien Architektur Group

This adaptable apartment building in Wohlen, Aargau, was designed by METRON Architekturgruppe and built in 1966. The eight-sto-
ried free-standing slab block with 49 apartments is owned by the private firm Tumau Immobilien AG and managed by the firm COS-
MOS at present. The owner and manager have changed several times since the building was constructed. The original in-
tention of the architects was to build apartments which can be adapted to the changing needs.

“新期望”住宅
（瑞士，沃恩）1966
這兩座出租公寓各八層，每棟有
49 單元。1966年建成，設計目
標之一是適應住戶長遠的需要和
居住方式的變化。套房大小，廚
房衛生間和人口樓梯是固定的。
而居室則由住戶用專門提供的木
制單位按30釐米格網分割。板條
寬有60釐米和90釐米兩種，安裝
方便，但開始較60年代一般標準
高。為方便住戶，建築師還專門
製作了一套用戶指南。
of one family and to changing lifestyles in the future. The overall size of each flat is fixed, as well as the kitchen, bathrooms and the entrance stair. The rest of the interior space can be divided within a 30 cm grid with light and easily movable partitions made of chipboard in 60cm and 60cm widths. These flexible divisions can be removed or reinstalled, but they did not meet sound insulation standard even in 1960’s. The architects prepared an introduction booklet for the tenants about the potential flexibility of the apartments.
Brahmshof

Zurich, Switzerland, 1990
Kuhn, Fischer: Hungembühler
Architekten AG

The Evangelischer Frauenbund Zurich (EFZ, Protestant Women’s Association) initiated a project competition. The competition program drawn from these meetings carried the central spirit of the EFZ, to “strengthen our capability and encourage ourselves, to think openly and to act with determination,” housing for differing persons was listed in the program as the primary requirement. The 5 story building around a common courtyard it was built in 1990.

布朗姆斯大院
（瑞士，蘇黎世）1990

這座位於市中心的住宅由當地的
新基督教婦女聯盟所擁有。在建
築設計階階段，聯盟通過數次
由多方面人士參加的討論會，
制定了設計任務書，任務書體
現了聯盟的宗旨，即“激勵進
取，開放思維，行動果敢”，要
求“住宅應為不同類型的人服
務，有不同的功能。”住宅於
1990年竣工，5層高，前有開放式
佈局，適應性體現在三個層面。
首先，承重混凝土門洞，造型多
樣，門洞間充料用普通碎塊，造
價低，但建成後調整不方便。其
The adaptability of the interior space is possible on three levels. First, the openings in the walls of the central zone of the building make it easy to adjust the flat size. Second, most of the rooms are the same size and proportion which allows adaptation to many different functions. Third, the living room and kitchen can be divided or combined according to the tenants own wishes with the arrangement of movable cabinets. The techniques and materials for the changeable parts are relatively simple. The building offered a high flexibility during the planning phase and construction phase.

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Housing “Living in Lohbach”

Hötting-West, Austria, 1990
Baumschlager & Eberle

The Support, or fixed part of the building, includes the outer wall, the inner access (staircase, landing, and corridor) and the utilities (kitchen and bathroom). Basically there are two very simple built structures in the plan. In the middle of building there is a stairwell surrounded by closets and ancillary rooms. On the outer fringe there is a surrounding wall, which serves as structural as well as an enclosure. There are no divisions of rooms between these two struc-
tures. To omit or to add a room, all one has to do is to remove or insert a partition wall. There is a fixed service zone and there is also the possibility of adapting the living area to individual requirements. Very diverse domestic arrangements can be realized. The façade is the crucial space, which defines the relationship between the public exterior and the private interior spaces. All openings to the outside are French windows from floor to ceiling providing access to the terraces/balconies that run around the buildings. Shutters made of copper and parapets of glass, both mounted in front of the terraces/balconies, serve as a protection from sun and weather and provide privacy.

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按下自己的需要開啓或關閉。任一戶的這種自主行為又體現了動態的空間效果。
Baumschlager & Eberle
Eco-school

Mändorf, Austria, 1996
Baumschlager & Eberle

The design orients itself to the close relationships between form, function, economy and ecology. The on all sides double layer of the facade of the school building consists of a wood and glass construction, which is wrapped by ventilated, sealed glass panels. Depending upon the position of the sun, the various conditions of transparency change the appearance of the building. From dematerialization caused by making light

麥德爾生態學校
(奧地利．麥德爾) 1996
設計目的是將功能、經濟性和節能要求組織在一個完整的形體當中。環繞四周的雙層立面由鋼木和玻璃構成，外層是隔遠的豎直玻璃柵，玻璃的透明和反射作用，隨著陽光角度而呈現不同的視覺效果，從完全遮蔽到完全反射周圍的環境，為節能，平面進深很大，主要玻璃立面加上中間層接採光，使室內光明而適宜。學生集體空間位於平面中間，四開通透教室。教室的數目和大小劃分靈活。
to becoming a minor of the surroundings. Extensive glazing of the facades, in conjunction with a central light well and clerestory windows in the interior walls made of wood, enable natural lighting of the floors, despite the ground floor area of approximately 80 by 80 feet. On each regular floor, seven peripheral classrooms group around a generous, central core, space with a maximum flexibility of space divisions.
Housing Sebastianstrasse

Dornbirn, Austria. 2001
Baumschlager & Ebele

A white, glass building configuration that presents a different façade according to the weather conditions, the hour of the day and the day of the week. It is often closed, although it is also opened from time to time, according to the user’s mood in each individual apartment. In front lies a mass-produced sliding mechanism. Glass panels that feature silk screens create the following effect: A person outside cannot look inside, but a person on the inside can see the goings on outside. This leads to a second effect, it is possible to adjust what can be seen…

(奥地利，多恩比恩) 2001
这座由白色的活动玻璃板构成的外墙，它的外装，每星期甚至每天都随着外部环境而变化。外墙通常是封闭的，但时不时地随着居住者心情而打开。这种活动外窗依靠精美的构造设计。白丝网状的玻璃板有不同的视觉效果，如外面看不到里面，而里面可以看到外面。既扩大了室内视觉的空间，又保障了住户的私密性。而且视觉上的穿透性使玻璃板的叠加层数而变化，采用活动外壁的目的是让使用者根据个人的需要调整内外关系，如窗户外……
seen from the outside; layering the panels over one another results in a visually almost impene-
trable glass wall. The theme was: individual living, and that includes allowing everyone to choose how
many windows they want to have, where they want them to be and how much distance they require
from their environment. Nobody needs curtains or blinds here, since the subjective impression of
being in an open space remains, even when the loggia spaces are closed. The concept works with-
out any shortcomings. The resi-
dents use these possibilities the
way the architects intended them
to. And the geometry of the sec-
ond loggia is an exciting addi-
tion to the surroundings.

The position, quantity and internal and external visual dis-
cance. And the external facade also reinforces the
environment.

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"Jia's Flat"

Mid-level, Hong Kong 2002
Jia Behdi & C-FI Architectural Planning design Ltd.

High-Rise, high-density cityscape and a rapidly changing socio-economic environment are major characteristics of Hong Kong. Accommodating the increasingly diversified living requirements implied by these conditions demands a high degree of spatial flexibility. The flat is located on a high floor in a dense urban area. The original non load bearing walls were demolished. The sleeping rooms were recreated, in both function and affect, by pull.

中半山 “賈居”
（中國，香港）2002
香港的居住環境是以高層高密度和快速的經濟社會變遷為大背景的。為了讓居民生活多樣化滿足，高度的空間靈活性必不可少。這所高層公寓是在密度高的市區，原有的非承重牆被拆除，代之以三面推拉壓和用兩塊獨立隔板組成的活動牆。由一組位於平面中央的移動隔板將這些活動牆組合在一起。活動牆的開合，形成不同空間聯繫和分隔狀態，適應日常生活的需要。三面推拉壓寬度不同，但都直至頂，強化了功能的模糊性和空間的不確定性，設
ing three sliding doors, and “Huf-fen” operation partitions out from “floating island” cabinet standing in the middle of flat. Opening or closing different doors creates different spatial combinations, and can accommodate various activities over time. The three sliding doors, varied in size extend from floor to ceiling to dissolve the functional ambiguity enhanced the indeterminate quality of the space. The design concept also aimed to minimize material consumption, minimize daily energy consumption through enhanced natural lighting and natural ventilation by minimizing interior wall properties. Assemble structure optimized a possibility of reusing and recycling the material.

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Gifu Kitagata Housing

Japan, 2006
Edge (HK) Ltd

Amidst the present trend of individualized lifestyles, the word communal is frequently cited but seldom realized. A better model of living would be a small village, where the villagers embrace a unique mutual identity based substantially on RECIPROCITY. In Gifu, the megastructure allows for certain interaction in its dedicated public spaces; it provides chances and choices for 10 families to group together and among them share their own CIRCULATION ROUTE, STORAGE SPACE, and...
LAUNDRY AREA: the flexibility can extend to sub-letting and combining units for big families. Regarding the layout, the alternating U-shape units create interesting spaces intersecting the village route allowing for a myriad of possibilities; the increased surface area of the unit also promotes CROSS VENTILATION and NATURAL LIGHTING of the dwelling units to a great extent. As a result, the design as a whole addresses reciprocity to enhance the identity of the locale, and pays particular attention to ensure the interests of individual units.
Suitcase House

Beijing, China, 2001
Edge (MK) Ltd.

Suitcase House is originated from the experimental development of the Commune By the Great Wall in Beijing. It attempts to rethink the nature of intimacy, privacy, spontaneity and flexibility. It is a simple demonstration of the desire for ultimate adaptability, in pursuit of a prosenium for infinite scenarios, a plane of sensual (pleasure. Adapting a non-hierarchical layout with the help of mobile elements provided by the envelope, it transforms itself readily according to the nature of the activities, number of inhabitants, and personal preferences for de-
degrees of enclosure and privacy. A metamorphic volume, it slides effortlessly from an open space to a sequence of rooms, depending on the inhabitants' specific requirements. The bottom stratum acts as a container for dedicated spaces. Compartments are concealed by a landscape of pneumatically assisted floor panels. At any time only the essential elements will have a spatial presence. Imagine in the daytime, a couple can open up all the sliding partitions and enjoy a totally indoor open space with a dimension of 44x5m. In the evening, when more guests arrive, the entire space turns into a lounge for party. Rooms can be formulated when the night falls. A maximum of 7 guests rooms may accommodate up to 14 guests if they stay overnight.

客人喬門，這個空間變成多功能活動室，夜幕降臨，一個個獨立的房間慢慢出現，房間多達七間，可住十四位客人，如果他們

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Staff Residence of Dongguan Institute of Science & Technology

Guangdong Province, China
2003-2004
Zhang Lei

Zhang Lei is well known in China for his well portioned outlook and sensitively designed layout plan. However, in this apartment house design, he moved even further by allowing the users to 'design' the layout and the partially also the façade, while maintaining the high quality of visual impact. The structural and service cores in each unit are minimal to allow

東莞理工學院教職公寓
（中國，東莞）2003/2004

此設計的特點是，在保證完整的外觀形象的同時，為住戶提供了平滑佈局、部分室內空間佈局的自主權。結構和管線服務所占的空間小，為居室的靈活劃分留有寬闊的空間。套型內的結構柱也是非承重用的依託。居室等室外空間的位置和大小也可隨住戶的意見而改變。套型的靈活劃分和陽臺位置的變化，有節制地體現在外立面，改變了一般居

住所建築的單調形象。
free division of living and sleeping area. The column in center is positioned in such a way that the users can easily setup a lightweight partition in various positions. There are several transferable outdoor spaces, e.g. balcony in various size and locations, upon the users’ preference, are located between the private indoor space and the outer skin of the building, which present a united value for the community, as well as a sensitive diversity presenting the individuality of the users.

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Facades Possibilities According to Floor Plans
Sculpture Show Room of Nanjing University

Nanjing, China 2001
Zhang Lei

It is not unusual to find the operable partitions in museum or art gallery for the purpose to adapt changes of exhibits. This project, as a transformation of use in a lobby of an existing building, means to be a temporary event rather than a permanent installation. The low cost, and light weight construction of partitions represent a temporality. Each operable partition is thick enough to serve as sculpture stands, with...
a large opening in the middle, it has multiple purposes: dividing space, connecting space and performing a showcase all at same time.
There is a growing demand on small apartments in housing market of Shenzhen. The two tower buildings were specifically targeted on small home buyers, providing small one-room apartments and two-room apartments. However, the architects intended to make a more variety within constraints imposed by the developer. In each of the four wings on the floor plan there were a one-room apartment and a two-room.
apartment. The two apartments can be combined to make a larger apartment. They can be sold as separate two apartments or as one bigger apartment to accommodate a variety of residents or changing of needs, from home office, family with two couples, to leasing on apartment and occupying the other under single ownership, etc. Thanks to the sheer-wall structure and thick floors to make a large, open and beam-free space, a variety of interior layout were achieved.
“Support” Housing

Wuxi, China, 1988
Bao Jiaosheng

The design of the project targeted on three phases of construction: the construction of the structure, the production and detachable infill elements, and the interior layout by the residents using the infill elements. The three phases of construction were carried out by three bodies. The structure was built by a construction company. The infill elements were made by a special producer aimed at general market. The interior fittings were installed either by the residents themselves, or neighborhood ser-

無線支撐體住宅
(中國.無錫) 1988

住宅的建設分三階段進行。第一段是設計建造支撐體；第二段是設計生產可分體；第三段是把住戶選定的可分體按照住戶的意願佈置安裝於他所選定的支撐體中，最後構成一個適用於整體的住宅。三個階段分別由三個不同的建築生產組織生產；支撐體由現有的建築公司來承建，可分體則由專門的工廠進行商品化生產，最後的安裝工作則由住戶自己或由他委託的社會勞動服務組織來完成，支撐體內的每一單元必須有許多不同的佈置方式。
vice agents. The structure design encouraged a variety of apartment layouts, including those for non-residential purposes. The planning of the buildings created a variety of courtyard-like spaces for communal gatherings. Most of the upper floor apartments were served with outdoor terraces, which invited creative adaptation of the users.

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支援體或部分支援體必須能適合於非居住的功能，以便安排住宅區內其他公共設施用房。單位採用以單窩為中心的設計形式中由自己，提供了室外公共交流的場所。整個住宅團組就是由九棟兩階型單體構成。
Spatial efficiency: remodeling of industrial buildings into accommodation

Nanjing, China 1994
Bao Jiajia

A local news company 'Nanjing Daily' acquired a small piece of land with three four-story industry buildings. The company intended to provide low cost accommodations for their young staffs. After comparing several alternatives, it finally opted the proposal of the architect to preserve the structures and remodel them into 27 duplex apartments by fully using the floor heights varied from 3.8 m.

高效空间：工业建筑的居住改造
(中国、南京) 1994

《南京日报》社有一块位于居住区的地块，建有多层厂房。报社计划建一批青年公寓，在比较数种方案之后，建筑师建议保留厂房，充分利用其3.8米和4米的层高，改造成小型跃层式公寓。建造分两期进行，第一期资金由报社承担。现有建筑内分割出27套“毛坯房”，室内只进行简单区域分割，超限、私设设备三个功能区域，设备管道系统。第二期，装修内装修改造资金由住户承担。建成一年后所做的调查显示，这种有住户参与的建造方式
to 4.0 m. To lower down the cost, the construction was divided into two phases. In the first phase, the agency purchased three zones sleeping, living and service. In service zone, drainage and piping systems were provided. In the second phase, each compartment was designed and constructed by the assigned residents with their own expenditure. A survey conducted in the following year proved that the residents who participate in design and construction were successful.

不僅套多樣，空間利用率較高，而且滿足住戶個性需求，得到住戶的認同。
House-Golden Age, private housing complex
Chongqing, China 2006
Li Hail, Tang Ning

This massive housing complex built with 8 m × 8 m concrete framework structure consists of duplex apartments, multiple sky streets and sky gardens, which serves as neighborhood gathering spaces. Each sky street connecting the apartments on every three levels is 3.6m wide, with inner half of the width used as garden and buffer zone of kitchens on the street level. The apartments are varied not only in size, but also in type, because of flexibility implied in the building structure. The
potential uses can have a choice from single story apartments, duplex apartments, and if needed, three story working apartments. In each type, a certain variety in layout and partition are also provided to accommodate diversity of accommodation. The partition walls were constructed with light-weight and hollow concrete blocks (700kg/cubic meter) in 200mm thickness.
1000 Bed Hospital

Kortrijk, Belgium 2000-2018
Baumschüler & Eheide

The planning contract was based on an age-old, traditional typology: a courtyard structure. The main objective was to create moments of architectural identification. The courtyard allows for vastly differing atmospheres, which effectively counter the danger of anonymity. In organisational terms, the most important elements are short distances in a low-lying, flat-level hospital design. This is guaranteed by the central alignment of its main functions (operation rooms, intensive care unit, etc.).
care wards etc.) and the direct access to the emergency area, for example. Developments in the hospital sector are the result of fluid processes in terms of technical medical equipment, financing, politically and with regard to human resources. It also isn’t clear which consequences the advances in genetic technology or in chemical/medication-based treatment will have in the future. Architecture has to react flexibly to these conditions — all buildings are thus usable for entirely different purposes, as hotels or office buildings, even as service company structures.
実験集合住宅

大阪

大阪ガス

NEXT21は、21世紀の都市型集合住宅のあり方を考えることを目的とし、大阪ガス株式会社により建設された実験集合住宅です。建設にあたっては、建築・設備の両面から様々な未来に向けての試みがなされました。

躯体・住戸分離方式、システムビルディング、フレキシブル配管システムなどの先端的な建築システムが用いられました。そして、総合3Dの植栽によって、環境に活み重なっ
緑地空間が形成されました。また、発電システムには、低騒音、高効率の燃料電池を用いたCO2ジェネシスシステムが採用されています。さらに、住戸の住居では、人が実際に住まう居住実験を実施しています。そしてこれらの建築システムの有効性を検証し、集合住宅におけるリフォームの問題点を抽出・整理することを目的として、数回のリフォーム実験が行われました。
アーバネックス三条
京都  西本町 株式会社アーバネックス

1999年3月枠、地域の住民がスケルトン計画に参画した賃貸集合住宅「アーバネックス三条」が、集合住宅建設をめぐる紛争の絶えない京都の都心部に完成した。建物の形態の検討で
は、「まちのかたち」に合致したスケルトンのあり方が、C G、模型等を使って議論された。当初は高さを低くすることに議論
が集中したが、大きなかたまりを細かく分けること、隙間を空
けることなどの重要性が徐々に話題となり、最終的には、まち

(Type Form) and Skeleton Planning

- Divide the Big Volume into some parts

Type A
- Multi-Unit
- Mixed-use
- 4,500 sq.m.

Type B
- Duplex
- Mixed-use
- 900 sq.m.

Type C
- Group Housing
- Mixed-use
- 600 sq.m.

Type D
- Group Housing
- Mixed-use
- 800 sq.m.

Type E
- Group Housing
- Mixed-use
- 1,000 sq.m.
の空間秩序の継承に重点を置いた形態が支持されるようになっ
た。また、議論は、隣接する敷
地だけでなく、周辺への配慮に
も及んだ。その結果、事業採算
のとれる容積の範囲内で、西側
の前面道路側だけでなく、低層
の町並みが続く北側や東側の高
さを拘束する形態が選択された。
こうした建設的な議論ができた
のは、分譲物件の計画が賃貸物
件に変更となったため、事業採
算が見込める容積率が指定一杯
の50%ではなく、50%程度
となり、幸運にも「検討の余地」
が生まれたことによると。この「余
地」を最大限活用することに
よって、地元住民と事業主が合
意点を見出すことができた。
ふれっくすコート吉田
大阪 ☃日本 ☃大阪府
大阪府住宅供給公社

ふれっくすコート吉田は、2000年に建設された賃貸集合住宅である。建築システムは、スケルトンとクラディングとインフィルから構成される。スケルトンには、段差スラブが採用されており、剥離の高い部分には、水性りに関する設備を設置することができる。
インフィルは、固定インフィルと可変インフィルから構成される。固定インフィルとは、内装壁、住戸内の設備の横引き配管、押入、天井、床のことである。可変インフィルとは、可動
収納家具、可変間仕切り、可変建具のことであり、インフィル・マネジメントという観点から、経年のインフィルの設置や移動、再使用を実現しうるソフトシステムも開発された。可動収納家具は、スケルトン所有者である大阪府住宅供給公社の所有であり、居住者に賃貸される。可変間仕切り、可変建具は、居住者が、可変インフィルの運営管理を行う（株）大阪住宅公社サービスから購入し、居住者の自己所有となる。また、可変間仕切り、可変建具は、退去時に不要となる場合、（株）大阪住宅公社サービスを介して、退去者から居住者に転譲する制度もある。
Arabianranta Project

Arabianranta, Helsinki, 2005
ArkOpen Ltd (Architects Esko Kahri, Petri Viita, Juhani Väisänen & PlusHome Ltd)

The project is based on a technology competition in 2001. Helsinki was searching for new urban solutions in accordance with the Open Building principles. The SATO Corporation, one of the largest housing companies in Finland, applied the PlusHome-concept. The load-bearing walls are the outer, longitudinal walls, enabling varying unit layouts on different floors. On the zones of sanitary spaces a two-layer slab is used...
enabling free distribution of drain and piping from the top. Residents could choose between a wide selection of floor plans, both different sizes and variations within the same size, presented in the pre-marketing stage via the internet. This stage was open till about 6 months after the construction started. Residents had another 3 months to select finishes, fixtures and accessories with fixed prices, could see the total price directly after making their choices, and could revise decisions before finally accepting the order.

--Stephen Kendall
Banner Building
Seattle, USA, 1994
Weinstein Copeland Architects

Bensonwood’s Open-Built® system has been applied to its timber frame building process since 2000. The benefits are efficiency during construction; easy adaptability during the home’s life; providing complete house packages of pre-engineered volume frames based on Open-Built principles; reduced costs for the timber frame and enclosure; and improved speed of delivery around the country by participation with the local associate network. The
company employs the most advanced CAD software and CAM production processes.

--Stephen Kendall

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Baubuette
Rothenburg, Switzerland, 2002-2004
Anliker AG
Bensonwood Homes

New Hampshire, USA, Since 2000

Bensonwood’s Open-Built® system has been applied to its timber frame building process since 2000. The benefits are efficiency during construction; easy adaptability during the home’s life; providing complete house packages of pre-engineered volume frames based on Open-Built principles; reduced costs for the timber frame and enclosure; and improved speed of delivery around the country by participation with the local associate network. The
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--Stephen Kendall

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![Diagram of a house showing different elements and their lifespans.]

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48
Catamaran Houses

Moscow, Russia, 2005
Reserve; Chief Architect Vladimir Plotkin

This complex consists of two parallel wings linked by transverse elevator/stair blocks forming a succession of atria. The regular structure is echoed in the rhythmic organization of the street-facing and courtyard facades. Underneath is a parking garage for 114 cars. The houses on the “back” of the complex are two-story units with private entries, gardens and parking garages. The building design received municipal approval with all units designed. Then, the
unit layouts were deleted and the contractor built the empty building. Units were sold, designed and fitted out independently.

—Stephen Kendall
Cohuatlan Housing Project  
Mexico D.F., Mexico, 1975-1977  
COPEVI, Design director: Jorge Andrade

In the mid-1970s, a part of downtown Mexico City was occupied by a type of low-income dwellings called “Vencindades.” The small size of dwellings (mostly one multipurpose room not larger than 25m²) and the quality of the building structures and services was resulting in a process of abandonment by many families who were moving to suburban parts of the city. This project was an experimental effort whose goal...
was to find an alternative to allow families to remain in their neighborhoods. Two main concepts formed the basis for this project: 1) A housing cooperative social organization and 2) the support/infill method of participatory design processes. The support was designed following a detailed analysis of use patterns and spatial images of the typical Vedidad dwelling unit. SAR design methods allowed the design team to develop six dwelling unit sizes and different layouts for each. This enabled the individual needs and resources of each family to guide the design of each dwelling. After 30 years, Cohuatan remains alive and in permanent change.
Dwelling of Tomorrow

Hollabrunn, Austria, 1976
Dirisamer, Kuzmich, Uhl, Voss and Weber

This ‘Dwelling of Tomorrow’ competition received first prize by the Austrian Ministry of Housing and Technology in 1971. Open Building methods were used to support the planning, design, construction and project delivery. The participants in the project included politicians, financiers, and professionals, as well as the users themselves, who participated in all phases. Floor plans and facades are different for each dwelling unit, and during the past 30
years, some units have enlarged or changed their floor plans and facades.

--Stephen Kendall
Gespleten Hendrik
Amsterdam, the Netherlands, 1996
De Jager & Lette Architecten,
Van Seumeren, Van der Werf
Huawei No.23 Project
Beijing, China, 1991
Zhou Feng, Zhang Nianceng, Zhou Peizhu
The INO Hospital

Bern, Switzerland, 2000-2004 (Stage 1 Primary Systems); 2005-2007 (Stage 1 Secondary and Tertiary Systems); 2008-2011 (Stage 2 Primary, Secondary and Tertiary Systems)

Kamm Architekten AG, Itten + Brechbuehl AG, HWP Planungsgesellschaft mbH

The 500,000 square foot project is managed by the Canton Bern Building Department. The building provides space for intensive care, emergency and surgery center as well as pharmacy and ancillary spaces. The owner and
the management team recognized that complex buildings such as this only become "whole" over time. Recognizing these dynamics led to a decision to adopt an entirely new process for designing the facility. A competition was held to select a design and construction firm for each of three distinct "levels". The primary level is intended to last 100 years and is expected to provide capacity for a changing mix of functions. The secondary level is intended to be useful for 20+ years, and the tertiary level for 5-10 years. The concept has already proven to be effective before the entire project is "finished".

---Stephen Kendall

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Einige Wohnungstypen
Keyenburg

Rotterdam, the Netherlands, 1984 (Complete renovation in 2006 with upgrades to the base building and complete refurbishment of the infill)

Frans van der Werf, Werkgroep KOKON

The project was designed for a mix of ages and incomes, with ground floor commercial space on the street. It was recently renovated. The initial infill used the 4DEE system of Nijhuis. Aided by a full-scale mock-up, tenants laid out their own unit plans in sketches. The architect digitized the sketches and rendered them...
in a computer program. CAD output immediately informed tenants how their choices would raise or lower the monthly rent, based on a standard price. The computer program then produced more detailed technical drawings and material quantity surveys based on the final approved design.

—Stephen Kendall

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Klippinki Housing
Espoo, Finland, 2006-2007
Arkkitehtitoimisto Ulpu Tiuri Oy

Klippinki is a project for independent living for young adults, chosen in a competition. The site is in Espoo and comprises two three-storey buildings facing the new village square. Access to most flats is from semi-private open corridors bordering the sunny common yard. Each flat has living spaces on both sides of the building. The building is designed for one-person households now, but also enables the enlargement of the units, thus avoiding a future
mismatch with demand. The concept includes a variety of dwelling unit fit-outs for the same basic unit, and offers young people with disabilities the possibility to live among their own age group.

—Stephen Kendall
Maya Project
Chongqing, China, 2006
Li Haile

The Maya Project demonstrates the Open Building theory in the real estate market. It has four detached levels: base building, flat, room level (flat interior), and furnishing. While architect and the developer control the base building and dwellers control the latter two levels, the flat level is mainly guided by instant market information in the pre-sale. Customers who are future dwellers can show their “participation” by choosing a preferred flat type. As the architect received feedback from
the pre-sale, he then adjusted the flat’s organization twice in the upper floors which had not been sold, in order to obtain a more marketable flat proportion. In this way, vertical variety on the Maya’s façade reflected a real process of synchronized design and sale. It recalls the vivid sense of vernacular villages. Dwellers can easily find their flats from faraway. In addition, the communal sky courtyards filled with plants also added to its friendly atmosphere.

--Ren Zhijie

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![Diagram of conceptual development process in Maya project](image)

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![Image of residential development showing the transition from planning to construction](image)
Multifunk® is situated on ‘Stegereiland’, the entrance to the new urban district of IJburg in Amsterdam-East. IJburg is being developed as a residential and working area. Multifunk® takes full advantage of this: it is a building that is suitable for various activities and can easily be adapted to incorporate other functions in the future. Its fixed shell structure can be filled in a variety of ways. The building can easily be reorganized in terms of the accommo-
oration itself, the access system, or even on a unit to unit basis.
This project won a competition on the combined merits of its urban design, architecture and participatory decision-making process. The project's dwellings surround courtyards in two-to-four-story blocks. Most units are entered via one courtyard, with back yards or roof terraces opening onto another courtyard. A prefabricated facade framework – an updated version of the typical Dutch canal house facade comprised of
wooden frames – was installed as part of the Support. The dwelling infill includes interior walls, doors, finishes; bathroom and kitchen cabinets and fixtures; electrical and mechanical equipment for each unit; and windows and doors inserted into the Support facade framework

--Stephen Kendall
This project combines principles of Open Building, ecological/sustainable design and organic architecture. The project was selected as a National Model of Sustainable and Energy-efficient Construction by the Ministry of Housing. This project embodies: Open construction (occupants lay out their own dwellings using a full-scale model); Life-time guaranteed dwelling (living space for households in different later stages of life); Social cohesion...
(social integration of older people who will require assistance); Organic architecture (shapes, colors and landscaping bring residents in communion with nature); Digital superhighway (telemetering to aid safety, communications and energy management); and sustainable construction (bio-ecological materials; new high-efficiency floor heating; reduced use of concrete; heating with solar energy; application of individual and collective heat pumps for energy savings).

—Stephen Kendall
Poland Open Building
Warsaw, Poland,
Siedlung Nussbaum

Berne, Switzerland,
Althaus Architekten Bern AG,
Design Director: Jürg Althaus

This project is a gift of affordable housing from Bern to its young people. A competition was held for the overall scheme of 350 houses, supported by city financial subsidies. The competition stipulated the density, the infrastructure concept and volumetric composition, and the bay spacing of the construction. This part, called “Nussbaum”, was designed using intensive discussions with the future owners. The result is 50 differently organized and detailed...
units, a demonstration of variability within a clear architectural order.

--Stephen Kendall
Solids IJburg
Amsterdam, the Netherlands, 2008
Baumschlager-Eberle
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Trento Dwellings

Haarlem, the Netherlands, 2003
Zeeman Architekten/ Van den Berg Alphen aan den Rijn: Maarten van der Breggen, Jānine Otten-Kardol, Jos Boom

The city of Leimuiden wanted to build houses for their own young citizens. The aim was to build small houses they could afford to buy, but with the possibility to adapt to their wishes in the future. The architect proposed houses that could "grow". To start with, the houses have a width of 7.2m to create the possibility for a bedroom and bathroom or workspace.
on the ground floor next to the living room. The second floor is smaller in the beginning but can easily be made bigger following the architects' design. The installations are already adapted to the largest house, to be able to enlarge the house as easy as possible, the idea being that if you wish to, you can live here your whole life.

--Stephen Kendall
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Voorburg Renovation Project

Voorburg, the Netherlands, 1990

In 1988, Patrimoniums Woningen – a large private housing owner - decided to rationalize management of the property and began upgrading it on a one-dwelling unit-at-a-time basis, parallel to an overall site and building upgrading process. Matura Infill Systems, a specialized interior fit-out company, was initially contracted to provide dwelling unit infill. Dur-
ing the two weeks required to gut each vacated unit, the new tenant met with the architect. A floor plan and equipment and finish specifications were selected from among several options. The architect’s drawings were then transmitted to Matura. One month after being vacated, the unit was again ready for occupancy, with an entirely new interior reflecting the new tenant’s preferences. When an occupant moves out, the housing corporation helps to sell the infill to the new dweller, or buys and stores or reinstalls it.

--Stephen Kendall
Xacalli

Mexico City, Mexico

Jorge Andrade
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These two rows of 19 houses opposite each other have a residential park in between. Through their different exterior finishes, the four terrace houses at the ends of the blocks and the two gatehouses in the centre ensure a flowing transition to the surrounding buildings and the park-like surrounds. The houses have a basic layout on two or three floors; while the specific floor plans, façades and extensions can be designed by the residents, using the flexible

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Zaltbommel

Zaltbommel, the Netherlands, 2002
Willems van den Brink

These two rows of 19 houses opposite each other have a residential park in between. Through their different exterior finishes, the four terrace houses at the ends of the blocks and the two gatehouses in the centre ensure a flowing transition to the surrounding buildings and the park-like surrounds. The houses have a basic layout on two or three floors; while the specific floor plans, façades and extensions can be designed by the residents, using the flexible
Wenswonen® (Desirable Living) concept from HIVG. Based on the sense of social responsibility, this project is an attempt to find solutions to the issues that emerge in a changing society.

--Stephen Kendall
Interview with Prof. Dietmar Eberle of B&E Baumschlager & Eberle GmbH, Austria

(The following essay was produced from two interviews conducted by Dr. Jia Beisi in Hong Kong October 25 2003, and in Bregenz September 17-18 2004)

1. What drew you first to the idea that architecture had to be "open ended" and able to accommodate change?

How long can we plan for, if we just think about people live there? We can plan for 15 years. But what is the life time of the building? 100 years. If you think about sustainable building, then it is even longer. Obviously, we can't build for 150 years while thinking of 15 years. I have to think about long distance in time. I have to think how to make it possible. When the needs change, in social, economic, culture and technology, you have to make building possible to change, but not in a difficult way.

We have designed many types of buildings, including big buildings, such as housing, office, school, hospital, and airport. We have experienced many changes of programs in a very short of time. That is the universal problem: new organization of social existences, new technology, and different value. But the strategy of flexibility can help.

For me it is important to create a good building which should be economical, efficient with a strong identity on the public level for the particular place. And at same time, it has to be flexible inside to accommodate individual needs and their identities.

2. Did you find yourself at some point at odds with your colleagues or clients or others who had the power to accept or reject your work? If so, how did you overcome this and continue to do what you believed in?

The way to achieve your objectives starts from the beginning of the projects. You have to know people well and try to integrate them at the early design stage. If you simply bring design to the clients, engineer or craftsman at later stage, they will always say "No". You don't need to tell them "you are stupid, let me do it". It is a very problematic in human approach. You should speak to crafts men first, then the engineer, then back to the clients. You should not do anything beyond their capability, if you need their help, because it does not make sense. The true design work is collaboration and building up a team, the rest is only work. They will bring all their knowledge.

When you have no people to participate at early stage, your design meant to be very difficult, because you only have yourself.

For me, the layout of apartments or questions like how many bathrooms are needed is totally a private matter. Except providing a maximum flexibility for the users with basic service, we have no interests to make interventions into this private domain. However, there is a very clear limit of user participation. For me, the relation between public and private should not be determined in a personal level. For instance, inside facade there is the owner to exercise his responsibility. Outside the facade there is the public and community, and therefore it is the responsibility of the architect to convey the public interests. The kind of limits does not mean these issues, can not be discussed publicly. But it can not be decided on individual level.

4. In the course of doing "open ended" architecture, did you find that new methods or skills were needed in your office's collective tool kit? If so, what were some of them?

Understand the building in terms of life cycle is the key. I understand that any building has five different systems and have completely different lifetimes.
1. All the public, infrastructure outside, much longer than the building, more than 200 years. We have to be very careful about it.
2. The structure load bearing structure, in combination with staircases and or the security problems. They don't have to change for about 100 years, unless you did something wrong.
3. External wall, service cores, and the mains. You don't change external wall for about 50-60 years, because it is too expensive, technically complicated, politically sensitive.
4. Function and layout of the building changes every 20 years.
5. Surface, ceiling, lighting, etc. change every 10 years.

To make change possible and easy, you need to organize the building in such a way that these systems are separated according to each life span. This gives you a lot of flexibility. This is the way we do.

We do a lot of research work on what is the goal of the project. Who are the people will be involved? What is the economic background, the transportation, and the quality of the ma-
tering is supplied. Design came at very end. We developed strategy about how to collect information. We don't make design sketches, but we have idea of gathering information systematically. Then we make first proposal. It is a very healthy proposal, because it based on information. Without information, it is like trials-and-errors. As architects, I don't think we can try errors. We should be serious strategies how to develop project.

For us it is important to work on different levels at same time. We try to make clear at beginning in each of the levels, which direction should go. Then we start to make decisions, which are simple and direct, with volumes, and structure, and many material work with, so design is easy.

5. What philosophical arguments have been mounted against the idea of an "open ended" architecture?

Firstly, buildings consume so much resource and energy, and they can make more contribution to sustainable future. Secondly, housing in the end, is a feeling at home, not necessary the materially, but with identity. In Germany it is called Heimat, or a place in your mind. Housing is not only an architecture problem, it is about participation by a lot of people.

6. What is next on the horizon for open building?

I like flexibility, but I understand it in a more complex way. Today we have to think about sustainability, energy, resources and management. We want to be a part of new development of technology. In each field there is many progress, I am interested in developing certain technology, and certain principles further on. We want to develop it further on. However the principle is still the same. We need understand building as separated systems based on the lifespan, their costs and benefits based on the local conditions and culture of the place.

However, flexibility is not about one kind of technology. I think a technical solution for all the systems is not the answer. First the reason is the cost. Some experimental buildings are too expensive to be popular. The second is that they create a very specific atmosphere, very technical atmosphere, which nobody like it. We must understand that don't build for technology, we build for people. The third point again is that one has to analyze the life time of house: the five different systems and five different life spans. We need first to analyze these systems, and make it possible to change one system without affecting the other. This is the most important area to study. The utmost goal is to make building more economical and more efficient.

Reference:

*The category of information collection are: People involved in the project; project as related to the urban and natural context; Technical and legal issues on structure, gravity, durability, and safety; Façade system; Function and layout (5-20 years); Anticipated users of the project; and Possible material and construction (BS Jia, 2005).