Amsterdam Academy of Architecture
Architecture – Urbanism – Landscape Architecture

New attitudes designing in times of transformation

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Foreword

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Strong criticism of the architect's social commitment and his role in the building process was voiced in the 1970s, especially from the left. The architect was portrayed as a bourgeois aesthete, a slavish follower of big business. Architecture could be better renamed 'room-facility engineering' (*verblijftuigbouwkunde*), and the architect had to serve the resident and the occupant. That's according to a manifesto from the critical avant-garde among students and tutors in Delft in 1971. Those days seem far away now, and the economic crisis that followed these ideologically critical years is also long forgotten. What we remember best is the 'boom' of the 1990s and the first decade of this century. This was the era in which architecture very emphatically manifested itself as an aesthetic discipline once again, complete with 'starchitects' who operated around the world. That does not mean that the resident and occupant were forgotten. It is to say that, from the perspective of the architect, the design of space and spatial structures also concerned less tangible matters, matters that could not be interpreted on the basis of social criticism, such as shape and material, light and colour, space and experience, language and context. All this came to the fore with the economic surge.

Now again we find ourselves in the middle of a recession. And the Club of Rome prophets, often depicted as messengers of doom and gloom in the 1970s for their warnings about the tenability of our pattern of consumption, have, if not always, proven right and certainly paved the way for sustainability policies that are emerging all over the world.

Moreover, the architect hasn't fallen behind the times, as the 1971 manifesto seems to suggest. He is, instead, consciously searching to determine his role and possible contribution in the permanent process of social and physical transformation that affects our society and our 'everyday surroundings' – a typical 1970s Dutch term that has acquired a new meaning. The crisis has hit the industry hard, but the profession is far from dead. Quite the opposite in fact. It is alive, but not with grandiose visions that are critical of the social order, nor with ideologies that enjoy support to greater or lesser degrees. Instead, the architect now adopts a sober-minded, enterprising, inventive and self-critical attitude in redefining his position within the design field and within a social and physical reality undergoing transformation.

Notions such as user-oriented, sustainability, repurposing, context, (external) expertise and public debate have also become important. Research, including a critical assessment of assignments, is slowly but surely gaining in prominence.

With this volume, entitled *New attitudes: designing in times of transformation*, the Amsterdam Academy of Architecture is presenting a series of reflections – some based more on design, others on research, some focused on thinking about education, others aimed at the profession and the position of the architect – that together paint a picture of the reorientation of the architect in recent years and, particularly, his change of attitude.

The connecting thread here is the realisation that, with the obligation of the architect to move in response to the changes of our times, the central question facing the profession is still: what are the implications of these changes and of the new briefs facing spatial design?

Today's architect is expected to adopt a critical attitude towards the society for which he builds. He must consider the issues at stake. But the relevance of his contribution is determined by how well he succeeds in finding new solutions on the basis of his specific expertise: the design of space.

Keep reading and thinking

Architects have lost sight of their fundamental competences

Mark Hendriks

The economic crisis and the focus on redeveloping existing buildings has forced us to revise our expectations about what architects should be able to do. Is it time to discover brand-new skills? Or time to return to ways of working that have belonged to architecture for centuries?

The debate about the changing role of architects and urban designers, about new possibilities for creative and innovative ways of working, is in full swing. An interesting contribution to the ongoing discussion appeared as an essay entitled 'Will the real architect now stand up?' in the latest yearbook of Dutch architecture. In the essay, authors Anne Luijten and Samir Bantal ask which skills do contemporary architects need to perform their work. They argue that a reassessment of the profession should go hand in hand with modesty, an awareness of business skills and the marketplace, and an open view to the world.
It is only natural that the Amsterdam Academy of Architecture is contributing to this debate. In this publication, it presents a number of design approaches that, as head of architecture Machiel Spaan notes in his introduction, extend beyond space and form alone. They concern a way of thinking and working that meets the needs of a changing profession and that can tackle current construction issues head on. According to the Academy, it is important for architects to research the context, work together with occupants and pay attention to sustainability.
The public search to define the position and skills of contemporary architects finds its origins in a number of social and economic developments. The financial crisis — enough has been said and written about it — has brought to an end the boom era of property development and urban expansion. Since 2008, architects and urban design offices have been struggling with dwindling project portfolios, wholesale redundancies and bankruptcy. On the client side, traditional players are departing the scene. Government bodies have to contend with cost-cutting measures and deadlocked land development. Property developers have been hit hard by the economic slump and are marking time. Housing associations are disposing of their investment activities and returning to their core task of building and managing dwellings. In the meantime, at an institutional level the architecture world is being stripped back bit by bit. From 2013 on, the Netherlands Architecture Fund will become part of a Creative Industries Fund, in which architecture is just one of the policy areas. The Netherlands Architecture Institute (NAi) is merging with Premsela and Virtual Platform to become an institute for architecture, design and e-culture.

Moreover, architecture and urban design now focus on the existing city. In other words, on the rezoning, redevelopment and reuse of buildings, sites and areas. More and more buildings and places are losing their original functions for various reasons, or they no longer meet the needs of our time — as the epidemic vacancy rate among office buildings shows us. 'Redevelopment,' proclaims chief government architect Frits van Dongen wherever he goes 'is the new building objective. Existing building stock is yelling out for it.'

It is tempting to view this era of reflection, and the accompanying focus on transformation, reuse, small-scale development and private initiatives, as the dawn of a new era. But shouldn't we rather see it as the very opposite? Does it not mark the end of an exceptional period, which ultimately turned out to be no more than an intermezzo in a long and rich history of planning, architecture and urban design?

Just think back. The building explosion after the Second World War was the result of, on the one hand, an unprecedented shortage of housing and, on the other, of an exponential increase in economic prosperity. Under the influence of a liberal wave of planning decentralisation, the past three decades saw the emergence of a real estate and property sector that, it turns out, relied largely on borrowed capital. It may have spawned a culture of Dutch architecture and urban design that enjoyed widespread publicity all over the world — but it was in fact nothing more than a large-scale and systematic process of building production in which, certainly over the past 15 years, developers and other large landowners called the shots. Whether or not there was any demand, whether or not it met the needs and wishes of residents and occupants, whether or not it harmonised with existing structures and qualities — none of that was of any relevance in many cases. Architects and urban designers just jumped on the bandwagon. This was the heyday of modernism, of the dogma that is still dominant among professionals: namely that the architect is brilliant, and everything he devises is by definition successful. In the *Blauwe Kamer* periodical, the young architects Eric Frijters and Olv Klijn pass judgement on the exceptional period that has ended. 'For generations above us,' they write, 'stacking stones was what mattered most; you only counted once you'd completed a building. In all the centuries before them, architects were chiefly occupied with research, with discussion, with publications, with the rejuvenation of their profession. Berlage wrote piles of pamphlets.'

Over the past 60 years, many architects have lost sight of a number of principles. Design attitudes have become overlooked owing to the emphasis on building, construction and excessive fees. Now that we are returning to an architecture and urban design centred on the existing city and limited budgets, on privately commissioned housing and new alliances, of small-scale initiatives and sustainability, we must once again concentrate on fundamental attitudes that have always belonged to the profession of architecture, attitudes that extend beyond concept, style and a vocabulary of forms. Of course, we must still pay attention to stylistic matters concerning the architectural treatment of existing buildings — do we heighten the contrast or allow old and new to flow seamlessly together? — but architects and urban designers must once again acquire proficiency in the field of context and history, knowledge and debate, managing uncertainties and do-it-yourself activism. In addition, servitude is the magic term. More than ever before, society would be best served by an architecture that presents sound and reliable solutions for the pressing problems of today.

Context and reuse

The transformation of the existing city is nothing new of course. Since the 1970s, architects and urban designers have been involved in the renewal of city centres, the redevelopment of former port and industrial sites, the restructuring of post-war high-rise housing estates, and the upgrading of station precincts. In all those projects, and certainly after the trauma of the thoughtless urban-renewal operations of the 1980s, when entire city neighbourhoods were demolished and replaced by new, monotonous housing complexes, architects are expected to be aware of urban context and take into account the wishes and needs of residents and occupants. And after 1999, the Belvedere policy even added a little extra: architects and urban designers were encouraged to take cultural-historical structures and elements into consideration in spatial development.
The fact that many architects nevertheless regard redevelopment and transformation as new issues is because the expansion projects that they had focused on in the boom years of the nineties and noughties are a thing of the past. For this group of architects, the process of transformation brings with it new challenges, all the more so because working with the context and existing development is less obvious to them than described here. Architecture is still often based on a concept, and everything must yield to that.
The so called H Team — set up in 2010 to reflect on current issues related to redevelopment — wants to effect change. It argues in its report, *Redevelopment in education*, that it is time for professional requirements to be set even higher. According to the H Team, architects must 'understand that redevelopment demands an historical awareness and a modest design approach determined by both the limiting conditions set by a building and the wishes of future occupants. Architects must be able to connect with the DNA of a building or site, deal with surprises that present themselves during construction and recognise the potential for redevelopment.' Further on, the report states: 'The architects of the future must know about marketing and financing, because they will also have to be able to sell a building.'
What the above means in practise is that architects need to be trained to reuse existing materials. In a course run by the Royal Institute of Dutch Architects (BNA), participants experiment, much like the students in the Kleiburg project featured in this book, with the use of local materials as building components — in order to arrive at exceptional and environmentally friendly designs. The method is based on Superuse, an online platform about inventive ways of recycling initiated by the Rotterdam office 2012 Architecten.

Research, expertise and debate

In 2007, students at the Arnhem Academy of Architecture delved into the life stories of the most influential architects in history. What they discovered was that those who had unleashed revolutions in thinking about architecture excelled in more disciplines than architecture. Rem Koolhaas, for example, once worked as a film-maker and journalist.

Vitruvius was in fact a soldier, and Gerrit Rietveld a furniture maker. And Le Corbusier had an exceptional talent for public relations. The education project was initiated by Eric Frijters and Olv Klijn. 'We assume,' they reply to the suggestion that it might simply be a coincidence that many big architects are or were doubly talented, 'that architects and urban designers need a number of talents to maintain contact with society. Besides design skills, they must possess new expertise in order to present pioneering solutions for pressing problems of a particular time.'

Exploring knowledge, conducting research, and not just the exhaustive analysis conducted prior to a design proposal, have receded into the background in architecture circles. Too many architects and urban designers still prefer to engage in production rather than chart the spirit of the times, search for renewal or debate social themes. Academy student Jan van Grunsven reacts against that development in the epilogue of this publication. His project lacks that one building, the ultimate solution, the object in which everything comes together. He deploys design in another way, as an interrogative exercise — something he thinks architectural practice does not get round to doing any more.

'Reading, developing a critical sense, is at least as important,' says Rotterdam architect Robert Winkel in the report *Redevelopment in education*. 'Students must in particular read and reflect a lot. In the 1930s, when architects also faced a shortage of work, they reflected on the future in a concentrated way. Now you hear nobody talk about 2030 — even though major changes are impending.'

It is important that architects and urban designers share their expertise and opinions with one another, with related professions and with a wider public. That is already happening in Italy and France, for example. Of course, the construction crisis is particularly severe in Italy — but architects there have always taken part in social debates. They are capable of writing and debating about their own and other people's work. In short, researching and discussing with one another about how to transform an existing building, about whether the little Zaanse Schans houses are out of place in the centre of Zaandam, about whether slicing open a bunker of the New Dutch Water Line is a legitimate thing to do.

The open end

It has been repeated endlessly — the era in which we believed we could generate social change and blueprint planning is gone forever. Architects must ask themselves how they can still achieve results in complex processes of transformation in which nothing is certain any more, and in which they are no longer in charge. The culmination of a plan and design process does not have to be a building or place. Flexible strategies need to be developed that allow for many possibilities, depending on economic developments, local initiatives and other factors. The imaginative power of the architect plays a decisive role in the process — not in representing what something will look like but in sketching a perspective to which all those involved will want to commit themselves.

Last year, the Amsterdam office of Urbanos won the second prize in a competition staged by the NAi and Ymere housing association for the transformation of a working-class area in the east of Haarlem. Instead of a spatial plan, the office for architecture and urban design came up with a cycle: a chair designed in Amsterdam is made in the east of Haarlem by an independent furniture maker, and is then sold to a businessman in Zandvoort. This cycle was translated into possible spatial and architectural interventions in the district. Vacant buildings, among them the meatworks site in Haarlem, could be refurbished to create workspaces, and there could be a market where craftsmen offer their products.

The development plan for the former port area in Deventer is a convincing example of what in recent years has been termed 'spontaneous urbanism'. Without a predetermined final image and investment plan, space is provided for the ideas and initiatives of people, entrepreneurs and others, who want to take charge of building for themselves. An approach like this calls for renewed commitment from architecture and urban design. The architects and urban designers involved — among them the Rotterdam office We Love the City — ensure cohesion and design quality at the level of the whole site, without restricting in any way the freedom of entrepreneurs and landowners when it comes to functions, design and speed of completion.

Facilitating uncertainty, or offering residents and occupants freedom, is the basic principle behind what is referred to as 'solid', a building in which shell and interior are separated. Solids are intended as buildings that can continue in use over time. Each new occupant can determine the function and the layout of the building — not the developers and housing associations, who usually only consider the wishes of the very first occupant. The Folding House student experiment presented in this book is comparable with the 'solid'.

Do-it-yourself activism

The disappearance of clients and the disappearance of sources of funding are forcing architects and urban designers to launch their own initiatives. That seems necessary to keep offices operating for now, but architects should always feel responsible for the functioning and appearance of the city. They initiate projects themselves, raise issues for discussion, act as developers to turn ideas into reality — as architect-developer Tom Frantzen has already shown on a few occasions.

Of interest in this regard are the designers of ZUS, who are tackling the Schieblock building and surroundings in Rotterdam all by themselves. They are trying to improve the quality of life in the area through small interventions. With the help of developer Codum and building owner LSI, Elma van Boxel and Kristian Koreman converted the vacant Schieblock building into a multi-tenant complex for young entrepreneurs and cultural institutions. Over the past year, they rose to prominence with the Luchtsingel

project — a footbridge that will connect Rotterdam's central railway station to the now disused Hofbogen station. The money for the initiative comes from crowdfunding. Rotterdammers can help in the construction of the bridge by sponsoring a plank. By way of thanks, the name of every backer is engraved on a plank.
Finally, architects and urban designers believe that their integrated perspective and creativity enables them to come up with answers to the major issues facing the world — the provision of food, climate change and social inequality. This notion of the architect as saviour of the world is making little headway outside the profession. Architects are rarely brought in to tackle such pressing issues. So initiating events is good, but it must be done in a language that appeals to the rest of the world.

A postscript

In a conversation with Machiel Spaan, head of architecture at the Amsterdam Academy of Architecture, we reflect on the findings presented here. He recognises the four attitudes but immediately makes a subtle distinction. 'An architect must, above all, be a good designer. He must make spaces and objects that are beautiful and practical. Once that basis is solidified, then we can talk about skills in the area of research, strategy and entrepreneurship.'
Most student projects in this publication are about making what are usually fictional spaces, objects and buildings. According to Spaan, that is a conscious and didactic choice. 'If you want to train first- and second-year students in a particular subject, such as recycling materials, you have to simplify the assignment. In the Kleiburg project, we should really be discussing the socio-economic issues facing the Bijlmermeer, and the historical significance of the urban and architectural typologies. But in an education project, in which you want to teach students how a block of flats works, what its component parts are and what you can do with them, aspects like that are a distraction.'
In addition to focusing on research, Spaan adds another element, namely experimentation, testing how and whether something works. 'In many education projects, such as Thin City in this book, we reverse the sequence of work. Instead of first coming up with a concept and programme — and then clinging to it anxiously — students experiment with structures and materials. In one course we asked students: "Here's a brick — what can you do with it?" You could ask the same question of a building or an area.'
Entrepreneurship, connection with society, strategic thinking, a knowledge of politics and financing — according to Machiel Spaan it depends on which skills each student develops. 'When students finishes here, they must know where their strengths lie, what position they want to adopt in the profession. Our job is to create the conditions for students to discover their rightful positions.' Mature students in particular, says Spaan, are well connected with society. They are older than the average university student and

work in the trade. 'As a student progresses through the academy, the complexity of the design projects increases. Students have to come up with their graduation assignment themselves. That means they must adopt an investigative and enterprising approach. Otherwise they won't come up with anything relevant.'

'Academy students are no fools,' Spaan concludes. 'They have 40 years to go. I've seen students who are way ahead of their time, who dig into a transformation assignment with an activist approach and new ideas. Two years ago, Jeroen Atteveld won the Archiprix prize with his project to combine a waste incinerator with a bathhouse in a port area. Some years before, Dingeman Deijs won with an idea to convert the marl caves near Maastricht into a hotel and health resort. At the time we thought that's impossible. But now we know it's actually very simply possible.'

With thanks to Marinke Steenhuis and Esther de Graaf

Fluid design strategies

Machiel Spaan

Many of the future design challenges in architecture will be faced outside the confines of what we are now accustomed to. Moreover, the traditional roles played by those involved in the design and construction processes, and even the nature of commissions, are changing drastically.

The many vacant and dilapidated buildings call for another strategy and approach to their reprogramming and redevelopment. This situation raises questions about the role and attitude of the designers who will take on such projects. On the one hand, their designs will be based more on the existing city and existing buildings. Thorough research into sites and existing buildings is important in this respect. The architect will have to develop skills and tools to assess the value of what exists and to analyse the components. On the other hand, conditions, regulations and actors are no longer as clearly defined as they were in the past. The contours of many projects are becoming fluid. Accordingly, architects must respond by shifting position and taking the lead. They must be capable of incorporating fluidity into their way of working and its results, and into their way of interacting with all parties involved. Journalist Mark Hendriks describes in his essay the changing practices in architecture and the changing role of the architect within it. Architects place the theme within the context of current national concerns and distinguish four design stances that architects can adopt to ensure they continue to play a role of significance.

Over the past three years, the Amsterdam Academy of Architecture has organised design projects, each of which raises for discussion, in its own way, the issue of the architect's new role. Students were confronted with the changing demands of the market, the government and the industry. The typology of the building, the skilled application of materials and interaction with occupants and the programme were used as avenues of approach. These three themes have prompted a new attitude towards the past, the present and the future. This new attitude is about more than space and form alone. It concerns new expertise that encompasses not only the design and construction of meaningful space but also the context, all that exists within it, and the process itself.

All these issues are addressed in the design projects described, which feature buildings that take on the form of either permanent shells containing flexible infills (solids), or temporary, mobile and self-sufficient structures. Innovation in the use of new materials and the reuse of existing materials and building components are subjects of scrutiny. Infills and initiative that were carefully programmed top-down are considered, as well as those driven from the bottom up.
None of the projects addresses the full spectrum of issues all at once, since the subject matter is too complex for that. Instead, each project tackles a number of aspects of the challenge presented by transformation. Some aspects are deliberately left unaddressed so that the focus can be turned to specific learning targets.

A number of design attitudes can be distinguished in these projects and themes. Six essays, divided among three themes, illuminate these design attitudes.

Typology: long lasting versus temporary
Alongside the *Great Spaces* research project, architect Ruurd Roorda is undertaking the *Palace for the Generations* project as well, in which he seeks to establish the prerequisites for a building that is destined to last a long time. On the basis of the core values of architecture, as defined by Vitruvius, the *Great Spaces* project examines the enduring character of buildings. The *Palace for the Generations* academy project takes the sturdiness of buildings in particular as its point of departure, a quality that Vitruvius termed *Firmitas*. The search aims to define a design attitude in which monumentality, routing, structure and form relate to one another. What type of building lends itself for occupation over an extended period of time? How specific can a building be? The principles that lie at the heart of long-lasting buildings are illustrated by work from Kingma Roorda architects and from students.

In contrast to *Great Spaces*, artist Jeroen Kooijmans, who was the 2010 Artist in Residence at the Amsterdam Academy of Architecture, explores the power of mobile and temporary architecture. How can the same object be constantly transformed in new ways in various locations? The archetypal form of the Folding House, built with students, evokes reassuring images in all situations, but at the same time the diagonal cut makes the house constantly interesting. The hinged mechanism turns the innermost part of the house inside out. Without any doors, the house is a volume that can open entirely. It offers freedom of use and an infinite number of possibilities within the limitations of the form. This small house confronts students with an understanding of how a simple idea can be applied in a surprisingly different number of applications. Huib Haye van der Werf describes three different 'conditions' of this house, and a pictorial essay shows how this idea can be endlessly transformed.

Craft: innovation versus reuse
During the *Thin City* workshop in 2009, supervised by expert in lightweight structures Adriaan Beukers and publicist and editor Ed van Hinte, both of whom were Artists in Residence at the Amsterdam Academy of Architecture, students made spatial structures out of thin, flexible materials such as plastic, tin, textile and paper. Only through their form, and in combination with one another, did these structures acquire the solidity needed for construction. Experimentation generates an understanding of structures through the combination of materials, and students became increasingly aware that choosing certain materials leads to possibilities and impossibilities concerning form and function. This way of working reverses the more common path in design, which proceeds from programme and form to elaboration in materials and details, and generates new, light and progressive solutions. Form and texture emerge on the basis of the characteristics and qualities discovered in the materials. Experimenting on the basis

of techniques of form and combining different materials produces new insight into the design of structures. Such insight is badly needed in a construction world that prefers to pour concrete and stack blocks and is very reluctant when it comes to using lightweight materials.

The customary design sequence is also reversed in the *Kleiburg to Kijkgrijp* project. It starts with an existing block of empty flats. By 'taking apart' the existing Kleiburg block of flats in the Bijlmermeer district and drawing and describing all the elements in an almost archaeological manner, the architect offers insight into the composition and construction of the existing building. By scrutinising the components carefully, he is able to determine their value. All the building components are then used in new designs. Just like in the *Thin City* project, the starting point of the designs is therefore not the programme or form, but the material with which you work. Reusing material generates inspiration and input for design. In his essay, Jan Jongert of 2012Architecten distinguishes four approaches for reusing materials: environmental, aesthetic, historical and an approach in which reuse is interpreted as a sport. A number of student projects illustrate these approaches.

Occupant: top-down versus bottom-up
In the *Woerkgebouw* project, the students examine a number of vacant office buildings. The assignment itself determines the new programme. Students tackle the programme, context and existing building at the same time. In his essay, architect and urban designer Arjan Klok describes the confrontation between a new programme and an existing building. He explains the relationship between the building and its surroundings, and how a new programme can redefine the position of the building within its context. New physical relationships such as routes, sight-lines and street walls breathe new life into the building and its surroundings and lend them a particular quality. Arjan Klok describes four design themes — contextuality, makeover, large scale versus individuality, and dimensions — and illustrates them with a number of student projects. In conclusion, he advocates a number of design attitudes that the architect must master in order to bring the transformation process to a successful conclusion.

In the *Winter Workshop*, held in the empty Winterthur office building in the Zuidas district, the building is hypothetically handed back to the neighbourhood. In contrast to the *Woerkgebouw* project, this workshop focuses on the quest to find a new programme. The students take on a variety of roles to examine what part the architect can play in this process. They head into the neighbourhood like detectives, looking and listening attentively, penetrating the secrets and the essence of the neighbourhood in the physical and social sense. Through social media, journalism and by 'eating in the neighbourhood',

they explore the area's stories about its past, present and future. On the basis of this 'living' analysis, they create spaces for possible occupants. The potential of the demand and the needs of the neighbourhood are then depicted in a variety of ways. The spatial proposals for the building are not direct, ready-made solutions. Rather, they represent opportunities, possibilities and dreams that challenge and inspire. Journalist Gert Hage describes the problem of vacant buildings in Amsterdam and reflects on this in relation to the location of the Winterthur building.

In the epilogue, artist and architect Jan van Grunsven explores the issue of transformation. The abridged version of his public lecture, held as part of his graduation project *Institute for the Global City* at the Amsterdam Academy of Architecture, places the theme in a cultural and historical perspective. 'The making of a building' is not an end in itself. Instead, his project is an occasion to highlight a range of approaches to the process of transformation. Every design process requires a combination of skills and attitudes. It is essential that there is a trained eye to recognise all the core values of the context. All design attitudes call for space, freedom and flexibility in thinking, and a fluid understanding of what designing entails and what the design is. For design is not only a product but also a process that requires attention. The process and interaction with all those involved are an intrinsic aspect of design. And often, the result will not be a finished building.

Typology:

long lasting versus temporary

Architecture of weight

Ruurd Roorda

If we dig deep enough into the history of monumental buildings, that history will explain the success of their life span. Such knowledge can help us to once more make buildings that will retain their value for centuries.

Background

Planet

The act of a building means relocating material from the earth. A hole is created somewhere, while a building is erected elsewhere to enclose a desired space. The earth is central to the process: as a source of material with physical properties, and as an ancient metaphor for all that is good in architecture. The earth is the focus of the current debate on sustainability. Halting the depletion of the earth's resources and closing the cycles of materials are ways by which we can maintain the resilience of the earth. 'Spaceship Earth', as Buckminster Fuller once called our planet, requires maintenance so that it will remain inhabitable for future generations.

Thinking about sustainability is topical, but it's still in the early stages of development. Architects paid it little attention in the past. Architecture determined its own agenda and sustainability was ignored as something that lay outside the profession. Within architecture, sustainability was nothing more than a technical issue, a question of numbers.

The life span of building is of course not exactly the same as sustainability. The two concepts are, however, linked to each other because huge quantities of energy, materials, water and carbon dioxide are consumed during construction. Even more is consumed during demolition. In principle, demolition and construction are to be avoided when it comes to sustainability.
Life span forms an important but as yet neglected aspect of sustainable building. Public appreciation (fed by the experience of beauty), utility (determined by adaptability and by cost-benefit analysis) and stability can influence that life span.

Technical issues mean that the architectural implications of sustainable building are still almost unexplored and, where they do exist, conflict with each other. There are avid supporters and opponents of each possible building form — light buildings with as little material as possible that respond rapidly to fluctuations in climate, or heavy buildings with an excess of material and a reduction in ambient temperatures —and every group refers to sustainability to make its point.

Weight is just one of the many variables in architecture, but it can certainly contribute to stability and sustainability, even in contemporary buildings. In most cases, weight relates to Vitruvius's principle of *firmitas* (sturdiness, stability), and is therefore an architectural factor that influences life span.

Here follow three examples of unrivalled buildings that address the themes of weight, phenomenal interior spaces and a long life at the same time. These are certainly canonical buildings, yet they are also buildings worth considering when it comes to achieving lasting architectural value.

Overweight

The Pantheon in Rome is over 1800 years old and is one of the oldest buildings still in use in the world. Apart from an avant-corps with a classical tympanum supported by slender columns, the building consists of a single vaulted space. A brick cylinder supports a huge domed arch that is 40 metres in diameter and is constructed of Roman concrete. An imaginary sphere fits exactly inside the resulting interior space. Both the cylinder and the vault are subtly elaborated with classically composed niches and cassettes respectively. The excess weight of the concrete dome prevents the vault from bursting.

An *oculus* (an eyelike opening) at the top of the dome is the only source of daylight penetration, and rainwater simply runs off the gently sloping marble floor below. Since the human eye cannot take in the resulting spatial form of the interior at a glance, the space surprises visitors upon entering thanks to a sequence of light-and-dark experiences that encourage movement through the interior to take in the whole building. That is why the interior leaves an indelible impression on the visitor.

The building is open to various symbolic interpretations. The circular form and the eye, for instance, could be read as reflections of the cosmos and the sun. Moreover, the interior has succeeded in accommodating various functions, one of them Christian, down through its history.

The heavy building mass contributes to a cool interior climate in the hot Roman summers, while the size of the oculus limits bright sunlight penetration and exposure to the changeability of nature.

That the building is still in use is no doubt down not only to the stability of the heavy construction, but also to the majestic interior in which the excess weight and the lighting conditions create a space that can accommodate various functions and that is open to various meanings.

Cosmos

The City Hall in Amsterdam (now the Royal Palace) is over 350 years old and was designed by Jacob van Campen. This building can be viewed as the architectural pinnacle of the Dutch Golden Age. After a period of unprecedented expansion, Amsterdam saw an opportunity to seal its status as a merchant city with this building, which was vast by the standards of the day. Four city blocks around the Dam were demolished to make way for the building.

The City Hall boasts a classical layout and is composed of a rectangle with four wings around two light wells, on both sides of a vast central hall. This hall is a long and light-filled space with a length of 33 metres and a height of 27 metres, which can be surveyed at a glance. By contrast, the main entrance is discreet. Where you expect a spacious vestibule you find the Tribunal, the ceremonial space where justice is administered.

Stately galleries connect the rooms on the *piano nobile*, which are all arranged around the edge of the building. The exterior presents a volume that is symmetrical in two directions, and all four corners read as independent pavilions. Dominating the façades to the Dam and rear side is a monumental, classically composed avant-corps. Although embellished, the sandstone façades are notable for their relative flatness. They feature an austere double row of pilasters above a sober basement. Volumetric elements such as exterior steps or a loggia are absent.

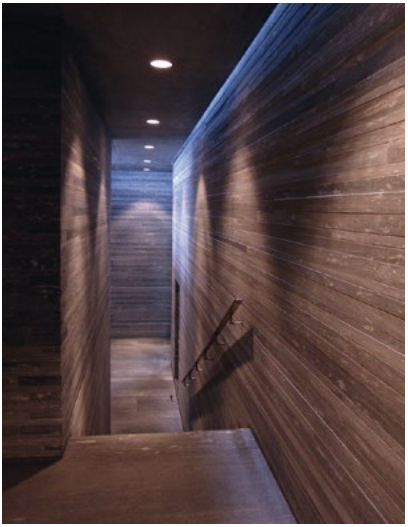
By contrast, the interior is vastly richer not only because of its dimensions and lavish finishes but also because of the symbolic programme reflected in the decorative schemes, sculptures, reliefs and paintings. In the central hall, the building reads as a reflection of a perfect cosmos that attempts to marry classical and Christian ideas in a single entity.
In the French period, Louis Napoleon confiscated the building and lived there for a brief period. During that time the galleries, separated by timber walls, became independent salons. Such alterations to a precisely formulated republican programme were absorbed easily by the building, in part because of its majestic interiors. This capacity to absorb change, which resulted from the spatial qualities of the interior spaces and the universal world view encapsulated in them, has increased the life span of this building considerably. In the end, this was the reason that the building was not demolished and replaced.

Rock

The thermal bath complex in Vals by architect Peter Zumthor was completed in 1996. This building, which replaced a 1960s spa complex, is now recognized as a modern-day masterwork. Half buried in the mountainside and composed of layers of solid gneiss extracted from a local stone quarry, the building expresses a desire to blend with the landscape. The structure is solitary and resists any formal integration with existing structures, lending it a timeless quality. It connects with the adjoining hotel complex through the mountain's innards. The building can be interpreted as a continuous geometric grotto system made up of 'rock formations' that nearly, but don't quite, lean against one another. Covering them is a 'floe' of complex double-walled concrete. Just like on a mountainside, the rock formations are located at irregular distances from each other. In the tall interior, the daylight becomes increasingly mysterious the deeper one ventures inside. Strips of glazing between the rock-like roofs offer an additional source of daylight in the sparsely illuminated interior spaces.

The building emphasizes the baths as an experience in which architecture stimulates all the senses. To mention a few impressions: dark and light, light reflecting on the water, the diffusion of light through steam, variations in sound caused by stone

surroundings, the touch of warm stone on naked skin. The building is poetry in water and stone.
The rock formations are hollow and contain smaller spaces that offer a variety of experiences with water in its different states. Located between the rock formations is space for the pools: a spring bath, an indoor bath and an outdoor bath.



One level lower are the treatment rooms for hydrotherapy and physiotherapy in a comparable composition, half buried in the mountainside. The architecture is deceptively sober yet offers a wealth of experiences owing to the balanced spatial composition, the daylight admission, the detailing and the layering of gneiss in varied textures.

With its oversized concrete roofs and walls ('Valser compound masonry') and the absence of finishing, the building embodies the idea of naked material, of mass, of slowness as a timeless phenomenon that resists a world that is obsessed by economics, efficiency and speed. Evoking an overwhelmingly sensual experience, the mysterious interior spaces are of such intense sensitivity that one can safely predict the building will enjoy a long life.

Practice

Windowless

When in 2005 Kingma Roorda architects was preparing an exhibition of its work, the partners descended more deeply into their personal histories for the purpose of self-analysis. Which spatial experiences were crucial? Which premature or more recent encounter with architecture was decisive? And how did that influence the designs? [1]

Without exception, the buildings that this analysis threw up contained almost no windows. Works listed included the Pantheon in Rome and the Roman theatre in Orange, France. And Wimpole Hall, with two masterly interventions in the interior of the country house by Sir John Soane, who broke the deadly boring spatial sequence along the endless enfilade by roofing over the two light wells. And Aldo van Eyck's unsurpassed Pastoor van Ars Church in Kijkduin, dating from the period that Aldo was still heavily influenced by Louis Kahn and only used rectangles and circles. And also the work of Luis Barragán, who raised the height of the walls around the terraces of his home bit by bit as the city around him infringed upon his life.

Striking buildings included the thermal bath complex in Vals. Here was a building that the office wished it had designed itself. What apllies to all the buildings mentioned here is that they harbour a secret. And this secret has everything to do with with an absence of transparency, with light and with an envelope of solidity. This counts as well for the small buildings on Insel Hombroich, designed by Erwin Heerich. It turned out that he had made

buildings of exactly the sort that Kingma Roorda architects had just about finished designing, namely tree follies in Zoetermeer: tranquil buildings set in nature, with phenomenal interior spaces and illumination through rooflights. Architecture of this sort would be realised by the office at a later stage, for example a restaurant in Leiderdorp.

The architecture of 'yes'

Kingma Roorda architects' fundamental attitude up to a certain moment was reactive. 'We certainly don't want that!' The 1970s? Please… Post-modernism? Get away! Deconstructivism? No way! Neo-modernism? Come on? Colour? No, unless... The origins of this office partly explain what has become known as the 'architecture of no'.

In fact, Kingma Roorda architects want to be elusive and avoid categorisation. You could even say that the company strives to create secrets of its own. But resistance demands a lot of energy and ultimately lacks creativity. This attitude was definitively abandoned in 1994 owing to new experiences with sustainable building. Sustainable building suited offices well in terms of message but also in terms of construction issues: building with clay, the ban on sandwich constructions, the use of thermal mass, the parallels with historical typologies and the references to a time without installations of significance. In short: the continuity of architectural history.

'Why not simply build what's good for the world and what benefits people?' This question prompted Kingma Roorda architects to fully focus on (almost) everything that is sustainable. The company said 'yes' to many sustainable initiatives, as long as architectural quality was still a priority. Kingma Roorda became particularly interested in passive buildings that featured a minimum number of installations and architecture that employed orientation, spatial form and passive technology. The question that emerged was whether sustainability should actually be visible. The office's answer was no, it simply had to work!

Mass

Sustainability had to be invisible in the commission for the tax office in Enschede. The outside of the building had to prolong the tradition of tax-office austerity as displayed in Bremer and Friedhof's architecture. In this case, making a 'friendly' building seemed kitsch.
Inside, however, the building had to genuinely benefit the tax department's employees. A combination of daylight and natural ventilation helped to achieve this objective.

Both aspects influenced the design. The façades feature double strips of fenestration, and a 22-metre-high atrium acts as a 'lung' for natural ventilation.[2] In the office spaces, the concrete ceiling enhances the emission of radiation and night-time cooling through

heat storage in the building mass, which was generously dimensioned to increase these functions.[3]

Mass has therefore been used here towards sustainability. It resulted in a building without air conditioning and active cooling, so that stale air is discharged via natural updraft in the atrium through six large shafts.

The double strips of fenestration serve different purposes: the upper one for light admission, the lower one for views. Adjustable exterior louvres provide solar shading in the lower window, while reflective glass in the upper window guarantees the retention of daylight.

These rational techniques led to a building that worked. A survey among users revealed that absenteeism was lower than in the period before the extension. Indeed, you sense the difference as soon as you enter the building: it was stuffy in the old building by Bremer, yet the new extension was clearly fresh. This suggests that sustainability can only be measured, and is fundamentally invisible, in terms of appearance.

The interior space of the atrium also enhances the effect of a majestic interior space that allows for edification, 'attachment' and a sense of collective identity. Architectural space is therefore a potential sustainability factor.

Shortcut

The experience gained in Enschede was pursued further within Kingma Roorda architects in various projects for offices, homes and schools. The objective is always passive buildings with as few installations as possible. Often the building mass is deployed to passively reduce the daily temperature curve through short-term heat storage. At the same time, making recognisable spaces is the fundamental aim in all projects. Preferably the interior spaces exceed the standard: able to serve various purposes by offering a variety of heights and open to multiple interpretations.

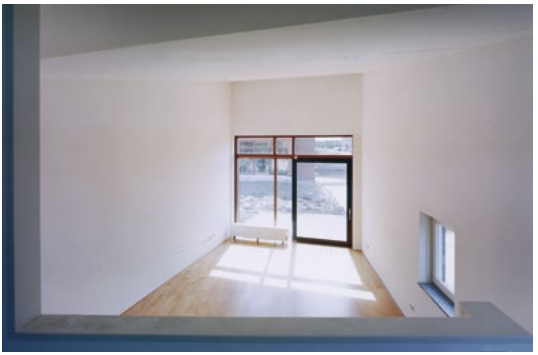
The design study for the renovation of a government office building in Utrecht combines sustainable ingredients such as daylight and ventilation with new flexible office concepts. The existing building was in a state of disrepair and consumed an astronomical amount of energy every year. Notable spatial

features were the low floor-to-ceiling heights and the size of the floors, which were not tailored to the tenant's needs.

The proposal by Kingma Roorda architects involved a higher level of technology than in Enschede, necessitated by the size of the building. Even so, the emphasis here is on passive building, with natural ventilation introduced through a double-skin façade, and installations to facilitate flexibility housed in a raised floor. The new external skin is proposed in glass, while the inner façade is carried out in softwood window frames with doors. Moveable sun shading is placed in the void between the leaves of the double skin. Interior partitions are also made of softwood and fitted with slats. As many of the lowered ceilings as possible were removed to facilitate the release of energy from the mass of the concrete skeleton.
A void on each floor of the 25-floor building provided a shortcut that compensated for the disadvantages of the confined floor area and the limited net height.

Not so fast

For a housing project in IJsselstein, Kingma Roorda architects enlisted the services of an advisor on sustainability with the aim of putting the project on the market as an advanced and energy efficient scheme. However, technical developments did not evolve as fast as the designers had hoped. Among the features scrapped were a collective energy supply and an experimental roof surface of photo-voltaic cells. The project was completed with more standard fittings, including individual central heating boilers, a heavy structure, balance ventilation and solar boilers.



Taking everything into account, you could say that architecture was the consistent sustainability factor. Apart from the materials (shell ground cover, timber façade finish beneath large roof overhangs), that factor was essentially spatial in character. The homes feature a series of interconnected spaces with illumination through rooflights and sufficient excess areas: veranda, living room, stairwells, bathrooms and bedrooms. Spaces that make living pleasurable, spaces that are worth keeping.
Thanks to the lessons learned in this project, the designers realise that there is a spatial dimension to sustainability that can be pursued almost without figures.

Education

Everybody!

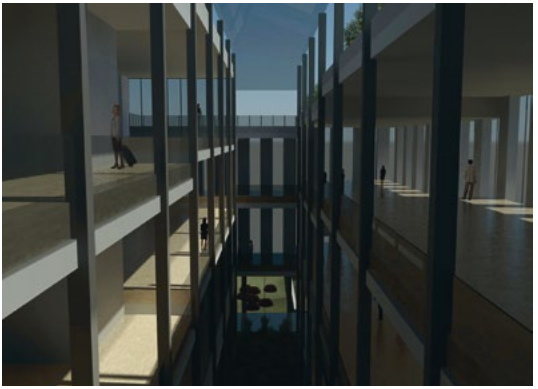
Majestic architecture of weight: that was the theme put forward at the Academy of Architecture. But why and for whom would you erect weighty architecture in this day and age? The premise here is that all majestic architecture will remain useful in the future, even if the ideological or programmatic basis changes or vanishes.
But who today is calling for majestic architecture? The answer to this question is: everybody! For it is only with such edifying,

supporting, comfortable and atmospheric spaces that we can create buildings of lasting value.
As an educational assignment, we selected a fictional programme with an equally fictional group of users: an urban club building for six successive generations. True, fragmentation in today's society make this programme fictional yet also plausible, since the project proposes no exclusion. After all, everybody is one of a generation, everybody belongs, everybody can join in. The collective spirit among the different generations forms the cement of society.

Establishing unexpected connections in and between generations was therefore this project's main objective. In this club building, each generation had its own Great Space, with a net height of at least 4.5 metres. The building as a support structure had to possess 'permanence' and function for at least 200 years, while built-in components, finishes and embellishments could be temporary. The entire building could be left unfinished and had to allow for alterations at a later date. Of course, the building had to be passive, with as few installations as possible and low energy consumption. The challenge was to create fantastic architecture, on a dormant site: the eastern side of Museumplein in Amsterdam, opposite the Concert Hall.

Plateaux

George Justus started his project by focusing on optimal orientation and the spatial idea of through-views in the interior. A comparative study of volumetric compositions came out in favour of a rectangular floor plan. Within this, the programme was arranged along a spiral that rose up around a narrow light well. In the building below there was space for a differentiated landscape with a main entrance, café and auditorium. Placed at the top was a roof garden and terrace. Passive building technology received a lot of attention and resulted in a double-skin façade and raised floors, with space for climate installations in between. The floors on which the spaces for the various generations are located form landscaped plateaux along which ramps and stairs are projected.

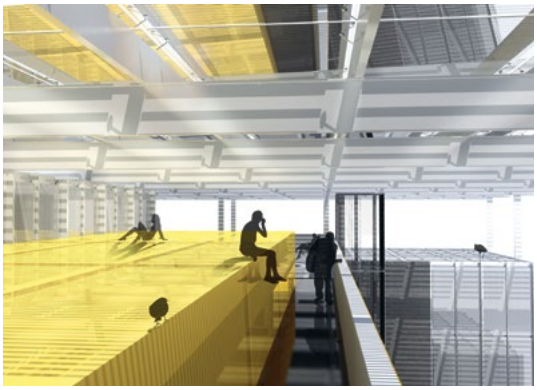


The light well is open and green and acts as a condenser between the generations. The space regulates both contact and separation in an atmosphere in which you show consideration for other people in a natural manner. The building is oriented to the south, where it has the largest percentage of glass, and the inner side of the façade features vertical, alternative blank and transparent strips. The depth of the double façade, its differentiated structure and the delicate colours create a subtle composition that reflects the rich contents.

Monumental

Marco Kramer was determined to realise expressive architecture here. His references were classical. As an antipode to the Big Museum, his building restores balance on Museumplein. The idea soon emerged to house each of the six generations in a separate tower. The first designs were monumental in three ways: a symmetrical composition of identically tall, towering volumes set on a continuous

base and topped by a huge, protruding volume and a theatrical cantilevered roof. Is this the desired expression of the collective power of the population? Not entirely, because in a final move the dimensions of the towers changed so that they are not identical.



As a result, some are not placed on the base. This 'democratisation' of the project has a good effect: the towers are tailored to age difference, the floors open up in places, and the (curtain wall) façades are for the most part translucent. This means that the collective spaces at the top of the building, which house a café, dance floor, lounge and auditorium, become spatially less dominant. To compensate for this, the volume is clad in gold-coloured sheeting. The large glazed roof is completely covered in solar cells. An additional effect of the last design move is a much more informal character of the ground floor.

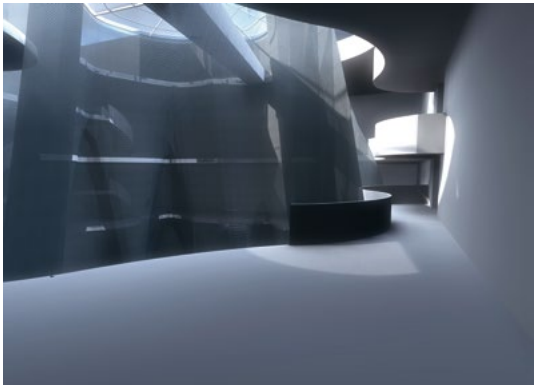
Slots

The project by Wendy van der Knijff arose out of extreme abstraction: pure images without architectural notation, centred on the theme of time. Her focus was on distinguishing between the permanent and the temporary, and both had to find a place in her design. Growth, shrinkage and disappearance of generations had to be reflected in the building, even after completion. The project achieved this in different ways. The position of the almost cube-shaped building, right in front of the Concert Hall, calls for the creation of a public zone, which takes the form of a diagonal collection of slots that house the entrance, circulation spaces and café. The remaining spaces are grouped around this up to a height of 25 metres, with parents above and elderly and children below.

All these spaces can grow or shrink both inside and outside. This is facilitated inside by adding or removing timber floors in the interiors that reach up to ten metres in height, and outside by repositioning the partition structure that defines the public zone. That is why the structure is made up of stretched canvas. Within this whole composition, a concrete core, steel façade columns and a number of concrete floors guarantee a life span of 200 years. The climate façade, to which planes of expanded metal are affixed, allows space for various wishes concerning intimacy during the first life of this building. The result of all of this is a rare combination of mystery and utility.

Cruel

Martijn Tjassens Keiser started the project with a thumping good reference image: a hollow tree. This image, this metaphor for life, perfectly expressed the aspiration for an overwhelming space. It only needed re-scaling. Put simply, this project was a hollow tree of wire mesh in a single-skin concrete block.



Apart from two narrow strips of fenestration, this block features no façade openings. Access to the building takes the form of a wide exterior stairs that descends to the basement (-6.40 m). Upon entering, you arrive straight into the cavity of the 'tree', an atrium, illuminated through a vast glazed roof. The spaces for the different generations are arranged around the atrium, behind tempered glass, on six split-level floors. Various flights of stairs rise from the basement to these floors. The sparing lighting, which enters through the mesh and comes from focused artificial illumination, evokes a mysterious atmosphere of togetherness. Undulations in the mesh wall encourage special activities. Further articulation in the form of partition walls is avoided. All circulation and service spaces are therefore accommodated in the north façade, which is constructed as two layers. Niches in the basement create space for an auditorium and for light openings of translucent stone. At the end of the route at the top of the building, a footbridge leads to a café with a small roof terrace. A proposal for passive techniques features, among other things, floors with concrete-core activation and a single-leaf concrete façade for passive heat storage. The contrast between the subtle, slowly unfolding interior and the harshness of the exterior box is extreme.

Elegance

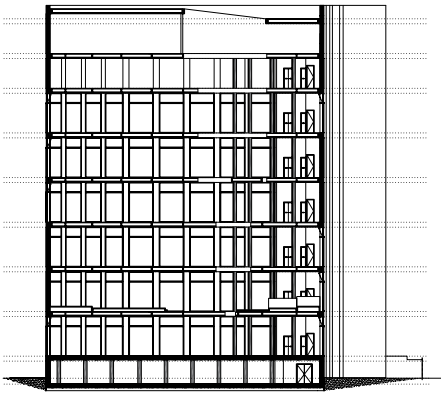
The project by Xander Speelman evolved out of a process of trial and error, but at full speed, as a result of quantitative analysis and energetic intuition. A stack of foam volumes (generation spaces) is treated on the basis of the idea that generations 'interact' with each other.

This produces a stack of interwoven horizontal blocks that touch each other in different places, akin to a rigid version of a paper chain. It is an aesthetically determined composition whose lack of logic in terms of usage cannot be grasped immediately. Function follows form? The resulting spatial-structural puzzle leads to a number of design adjustments, among them the rotating of one of the volumes, whereby glazed floors take the place of façades. Generations are thematised: borderless, pragmatic, lost, protest, silent or pre-war. Nonetheless, the floor plans are serene and remain unexplained. Time and again, the

marvellous elegance gets the upper hand on explanations of the functions, and this ultimately results in a building whose exact function is only touched on in passing. Does this perhaps herald more timeless buildings? In the project's elaboration we do of course encounter the slender frames with the large spans, which prompt the use of a steel structural system for the building.

Resistance

The fascination for the 1960s and the ideas of Frank van Klingeren in particular came together in this original project by Marc Keizer. It took shape after some initial hesitation and doubt: what to draw? The exterior form, the irregular pentagon, emerges 'rationally' by dedicating lines from the context as building lines. Floor plans initially display voids, which gradually fill with what at first seem inimitable ingredients. Positioned at the centre of the building is what you could call a gap, sometimes jokingly referred to as the 'generation gap'.



The generations are located on both sides of the gap, the oldest above and the youngest below, 'sandwiched' between roof and ground. Collective spaces are also envisaged: below a foyer on a bike shed, and above an auditorium and café beneath a roof terrace.

In many respects the architecture of this building displays a form of resistance that Van Klingeren at least would have found attractive. With its immense height, blank base, large expanses of glass and narrow, appended balconies, this cannot be called a 'cute' building. Even so, it is an appealing building, precisely on account of its contrariness, and also because it refers directly to the direct character of Amsterdam people. What's more, it is free of almost all politically correct architectural trends.

Form

Mindaugas Savickas took the very opposite approach. Fascinated by the architectural present, his design betrayed a bias towards 'shape' that is easily situated in the current decade.

Taking this into consideration, we can view his design response to this assignment as surprisingly calm from outside. Lines from the context define the taut contours of a compact volume that responds to the positions of the Big Museums and the sloping roof of the underground supermarket on the other side of the central axis. The only hint of the spectacular interior space consists of the glass façade that is composed of vertical sliding doors of about five metres in height. Visible from the sky only, the roof does, however, offer hints of a more lavish interior: behind its sharp

edge line, the roof consists of curves through which a scattering of rectangular timber skylights and structures protrude. More is going on inside: a passage flanked by lightly curving walls connects the three corners of the building. The remaining building mass consists of three layers that are accessed through vertical circulation in the timber towers. Although suffering slightly from 'overloading', both the roof and the passage are genuinely majestic spaces: one a sort of rock landscape, the other a grotto fitted with bridges and balconies.

1 Kingma Roorda architects in collaboration with Bernard Colenbrander: Kruising exhibition, ABC Haarlem, 2006.
2 The relation of the interior space refers to De Passage in The Hague by architect Westra en Van Wijk, 1882-85.
3 The word 'tax office' can also be taken literally. Until 2005, the building had to be able to carry the heavy load of tax returns on paper. On account of the integration of so-called 'teams' and administrative 'units' and the desire for flexibility, the final series of tax offices could be interpreted structurally as archive buildings. The heavy floor loads make these buildings suitable for other functions of course.

Palace for the Generations was organised by Ruurd Roorda as a design project for second-year students of the Amsterdam Academy of Architecture during the 2009-2010 academic year.

Three tales of a folding house

Huib Haye van der Werf

The Folding House designed by Jeroen Kooijmans, is inspired by natural phenomena such as plants or shells that can close when danger threatens. Transformation and an ongoing sense of wonderment are key to Kooijmans' work.

Rotterdam
15 November 2008

Emilie was tired. She had been in a meeting until late afternoon, and now she couldn't believe that the space she had been meeting in, sitting in, discussing in these past five hours was also going to be her bed for the night. It was late and the presentation she had been working on had to be ready to go tomorrow at 10:00. That meant that she had a few hours in the early morning to go through it one last time and make any changes if necessary. She had already e-mailed it to the bosses, expecting there would also be reactions from them sometime between now and 8:00 tomorrow morning. If she went home to her own bed, she would only lose time. MVRDV was keen on getting this assignment, and that meant going the extra mile – and anyway, this wouldn't be the first time that someone slept at the office. It was, however, the first time that someone would be sleeping in the relative comfort of this new Folding House. No more sore backs from sleeping sitting down behind a desk. Jeroen Kooijmans' invention offered not only a place to sit and discuss matters during office hours, but also a place to actually stretch out completely and lay down at night.
'How ironic though,' Emilie thought, 'that my refuge for the night is also such an essential part of the assignment I've been working on these past days.' Scanderbeg Square in Tirana, Albania was to be redeveloped and the city's eccentric mayor firmly believed in the need for an outspoken statement in order to bring about lasting transformation and catalyzing change. Yet at the same time Tirana was changing fast and any proposal had to also keep this in mind. The Folding House therefore played an important part in MVRDV's proposed scheme as it offered the opportunity to programme the square more flexibly, thereby making it potentially more public. In the overall plan, the numerous Folding Houses could be joined in different patterns and given different uses, from market stalls to cultural pavilions (or temporarily set aside completely).
During the hours of her last meetings, Emilie had found herself looking more closely at the simple yet practical design of the house, regarding its role in the assignment in a different light. At first, the lack of windows and the neutral wooden interior and exterior seemed desolate to her. Soon, however, she realized that this neutrality was exactly its quality. 'No wonder Winy doesn't allow anybody to pin anything inside or out' Emilie thought, 'this thing mustn't take sides.' She now lay down inside covered by a blanket that she had the foresight to bring with her. The Folding House was almost completely closed, letting in the light from office ever so slightly. She was impressed by how easily the benches went down and offered an almost queen-sized sleeping surface. 'Next time I'm bringing a mattress', she thought just before drifting off into a heavy sleep.

Cairo
8 February 2016

The night before, he and his brother Hussein had finished putting on the last coat of protective paint in the colours of the revolution. Now, about an hour before sunrise the time had come to transport it to Tahrir Square. Under TL lighting in his uncle's garage, Mohammed looked proudly at the structure before him. Not only did it make an imposing impression thanks to its symbolic insignia, but its simple form also clearly stated its potential. This simplicity is something he – together with many others – was still fighting for. It was the five-year anniversary of the first Egyptian uprising

in 2011 and still things were not resolved. People were taking to the streets again and Tahrir Square was once more the centre of the movement, only now mere tents were not enough. The situation called for a different kind of statement, and Mohammed had thought that the structures that housed and sheltered the protestors should be part of this new symbolism just the same. A few years back he had been working for the Townhouse Gallery in Cairo and once found a drawing of a project that one the visiting artists – Jeroen Kooijmans – had presented. At the time, the design of the structure intrigued Mohammed because it was such a straightforward plan: a simple house that could open and close. He immediately thought how handy it would be to have such a structure on the rooftop of his building to use for storage in the winter, and a place in which to meet and drink tea in the summer. He copied the design on the Xerox machine and resolved to speak to his brother about building it in the spring, but then things got worse in the city and it was no longer a priority.

Almost three years later, he was sleeping in a tent on Tahrir Square with hundreds of others when one night – cursing the rocks and cold ground – he remembered the drawing he had made and the artist's presentation. Excitedly, he called his brother and uncle and immediately began building. He now stood before his very own Folding House. It was a bit smaller in scale from the one he saw on the artist's drawing, but no less impressive. He stood imagining how he soon would have a semi-permanent structure in which to live, eat, discuss and sleep, as long as it took to bring about change in the country he loved so much. He smiled to think of how awe-stricken the military troops would be when he simply closed off the house from the outside world. More so, he imagined their disbelief when confronted with a hundred of these structures, because Mohammed had passed on the design to as many people as he knew would able to build one and use on the square.

His uncle's truck arrived and with the help of every man in the street, the Folding House was lifted onto the truck. Mohammed and Hussein patted each other on the back and got into the front. With the distinct silhouette of a hose on the back, the truck moved off down the street, only just missing the cars parked on each side. Tahrir was only a ten-minute drive, but the cargo it carried was worth weeks, if not months, of work.

Amsterdam
19 May 2012

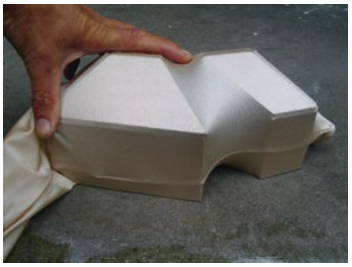
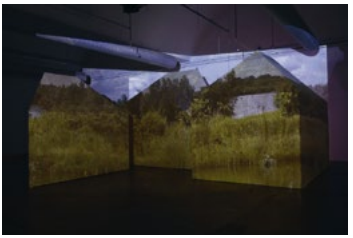
It is a hot day by Amsterdam standards, and Cees is smoking a lot. He is in the final days of his studies at the Academy for Architecture and busily working on his final proposal, which will be reviewed and assessed in just over two weeks. Cigarettes not only calm his nerves and give him an excuse to be outside on such a fine day, the designated smoking area also reminds him of a pivotal moment during his studies. A moment he will carry with him for a long time, perhaps even forever.

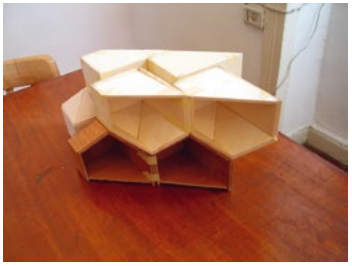
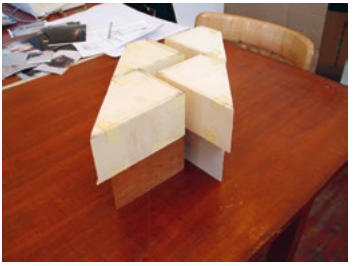
Cees is sitting in a Folding House designed by Jeroen Kooijmans, which stands on the middle of the small square just outside the cantina. Cees was part of the class that worked together with Kooijmans when he was visiting artist in 2010. He remembered that he thought it strange the Academy had invited an artist to work with students. He soon found out he was mistaken. As an artist, he challenged the students to think more about the possibilities of building without being burdened by any of the impossibilities such as financing, building codes and gravity. In no way could Cees remember what he had imagined for this conceptual experiment.

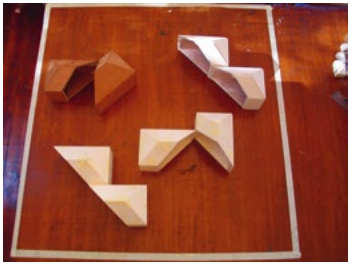
What he does remember vividly is Kooijmans' idea that actually building something was the best way to make the students aware of the true potential of being an architect. Cees and his fellow second-year classmates all went to Kooijmans' studio - where they had access to proper tools – and they set out to building a project that he had been working on during his period as visiting artist: the Folding House. Now, two years later, he is proud of the fact that his professors see his concepts and designs as unconventional. Also, he is proud that he can now actually build something, as this was not always the case. Every time he lifts his right hand to take a drag from his cigarette, he is reminded of this insight by the eternal blue streak on his thumbnail brought about by one of the wooden walls of the original Folding House that had fallen on his hand back in Kooijmans' studio. He smiles now when looking at it and thinking back.

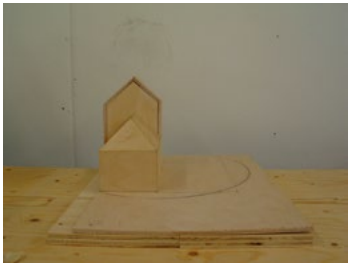
The Folding House is completely open to let in the sun as much as possible. Cees looks at its design and sees that this one has been factory produced. He wonders what has become of Jeroen Kooijmans. He imagines that such an artist would not have begun such a project only to mass produce it and make lots of money. He envisions that Kooijmans is either working steadily to improve and elaborate on the design, or is working on something completely new and different. Perhaps both. Having taken the last drag of his cigarette, he puts it out in the Folding House's built-in ashtray and heads inside.

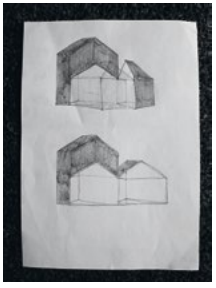
Artist Jeroen Kooijmans (in collaboration with Roé Cerpac) was Artist in Residence at the Amsterdam Academy of Architecture in 2010. Kooijmans and Cerpac headed a research lab in which they worked with third-year students to find new possibilities to create miraculous transformations in disciplines such as film, biology, physics, alchemy and art in general. The title of the study was 'Transformation: A search for possibilities to create an unexpected moment of change'.

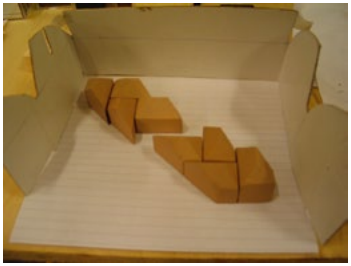


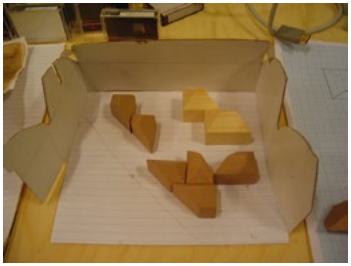


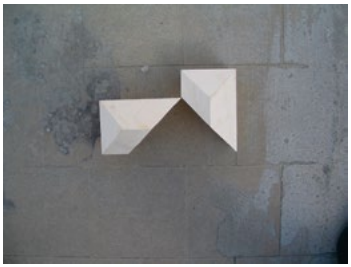
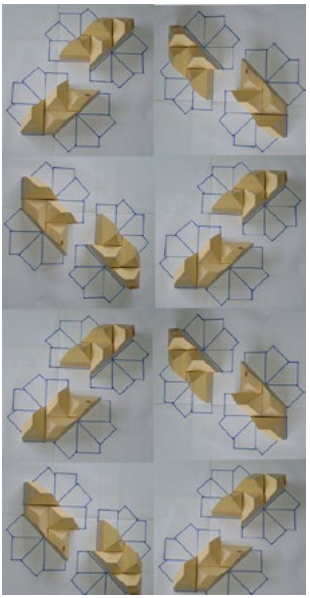









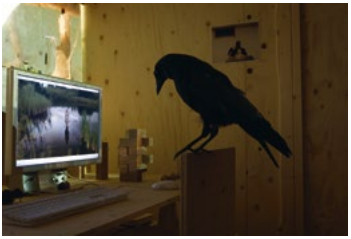










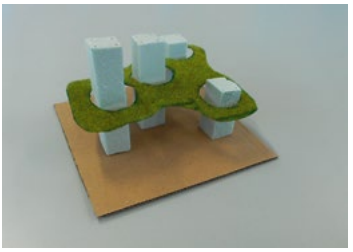






















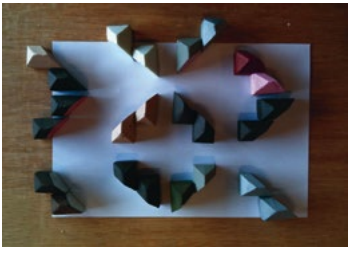
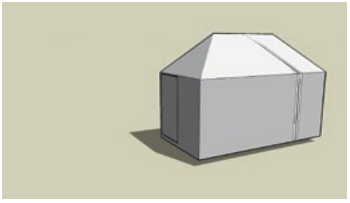
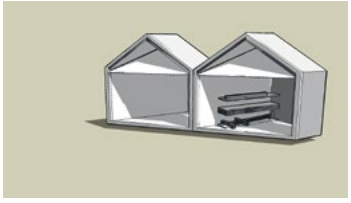


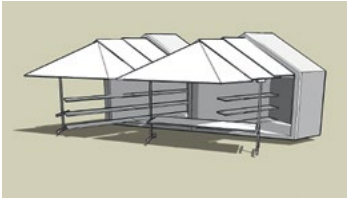








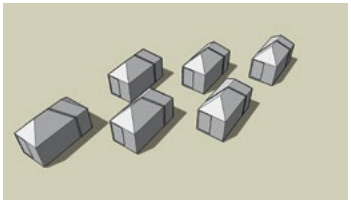
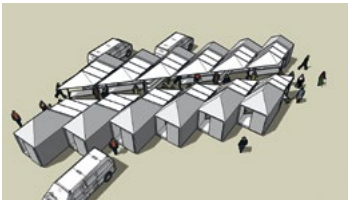
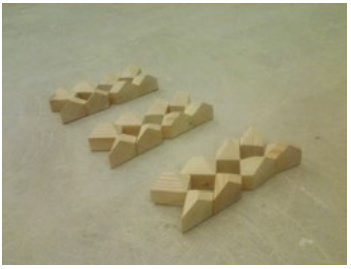
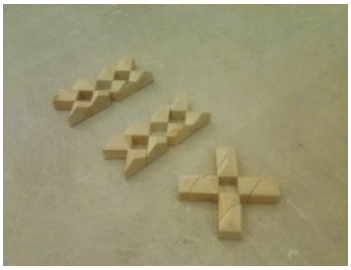
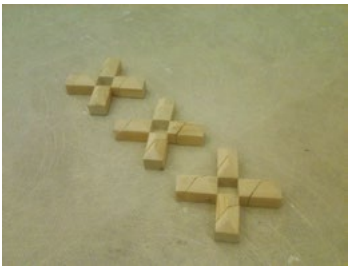










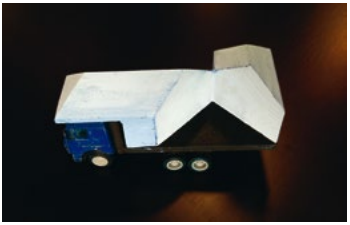


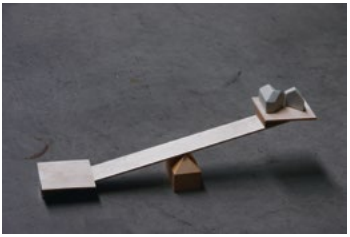










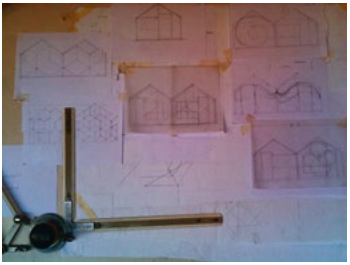


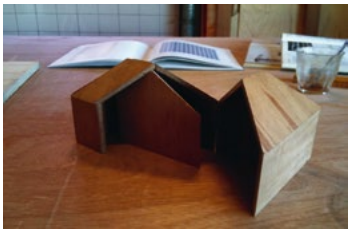



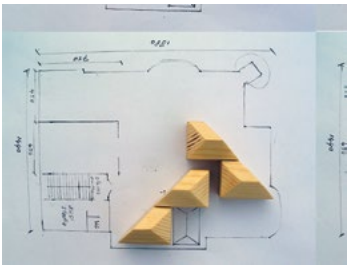















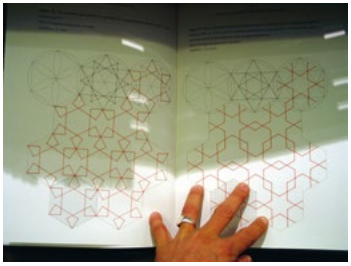
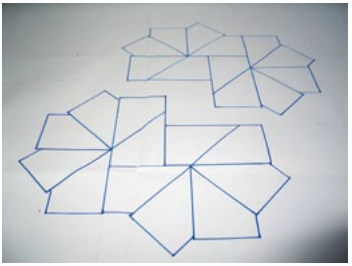
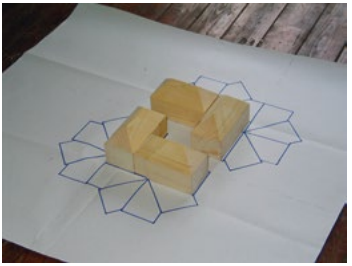
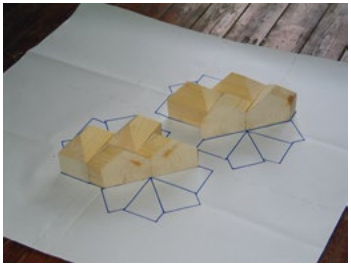
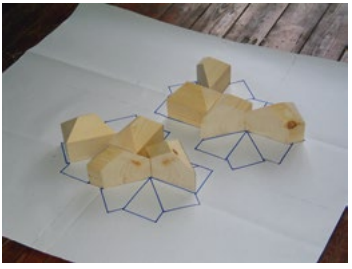
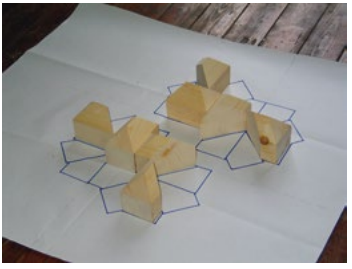
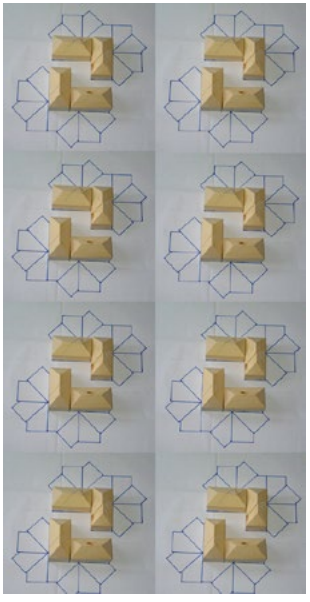
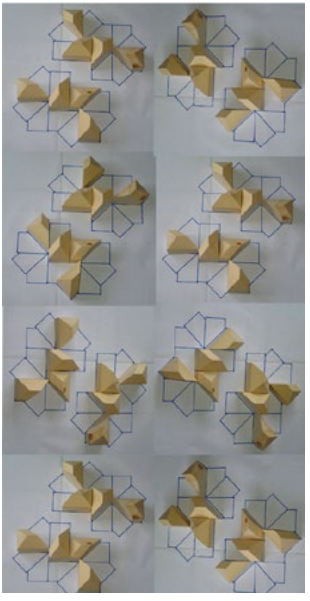
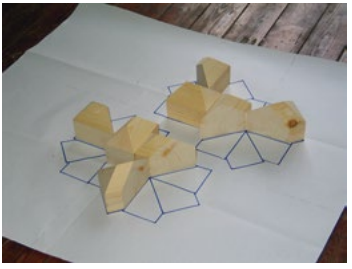
























Craft:

innovation versus reuse

Thin city flat out

Ed van Hinte

In architecture it currently is common practice to create form starting from programme and meaning. The buildings structure hardly gets attention and is left to engineers who find it challenging to search for solutions within the conventions of their discipline and of everyday building methods.

However, today there are new technological opportunities, with which buildings can be made as much as 25 times lighter and more efficient. They imply much lower energy costs and a higher productivity. Slowly but surely these technologies find their way, primarily in aerospace industry, where weight directly comes at a price.

Zaha Hadid designed this mobile art museum for Chanel. It acts as a disguise for a brutal, superfluous steel construction.

Lightness in theory

Separation

Construction has a long history, roughly the past 150 years of which has been peculiar. By chance, just before writing this text I heard an architect speaking about Darwin's dip, as a term to indicate an interruption in evolution. No matter how you look at it, something went wrong with the capacity of buildings to adapt. Owing to the development of systems, ideologies and economic principles against the background of increasingly undivided community of goods, construction in particular has witnessed a rigid separation between project and organisation, architecture, construction and industry, and craft and use. It isn't that segregation is wrong by definition, but the countercurrent of reintegration and productive collaboration is lacking. There is too little reciprocal influence and too little affinity with the other aspects. I certainly do not claim to know all architecture firms, but it strikes me that for architects at least, design practice ends at precisely the moment — in my view as a product designer — that it is about to start. The architect organises and styles and then passes it on. Consequently, the relationship with the opportunities afforded by technical progress disappears. Or perhaps you should say that architects largely confine themselves to the realm of style principles about geometry and simplicity based on understandable misconceptions about the relation between technology and construction of a century ago. This is not intended as reproach or a complaint. It has just turned out this way because of the characteristic inertia of the construction world. Most other industries also display a degree of wasteful and unbalanced growth, but the separation between design and technology is less visible there.

Lightness

Lightweight structures, the speciality of inspiration Adriaan Beukers for many a day, calls for another way of thinking and designating characteristics than is

This business aeroplane is constructed fully automatically by applying carbon tape impregnated with synthetic resin layer by layer.

Conquering hearts and minds with light balloons in the form of trucks. There is only material where it is really needed. The rest is air.

Light means fast, just like heavy means slow. For years, the area around the main railway station in Amsterdam has been a mess. The reality is not the design, but the long journey towards it. Boeing can construct seven jumbos in a month. Jetliners are much more complex than buildings, but lightness and very thorough design work save a lot of time during production.

currently common in architecture. In the first place, it is not a matter of replacing heavy materials with lighter ones. A material has many more properties than its relative weight and expression, and a number of those specifications determine what you can do with it, how you can process it, how much load it can carry. The lightness of structure is derived from such properties. That is why I always say that aluminium is heavier than concrete, but you can nevertheless construct much lighter structures with it.

For lightness you always have to think about the combination of material, manufacturing process and concept. Together they generate form and function. It took a while before it dawned on me that the notion of 'function' has a totally different meaning for architects and engineers. The former emphasise use and programme, the interaction between the building and people. Technical experts, by contrast, look at the physical effects, at how a construction responds to gravity, wind, sun, rain and earthquakes, for example. And then it is not one or the other. The two ways of looking complement each other. At least, that should be the case. The effect of the process of separation already noted is that architects and engineers do too little to observe or try to understand each other. There is a reason for this situation. In general, the architect takes (and sells) the conceptual decisions, while the engineer tends to adopt a subservient role

and gladly embraces the constructional challenge. Design processes within disciplines are conventional. Since architects limit themselves to programme and form, and engineers develop solutions in line with their own conventions and along the well-trodden tracks of building production, very little innovation occurs, in the sense of adaptations to the integral whole in response to drastically changing insights into the use of energy and raw materials. Responding to changing requirements is invariably a question of additions to the 'equipment level', as it is so nicely put in the automobile industry.

Lightness, in the first place, is about stimulating technical insight. That boils down to an extremely simple principle: use as little material and energy as possible. As already stated, that does not simply mean you should use the lightest possible structure (although that is a consideration), but that you should use a composition of materials and production processes to design the lightest possible construction, the properties of which fulfil the design's physical function effectively. You could call it physical minimalism. It has nothing to do with minimalism as a visual style of geometrical simplicity. Lightweight construction requires experimentation and careful thinking with components such as wires, textiles and resinous substances that, brought together in a form, can achieve more than many times the weight of steel that is so heavily used today. Methods are currently being rapidly developed for creating structures out of fibres and resins. The most important feature is that such a structure takes place at a much smaller scale than we are used to calling structure. You do not screw or rivet any components together, but you make a careful blend of ingredients. The consequences in terms of form in architecture are incalculable. In general, architecture lags well behind when it comes to technological developments. Gaining acceptance, or 'conquering the hearts and minds', as it is called in contemporary wars, sometimes makes it necessary to think in a manner you could term 'maximalism'. It is about making light structures seem heavy and reliable. It is about essentially doing the opposite with form than is now the case: making heavy things look heavy instead of light.

Minimum weight implies minimum effort. Of late I have been using that word 'effort' more frequently because it is more physical than 'energy'. It gives a better sense of the exertion that construction or transport costs if we did not always switch on big and sluggish combustion engines that consume fossil fuels. Light leads to the opposite of slow. Processes can occur faster and more productively and are easier to reverse. Change costs less effort. In architecture, adaptability means flexibility. That is another one of those differences with technology, where it has more to do with the capacity of a structure to change shape, i.e. that something bends and then springs back into position. In architecture and urban design, flexibility means that programme and use can change over time. In a light city it implies, in theory, that a place undergoing change, a station area let's say, is not a mess for years. Changes exert far less impact in terms of material, effort and time.

When change occurs easily, we encounter the second aspect of the experience of lightness, namely that change clashes with human conservatism. It is unpleasant if you have no opportunity to get used to your surroundings because they constantly change appearance. Lightness possesses other similar characteristics. Light objects feel, sound and look different. That takes getting accustomed to, but it also calls for design interventions in the area of aesthetics, and by that I do not mean just visual aesthetics. For technology and perception, an idea of balance must gradually emerge in what design pioneer Raymond Loewy termed the MAYA principle: Most Advanced Yet Acceptable.

Mould for the bodywork of the Superbus, the outer wall of the interior.

Lightness in practice

Superbus

Transport is the point of departure for Antonia Terzi, engineer in aerodynamics and construction with experience at Ferrari and Williams. She now works as a project manager at Superbus. Terzi hates that name, but it denotes the ultra-fast electric public transport system with which Wubbo Ockels regularly features in the media. It remains to be seen, however, whether the point of departure is right, and whether passengers travel from door to door and speed along at 250 km an hour only 'on the straight sections'. But it is now a prototype that looks like a crazy limousine with plenty of bling. The vehicle measures 15 metres in length and is

just 1.70 metres high. The reason is simple: air resistance is largely determined by the front surface. What Terzi emphasises right from the outset, with a formula that made the audience tremble mistakenly, is that all other resistance that a vehicle has to overcome depends on the mass. The heavier something is, the more power it takes to set it in motion, overcome friction and push it upwards if it has to travel uphill. That can be easily translated into construction transport, including hoisting. And that is considerable, because depending on the assumptions of what you include, between 15 and 25 percent of all transport in the Netherlands is construction related.
With a 1500-kilogram battery, the Superbus weights no more than 9 tonnes. That is light for 22 passengers. Not surprisingly, it is constructed of carbon fibres that are laminated in layers over each other in a carefully arranged pattern. The structure does not get simpler by giving every passenger a door of his or her own. The great thing about such a structure is that it is possible, and that construction of such a prototype does not have to be that expensive. What is so good about a composite structure is that although a careful design takes a lot of time, no extreme pressure or temperature is required for its construction. Moulds can be made of timber, resulting in a possible reduction of costs.

The proportion of steel in the construction of the roof is minimised.

Glass dome

Intensive collaboration between architects and engineers produces some interesting examples. The Paris office of RFR is an exceptional engineering firm that was founded by Peter Rice, who died young but was one of the few engineers not to remain anonymous. RFR worked on celebrated projects such as the pyramid by Pei on top of the entrance to the Louvre and the Centre Pompidou by Piano and Rogers. The firm has a reputation in the field of special glass façade structures and is always pushing the boundaries of what is possible in using glass as a

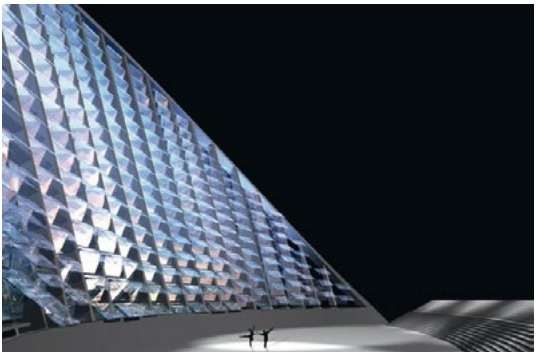
structural element. The current director is Niccolo Baldassini, originally an airplane engineer.
The most spectacular project is the roof of the area in front of the old station's façade in Strasbourg, which is now a TGV station. It is a roof with an area of 5,000 m^2 that appears to be double-curved owing to its scale. In reality, it is made up of cold-bent strips that are laminated into the frame on site: two layers of glass with a synthetic layer between them. The method of construction using slender frame components balanced with cables reduces the frame to a visual minimum.
The easiest way to describe the form is as a well-chosen segment of a giant toroid (inner tube) that wraps around the station building. The architecture firm AREP had another idea, more curved with a bulge in the middle. To make it feasible, RFR came with an alternative that produced the final result. The question here could be why the architect was needed at all. For Baldassini, however, the architect is the individual who comes up with the starting principles for the development and with whom you then work with closely. What is important is the quality and feasibility of the whole project. RFR, for that matter, is also exceptional because half of their employees are architects. In most engineering firms, that percentage is much more modest.

The footbridge near Dronten is sturdy enough to support 15 elephants and weighs just 13 tonnes.

Woven bridge

What I often present as a shining illustration of composites in loadbearing structures is the pedestrian bridge near Dronten by the firm Fibercore Europe in Rotterdam. Founder Jan Peeters is a real pioneer in the field of composite structures. In construction you see fibre-strengthened synthetics especially in façade panels, a valuable application of course, but much more is possible.
In the case of the bridge, it is simply a question of listing the advantages.

It is more than 95 per cent lighter than a concrete structure and maintenance-free, but not more expensive, even though it is made of carbon fibres. The essence of lightness becomes clear here. Carbon with resin is of course much more expensive per kilo than reinforced concrete, but you need far less of it. That results in a bridge that behaves slightly differently. It bounces a little and sags slightly over time, without breaking. It can support fifteen elephants without any difficulty. You can counter that sagging by making a slight curve. Eventually the bridge will become a little straighter. That always looks better than a straight bridge that sags downwards after a few years.
Apart perhaps from its slender form, a bridge of carbon has no noteworthy exterior characteristics. The woven carbon, prestigious in sports cars, is painted to evoke confidence. Some architects find that shocking because it is at odds with their notion of clarity, honesty and radicalism. Personally I don't mind. Such conventions belong in the minds of architecture lovers. It is precisely such a convention that means that the bridge has a steel railing that thus requires maintenance. Questions were asked about sustainability of course, but insight advances, and that gives a favourable impression. It was already clear that a bridge like this is indestructible and stays floating. After a disaster, you simply put it back in place. The surface will suffer somewhat from algae, but that has no impact on its structural quality. In terms of energy and emissions, the firm carried out a study of another bridge that is suitable for truck traffic. In comparison with a normal bridge, emissions are reduced by two-thirds. On top of all this, Peeters claims that high-grade resins will be extracted from plants in the not-too-distant future. So there are surely enough reasons to further explore the possibilities of structural composites.



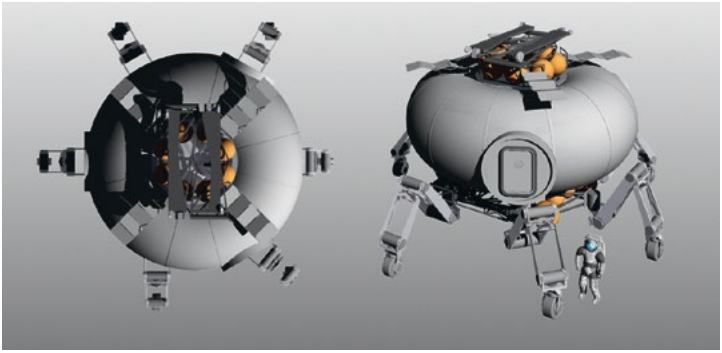
Michael Pawlyn helped to design the desalinisation installation on Las Palmas. Technically it performs like a desert beetle, but programmatically like an open-air theatre.

In terms of hierarchical complexity, the construction of the Eiffel Tower is nothing compared to that of a human hair.

Biomimicry

You could consider the use of raw materials produced by nature as a form of exploitation of life that precedes biomimicry: not analysing and imitating, but bluntly using. Julian Vincent, a biologist and specialised biotechnician, introduces three areas in which nature can help in design. In practice, nature is both a confusing and an emotionally charged notion. Research reveals that most people associate nature with 'trees' or 'greenery'. You would almost forget that Higgs boson, influenza and the planet Jupiter are also part of it. Substances made from petroleum are considered 'unnatural' even though the makers, ourselves, are simply a species of animal and petroleum is a condensate of life that kicked the bucket millions of years ago. To avoid using the term 'nature', with biomimicry I prefer the functioning of organisms as prompters of technical solutions.
At its lowest and, according to Vincent, weakest level, you then look at the appearance of a plant or animal and you try to copy it. The work of architect Michael Pawlyn offers some good examples of this strategy. He worked for Grimshaw on the famous Eden project in Cornwall, which consists of huge domes with a metal frame of hexagons, the optimal distribution of forces according to the honeycomb principle, in which transparent Teflon cushions are held. The structure is lighter than the air it contains. The concept for a desalination installation by Pawlyn on Las Palmas was inspired by a desert beetle, which is so black that enough water condensates on its shell in the cold night air to meet its daily drinking needs.

At a higher level, natural systems are, according to Vincent, much more interesting than a plant here or an animal there on account of the hierarchical composition of functions. That offers wonderful insight into the refinement you can discover in everything that grows and blossoms, and the coarseness of what people concoct with it. The best example is human hair, which contains more hierarchical levels than the Eiffel Tower. The highest level that Vincent described is the most abstract. It's called TRIZ, an abbreviation of a Russian name that means 'Theory of inventive problem solving'. TRIZ is a collection of tools for analysis, comparable with systems engineering, combined with knowledge. Those who wish to find out more about it can consult the internet. Major problems for big companies could be solved with TRIZ, although it seems to me that design is essentially about formulating clever questions. Solving problems does not cover the entire design process.



The form of the moon station is defined through experiments. There is surprisingly little needed to keep four people healty for 28 days in conditions that make the notion of 'severe' irrelevant.

The mountains

It was through Adriaan Beukers that I met Maxim de Jong from Chilliwack, Canada. He is a designer of fuel tanks for spacecraft and inflatable moon stations. I was impressed by his story about the design of inflatable textile structures and the effort it cost him to explain to NASA that a perfect sphere or cylinder is not a perfect form if you want to make a lockable opening in it. The uniform pressure from within on the airtight material seeks a form that facilitates an even distribution of forces. A balloon is not a sphere either. What's more, such a structure is not open to theoretical analysis and calculation on account of the transition from textile to valve and also on account of the textile itself. It is a structure and not a homogeneous material like aluminium. Making through trial and error is the only thing that can be done. De Jong and his firm have been asked to work on a moon station. His experience as a mountain climber, a pastime that nearly cost him his life, afforded him important insight when working on this commission. Close to his home there is a steep mountain. A decade ago he tried to conquer it three times. On the first occasion he went with a friend. They took equipment with them, including those hammocks you can attach to the face of the mountain for sleeping in. After three weeks they had to return home without successfully completing their mission. On the second occasion he went alone, without a hammock and with less equipment. He made more rapid progress, but a change in weather meant he almost froze to death. He made a break downwards and reached safety. Then he decided to undertake another effort, with even less equipment. He succeeded. And that is now the principle of a moon voyage: take as little as you need to survive healthily. It is a question of costs and feasibility. Some 1,000 kilograms of fuel are needed for every kilo you take with you, because for fuel you also need fuel. Maxim de Jong had just received the results of the NASA project that determined the subsistence level, the minimum needed by four people to remain on the moon for 28 days without getting sick or going mad. It turns out you require unbelievably little energy, equivalent of what an electric heater requires, to survive in the second-most hostile surroundings ever

inhabited by people, if you can put it like that. After all, an expensive spacesuit must always be worn there. The philosopher Peter Sloterdijk calls space travel a combination of precision and frivolity.

Slums grow independently of plans and designs. Analysing the conditions and taking advantage of them as an architect makes sense. People construct houses themselves.

Barrios

Hubert Klumpner, from Austria, and Alfredo Brillembourg, from Caracas, who work as an NGO architecture team under the name Urban Think Tank, endeavour to create optimal living conditions in slum areas, especially in the Caracas barrios. Since more than half the world's population now live in cities, 90 percent of them in slums, they emphasise that architects must try and learn from that and address the issue intelligently. They are good at using minimum resources to create possibilities for people who live in slum dwellings and improve their living conditions. They do not do that by designing houses, since people can do that themselves for next to nothing in a weekend. Urban Think Tank works more by providing simple social amenities such as moveable sports accommodations or flights of steps. Their best project is their response to a commission to provide access to a slum area on a mountainside in Caracas, with an avenue or something similar. They studied the situation and concluded that this was not the answer. The mountain covered with dwellings of corrugated metal could be read as a single building, and you provide access to that with a lift. And that is what is there now: an aerial tram over the neighbourhood, with a few stops. Major demolition was therefore unnecessary.

An idea not yet put into practice is to erect a tower of beams inside which people could then suspend living space. That idea, in the context of the informal city, appealed to me as a lightness freak. Klumpner and Brillembourg illustrate, without incidentally reflecting on it in that way themselves, the consequences of lightness for the adaptability of the city. And they also show that the light city exists, not as an ideal but as a pragmatic possibility in miserable conditions. Therefore, the conditions for light construction are not new. They appear on a huge scale, and we can learn from them.

Lightness as experiment

Thin City workshop

They were wonderful, the structures made during the Thin City workshop at the Academy of Architecture in Amsterdam. But they needed their people. After all, just a day after the workshop the rain could not stay away any longer, and nobody could prevent most of the structures, erected in the courtyard of the academy, from collapsing on the ground like damp fabric. But it was no disaster. They were finished and had accomplished their role as MacGuffin devices. For those who do not know what that is: MacGuffin is the word that Alfred Hitchcock, the genius director of mystery murders, used to denote some item — the loaded bomb, the briefcase full of money or the secret formula — that a story revolves around but which is ultimately not important.

A full week of exciting stories of discovery, and trial and error, and building ended in inglorious rain. They were exciting days spent, on the whole, in a relaxed and optimistic atmosphere. A period of intensive design work with hands in the glue and hair full of gelatine. The interior of the academy building

disappeared under an avalanche of cardboard, branches, leaves, pieces of cloth, mesh, balloons and pedal-bin bags. And it seemed a miracle that so much rubbish could ever be cleared away again. But amidst all the experimentation with materials, Thin City produced a lot of sound and good ideas about light construction and inspiration about the discovery of forms.

Within a week, the academy courtyard turned into the beginnings of a light city, with a choice selection of different approaches to light building. The name Thin City was derived from the essence of the assignment, which meant that participants had to build a reasonably sturdy and free-standing space using as little material as possible — thin, limp materials like fibres, paper, cardboard, canvas and whatever else came to hand. Spaces three metres tall or more, so that people could enter them. And if they needed any stiff members, such as beams or uprights, they had to make them too.
An assignment like this consists of various principles that are out of sync with the way architects commonly think. In the first place, they are scarcely involved with construction. Instead, they develop forms on the basis of programme, use and expression. It is then up to others to decide how those forms have to be made. In Thin City, participants started with materials whose possibilities they had to explore in order to find out just how feasible their choices really were. It was about looking at forces and how structures respond.
A thorny issue was to learn to think in a different way about structures, and the key word here was glue. This workshop was the first occasion that I expressly used to make clear that you compose ingredients, of which glue can be one. The conventions restricting designers and architects means they are no enthusiasts of that. They prefer to keep things clear and pure, and they prefer to select one single material as a starting point, even though there are always at least two of them when it comes to composites. Using resin or glue to determine the form that a piece of textile has acquired is something they find objectionable, even though it is the perfect way to make something light: a clever, hollow form with a thin wall of fibres as an agent that fixes the form.
The workshop proceeded very smoothly, and the various backgrounds of the tutors proved invaluable. As you could expect, there were differences in level among the groups, but the average was reasonably high and the energy that erupted at the start was overwhelming and remained at that level till the end. With an average of 15 participants, the groups were on the large size. It was inevitable, therefore, that subgroups would emerge within some groups, and that individuals would branch off on their own. That may in some cases explain the incompleteness of the final product. It did teach me to indicate at the start of such a workshop that each group has to work on just one project. Now I will discuss the work of each group.

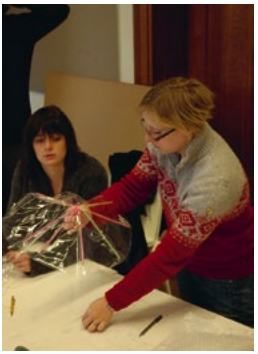
Glue kitchen

The most aromatic space was definitely that in which the group of architect Willem van Seumeren and designer Tjeerd Veenhoven did a little fancy cooking. In no time, the office room turned into an experimental farm into which they dragged branches and leaves from Artis Zoo as well as packets and bottles of cornstarch-like powders and sticky stuff. If you came to take a peek, you got a tour of 'the business'. The tutors wanted to explore the possibility to construct using natural tools, and the group did that with enthusiasm, at all scales. The group stood out a long way as a laboratory for materials.

A production system gradually emerged, with its own department of gelatine rope structures and a stick factory. The production of components got under way swiftly, while the composition of the whole structure proceeded somewhat less swiftly. Towards the end, the group came to the conclusion that the particular attention for smaller construction elements and stirring glue had been at the expense of trial objects three metres in height. Too much thought had perhaps been invested in a structure of small beams and a skin. Nonetheless, with a little cheating (the illegal incorporation of sticks in the frame structure), they still managed to erect a surprisingly beautiful building.

Balloon beams

An extremely rare duo: designer of spacecraft inflatables Maxim de Jong and landscape architect Bruno Doedens. The excitement and, eventually, the pleasure shone from their group, and that was down to the classic, and in this case, extreme contrast between the two tutors. De Jong offered no solutions but continually asked for 'minimum requirements': what is really the least you need to satisfy the requirements. Doedens appreciated that but countered by stressing that the result still had to look convincing. The group worked in a disciplined manner and, after elaborating a number of alternatives, arrived at a spectacular



structure: a triangular piece of fabric spanned over three ultra-light beams no fewer than ten metres in length whose lower sides were anchored together on the ground to form an inverted pyramid.

The principle of the ultra-light beams has real potential. In the end they were 'just' seven metres long and weighed an astonishingly light 1.5 kilograms apiece. One such beam consisted of a cylinder of fairly sturdy foil that retained its shape thanks to standard balloons inserted into it at regular intervals. If you think of genuinely elaborated alternatives instead of party balloons and foil, then you really can make light yet stiff beams, with lots of air and little material. In the end, the pyramid did not stand on its tip owing to an accident that occurred moving the structure to the courtyard.

Air pockets

Very soon after the workshop got going, the group headed by designer Peter van de Jagt and aircraft engineer Floor Koppenaal split into three groups that would not reunite again. All three started experimenting with the possibilities of inflating, and foils and other thin skins, but in very different directions. At the same time, midway through the workshop they ran aground in rather similar fashion: clinging on to what they had, and not daring to gain sufficient distance from it so that they could proceed further. And all because what they had seemed so promising. One group built a structure out of rope, which had to be held firmly in position with small balloons. The simulation in which the structure was affixed to the ceiling was so beautiful that the moment to convert it in the courtyard

and turn it into a tensegrity hut was put off till the very last moment. Even more beautiful, especially at night, was the hot-air balloon of insulation foil, made by the second group, which remained upright thanks to the heat of a spotlight placed on the ground. The balloon was not stable enough in the wind outdoors, and the group did not succeed in finding a solution for that problem. Its attempts focused on the sturdiness of the balloon, but the real problem was actually the form and the anchoring. The third group was initially happy with an unordered pile of inflatable pedal-bin bags. That was until they realised that unordered by definition meant too much material, and so they came up with the idea of tying the bags together with small elastic bands. That produced a wonderful dome structure without a frame. Lightness requires order.

Weaving

A material that designers often use when experimenting is pulp cane, or something similar to it. You can get hold of it very cheaply by taking apart roller blinds from the Xenos discount store made from the material. It became the basic ingredient in a huge double-curved dome with a trunk and something else attached. Headed by designer Stijn Roodnat and architect Lada Hršak, the group tried everything it could with those thin sticks, and it soon became clear that, once you have made a start, you could weave away in all directions without any support. Friction and bending stress hold everything together. Since there is no standard order in such a woven structure, it permits constant changes. You can simply make a hole anywhere and continue weaving from that spot. After

that discovery, it was not difficult to conjure up something big and compelling. Yet I would like to point out, albeit in hindsight and with the knowledge of other groups of course, that it was not considered whether the same could have been achieved with fewer components. The issue of really determining and fastening everything remained unresolved, thanks to the persuasiveness of the friction between the sticks. And of course because it became such a big and beautiful object that demanded so much weaving time to create.

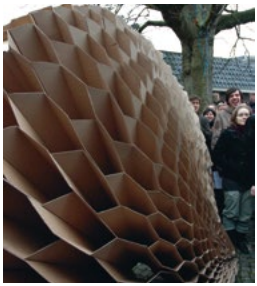
Adhesive tape

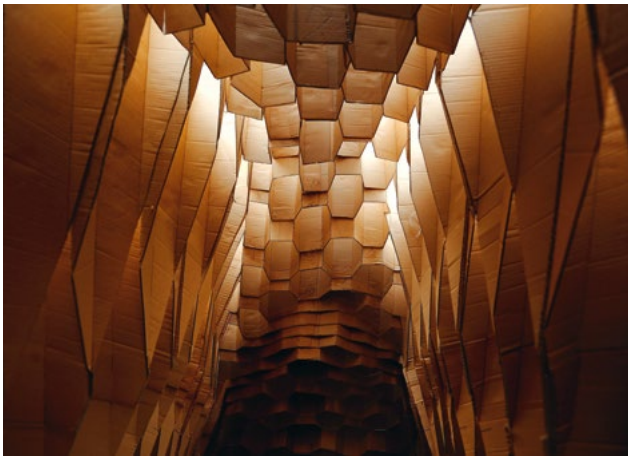
One thing was clear right from the very start in the group headed by architect Anne Holtrop and aircraft engineer François Geuskens: everything had to be with adhesive tape. Not everyone realises it, but adhesive tape and plaster are perhaps the world's most common and most frequently used composites. Tape is something thin, foil or fabric, with glue and sometimes a little gauze. Everything it touches becomes part of the construction like a snowball on a roll. You use tape to repair sports injuries and bridges. There is also tape made from high-grade fibres, and complete aircraft are stuck together using it.

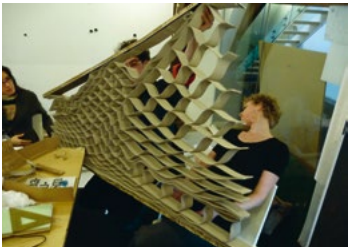
You cannot make a volume with adhesive tape alone. Creating that required the help of a few legions of balloons, which required blowing and pumping for days on end. Luckily nobody fainted. Initially, the first tests made it seem like a good idea to turn the balloons inside out after they had been made into a form using the tape. That resulted in an interesting rubbery exterior skin. In the end, however, it seemed handier to consider the tape as the exterior skin. Then it was a matter of pumping and taping until an acid-coloured blob igloo emerged. This was the only hut with a door and a window that could open and close.

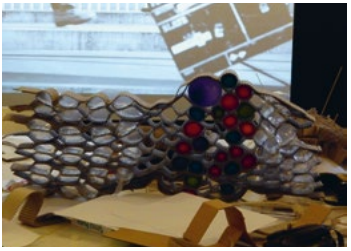
Honeycomb

If you stick paper cylinders to one another, wall to wall, they will of course form hexagonal prisms, especially if you also exert pressure on them from all sides. That is the origin of the honeycomb. For centuries, the regularity of the pattern has proved intriguing, firing the imagination and provoking experimentation. Designer Bas Kools and architect Martin Sobota were also seduced, and instructed their group to get to the root of what you can do with it. Variation in the size of the circular cylinders that you attach to one another allows you to influence their properties. If you approach it spatially and allow each cylinder to decrease in proportion to its height, they become cones. You can vary a lot more until you end up with foam. Then again, that is a little awkward if you are sticking pieces of flat paper to one another. The group went to great lengths and





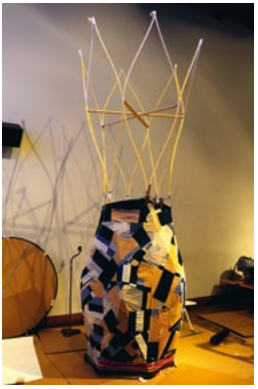


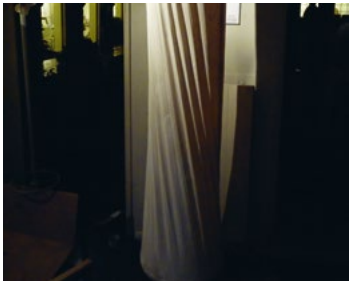


used many layers of cardboard to make a domed structure, made of cone-shaped honeycomb, that you can fold out. Think of Christmas bells made of paper. The special thing about the dome was that it was rectangular from the inside, as a step towards a spatial interior in which the light from the outside does not enter everywhere in the same way. Owing to the large amount of work involved in making the structure, there was no time to come up with ideas for the next stage of creating a sturdy and compact structure. A honeycomb only becomes stiff if you close the cells.

Fabric columns

The classical approach to thinking about composites is: start with a soft fabric, then shape it into a desired form with a mould or another tool, and finally 'freeze' the fabric in that shape with something sticky that becomes hard. Andrea Scardaoni from the Faculty of Aerospace Engineering in Delft and architect Erik Jan Vermeulen encouraged their group to experiment with this procedure. Intelligent frames of PVC tubing soon emerged, an extremely cheap material for experimentation. The idea was to seal such a frame with textile soaked in textile glue.





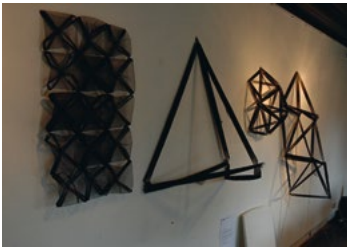
Except it was not the intention to propose a framed structure. The required stiffness had to come from the soft material. That turned out to result in very beautiful principles. The simplest idea worked best: stretch textile around an upright hat stand to form a hollow cylinder; turn the top part of the hat stand around so that the cylinder twists while the base does not move and the middle section constricts into a sort of diabolo shape; cover the cylinder in glue and wait until is gets hard. The nice thing was that an unintended phenomenon actually turned out favourably. Except for a constriction, vertical folds also appeared along the full length of the cylinder wall. That seemed like a setback, but those folds were precisely what created stiffness. When something is discovered by chance, inventors call it serendipity. In this case, it was the creation of stiffening folds without the use of a supporting mould. In other forms of cylinders, you can also allow useful folds to appear.

Mesh & gel

The group headed by fashion designer Gerrit Uittenbogaard and architect Serge Schoemaker received a wonderful material to see if they could use it to make a structure. It was very thin mesh with hexagonal openings, as used in veils and lingerie. It was fairly stiff to start with, and it seemed difficult to deploy it directly as a structural material by folding it, rolling it, shaping it into clever geometrical formations or fixing it with wire. And so the quality of the beautiful material distracted the group from further experimentation to reach the target height of three metres. This was very understandable, since you do not just spread glue on something so beautiful.



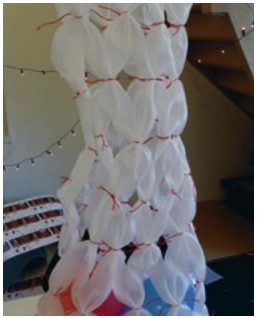


Yet it was unavoidable in the end, and in the next stage the participants examined whether the mesh in a strong tube could be changed with the help of gelatine. That seemed possible, except gelatine shrinks and, as a result, the tubed warped overnight. In the end, there was not enough time for a new stiffness test. I think it could have succeeded by not hanging the tubes freely but keeping them in shape with a small weight or something similar. All the group could now do was build a hut with warped sticks.

Building fabric

The group headed by designer Nienke Sybrandy and architect Ekim Tan got itself tangled up in stubbornly soft textile for a long time. Consultation was intense. A nice experiment emerged at the start, in which the idea of a composite in the form of a frozen textile was taken literally. Wet items of clothing were left out untouched in the freezing cold of the courtyard overnight. That worked — at least as long as it froze. Unfortunately, the weather forecast indicated that such a structure would not survive the thaw until the presentation.







The group worked in smaller groups and, in some cases, even individually. They carried out nice tests, including one with thick foil that, when folded, remained upright. An interesting technological test involved melting electrical cord onto textile by pressing the plastic insulation into the material while hot. Electrical cord turned out to be too weak, but it is not inconceivable that the principle works if the metal is stiffer and the distribution of cord across the textile is optimised. The group displayed the familiar yet, in view of the purpose of the workshop, underserved reluctance to the use of glue. In the end, the group nonetheless managed to fight its way upwards with a number of structures based on frames of self-made stiffening elements, sticks of rolled cardboard or textile.

Sticky suits

Located opposite the Academy of Architecture is the famous flea market. The group headed by designer Willem Hoebink and architect Arda van Helsdingen decided to try its luck there, with a search for usable building materials. There they made a discovery that everybody experimenting with textile structures eventually makes: ten identical black blazers with pairs of jeans. These were clearly destined to become building materials. The human form had to do the work. Their workspace quickly transformed into a popular, surrealistic boutique. Music! A luminous mummy hung from the ceiling and customers in suits stood everywhere as they allowed themselves to be covered from head to

toe with textile glue by shop assistants wearing blue plastic aprons. Then the starched clothes had to become a building, a human pyramid. How do you fix stiff clothes together? With nuts and bolts. Now it was the shop's turn to undergo a transformation and turn into an operation theatre. Heavy-handed surgeons drilled holes in human figures and sawed and cut until the suits were suitable to form a tower in the courtyard. Perhaps it was not the most stable and light structure, but it was certainly the only one in which a heavy dose of associative power distracted attention from lightness.

At the invitation of Machiel Spaan, head of architecture at the Amsterdam Academy of Architecture, Adriaan Beukers and Ed van Hinte were appointed Artists in Residence at the Amsterdam School of the Arts in January 2009. Taking the theme of Lightness, they worked with first- and second-year students on structures made of light or soft materials.

Superuse

Jan Jongert

The need for innovative ideas will remain as long as we do not have enough green energy at our disposal to produce all building materials in a healthy manner, and do not have any healthy way of processing waste concrete. The projects discussed in this article show the wealth of creative ideas that emerge when the freedom of choice in selecting materials is limited.

An auction in Nuenen

During his early life in the Netherlands, Vincent van Gogh often painted the church tower in Nuenen before and after it closed for good. His last work in the series depicts an event we can scarcely imagine: a sale of items from the church. Even the crucifixes on the graves were removed and went under the hammer of an official auctioneer. In those days the people of Nuenen would have used the stones, wood and stained-glass windows directly in their self-built homes and outhouses. For there was little waste in that pre-industrial era. Implements and buildings were made of natural materials. After a predictable period of time, these would decay and then be put to another use if the quality of the material permitted it. Transport possibilities at the time meant that materials were only distributed within a small region. This, combined with the relatively high cost of material with respect to labour costs, created the perfect conditions for a society based on sustainability and recycling.

The population growth, urbanisation and mechanised mass production that erupted after van Gogh's lifetime brought to an end this natural process of building. For architects, the most expressive resources were glass, concrete and steel. They made it possible to shape new ideals without the restrictions of tradition and craftsmanship. In less than a century, changes in production processes, access to trade around the world, global transport and the rise in labour costs ensured that much non-renewable raw materials and huge volumes of excess materials created a spatial and environmental problem after a short life-span. And construction is of course not the only culprit, though it does contribute significantly to the problem because of the quantity of materials used and the increasingly shorter life-spans. It is astonishing that even though the leading architects renounced modernist ideals, the materials applied in construction have remained the same. The only difference is whether historicising brickwork or futuristic aluminium wraps the same concrete structures that hold up buildings. Or perhaps we should speak of veils instead of wraps because of the dearth of new ideas. For even though experimentation led to ever higher structures and new finishing techniques, the western world has hardly been a hotbed of invention in innovative materials that rely less on non-renewable resources. An adverse side effect is that explosively growing economies in Asia and South America embrace these outmoded construction methods. As a result, these regions are witnessing the development of production processes that fail to consider the future. At the same time, local crafts are dying out, even though they could act as essential catalysts for innovation.

An intercontinental tango

In regions at the bottom of the ladder when it comes to economic development, building a shelter with local resources is often the only possibility when it comes to providing for the basic necessities of life. Ingenuity is not a choice but a necessity. Bjarne Mastenbroek of Search Architecten once showed the

humble homes of Ethiopians who have settled in large numbers on the south side of a heavily used railway line. The reason is that train passengers throw a huge amount of plastic packaging out of the windows of passing trains, and consequently the north wind ensures a constant supply of waterproof roofing material. On the other side of the world, the Smart Shelter Foundation headed by Martijn Schildkamp is testing a technique that uses heat to compress the same synthetic material into roof tiles. The Smart Shelter Foundation focuses on housing problems in developing countries. It turns out, however, that the people in need of housing are highly averse to cheap and sustainable techniques, because waste materials and natural materials exude a sense of poverty. If people have a choice, they prefer to wait for modern new construction in which concrete is the main ingredient. Irrespective of whether or not this is the most suitable construction material for a tropical climate, the appearance and the accompanying status prove decisive. Many developing countries are experiencing the same problem: the most obvious, sustainable and advantageous solutions, because of cheap labour, are dismissed for reasons of status. A possible strategy to give a positive twist to this resistance emerged during a conference about building with waste held in Buenos Aires, the birthplace of the tango. It was only when this style of dancing, which originated in poor communities, became popular in Paris that it was able to grow into a national symbol in Argentina. In rich countries the cost of labour is now so high that crafted products that are reused have become items of luxury. These products, which enhance identity, are making reuse fashionable in Europe and the United States. Indeed, it is on its way to acquiring the same stylish status that the tango once enjoyed in Paris.

Superuse versus Cradle to Cradle

When 2012Architecten started in 1997, the office's ambition was to design buildings that derived their character from elements present in the surroundings. Initially, the office thought of orientation, geology, buildings and greenery, but very soon the office discovered an interesting niche, namely the flows of material in our cities. In the first experiments the designers were increasingly enthusiastic about the chance matches that occurred when they brought different materials together. This laid the foundation for *Superuse*. During the first decade of its existence, 2012Architecten specialised in the application of excess materials and, at the same time, developed instruments to support this way of designing. Harvest maps, knowledge platforms and scouts were deployed in an increasing number of projects at different scales and with an increasing range of materials. The niche is defined by the value that discarded items yield in a new application, even before they end up in the recycling process. Superuse distinguishes itself from reuse in that it is always about finding another application for a material than the one for which it was originally designed.

Villa Welpeloo, Enschede First villa with 60% Superuse.

Besides Superuse, the 1990s saw the emergence of two other strategic innovations in the area of material applications: *Lightness*

by Ed van Hinte and Adriaan Beukers, and *Cradle to Cradle* by Michael Braungart and Bill McDonough. Lightness focuses on the most efficient possible design of construction components in which the properties of a material are exploited to the full in a particular structure. What it shares with Superuse is that it aims to minimise the transport of materials by propagating the principle that the heavier the material to be applied, the closer to the construction site it should originate. From another perspective, Cradle to Cradle is about developing new decomposable materials with which to bring the entire production chain into a new cycle. Cradle to Cradle gives designers and producers a fantastic incentive to think in terms of cycles. Superuse is often confused with Cradle to Cradle, but there are essential differences. The most important became clear when I asked Michael Braungart about the possibilities for applying Cradle to Cradle to our stock of housing built in the post-war period, including the blocks of flats in the Bijlmer district. Braungart answered without ceremony that there was no possibility. 'Our concrete buildings are made from bad materials and should be demolished as soon as possible to make space for the construction of buildings with healthy, decomposable and recyclable materials.' This is not only an economically impossible operation, but also a way of wasting a vast amount of energy. That's simply because for every existing home demolished, a new one has to be built. What's more, the demolition of a concrete building produces a mountain of waste with which you could fill the entire IJsselmeer. And the damaging components still have to be purified and removed from our ecosystem. As long as all products are not manufactured according to the Cradle to Cradle standard and all energy for transport, production and processing is not generated in a renewable manner, Superuse will develop methods and techniques to give 'stupid' components the longest possible life-span. In addition, it focuses on the potential of what exists. It deals with a reality that the people of many countries are grappling with every day, a reality that is gaining in urgency in our economy owing to the growing scarcity of raw materials.

From Kleiburg to Kijkgrijp: four perspectives on Superuse

In the Kleiburg to Kijkgrijp project supervised by Jord den Hollander, students were asked to take Kleiburg, the last remaining Bijlmer block of flats, as the basis for a Superuse building: a public building of 400 to 800 m² for which the students had to formulate the programme.

Apart from the shared determination to dismantle the building into its constituent construction components, each student was free to determine the approach to and degree of reuse. This resulted in a range of methods for deploying the components of prefabricated buildings a second time.
Generally speaking, we can distinguish four different Superuse approaches that harmonise with the various approaches that 2012Architecten has encountered in practice in recent years.

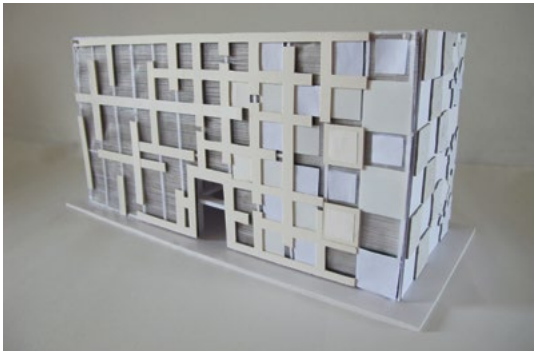
Superuse Aesthetic

A first recognisable approach is the aesthetic one in which the discovery of a sense of rhythm and shifts produces a totally new appearance. This often happens in experiments with a single material. A standard component is arranged in a pattern in such a way that a new layer emerges that is a cut above the individual components. This is where the fascination for Superuse starts for many designers, including ourselves. Something that appears ugly and worthless at first sight, a plastic window frame or a rebated door or a wheelie bin for example, can in sufficiently large numbers become the basic building block of a wonderful new entity. Experiments like this have thought us that there is no such thing as an ugly building material. The specific application of context, dimensioning, scale and rhythm in a design determines the aesthetic appreciation of the components.

A good example of the aesthetic Superuse method is the project for a Bijlmer Museum by Bart van der Salm. He applies almost all disk-shaped concrete elements in his building. These elements inspired his design in which horizontal and vertical rhythms contribute very nicely to a spatial experience and in part determine the functional layout of the museum. The result is an exciting interaction between materials and design, in a process in which design is clearly the dominant factor.

Superuse Energetic

You can also consider the Superuse approach more scientifically from an energy point of view. The notion of the *embodied energy* in a material plays an important role in this respect. It indicates how much energy is encapsulated in a building material from its extraction to its application. On the basis of the desire to reduce embodied energy as much as possible, the objective is therefore to find a new application for leftover materials with a minimum addition of energy (for transport, processing and the like). For this approach, 2012Architecten recently developed a standard called the Superuse Relevance Factor. This factor rises as the life-span of a material is extended with less effort.

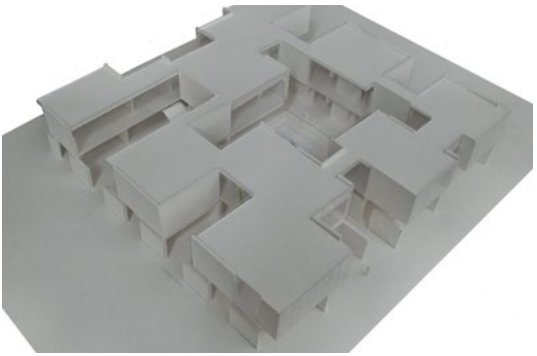


Marije Brans leaves part of the building shell intact and uses a portion of the material that becomes available to create a new façade around the shell.
Her project metamorphosis is an example of the energy approach, even though the cost of energy does not determine her design considerations. Brans starts by preserving the existing structure and dismantles all removable and lighter elements from the building and deploying them again to create an expressive new skin. The stock of construction components is used pragmatically and is subordinate to the overall design. In terms of approach, metamorphosis comes closest to the more common architectural practice of transforming 1970s blocks of flats, except that the innards of the buildings have not been reused up to now.

The Embodied Energy differs for each type of material. The figure for steel, for example, is many times higher than that for wood. 'Superusing' steel becomes relevant more quickly with this approach. Needless to say, it pays off to recognise the properties of components as much as possible and to leave components intact as much as possible. A good example of this approach at the level of components is the application of draining boards as façade cladding. From this perspective it is obvious that redevelopment in the built environment is a matter of making original buildings suitable for new functions with as few interventions as possible. This form of Superuse often lies close to reuse. Most student projects are searching for possibilities to achieve a maximum transformation with a minimum intervention.

Historicising Superuse

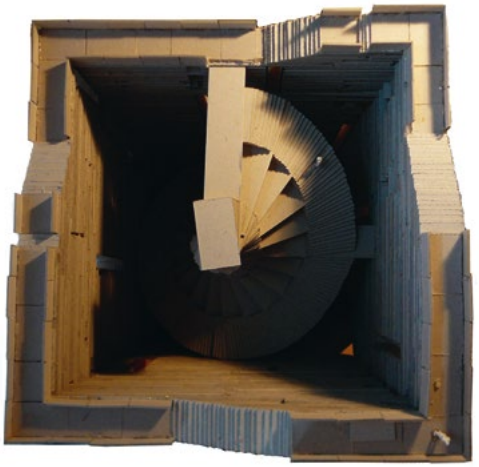
There is also a historicising approach to Superuse largely based on identifying and expressing the historical value of a material or component in the design. The application of a building component remains as true as possible to its recognisable former function. All that changes is the context or composition.



In his design for a temple of culture, Christiaan Schuit searches for a way to turn the materials that become available into a new building form that is similar to the Bijlmer blocks in terms of material technology and design. The result, in contrast to the original building, is a volume that reflects the 1970s aim of achieving greater social cohesion with casbah-like buildings. It is surprising that two entirely opposing ideologies can be designed with the very same components.

Superuse as Sport

You can also conceive of Superuse as a sport with the source materials acting as the limiting context. In this process the designer tries to resolve the mutual relations between the available materials, like in a complex puzzle, and takes these relations as the starting point for design. Often, the programme must be made subordinate to these relations, or be strongly influenced in the positive sense by the choice of materials. You could rightly describe this way of designing as 'designing in reverse'. Material dictates form, and form generates function.



Sjors Onneweer seeks one overall form in which the different dimensions and thicknesses of the concrete elements all find a place. Here the design process is the fine result of a struggle between a permanent list of ingredients and the spatial design of the programme. The strategy to keep this fully under control means that each specific element is accorded a specific function within the building. Consequently, the building becomes a poetic monument for the neighbourhood at a number of levels.

The existing is a building catalogue

The need for innovative ideas will remain as long as we do not have enough green energy at our disposal to produce all building materials in a healthy manner, and do not have any healthy way of processing waste concrete. The projects discussed in this article show the wealth of creative ideas that emerge when the freedom of choice in selecting materials is limited.
The projects illustrate that much more is possible when transforming post-war blocks of flats than simply renovating them for particular groups such as seniors, removing entire interiors, adding plinths, or any of the other common architectural transformations applied to buildings. The existing housing stock can also be considered as a catalogue of building components with which to design contemporary architecture. Mass production means that we have so much documentation available about the building components at our disposal that current and future architects will be able to handle them easily.

Kleiburg to Kijkgrijp was a design project for first-year students of the Amsterdam Academy of Architecture during the 2010-2011 academic year. The project tutors were: Arie van der Neut, Bastiaan Jongerius, Jeroen van Mechelen, Jasper de Haan and Jeroen Bergsma.

Occupant:

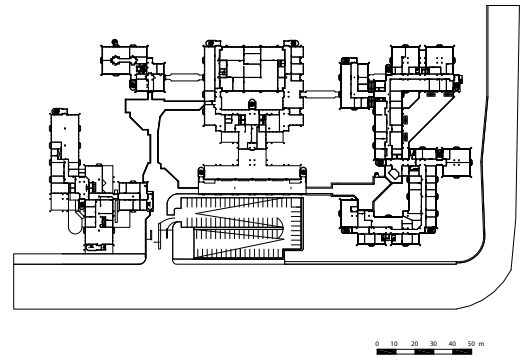
top-down versus bottom-up

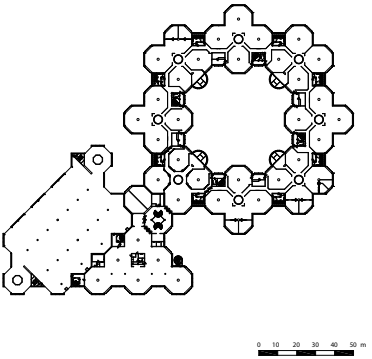
A living building for entrepreneurship

Arjan Klok

In the Woerkgebouw studio, students from the Academy of Architecture conducted design research into two vacant office properties in Amsterdam: Frankemaheerd and Basisweg 10. The spatial, architectural and structure possibilities of both buildings were analysed with a view to transforming them into contemporary complexes where entrepreneurs can live and work.

The question to be answered by the study is whether large, vacant office complexes built in the period 1960–1990 can accommodate the 'entrepreneurs of the future' by providing the ideal setting in which they can live and work. An additional objective was to discover ways to make such buildings meaningful places in the city again.





Frankemaheerd

Basisweg 10

Dealing with the existing

Architects have frequently faced the task of renewing and transforming monumental, vacant buildings in recent decades. An additional task of late has been to come up with fresh ideas for the growing number of large, abandoned office complexes built between 1960 and 1990. Vast in scale, outdated and nondescript architecturally, these buildings are usually located in dismal surroundings. Such qualities make it difficult to imagine that new occupants could ever feel at home in these structures. The challenge now, therefore, is to transform these empty buildings in such a way that they are capable of becoming places to which occupants can feel attached.

When it comes to new uses for empty office complexes, thoughts often turn to their conversion into places for start-up businesses in the creative sectors, into residential buildings or into hotels. Remarkably, one particular target group is totally overlooked: small-scale entrepreneurs who want to combine their living and working environments.

In cities like Amsterdam, there is a growing group of enterprising, small and mid-sized businesses run by entrepreneurs who live and work in a flexible manner, and they are willing to combine the two if the price is right. Prior to the 1970s, when the dogma of separating functions held sway, there existed a logical model that combined living and working, whereby the living accommodation was situated behind, beside or above the business. We can revive this traditional model in a large office complex and augment it with all sorts of high-standard shared amenities, with an improved appearance and with lots of flexible space. And all that for an affordable price.

One interesting question is whether abandoned office complexes from the 1960–1990 period can be remodelled to provide the entrepreneurs of the future with the living and working conditions they are looking for. An additional task is to discover ways of turning these buildings into important structures in the city.

A major new challenge for architects is therefore to come up with strategies for transformation and concepts for conversion that can form the basis for a fresh and appealing building full of life. Such a building must provide working environments that are both practical and representative, and living environments that are comfortable and complete. Such a building must allow work aspects, family life and leisure time to blend easily. Such a building must offer small and mid-sized entrepreneurs the benefits that come with a large enterprise set in an attractive-looking premises. Such a building must cater not only for one particular type of work but also for commercial ventures in the broadest possible sense of the term. Such a building concept must accommodate a sizeable community of entrepreneurs and have a beneficial effect on both the occupants and the immediate surroundings. In short: a *woerkgebouw*.

Woerkgebouw is a contraction of the Dutch words *woongebouw* (residential building) and *werkgebouw* (office building). It denotes a prominent, large, flexible building built in the period 1960–1990 as a company headquarters and refurbished as a multi-tenant building for entrepreneurs who wish to combine home and work life in one place.

The development of the *woerkgebouw* aims at providing the ideal living and working environment for entrepreneurs, bringing urban

life back to places where people work, and making such places more attractive and lively in the process. The *woerkgebouw* strategy aims to undo the negative image of districts such as Amstel III and Teleport by infusing them with fresh dynamism. New perspectives will open up as enterprising live-work pioneers move into areas where large, vacant office complexes offer perfect living conditions for entrepreneurship.

Large-scale vacancy in Amsterdam

For quite some time now a debate has been raging in Amsterdam concerning new functions for vacant office space. Of the 7.5 million square metres that were available in mid-2012, about 1.3 million square metres stood empty. This is 17 per cent of the total volume of office space in the city. In areas such as Amstel III and Teleport Sloterdijk, vacancy rates are even higher, at 25 per cent and 19 per cent respectively. This is an incredibly high percentage. One in five office buildings has been empty for a longer or shorter period. If you project the same rate onto the housing sector, it would signify some 10,000 hypothetically vacant homes — equivalent to an entire urban district!

Problem or opportunity?

A large portion of this empty space goes almost unnoticed because much of it is made up of partly unlet floors in small buildings scattered across the city. You could argue that this is not a problem but, in a certain sense, a positive urban condition. A high vacancy rate allows entrepreneurs to find workspace quickly at various locations in the city. What's more, a high vacancy rate also keeps rental prices down, generating ideal conditions for a dynamic commercial climate.
Much of the vacant space is, however, more problematic because of the extent to which it determines the appeal of important office districts such as Sloterdijk, Amstelveen, Diemen, Duivendrecht and Zuid-Oost, and that has a knock-on effect on the image of Amsterdam as an attractive city for job creation. In these areas, we find highly visible office complexes of between 25,000 and 50,000 square metres of floor space, built between 1960 and 1990. The former head offices of such major concerns as KPN, Sfb, GAK, Bijenkorf and Hema are currently empty or for sale.

Various strategies, among them a system of fines, relocation bans, reprogramming options and even demolition, are being considered or deployed to curb vacancy. When it comes to reprogramming, thoughts often turn to transformation strategies to make buildings suitable as places that attract upcoming businesses in the creative sectors, as residential complexes or as hotels.

Despite a number of successful examples, one can make some critical observations about these strategies. For example, owing to their location, many office buildings do not lend themselves to reprogramming. Moreover, hotel guests, house hunters, and even students and new entrepreneurs are not easily lured into office districts. The proximity of the city centre and the quality of the surroundings are significant factors in the search for new functions. The location of many of the office developments is too peripheral and suffers from poor-quality space around and between the buildings.

On top of this, the creative entrepreneurs attracted to cultural breeding grounds remain an elusive category. Partly owing to economic motives, and partly also to the sector's sensitivity to image and to 'being in the right place', they are nomadic in their work

and location behaviour. These entrepreneurs are difficult to gather in a large and uniform complex alongside competitors. Large, vacant buildings from the 1960s, 70s and 80s often fail the test when it comes to the search for an original and unique place.

A better strategy, therefore, might be to transform such a building and its immediate environment into a *woerkgebouw*, as an ideal, all-in living environment for entrepreneurs. Such an option probably has more chance of success and is socially very relevant.

Buildings as big as a neighbourhood

At the moment, there are about ten large vacant or temporarily sublet office complexes in Amsterdam. These are huge buildings, containing anything from 20,000 to 50,000 square metres of floor space — large enough to be compared to a neighbourhood of 200 to 500 homes. Two of these buildings from the 1970s characterise the architectural task, both architecturally and typologically, and related urban issues.

In mid-1974, the Sociaal Fonds voor de Bouwnijverheid (an organisation charged with implementing social security policy) moved into its new building at Basisweg 10, in the western port district of Amsterdam, close to Sloterdijk train station and a stone's throw from the junction between the A10 ring road and the S102 road. The new accommodation was designed by architecture firm Oyevaar, Stolle and Van Gool. Totalling 60,000 square metres in floor area and featuring its distinctive honeycomb-like form, the structure was a huge and characteristic building for its time. The structuralist layout of open-plan floors amounted to a statement against functionalist architecture and aimed to make human scale and experience the core issue of architecture again.

A third of the building has been vacant for a number of years now, and the current occupant plans to scale down even further and possibly even move elsewhere. The owner has contemplated various options for transformation: rent reduction, high-quality renovation, demolition and high-density new development. However, none of these alternatives has proven feasible.

In about 1977, the Heerd (also known as Frankemaheerd) became the new headquarters of a major Dutch retail concern called Koninklijke Bijenkorf Beheer. Today the building is hemmed in by all sorts of urban functions. The proximity to Bijlmer station and the almost direct connection with the A2 motorway means it is optimally linked to national infrastructure networks. The architecture firm OD 205 was appointed to design the 20,000 square-metre complex. In working on the commission for the new headquarters, the firm favoured a predominantly questioning approach to functional and technical innovations rather than an aesthetic approach. Terms such as a 'moving and breathing' complex lay at the heart of the resulting design. The brief stipulated the possibility of using the buildings individually or together.
Most of the complex has been empty for some time. Some parts are let to small-scale and informal companies. A branch of the public library is one option under consideration. Despite the low rent, attempts to let all the space have been unsuccessful.

The two case studies present a tough challenge. Although the sites enjoy easy access, the conditions in the area are less than ideal. The locations contain no residential development. Moreover, the views and the zone within walking distance are not up to the desired

standards. On top of that, the buildings feature unconventional floor plans and circulation systems, and the characteristic architecture, considered unappealing by many people, does not lend itself easily to other programmes.

Presenting unexpected alternatives

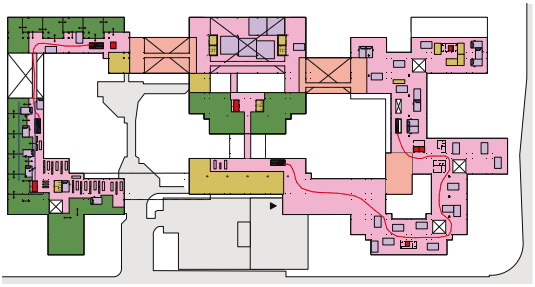
The study projects developed in the studio at the Academy of Architecture take a unique approach to offering new programmes and new possibilities for the Frankemaheerd and Basisweg 10 developments. By means of programmatic, typological and architectural makeovers, the studies demonstrate the available options for breathing new life into the large-scale office complexes in question. Each project is based on its own specific definition of 'the entrepreneur', and explores the possibilities for the building complex and its surroundings through design. With light-footed and inventive proposals, the students demonstrate in optimistic and surprising style how the buildings can accommodate the ideal living and working environment.

New meaningful relations with the context

An important finding from the studies is that, just a few decades after their completion, many buildings must establish a new connection with their surroundings. The buildings were designed on the basis of the functional and programmatic logic that prevailed at the time. Usually there was no urban context, never mind a pattern of urban life with which to connect.

The studies show different ways in which a large complex can influence its surroundings and context through transformation. In the current social constellation, which is small scale, interactive and dynamic in character, there is no place for a building that behaves as an unchanging and introverted bastion. Modern city dwellers experience such a complex as unpleasant and anti-urban. That is why clarifying the expected benefits for the urban context is a precondition for transformation. A *woerkgebouw* must engage with its immediate surroundings and passers-by in an extravert and meaningful manner.

With his proposal for the Frankemaheerd complex, Jesse de Bosch Kemper shows how a building can engage in a new way with its surrounding context. The objective of the study is to transform the Frankemaheerd complex into a striking venue that efficiently facilitates the work of small entrepreneurs and, at the same time, unites them in a building with a strong appeal. In the scheme by De Bosch Kemper, the amenities form the basis for the new organisation within the building. In addition to the amenities, the programme includes dwellings finished to a high standard.

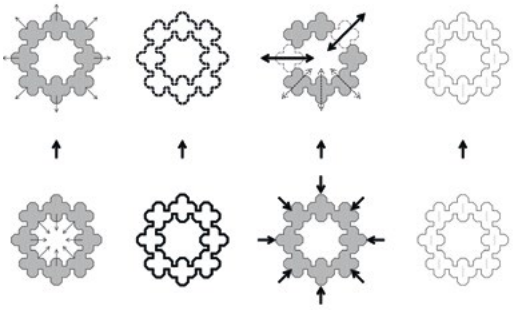


In order to create the desired sense of community and permanent interaction among occupants, the design provides a multipurpose lobby, or 'hub', on the first and second floor. The hub is also open to people from the surrounding district and is therefore significant to the wider community. Lending the former building complex the appearance of a single large entity is a neutral dark-coloured façade screen in whose architecture the lobby plays a prominent role. Other elements are discreet and neutral. The building is transformed beyond recognition and acquires a contemporary, almost museum-like appearance.

This design study shows how to deploy a limited number of simple organisational principles and an inventive façade screen to transform Frankemaheerd, situated in an undefinable and cacophonous urban context, into an inspiring and stylish attraction for entrepreneurs.

The project by Dennis Huiskens for the Basisweg 10 complex also demonstrates that adjustments to the organisation, programme and appearance of office complexes can generate a completely different, more meaningful relation with the context.

An exceptional characteristic of the Basisweg 10 complex is its location in one of the few remaining green areas in an intensively developed office park. The proposal makes the most of this advantage. The building is positioned as a green oasis for both those working nearby and the wider public.



The proposal is to develop the building for social and collective cohesion instead of as a single-purpose work environment. It benefits entrepreneurs if they can easily establish contacts and switch back and forth

between their work and home environments. To facilitate this, Huiskens has designed a building with a clear structure. It is a building with practical, open and flexible spaces for housing, office and production work. A building with a central space that functions as a throbbing heart where everything comes together and is geared to encounters and contacts.
Reorganised in this way, the building is essentially turned inside out. The most important place is the central court, which becomes the chief means of access to all floors. In this way, the interior becomes the key element of the renewed build ing.

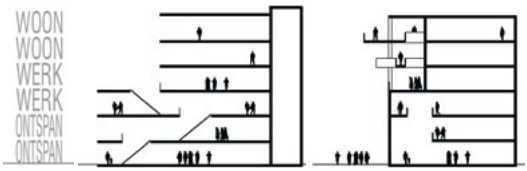
Dennis Huiskens proposes radical changes to the appearance of the building — from introvert to extrovert; oriented towards all sides rather than just one; from heavy and dark to light in all aspects. A building that is fresh and modern in appearance, and green in character.
Owing to the materials he has chosen, his building looks more like a cultural centre or school than an office complex.

The studies by De Bosch Kemper and Huiskens show that the incorporation of amenities geared to both entrepreneurs and the wider public enhances the value for both the occupants and the surroundings. A large building that meets the needs of its residential and working occupants has significant benefits for its surroundings.

The need for new appeal

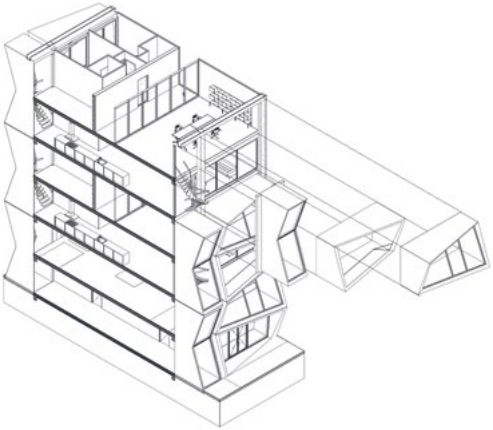
A beneficial transformation of such outmoded office complexes makes a radical overhaul of their appearance essential. Today's city dwellers have a broad reference framework and are style conscious when it comes to their everyday surroundings. Most entrepreneurs value representative appearance and want to distinguish themselves, and they want to see that reflected in their building.
The study projects demonstrate how seemingly unattractive buildings can take on a totally different appearance with relatively simple or far-reaching typological or structural adjustments.

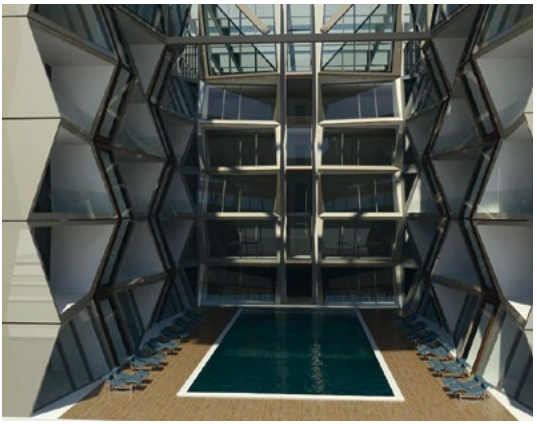
For example, Marijke van Suijdam proposes a simple yet effective makeover for the Frankemaheerd complex. Her design recommends replacing the existing façade components with floor-high glazed panels. These have the remarkable effect of replacing the dated structuralist look with contemporary modernism. In the process, the complex acquires the character of a luxury residential building.



Her design offers a simple yet effective organising principle for the complex. It makes a distinction between an 'exterior' that engages with the surrounding avenues, and an 'interior' grouped around green courts. Access at ground level and between the floors and the collective spaces is oriented towards the interior. The lower two levels cater for entrepreneurs and boast a programme geared to amenities and relaxation. This is the focus of life inside the building. The courts are not only green spaces for occupants to admire but are also interesting for passers-by and visitors. The third and fourth levels feature flexible floor plans with a wide variety of workspaces. Private workspaces and related facilities are housed in block-like volumes, while other activities take place on the open-plan floors.
All of this allows the complex to respond to a definition of contemporary entrepreneurs based on their efficient combination of working and living, their focus on 'green', and their desire to live both together and independently. They are entrepreneurs who are conscious of style and quality, and they value an address with an identity all of its own.

While Marijke van Suijdam lends the Frankemaheerd complex a new character with relatively simple alterations to its section and façade, Andrew Page goes further. For him, Frankemaheerd has the potential to manifest itself with unique typological and architectural qualities. His study shows how a few dynamic interventions, such as the addition of a roof over the entire complex and a three-dimensional façade screen, can turn an uninteresting place into one of distinction in its context. The roof creates a unique space: a covered plaza in the central area of Amsterdamse Poort. Offering this condition amounts to an invitation to the public in the surrounding retail and education areas to visit the complex.





Besides the roof, the complex acquires another distinguishing feature: a strongly three-dimensional façade screen. This expressive screen can be interpreted as a personal statement against the often minimalist architecture of large-scale office complexes.

Thanks to its unforgettable and spectacular appearance, the proposed façade addition ensures a sense of place-making.
Located between the parking level and the roof are four levels of live-work units, each of which extends over two levels in the form of a maisonette. That makes it possible to give each live-work unit two entrances, one on one side of the corridor providing access to the living area, and one on the other side of the corridor providing access to the work area within the unit. As a result of this arrangement, the maisonette can also be turned into a home in which partners or family members have a more or less independent lifestyle.

Besides their fascinating architectural makeovers, these projects demonstrate how the addition of outdoor spaces and roof terraces can transform a large-scale corporate headquarters into a 'place where people gather'. The roofed structures encourage the use of the inner courts and, hence, enable the complexes to make a leap forward in terms of boosting their appeal.

Balance between large-scale and individual character

When transforming a large-scale headquarters, it is important to give the buildings the character of multifaceted and lively venues that can accommodate entrepreneurial individuals and small-scale collective entities. The abstract, anonymous and cheerless atmosphere of the former strongholds of gigantic concerns, brands and institutes is no longer satisfactory. A similar challenge presents itself when it comes to the floor plans and means of access. In the transformation process, plans and sections need to create an agreeable degree of distance between the living, working and recreational functions. The large floor surfaces provide an opportunity to find the right balance between space for the individual and private domain, and space for the collective and public domain.

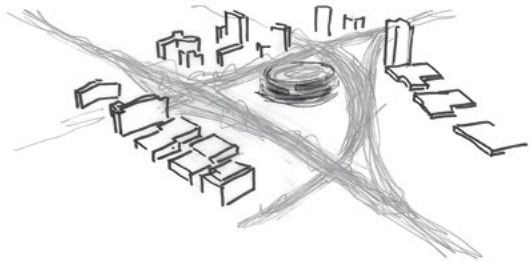
Jeroen Schoots' proposal to transform the Basisweg 10 complex attempts to find the perfect balance, in terms of both organisation and appearance, between the scale of the individual and that of the collective. Moreover, he offers entrepreneurs their own recognisable space within a larger collective.

The building is no longer organised around a main entrance but features entrances of equal status on all sides. This makes it possible to use the access and opening times in a flexible manner.

The building is not solely tailored to small-scale tenants. Rather, it provides spaces where larger businesses can locate too. The organisation and use of the complex are flexible and varied. Each entrepreneur has the use of a basic module and also the freedom to work in other parts of the building.
Essential elements in the arrangement of the floor plans are the 'voids' and the 'basic modules'. The large, spatially appealing voids divide the floors into two zones, an inner and an outer ring. Located on the inner ring to one side of the voids are the expressive basic modules containing the individual work spaces. Positioned behind each basic module are the living quarters of the entrepreneur.
To enhance the building's appearance, a new zone is added beyond the façade. This zone contains flexible work places as well as collective and public amenities.

In this design, the building is effectively transformed to create an attractive interior, and the appearance changes from an abstract, dark sculpture into a varied live-work building for multiple tenants with an extrovert, small-scale, legible and lively façade.

While the project by Jeroen Schoots expresses the individual in both the interior and exterior, Mindaugas Savas sets up an extreme contrast between exterior and interior in his project for Basisweg 10. In a monumental and extrovert way, the exterior engages with the surroundings, which are dominated by infrastructure and flows of people passing by, while the calm zones inside are distinguished from the private domain by clear transitions that are subtly indicated by materials.



For Mindaugas Savas, the most important characteristic of modern-day entrepreneurs is that they seek opportunities and embrace risks. Savas proposes converting the building in such a way that it draws on these two personality traits. What is crucial to opportunity seekers is that they prefer a direct and open relation with their context. For Savas, a *woerkgebouw* must be dynamic, open and extrovert in order to generate a multitude of conditions, occasions and ideas. Those willing to take risks find it important to feel at ease, confident and encouraged.

The project by Savas amounts to a typological and aesthetic upgrading of the building in which the infrastructural position and public space are his chief considerations. At the time of its construction, the monumental-looking fortress on the desolate expanse of the new office district provided a protected environment for the working communities of office clerks. Mindaugas Savas' proposal makes it an open building that responds to and seeks contact with its dynamic context.

The vast ring-shaped floor plates are divided into two zones and thus adapted in view of the combined use by residents and workers: an open and extrovert zone on the outside and a closed, introvert, small-scale zone on the inside.

To lend the building a contemporary aesthetic, a round façade is fitted on all sides. This is positioned at some distance in front of the existing façade. This is a practical choice because the current outer façade cannot be structurally altered. The new exterior ensures the desired architectural appearance whose sought-after qualities are dynamism, openness and a relation with infrastructure. The original outer façade becomes an interior wall, and the resulting space between old and new façades creates extra floor space.

The projects by Schoots and Savas show that two strategies can meet the needs of small-scale entrepreneurs. One strategy is to make the building appear modest. The second is the very opposite: turn the building into a landmark and dominant eye-catcher that acts as a context generator with transformative capacities. In both strategies it is essential that the users are explicitly offered a private environment, a domain of their own.

The convenience of the woerkgebouw

Besides facilitating small enterprises with ideal working conditions and spaces, the most striking aspect of the studies is the introduction of 'new-style homes attached to work premises'. These are homes designed specifically for entrepreneurs for whom living and working are inseparable and who have no objection to living in an office district. After all, this is their place of work, and they are surrounded by like-minded people.

The large buildings offer the possibility to make homes that compensate for the lack of qualities — garden, tranquillity and appearance — offered by a traditional home. These are high-quality, spacious and comfortable homes with more outdoor space than usual, with atriums that can be used all year round, for example. The homes enjoy a wide variety of shared amenities that raise the quality of living to that normally attainable only in a luxury hotel. In short: qualities that make the life of an entrepreneur easier.

The greatest benefit that comes with the transformation of a large office complex into a *woerkgebouw* is perhaps the spacious dimensioning of the building's structure. This important quality makes it possible to create spacious living spaces. In addition, the large spans make it possible to design residential and work units that are extremely flexible and easily altered. Whereas the majority of housing developments feature elongated units, five or six metres wide and ten to twelve metres deep, large office complexes offer more versatility and size when it comes to dimensioning spaces. The dimensions of housing depths, floor heights, size of entrance areas, and widths of corridors and galleries: all are above average. A *woerkgebouw* is a spacious building!

Time for a new mindset

Many obstacles of a political, psychological, administrative and financial nature must, of course, be overcome in order to transform any of the large office complexes built in the 1960s, 70s and 80s into a *woerkgebouw*.
Current planning restrictions for living in office districts, for example, need to be relaxed. People should be given the freedom and responsibility to settle in these areas if they so wish, just as people are free to settle in the traditional busy areas inside the motorway that encircles the city. Owing to the scale of the office complexes awaiting transformation and their typological and technical potential, every possible 'interior climate' can be created. With their design studies, the students implicitly assert that people, and certainly entrepreneurs, should be allowed to decide for themselves the conditions under which they wish to live, and the students argue that many contemporary housing demands can be achieved, or compensated for at least, in large buildings.

Moreover, without any drastic depreciation in property values, the projects discussed cannot be realised fully. This is probably a question of time, since there are not too many alternatives for these huge office buildings. A proprietor or investor who has written off the investment can start to make profit again after its transformation. The municipality should also make a contribution: undeveloped sites and vacant structures in office districts can no longer continue as money spinners for other city projects. Rather, there is a pressing socio-economic necessity to invest in the office districts themselves. Investing in redevelopment projects solves two problems at once: it creates a new type of residential environment and breathes new life into office districts.

Under these conditions, complexes such as Basisweg 10 and Frankemaheerd can once again become landmarks that bring a new lease of entrepreneurial life back to these districts in contemporary fashion.

The studies also make clear that projects of this sort demand a new mindset and design attitude from architects.
Without being presented with a commission whose contours have already been drawn, the architect of the future must be capable of defining a topical programmatic concept that directly reflects the needs of society, and of penetrating all the spatial and social facets of this concept. The architect of the future must draw on deep reservoirs of imagination to quickly assess and indicate whether an existing building has the potential to be transformed into an entity with an attractive, alternative programmatic concept. The architect of the future must be capable of providing insight into the possible spatial, functional, and psychological value and significance that a transformation can offer for both a building's occupants and its urban context. The architect of the future must be able to present inventive, practical and feasible architectural proposals to give an existing building a new purpose and personality effectively, radically and sustainably. The architect of the future will be involved in a continual process of searching for opportunities of a programmatic, spatial, architectural and structural nature.

In short, the architect of the future must be able to deal with what exists without a clearly formulated commission. He must continually generate ideas and opportunities, not only with his office but also with every project as an enterprise!

Woerkgebouwen was organised by Arjan Klok as a design project for third-year students of the Amsterdam Academy of Architecture during the 2010-2011 academic year.

WWWinterthur

Gert Hage

In mid-January, a quiet and wintry Prinses Irenelaan in Amsterdam suddenly came to life. That was when more than one hundred students from the Academy of Architecture took over a large, vacant office building located on the edge of Oud-Zuid, a tranquil and elegant neighbourhood, and the Zuidas, the business heart of the Netherlands.

The Zuidas offers employment to some 40,000 highly educated and very well-paid people. The students drew up an inventory of ideas and wishes for and from the neighbourhood, and then assessed and translated these into plans and visions, unhindered by any limiting conditions. Just imagine — this was the idea behind the Winter Workshop — that you gave a vacant office building back to the neighbourhood, that you and local residents had to come up with a new use for the building, without having to consider any zoning plans, financial constraints or other obstacles. What would you do with such a building? What needs could it fulfil? How could a prospective architect interpret those needs and wishes?

The theme of the workshop was highly topical, given the vast amount of vacant office space in Amsterdam. Something in the region of 1.3 million square metres, some 17% of the total volume of office space, currently lies empty. The problem is not so severe on the Zuidas. Vacancy there is limited to roughly 6%, in contrast to other districts like Amstel 11 (25%) and Teleport (19%).

One of those vacant office buildings on the Zuidas was once home to Winterthur, an originally Swiss insurance company bought by SNS Reaal in 2008. For the past few years, the building has been owned by property developer Breevast, which is at its wits' end what to do with it, as Mark Brentjes of Breevast explained during a discussion with students on the first evening of the workshop. That is not down to any lack of demand for office space on the Zuidas. Despite the crisis, the area is a popular location for multinational firms, for whom the proximity to Schiphol and the presence of a large number of legal and financial service providers carries great weight. Nothing the matter, therefore, with the location of Winterthur. The problem, rather, is that while it may not be such a poor building, it no longer meets the requirements set by tenants. It is too low, it contains too few parking spaces, and — most importantly — it is not a sustainable building. Brentjes decided that for all those reasons, renovation is not a paying proposition. But what then? That was the question posed to students.

The severity of the vacancy problem has put the subject of transforming buildings high on the local government agenda in Amsterdam. Again and again, experts point out worryingly that no new tenants are likely to be found for many of the vacant properties, at least no tenant for traditional office functions. It is, in short, a problem that won't go away soon, certainly not on the urban periphery. The problem is less extreme in other parts of the city, including the centre, because of the strong growth in the knowledge economy and the creative sector. The well-educated service providers and creatives that are gradually coming to dominate the Amsterdam economy no longer want to be locked up in glass cages located on windy office parks. They want urban life and places of encounter. Living, working and leisure merge seamlessly with one another for this new breed of

knowledge workers. They want to live where they work and work where they live. The city is their office, certainly for the rapidly growing group of freelance workers. That explains why the demand for small, flexible office spaces is greater than the supply. Building vacancy is therefore not only a structural but also a qualitative problem. Supply and demand are out of sync with each other. 'The market calls for multifunctional, attractive areas that are easily accessible, by public transport too. But the supply is made up largely of massive office complexes in monotonous areas outside the motorway that encircles the city,' noted the city's department of planning in its 'Plan of Amsterdam' policy paper issued at the start of this year.
The city centre meets the market demand. Efforts to transform vacant office structures there into places that meet the wishes of the creative and knowledge industries have been partly successful. The Bank on Rembrandtplein, ABN AMRO's former head office, was turned into a multiple-occupancy building; De Bazel bank building on Vijzelstraat is now home to the City Archive; the former Achmea office on Molenwerf is now an apartment complex; the Shipping House on Prins Hendrikkade is a five-star hotel; and — to mention one more example — the Trouw building on Wibautstraat now houses a contemporary venue for cultural events. The city authorities have even established their own 'transformation team' to guide property owners through the labyrinth of regulations when converting office buildings into structures that accommodate other functions.

To date, the Zuidas has also managed to steer clear of the malaise that has hit the office market in Amsterdam. The Winterthur building is one of the very few office buildings that have remained unoccupied for a number of years. That is until it found a new, temporary lease of life as an educational building for the Academy of Architecture. On the morning of Friday 13 January, students moved into the premises for the winter workshop entitled 'Neigbouring an empty office'. The first two days were devoted to a study of the surroundings, while the days after that were spent thinking and developing a new future for the Winterthur building. But that very first day the fire brigade threw a spanner in the works when it declared the building unfit and ordered its immediate evacuation under penalty of a fine of 20,000 euros. This was even further proof that the thick web of regulations that govern the planning process can stand in the way of new initiatives. But the nearby Church of Saint Thomas offered a solution, at least for the first evening. This charming place of worship, designed in the early 1960s by architect Karel L. Sijmons, opened its hospitable doors for the planned discussion between Mark Brentjes of Breevast, urban designer Hans van der Made, who was closely involved in the development of the Zuidas for a decade, and Pastor Ad van Nieuwpoort of the Church of Saint Thomas.
Chaired by Jord den Hollander, the discussion started with Van der Made,

who outlined the development of the Zuidas, a place that, as he emphasized, is ruled by the world of big business, a world in which efficiency and certainty are paramount. 'The construction of a new office building is generally more cost-effective than the transformation or conversion of an existing building.' Mark Brentjes nodded in agreement. 'It would not make economic sense for us to renovate the Winterthur building. Businesses want an office that is modern and sustainable, and they don't want to have to share it with other occupants. Meeting those demands requires such a radical renovation that new construction is more profitable.' Other possibilities, such as temporary use or a possible combination of living and working, are now being studied.

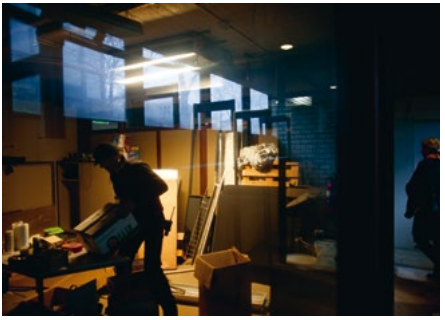
The first thing that struck Pastor Ad van Nieuwpoort after his appointment to the Church of Saint Thomas in 2004 was the level of animosity between residents and service providers along the Zuidas, or as he put it, 'between the yuppies and the pensioners'. He resolved to bring the two divided worlds together, with the church acting as mediator. And he succeeded. More and more yuppies now find their way to the church in search of reflection and meaning in a world that moves at a hectic pace and is dominated by money.

That was the message impressed upon the minds of the assembled students that evening. And over the course of the week, it turned out that these edifying words had left an indelible mark on the students.

After some alterations were made, Winterthur was accessible again a day later, albeit under the permanent supervision of three members of the fire brigade. The students, divided into ten groups, were then able to get to work and turn their analysis of the neighbourhood and the building into proposals to transform Winterthur. Everything was permitted, and no obstacles stood in their way. There was no brief, no restrictive zoning plan, no difficult profit targets. The only requirement was that Winterthur should become an integral part of living and working on the Zuidas. In other words, the new function had not only to respond to the social context of the neighbourhood but also to add value to it.

As the week progressed the direction became clear. The various groups were thinking along the lines not so much of buildings but of spaces. The power of imagination did the rest. The students built, painted, wrote, cooked and filmed. They knocked on the doors of neighbourhood residents to ask if they could use their kitchen. They dragged other residents into an improvised TV studio for an interview. In fact, the building throbbed to the sounds of activity, very much like the Zuidas itself. But whereas the glass towers are the setting for lucrative deals, cut-throat competition and a stringent work ethos, the students in their projects concentrated on intimacy, relaxation and interaction. In their eyes, the future of Winterthur lies not in dynamism and moneymaking, but in the small scale, contemplation and silence. The students transformed

the building into a wellness centre, a golf course, a lush garden, a meeting point for the neighbourhood, a TV studio and a market hall. The focus of most projects lay on people, not on their purses. Pastor Ad van Nieuwpoort was no doubt a happy man.

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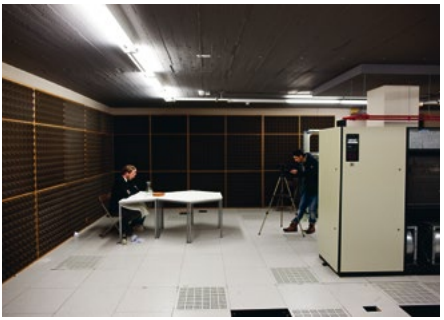

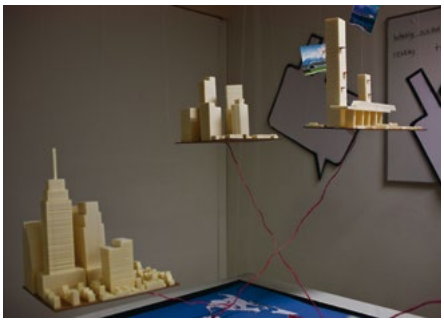

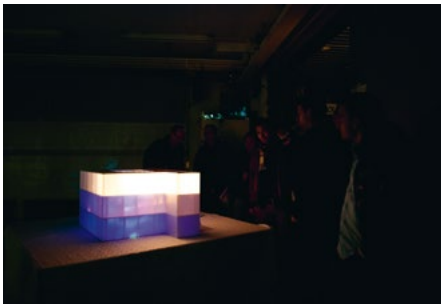

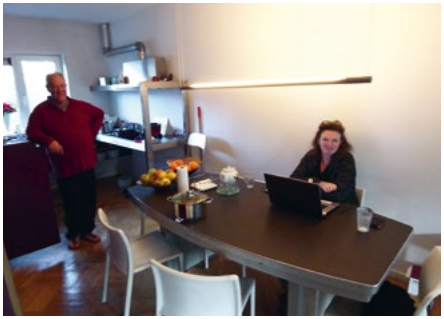

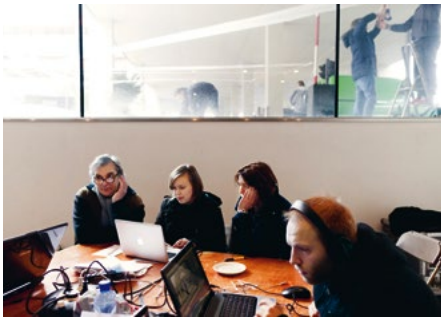

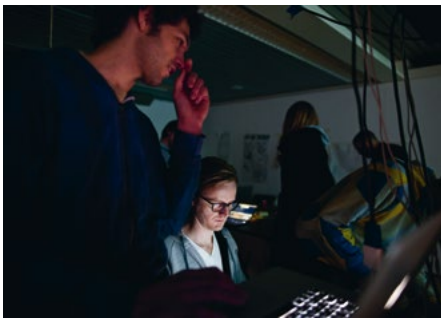


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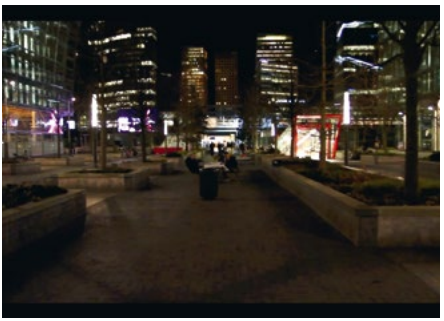
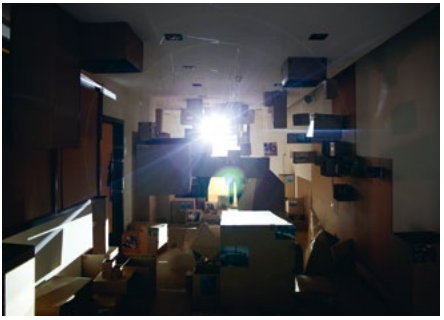



WHO'S YOUR
NEIGHBOUR?


TRACK
ME



A home is a reading room is a hotel is a home: the Institute for the Global City

Jan van Grunsven

The 'building itself' is not the objective of this project. Although my reflection on 'the making of a building' has produced numerous studies, texts, diagrams, spreadsheets, maps, plans and models, the *single* building, the *final* solution, the object in which everything comes together, is absent. I prefer to speak of the many buildings that are implicit in this project, of the differences in approach, of the realisation of what is forgotten, of the discontinuity, of the inconsistency and ensuing confusion, while it's still possible.
Within the limits of academic freedom I wanted to engage with what architectural practice does not seem to do (or no longer seems to do): design as an interrogative process independently of any institutional investment practice.
See it as the expression of architecture that displays its value in establishing connections, in exchanging knowledge, in enlarging sociability, in offering possibilities for identification; architecture, which formulates its programme in dialogue with society, and bases its means and ends on that.

The project has its roots in 'the contemporary city', the city that has adapted its features and conditions to the information age. In this city the equally crucial and irreversible developments of the past decade, the connection between public and private, between individual and community, citizen and society, have changed radically. Now that the classical construct of spatial continuity, with its clear distinction between inside and outside, has crumbled at an unprecedented rate, the linear connection between space, time and action has also fallen away. With this project, I attempt to account for these changes in my way of working, in process and result.

Unlike the convention in which an architectural design is always the prior representation of what does not exist (or at least not yet), this endeavour testifies to a project that unfolds in the 'here' and 'now'. The *operative moment* I have sought in the interplay between orientation, theory, design and attitude, brought into the present through words and pictures in a lecture and exhibition respectively.

To anybody who sees in the above an unrealistic or utopian aspiration, I gladly repeat the words of the philosopher Vilém

Flusser, who writes the following in the introduction to his book *Into the Universe of Technical Images*: "*Utopia* means groundlessness, the absence of a point of reference. This essay is to be read not, or not primarily, as the projection of a fantasy into the future but rather as a *critique of the present*."

Orientation: the meaning of the local

1) Globalism presumes a strategic and cross-border geography, in which the global is constituted through multiple 'locals', each with specific features. The accumulation of knowledge, information and exchange so characteristic of the metropolis demands new forms of connectivity: an interaction environment, an interstitial space, a *heterotopia;*

2) The irony of globalism is that it shows us the economic advantages offered by a jump in scale (export and growth), while the 'big scale', in turn, highlights the importance of 'local issues' in response to 'global threats' (including climate change and the resulting collapse of the ecological system). Solutions for this, should they even exist, tend towards an 'intensification of the local', for example in the form of urban agriculture as a contribution to daily food production, or the calculation of the 'embodied energy' in the products we use and the choices we make on the basis of this;

3) Globalism cannot so much be recognised in the generic condition of 'sameness everywhere' (the same worldwide market formula; uniformity in clothing and behaviour, irrespective of cultural differences), but rather in the very opposite: in the special and the exclusive, in the hyper-subjective and individual.

The question, however, is whether architecture is in a position to engage with something like 'the global condition'. The reservation that this question expresses is justified. Architecture cannot measure up to something that exceeds it in terms of scale, omnipresence and importance.
The question, therefore, is not whether architecture can be the *representation* of 'the global condition'. There is a danger that a 'representation' will not get much further than a formal, decorative analogy in which 'the global' is simply depicted,

imitated with the signs of an 'international style', such as we encounter at airports, or in the lobbies of international business hotels.

Why not consider whether 'the global condition' entails a view that architecture can 'emulate'? After all, 'condition' in this case means something like 'state' or 'situation', and that demands more of an attitude, a way of thinking and acting, than a way of *representing*. It will then be apparent whether, or to what extent, 'the global' can be negotiated in the object of architecture.

Motive and location

The INSTITUTE FOR THE GLOBAL CITY [IGC] is an internationally dispersed institute of knowledge that sees thinking about the city in a global world as a structural aspect of the development of the city and its architecture in a local perspective (no matter where in the world). It links theory to practice, research to design, laboratory to business, dream to action. Two questions in particular merit attention here: what does 'the global condition' mean for the contemporary city and its architecture? Within that, where and under which conditions can one (still) speak of 'the collective'?
Introvert by nature, the IGC also presents itself as a podium, which shares the knowledge gathered and developed with interested parties at home and abroad, via a constant stream of publications, exhibitions, events, symposiums and debates. In respect of its own role in the entire process, the IGC accounts for its activities by means of 'feedback meetings', under the watchful eye of the public.

My proposal is to establish the IGC at three locations, eight meridians distant from one another according to the time scale of Greenwich Mean Time. When the previous day's research recommences in the morning at one of the locations, the other two offices will have taken this research further during the intervening 16 hours. I chose the cities of Amsterdam, Hong Kong and Seattle — numbers 5, 2 and 6 respectively on the Forbes list of 'smart cities', and representative to a greater or lesser extent of the European, Asian and North American metropolis. For the further development of this project, I decided to limit myself to Amsterdam, with my preference

for a site based not on the obvious choice of the Zuidas — too 'corporate', too much an 'illustration' of metropolitanism, allied too closely with the financial sector, too poorly representative of 'the social' in a broader sense — but the Bijlmer.

The Bijlmer: icon of belief in the ability to shape the collective and the City of the Future; themes that reflect the core of the IGC like no others; icon of an internationally branched social thinking that, thanks to the claim of universality, would have known anywhere how it had to house its population; icon thanks to the cultural and national diversity of its residents, who hail from some 160 countries and connect with just as many home situations somewhere else around the world.
The Bijlmer: without doubt the most cosmopolitan district of Amsterdam, although it never succeeded in turning this into a positive identity.

With the availability of the Kleiburg block of flats, the possibility arises to actually make the Institute for the Global City part of the emblematic hexagonal grid (or what remains of it), a structure whose fame reached far beyond the country's borders, and that is even visible from the moon, or so it has been claimed, although this is not true.

Cell

"The architecture of the metropolis depends essentially on the solution given to two factors: the elementary cell and the urban organism as a whole. The single room, as the constitutive element of the dwelling, will determine its appearance, and since the dwellings in turn form the blocks, the room will become a factor in the urban configuration, representing architecture's true goal. Reciprocally, the planimetric structure of the city will have a substantial influence on the design of the dwelling and the room." (Ludwig Hilberseimer, *Großstadt Architektur*, 1927).

Hilberseimer is radical in his postulation of the reciprocity of principle and result, the logical consequence of his idea of 'the urban organism as a whole'. Reduced to a diagram, his 'city machine' reads as follows: it is the task of architecture to assemble elementary cells to form an urban configuration in

which the cell as 'object' disappears; in its turn the city taking shape is able to readjust the formation of the cells that are assembled by architecture into ... (ad infinitum, as a result of which Hilberseimer, at the same time, formulates the end of an architecture that is the product of the subjective design preferences of the architect). "As great masses have to be shaped according to general law, dominated by multiplicity in which diversity is kept under control", Hilberseimer writes, "the general case, the rule is emphasized while the exception is set aside, the nuance obliterated. Measure reigns, forcing chaos to become form, logical, univocal, mathematical form."

Objections are conceivable, and there have been many. A first objection, and perhaps the most fundamental, argues that Hilberseimer designs the blueprint for a city as it must *become,* but neglects the city as it *is.* Where Hilberseimer speaks about the necessity to control chaos, Aldo van Eyck (Team 10) retorts with: "Cities are chaotic, and necessarily so. Order has no other function than to make what is chaotic work."
A second objection resists the 'principle of equality' employed by Hilberseimer, bringing diversity under control, the erasing of nuance. As people we are equal, according to the Geneva Convention, but not in terms of descent, culture, knowledge, talent, wishes or desires, not if thrown back into our most everyday sense. The mutual differences are too big to be squeezed into one single common mould.

It is evident that the lack of diversity in the architecture of Hilberseimer, and that was defining for so much post-war architecture, can no longer be the expression of our society centred on the individual and the diversity of cultures that it contains. But it's too easy to see in Hilberseimer's ambition of 'uniformity', a fundamental lack of freedom, or worse: a model of repression. On the contrary, his contribution, which cannot be underestimated, is that he saw the construction of 'the dwelling' essentially in line with 'the organisation of the collective'.

More than from the 'current bliss of the new' in which we recognise the false and ever unfulfilled promise of the free market, the reciprocity of the city and cell speaks of a sincere engagement with the lives of people, which many unjustly identify with the apocalyptic vision with which Hilberseimer brought his Großstadt to attention.

Typology

Kleiburg was designed by the architect Frans Oppenhof, and built under the auspices of the Intervam firm of building contractors. Except for the lowest two levels that were poured on site for the sake of stability and loadbearing capacity, it is a fully predesigned and coercive prefabricated construction system, which consists of concrete components and timber frames. Loadbearing walls are single leaf and 180 mm thick; floors are 140 mm, exceptionally thin by current standards. Consequently, the spans are also short, alternating 3 m and 4 m; pipes and sewer systems are exposed. The brackets that support the galleries and the balconies are filled and form cold bridges, while the galleries and balconies themselves are separated from the interior floors by a layer of insulation. It is the only insulation deployed. The façade is made of wooden panels and single glazing. The main loadbearing structure of the building permits no flexibility. Each wall you want to remove creates a structural problem.

The IGC provides studio spaces for design research (LAB), study facilities for PhD students, an archive for storing research data, office space, exhibition space, service areas, a depot, a library/mediatheque, a reading room, an auditorium, one or more restaurants, one or more bars, a hotel-cum-guesthouse, a roof garden.

Looking at the Kleiburg block of flats, you see on each level a succession of dwellings (cells) juxtaposed, oriented perpendicular to the long axis of the building. The dwellings are entered from a gallery, accessible by stairs and elevator. The brief called for an institute, with spaces that exceed the surface area of the individual dwelling (cell).

Kleiburg's rational layout and generic main loadbearing structure give rise to a typological experiment. Not suitable to offer space to the conventional typology of an auditorium (or library, exposition space or restaurant), the assembly of cells can be investigated according to what makes them *unique*, as if the auditorium was concealed within.

In terms of surface area, the Kleiburg block is three times bigger than what is necessary to accommodate the IGC programme. The neighbourhood makes use of the excess space by providing for

small businesses and dwellings. The number of cells reserved for the IGC is not determined in advance and is principally unstable: where there was once a demand for dwellings, there might now be a need for a reading room, an office or indeed a hotel.
Respecting the main loadbearing structure while incorporating typologies that are not particular to the gallery-access block of flats makes it possible to take over cells or 'give them back' instead, depending on what the situation demands at any moment in time.

An office is more than a collection of work spaces; it is also a place to discuss and exchange information, in meeting rooms intended for the purpose or informally, at the coffee machine in the pantry, the photocopier upstairs or the printer at the end of the hallway. An auditorium is more than a place for debate between guests at the table, or between the guests behind the table and the people in the audience. Ernst Neufert is not right. An efficient use of space is not only a matter of linking functions to square or cubic metres but also about how people behave in response to space and whether or not that contributes to the essence of the organisation.

Spatial and temporal disposition: the interstitial (cut to:)

In 1974, for the exhibition 'project 74' at the Kunstverein in Cologne, the American artist Dan Graham displayed the work *Present Continuous Past(s)*. Graham is best known for his performances in which he reflects on the role of the media. Or, to put it more accurately, in which he makes the public aware of the effect that the media has on how we behave. Graham does this by making *the activity of perceiving* reflect *the subject of perception* (that which is perceived). In the work *Present Continuous Past(s)*, it is not the artist as performer who forms the focal point of the work, but the performance by and through the public. The work consists of a square room measuring 3 x 3 m with a height of 2.50 m, with an entrance in one of the four sides. Two of the four walls (the wall opposite and the wall to the left of the entrance) are covered entirely with a mirror. In the middle of the wall to the right of the entrance a monitor is positioned and above it, at eye level, a round hole with the lens of a video camera behind it.

Graham writes about the work: "The mirrors reflect present time. The video camera tapes what is immediately in front of it and the entire reflection on the opposite mirrored wall. The image seen by the camera (reflecting everything in the room) appears eight seconds later in the video monitor (via a tape delay placed between the video recorder, which is playing the recording back)."
A person viewing the monitor sees both the image of himself or herself of eight seconds earlier *(= past 1)*, and what was reflected on the mirror from the monitor eight seconds prior to that, 8 + 8 = 16 seconds in the past *(= past 2)*, measured from the moment the person looks at the monitor *(= present continuous)*.

In this work, the visitor is both observer and performer at the same time. Performer of behaviour that the work activates in a playful manner, observer of both the performance and the way in which the work 'works'. It is tempting, when you find yourself alone, to pull faces in front of the camera, to jump around or behave differently in some other way, and then to look at your previous self on the monitor as though you were someone else: you, observer, actor, performer. The work is as playful as it is merciless in the way it generates feedback about the working 'system'. So there you are, relishing the memory of your own uncontrolled movements on the monitor, and then suddenly there is someone standing next to you, a visitor you did not hear enter.

Imagine there is a conference taking place at the IGC in Amsterdam, a live broadcast in which the sister institution in Seattle joins the discussion in Amsterdam via Skype. And imagine that this conference becomes the launch pad for a plan to create different units or places scattered across the globe where people can come together and where they can interact with one another during the conference. You could then speak of the creation of a collective, a *multiple* collective, that has the *interstitial* as its defining feature, that manifests itself in different connections, at different times, around the world, and where physical distance is bridged by virtual presence (in this case Skype).

In this new reality conventional geographical data is of little value; the geometric city has become a topological city. By formulating 'distance' (to the other space, wherever it is in

the world) as 'a degree of proximity', new media enable us to dramatically extend the use of space and scope of experience of a conventional typology. Media convey the opportunities for a contribution to the *re-enactment* of a (multiple) collective, beyond the spatial and temporal *disposition* of a global world. Common ground is no longer geographically limited. (Likewise, the same applies to *identity*, *origin* or *the authentic*.)

Design (1): Détournement

Rémy Zaugg is a Swiss artist. In Zaugg's work the foundations of painting, perception, as well as painting itself, are subjected to ceaseless introspection. Language plays an important role — language as writing, language as image (visual language). In 1987 Zaugg stays for a period of a year at the Künstlerhaus Bethanien in Berlin. There, in the silk-screen printing office, he works on a large piece entitled *Réflexions sur et d'une feuille de papier* ('Reflections on and onto a sheet of paper'), which consists of 138 different sheets and 199 footnotes. The silk-screens thematise more than anything else 'the question of painting', the context within Zaugg speaks of a 'novel' about 'the history of painting'. The analogy with the novel is illustrated by the way the work is systemised, by dividing it into different chapters, a total of 27. I am interested particularly in chapter 8: *Divagations sémiologiques* ('Semiological detours'). I am quoting here from a publication devoted to *Réflexions sur et d'une feuille de papier*, which accompanied an exhibition of the same name in Antwerp in 1990: "The sheets, 8 of them altogether, look like printing errors. They summarise the themes of the first seven chapters, but do not seem to show the clarity of a particular aspect. Unless confusion itself is its theme."
In this chapter Zaugg seems to be deliberately heading for failure, or at least for the *image* of failure. Parts of chapters that still have to come are printed on sections from chapters that preceded them. This results in overlaps and a complex density of information, which remains open to chance as an *image*, but is subject to the direction of the artist. The image of the misprint is therefore misleading. The misprint is a deliberate attempt to show that the work has no end; every final page of a chapter only marks the point where the artist stopped, and is not an end point. Everything depends on possible images and on possible perceptions of images.

"Whoever makes a design, whether it be a building, part of a town or a park, is basically concerned with a given program and a location or site. The program can be fixed beforehand or determined as the design progresses. Much the same applies to defining the site … Finally, designs must satisfy conditions of usefulness and construction … Knowing how to fulfil all these requirements and expectations is one of the main problems facing designers with each project." (Bernard Leupen. *Design and analysis*, Rotterdam 2007, p.13).

Designing means changing, altering or adding to the existing, and if it's at all possible, enhancing its quality. We speak of a good design when the situation improves as a result of the design, of a bad design if we consider that is not the case. Designers impress upon us that they solve a problem with their design. Designs are useful. Proposals for the IGC, as outlined already in this text — the interaction environment, the informal space of action or the space in between the actions, the spatial and temporal *disposition*, the interstitial, the space for communication and exchange, the space for connecting or being connected to – they are all in harmony, to a greater or lesser degree, with the conventional view of what a design is intended to achieve. They are useful, to the extent that they are capable of modifying an existing typology (the dwelling) into a typology desired by the IGC (the auditorium, the reading room, the library).

Rémy Zaugg is an artist, not a designer. Zaugg does not solve problems; Zaugg raises questions. His questions concern perception, and the actions that he connects to his perception. In other words, he poses questions about the things he makes as an artist. Therein lies the value of what he does. That too is useful, even if it is another sort of usefulness, the significance of which is difficult to determine.

Under the title 'Détournement' a number of proposals are being made for the Kleiburg block, in which the intervention aims to abstract or probably 'undermine' *function*. The title is taken from a technique that was deployed by the Situationists, and before them by the Surrealists. With the détournement, one attempts to liberate the existing from the suffocating grasp of convention, by bringing the elements of a system into action against themselves. In the case of the Kleiburg building, the

proposals are a matter of relatively modest operations. It could be that no doors are incorporated into the revamped glazed façade, that the internal passageways in the apartments are closed off, or that a gallery balustrade turns the corner before it reaches the end of the building, hence blocking the passageway. In all cases, a section of the building is rendered inaccessible, taken out of normal use. You can interpret the détournement here as a strategic reservation for later: the building has already been assigned to us; allocating a function to it is not yet an issue. We are accustomed to thinking in that way. It is more difficult to accept these interventions as they are: their nature lies in the *lack of function*, in evoking an *opposing image*.

Design (2): A room for Saskia Sassen

The Bijlmer — it was once said to be 'as strong as Stonehenge' — is branded in the collective memory of the Netherlands, even among a generation that did not personally experience its creation 'and what happened after that'. How ironic, then, that the only place where you still recognise what the Bijlmer must have been like, where you can experience the 'green void' within the surrounding hexagonal grid, is the place where the first part of the Bijlmer was erased, where the El Al plane crashed and where the Bijlmer Monument now stands. As though the aircraft, as it nosedived towards the ground, was pointing ahead as if to say: "Look there, that's where the Bijlmer *was*".
All later applications of art cannot mask the scars that the large-scale redevelopment has inflicted. What of its urban frame remains, is a patchwork of 'good intentions'. The unity has been lost; the honeycomb structure, once heroic, has been fragmented, reduced, made to look insignificant.

With the arrival of the IGC and its connection to Hong Kong and Seattle, a new chapter in the history of Kleiburg begins. In anticipation of the success, I see Saskia Sassen, author of the term 'global city', visiting for a conference lasting several days. I ask myself the question: What is the accommodation that the IGC as host can offer her? Even though I am not Saskia Sassen, I would venture to predict that her preference would be for an authentic Bijlmer flat, untouched and in its original condition, emblematic for how it must have been to live in the Bijlmer.
But the Bijlmer is no more. The city machine of Hilberseimer is

checked, its reciprocity reversed. All recent interventions in 'the urban organism as a whole' have also changed the 'elementary cell'. Authenticity here is inherently impossible.

Provided that one is aware of the inconsistency, the decision 'to leave the cell the way it was' can be interpreted as self-critical feedback in a context of eternal transformation, the subversiveness of a questioning attitude, yes, even as an act of protest. Conceived as a design choice, this is the zero degree of what design can be, localised on the other side of the spectrum, where the détournement is encountered. It is a legitimate choice all the same. Closer to the original you will not come.

A home is a reading room is a hotel is a home. We are back where we started (and further away than ever before).

This text is an abridged and edited version of a lecture by Jan van Grunsven that formed part of his graduation project Institute for the Global City at the Amsterdam Academy of Architecture. The lecture was accompanied by an exhibition and was delivered on 16 January 2012 during the final examination, which was open to the public. The lecture was repeated as a public presentation on 27 January 2012.

Biographies

Mark Hendriks studied spatial planning at Wageningen University and has worked since 2004 as an independent journalist, editor and author in the field of physical planning, urbanism and landscape architecture. Under his office name Tekstlandschap, he explains, discusses and comments on the intriguing world of the design and planning of the city and countryside. Tekstlandschap stands for a journalistic approach that keeps professionals alert and communicates with a wider audience in an appropriate manner.
Mark Hendriks is also an editor of the periodical *Blauwe Kamer* and the three-yearly publication *Landscape Architecture Europe*. In recent years he has worked on a variety of publications, among them the yearbook of landscape architecture and town planning in the Netherlands, *Ontwerpen aan Randstad 2040* and *Nieuwe Landschappen*. His 2010 book *Leidsche Rijn Park* examined the design and realisation of this large city part in Utrecht. Mark Hendriks is a guest tutor at the Amsterdam Academy of Architecture and Delft University of Technology.

Machiel Spaan is an architect. He graduated from the Department of Architecture and Urban Design at Eindhoven University of Technology in 1992 and is a co-founder of the Amsterdam-based architecture firm M3H architecten. A hallmark of M3H's work is an approach that engages with the design problem and takes confluence rather than conflict as its starting point. Questioning the physical, social, historical and social context determines the programme and the architectural form in all projects. The hidden potential of the site is rendered visible and can be experienced. M3H is an architecture firm that devotes attention to all facets of design, from an urban scale to the detail. Making and building are key aspects. M3H has designed and completed scores of buildings in urban settings.
In addition to his practice, Machiel Spaan has been actively teaching since 1994. He has focused on creating a sensory experience of architecture in educational projects such as House for a Blind Person (2001), Tastenderwijs (2004), The Temporary Expert (2004- 2007), and Music, Space & Architecture (2010). Machiel Spaan was head of architecture at the Amsterdam Academy of Architecture from 2007 to 2012. In that capacity he was responsible for the quality of the curriculum and organised the educational projects, important motives for which were the process of creation, the relation with the arts, and the social context of Amsterdam.

Ruurd Roorda is a co-founder of Kingma Roorda architects in Rotterdam,which was established in 1989 after winning competitions in Eindhoven and The Hague. The firm's multifaceted body of work reveals a continuous search for architectural richness, with projects that range from housing, schools and offices to restaurants and interiors. Its buildings are manifold and colourful, reflecting the variety of contexts and design briefs. The firm considers the three-dimensional character of architecture, city and landscape to be of primary importance. It is the firm's belief that the space around man needs to be uplifting, supporting, comfortable and atmospheric, both inside and outside, if it is to form a valuable envelope. And buildings should function for a lifetime. In the office's projects, a predilection for timelessness, ancient types, and the characteristics of context results in new interpretations of architecture. The work attitude is one of concentration and precision, aimed at achieving an enduring subtlety. Sustainability is another important consideration, with equal opportunities for using space, materials, energy and mobility intelligently. Ruurd Roorda teaches architectural design at Eindhoven University of Technology and the Amsterdam Academy of Architecture. He is currently conducting a study of architectural sustainability, which is linked to research by the Royal Institute of Dutch Architects.

Huib Haye van der Werf is partner/ curator at TAAK. From 2011 to July 2012 he worked as a curator with SKOR (Foundation for Art and Public Domain). From 2008 to 2011 he was a curator at the Netherlands Architecture Institute (NAI) in Rotterdam. From 2005 to 2008 he was an advisor on art for the Chief Government Architect. He has compiled various exhibitions, the most recent of which was *Stem Terug! Vote Back!* for the Appel Arts Centre, *Power of Place* for the International Landscape Triennale in Apeldoorn, and *Article 12* by Jill Magid at the Stroom gallery in The Hague. He is currently a member of the advisory committee on visual art for the city of Utrecht, and chairman of the committee for foreign studios at the Mondriaan Fund. He has written for, amongst others, *Artforum*, *Metropolis M* and *Open*, and for publications about artists such as Navid Nuur and Sanja Medic. He holds a BA in Painting (Royal Academy of Art, The Hague) and a BA/MA in Art History (University of Amsterdam). In 2004/2005 he took part in the Curatorial Programme at de Appel arts centre in Amsterdam.

Jeroen Kooijmans produces work of a high quality using a strong visual language that combines reality, fantasy and poetry. Subjects he addresses in his work are time, circulation, utopia, religion and fairy tales in reality. Hallmarks of Kooijmans's work are the use of audio-visual media, the influence of paintings, his archive of collections, humour, optimism, connection with architecture, interaction with the public, being Dutch, and travelling. His work has been exhibited internationally at the Tate Modern (London), Stedelijk Museum (Amsterdam), Museum of Fine Arts (Buenos Aires) and Lalit Kala Akademi Gallery (New Delhi). In 1998 he won the NPS Culture Award. In 2001/2002 Kooijmans took part in the P.S.1/MoMA (New York) international studio programme. His work featured in the 2010 exhibition *Beyond the Dust* in Middelburg, Paris and Milan.
Jeroen Kooijmans and Roé Cerpac worked together on architecture-related projects such as Hanging Houses and various projects with the Rotterdam architecture firm of MVRDV. That firm invited Kooijmans to make a film for the 2000 Architecture Biennale about the optimism and beauty of overpopulation. This resulted in *The City of 12 Million Sun*, about Tokyo.

Roé Cerpac is active in various projects that, in recent years, touch more and more aspects of society. In this regard he works intensively with other artists such as Liza May Post, Theo Schepens, Jennifer Tee, Jeanne van Heeswijk and Jeroen Kooijmans. Cerpac studied at the Gerrit Rietveld Academie during the same period as Kooijmans.

Ed van Hinte studied industrial design at Delft University of Technology. He is a journalist and author in the field of industrial design, technology and architecture. In 1996 he won the Jan Bart Klaster Award for art criticism. In collaboration with Adriaan Beukers he published *Lightness* and *Flying Lightness*. Following these publications, van Hinte initiated Lightness Studios in 1996, a foundation that advocates lightweight structures by making models and prototypes during various events such as national and international workshops.

Adriaan Beukers is a professor at the Faculty of Aerospace Technology at Delft University of Technology. The chair covers the subjects of composite materials and production methods. The success of his innovative approach in realising lightweight constructions is widely acknowledged. He has won several awards and holds various academic chairs, from Belgium to Japan.

Jan Jongert graduated as an architect from the Rotterdam Academy of Architecture in 2003. As co-founder of 2012Architecten in Rotterdam he designs interiors and buildings and develops strategies to facilitate the transition to a sustainable society. He develops tools, processes and projects that promote local exchange and production as an alternative to the transportation of resources, products and components around the globe. Key projects of his are Villa Welpeloo (2009), Recyclicity MSP (2010) Superuse.org (2007) and Cyclifier.org (2011).
Jongert specialises in the behaviour of flows in interior, industrial and urban environments. His fascination lies in shortcutting and interconnecting flows as a means of supporting a sustainable future.

Arjan Klok graduated in 1995 as an architect and urban designer from the Faculty of Architecture at Delft University of Technology. Among the issues he explored as an undergraduate was infrastructural design in urban areas, such as the major city roads in and around Rotterdam and Antwerp.
From 1991 to 2001 he carried out various studies with Edzo Bindels, Ruurd Gietema and Henk Hartzema, which resulted in innovative and appealing proposals that opened up new perspectives for the Netherlands. In 1999 this work earned them the Rotterdam Maaskant Prize for Young Architects.
From 1995 to 2001 he worked as a project manager and designer at Maxwan on a large number of infrastructure-related projects, among them Leidsche Rijn in Utrecht, the Zuidas in Amsterdam, and the station areas in Utrecht, Tilburg and Enschede. In 2001 he set up StudioKlok, where he works on, amongst others, the development of railway zones, the transformation and restructuring of employment areas, and the renewal of townscapes and urban motorways.
Arjan Klok teaches regularly at the Faculty of Architecture at Delft University of Technology and the academies of architecture in Amsterdam, Rotterdam and Arnhem. Each year he mentors a number of graduating students, gives lectures, and acts as a visiting critic. He has been head of urbanism at the Amsterdam Academy of Architecture since 2012.

Gert Hage studied criminal law and criminology. After graduating he worked as a freelance journalist, first in Italy and then in the Netherlands. He was an editor for *Quote*, *Intermediair* and *HP/De Tijd*. Since 2001 he has been an independent contributor to such publications as *de Volkskrant*, *Vrij Nederland* and *Blauwe Kamer*, and to the VARA broadcaster. In addition, he is involved with the Stichting Landschapstheater en Meer (SLeM) by landscape architect Bruno Doedens. He wrote the accompanying essay entitled 'Will and representation' for the book *Temporary Landscapes* from SLeM. He is now working on a book about Naples.

Jan van Grunsven is an architect based in Amsterdam. He studied at the Academy of Art Education in Tilburg (1978-1983, cum laude), De Ateliers (1984-1986), and the Amsterdam Academy of Architecture, department of architecture (2006-2012, cum laude).
His work builds on the conceptual art of the 1970s. Using architecture and exhibition models, he subjected the practice of exhibiting to a systematic critical analysis. He gradually shifted his attention to areas outside the museum, in particular to the formal organisation of the city (its urbanism and architecture) and to what this reveals about how we experience public space.
He has taken part in various solo and group exhibitions at home and abroad, has taught in various capacities (amongst others at the Gerrit Rietveld Academie and De Ateliers), and for many years he was senior lecturer at the Institute of the Arts in Arnhem (ok5/Visual art and public space). While there he worked on a structural collaboration with the European Master of Landscape Architecture (Velp) and the Arnhem Academy of Architecture. He has sat on various juries and advisory bodies (for, amongst others, Stroom HCBK; Foundation for Art and Public Domain; Netherlands Foundation for Visual Arts, Design and Architecture; Prix de Rome; Open).

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WWWinterthur

The traditional roles played by those involved in the design and construction processes, and even the nature of commissions, are changing drastically. Many of the future design challenges in architecture will be faced outside the confines of what we are now accustomed to.

The debate about the changing role of architects and urban designers, about new possibilities for creative and innovative ways of working, is in full swing. On the one hand, spatial design will be based more on the existing city and existing buildings. The architect will have to develop skills and tools to assess the value of what exists and to analyse the components. On the other hand, conditions, regulations and actors are no longer as clearly defined as they were in the past. Accordingly, architects must respond by shifting position, interact with all parties involved and take the lead.

New attitudes is a project of the Amsterdam Academy of Architecture. This volume contains contributions by Mark Hendriks, Machiel Spaan, Ruurd Roorda, Huib Haye van der Werf, Jeroen Kooijmans, Ed van Hinte, Jan Jongert, Arjan Klok, Gert Hage and Jan van Grunsven.

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