



Prof. ir. H.C. Bekkering

Designerly Ways of Urban Thinking

Farewell Speech

March 7 2014

Faculteit Bouwkunde

Designerly Ways of Urban Thinking

Farewell speech

Delivered in a shortened version March 7 2014
on the occasion of his retirement as professor of Urban Design
at the Faculty of Architecture and the Built Environment
of the Delft University of Technology

by

Prof. Ir. H.C. Bekkering

ISBN: 978-94-6186-361-4

Mijnheer de Rector, leden van het College van Bestuur en het College van Hoogleraren en andere leden van de universitaire gemeenschap; zeer gewaardeerde lezers. Dear Students.

In this farewell speech I am using my last chance to make a few remarks in public on what I think are some essential aspects of academia, in The Netherlands and abroad. This will constitute the first three parts of this publication:

1. On Change & Tradition,
2. On Some Changes in Academia,
3. On Different Characteristics of Research.

After that I will give an overview - in short - of the results of the PhD research in my chair, the Chair of Urban Design.

1. On Change & Tradition

In life, change is necessary. Even if we do not want it, or want it not to happen, it is inevitable. I am convinced that this is not only a law of nature, but also of culture. In Western culture, in general we still tend to hold on to the idea that the purpose of change is first of all to achieve growth. This is deeply imbedded in our culture. In terms of 'la longue durée', the long line of our history, we are just beginning to understand that the state of the world, and of the earth is very seriously limiting this. The next generation after mine, at least in the West, for the first time since many centuries cannot count anymore on reaching higher levels of income and welfare. This is dramatic, but it is a fact we, and they, will have to live with.

In our universities we deal on a daily basis with two aspects, for both of which the just mentioned is extremely relevant: the scientific, mental and cultural development of young people, and the development of new knowledge through research. Both are aimed at creating a better future. One of the amazing experiences in the nearly twenty years of my professorship has been to see how in the beginning we as teachers had to understand and begin teaching the limits of growth and the principles of sustainability, while the present generation of students concerning this awareness and sense of responsibility for our environment is in a very natural way ahead of us even when they come in. The same holds true of course for their familiarity with the digital and globalizing world. I will get back to globalization later.

Even though I am convinced that change in the general sense is indeed necessary, by no means everything has to change all the time, and certainly not all at once. Like in my entrance speech, I will quote on this whom I regard as my most important predecessor in Delft: professor Marinus Jan Granpré Molière (Fig. 1).

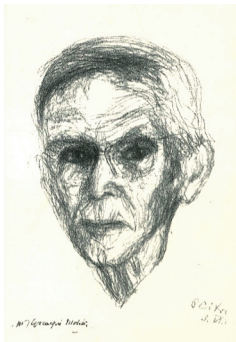


Fig. 1. Marinus Jan Granpré Molière, Paul Citroen, 1966

This time I have taken the citation from a letter he wrote in 1961 to the Board of what is now the Union of Dutch Urbanists and Planners (Beroepsvereniging van Nederlandse Stedebouwkundigen en Planologen), showing his concern for the discipline long after he left Delft in 1953. Referring to the content of urban design, he wrote (in my translation):

"[-] one of the most important abilities embedded in our [human] nature is: memory. For that reason one of the greatest pleasures is in recognition. This means that the past will have to be incorporated in our conception."

"Nu is een van de voornaamste vermogens van onze natuur: het geheugen. En daarom is een der grootste vreugden in het herkennen gelegen. Het houdt in dat het verleden in onze conceptie zal moeten worden geïncorporeerd." (Haan 2013 p 74)

Humankind has developed a marvelous mechanism to guide this: the mechanism of tradition. Contrary to the prejudice that tradition would oppose and impede change, tradition in itself is not static. Tradition is a general cultural mechanism that facilitates change. It makes change possible, but in a gradual, a prudent way; if you want: little by little. Tradition does not presuppose that everything should stay as it is. Tradition is a way of doing things, directed towards action, not stasis. Tradition offers support for the way changes can be accommodated in the existing environment without causing ruptures and fractures. Thus it allows for historical continuity, and for people experiencing it to recognize and understand the results and identify with those.

It is especially important to take tradition seriously as a mechanism in society when dealing with change in existing urban environments, where new elements are always and by definition part of a larger existing whole that is being transformed. It is fascinating, and reassuring, that tradition is a great force in Western as well as Eastern cultures, as I experienced when travelling abroad, and when teaching and researching for a sabbatical year at the University of Michigan in the United States and at Tsinghua University in Beijing, China. This aspect of internationalization, understanding and as far as possible and fruitful bridging cultural differences, is - I am happy to know - now seen as an important goal in our School: inward by receiving students and staff from elsewhere, and outward by preparing students for a possible career outside The Netherlands.



Fig. 2. Documents files Fundamentals (Grondslagen)

In my opinion, the value of history and tradition is just as high for education. This is why I was extremely pleased when asked by the School in the last year before my retirement to lead the integration of three existing Bachelor courses into one new and larger course. Basic Principles of Architecture and of Urbanism were combined with the teaching of History of Architecture and Urbanism in what we call Fundamentals (Grondslagen). (Fig. 2) Together with Cor Wagenaar and Jurjen Zeinstra we developed a canon of projects taken from history up to the present, chosen for their relevance for the present design practice in urbanism, landscape architecture and architecture. This has resulted in a large number of our faculty being involved in the choice of the projects and assembling the documentation of a total of 160, mostly realized projects of urban design, landscape architecture and architecture. These are presented in four document files, designed by Véro Crickx of Sirene Ontwerpers.

The canon is based in the first place on the idea that to be able to design effectively a designer should have an easily accessible overview of good solutions to a wide range of spatial design problems. Jo Coenen used to call this the catalogue of architectural solutions that every architect should have in the back of her or his head. We now, as children of our times, call it a canon. It is not intended to be an objective overview; it is intended to reveal the type of school the Delft Faculty of Architecture is and wants to be. As Thomas Vaessens, professor of History of Dutch Literature at the University of Amsterdam said in an interview with the national newspaper 'NRC/Handelsblad' last year (in my translation):

"[-] there exists no objective criterion on which we can base a canon. The canon is fluid. Each momentous version of it can be traced back to a conviction, to a certain way of valuing."

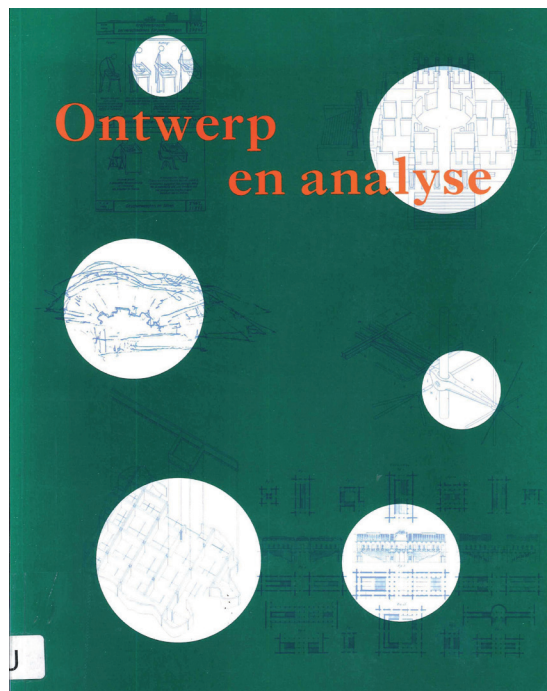
"[-] er is geen enkele objectieve maatstaf waarop we een canon kunnen baseren. De canon is beweeglijk. Iedere momentopname ervan is terug te voeren op een overtuiging, op een bepaalde manier van [-] waarderen." (Vaessens 2013)

This of course implies also that the school should not only finish and perfect the great work on the four massive files, but in the very near future should reconsider its contents and at least include recent examples that have been produced in practice, and keep doing so.



The series can become a true and attractive instrument of public relations for the school. Already in its unfinished state schools around the world have asked for more information and even for being allowed to use the Delft canon. That last request, I think, is not very smart. Of course some of the projects, by nature rather a lot, are universal or at least international, but each school should color the choices for itself.

Next to building their catalogue of good examples, the other idea behind the canon is its use as a tool for students to learn to analyze and understand projects. This is where it connects to what I consider to be a very important Delft tradition: that of design analysis based on morphological and typological research. Initially this was based on the Italian school of typo-morphological research, but it was developed into a Dutch version stressing a specific method of reduction drawings and the layering, or splitting up in different layers, of scales and determining aspects of the environment. It was fully implemented in the Delft way of teaching design, and so it can truly be called the Delft School. It started from 1980 onwards with the successive versions of the so-called LAS-book: 'Landscape Architecture, Architecture and Urbanism' ('Landschapsarchitectuur, Architectuur en Stedebouw'), compiled for both the students of architecture and urbanism by Rein Geurtsen, Bernard Leupen and Sybrand Tjallingii. (Fig. 3) In 1993 it was turned into the here and internationally very successful book 'Design and Analysis' ('Ontwerp en Analyse') by Bernard Leupen, Christoph Grafe, Nocola Körnig, Marc Lampe and Peter de Zeeuw. (Fig. 4)



In the development of this Delft method of analysis especially for urban design, the work of Rein Geurtsen has been very important, as for instance in his 'Locatie Zuidpoort Delft. Stads morfologische atlas' of 1988, an atlas of urban morphology for a competition site in the southern part of the Delft town center. (Fig. 5) Another major result was 'Amsterdam als stedelijk bouwwerk. Een morfologische analyse' or 'Amsterdam as urban building or urban structure. A morphological analysis' by Casper van der Hoeven and Jos Louwe of 1985, the outcome of their Master thesis of 1980. (Fig. 6) And 'Rotterdam, verstedelijkt landschap' or 'Rotterdam, urbanized landscape' of 1987 by Frits Palmboom, recently appointed Van Eesteren professor in our department. (Fig. 7) The approach was spread around the world by the early issues of the journal 'O-ontwerp-onderzoek-onderwijs' or 'Design-research-education' in the early 1980's, with authors like Roy Bijhouwer, Rob van der Bijl, Jaap van den Bout, Maurits de Hoog, Eric Pasveer and Harm Tilman for urbanism and for architecture Peter Drijver, Leen van Duin, Henk Engel, Dick van Gameren, Jan de Heer, Max Risslada and Jurjen Zeinstra among others. As I will show you later, the further development of this tradition has also been part of the research in the chair of Urban Design.

Fig. 3. *Landschapsarchitectuur, Architectuur en Stedebouw* or: *LAS-Boek* (Landscape Architecture, Architecture and Urbanism) Rein Geurtsen, Bernard Leupen and Sybrand Tjallingii, 1980 and later
 Fig. 4. *Ontwerp en Analyse* (Design and Analysis) Bernard Leupen, Christoph Grafe, Nocola Körnig, Marc Lampe and Peter de Zeeuw, 1993 and later

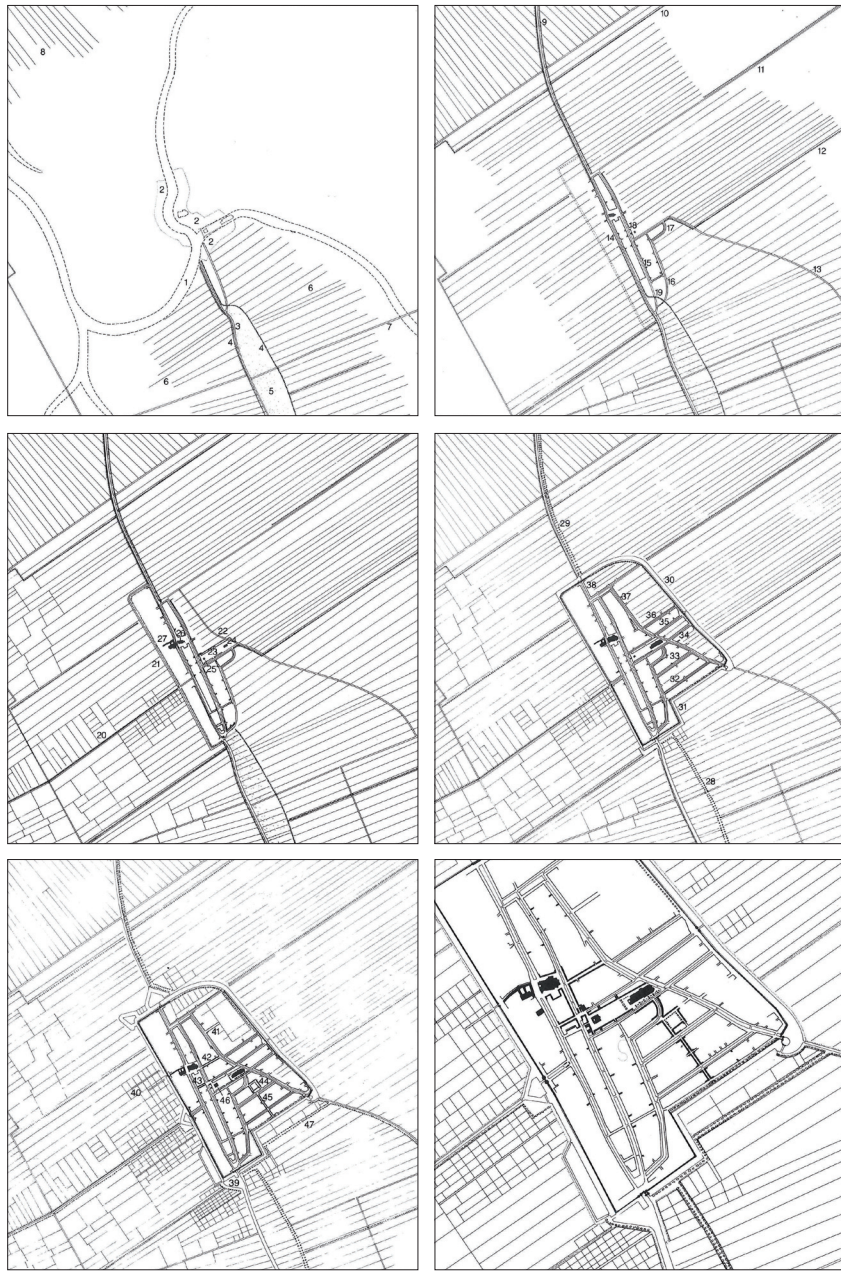


Fig. 5. Locatie Zuidpoort Delft. Stadsmorfologische atlas (Location Zuidpoort Delft. Atlas of urban morphology) Rein Geurtsen, 1988

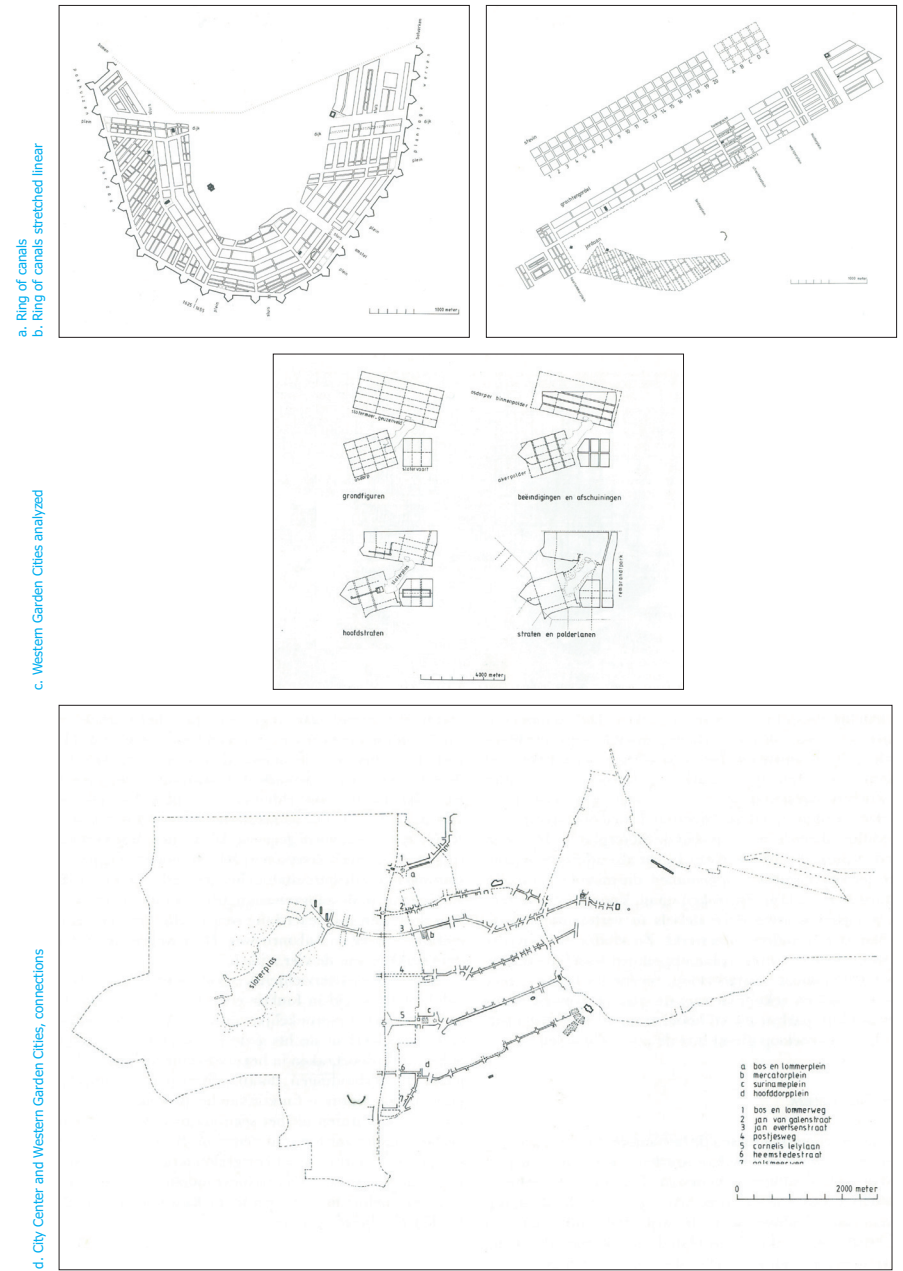


Fig. 6. Amsterdam als stedelijk bouwwerk. Een morfologische analyse (Amsterdam as urban structure. A morphological analysis) Casper van der Hoeven and Jos Louwe, 1985

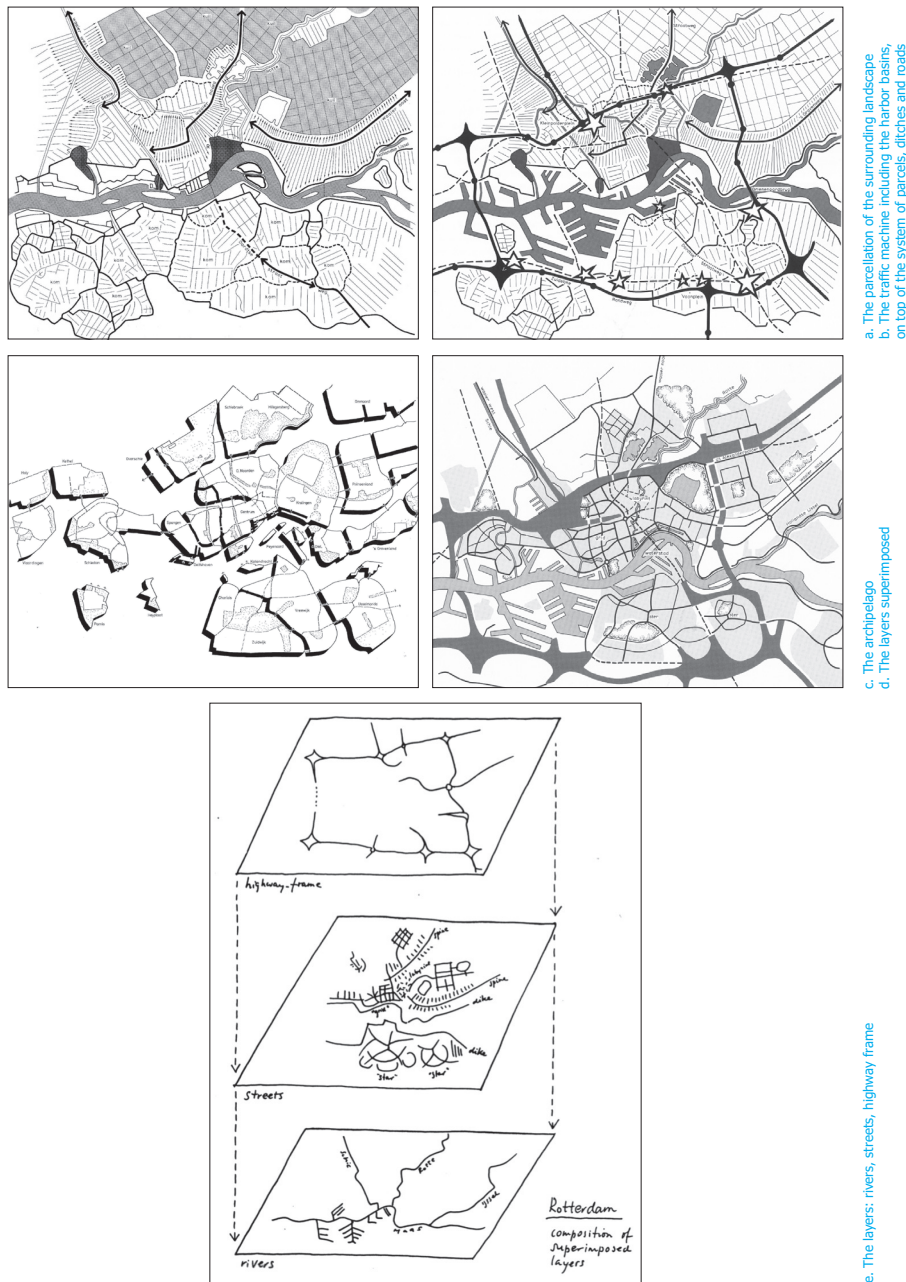


Fig. 7. Rotterdam, verstedelijkt landschap (Rotterdam, urbanized landscape) Frits Palmboom, 1987

2. On Some Changes in the Academic World

As I mentioned before, the idea of tradition relates to the subject of change. Alas, not all change is for the good. The last years there have been some far reaching changes in the academic world in The Netherlands that in my opinion before implementation have hardly been discussed as for their effects, at least not beyond a certain degree of political correctness. To some of these I have been and am strongly opposed. I will mention the two that I find the most important.

The first. The Dutch institutes of higher education and the government have made so-called 'prestatieafspraken' or agreements on future performance. If an institution does not meet the agreement it will be fined by way of a reduction of its government financing, the so-called first money stream. Some pertain, by the way, that these agreements are in conflict with the Dutch Constitution and thus illegal. They nevertheless exist and are very real; a typical example of the (in)famous 'Dutch tolerance'. Part of the agreements puts general numbers to be reached in place of the assessment of quality, of the institution, its parts and individuals, of staff and students. I take the last as an example. In my eyes this is diametrically opposed to one of the essential goals of academic education. Instead of the assessment of delivered results by an individual student, this leads us in the direction of the American system of prefixed percentages for students' marks. When I studied in the United States almost fifty years ago, and when I taught there for a semester four years ago, I experienced the effects of this. In both situations I could not get used to it. Even if you would be able to monitor precisely the levels of difficulty of tests, there is something fundamentally unjust in the presupposition that a body of students always has the exact same characteristics. Even though large numbers allow for conclusions on the basis of statistics, my experience is that there are good and less good years in successive student populations, with a deviation that way exceeds that of the prefixed percentages. As part of these agreements, TU Delft now has promised to improve study results in the Bachelor, a worthy cause. The story is that we will improve our methods of teaching to achieve this. Did we need this financial threat to improve ourselves? Or will we just rely on an 'improved' administrative procedure? Even more disturbing is that the agreement states that we will have 7% honors students. I have led the development of the honors program for our faculty and again I have found, with the members of the selection committees, differences in the level of successive year groups. Now which is worse? To have more honor students than deserve to be, or hold back the extra attention and in the end potential - and intended - societal effect for those who do deserve it? Both, of course, are wrong.

To prepare themselves to meet these agreements on future performance, the Dutch universities have invented all kinds of measures. One that has been implemented, and that by now is generally accepted, is the negative binding advice on the continuation of studying (Negatief Bindend StudieAdvies/BSA). This is a complicated way of saying that a university is allowed to forbid a student to continue in the field of study she or he is enrolled in on the basis of the amount of standardized European study points she or he has gained in the first year of her or his Bachelor studies. The first scientific research as to the effects of this measure last year by the Erasmus University in Rotterdam among students of psychology showed that after installment students on average did not spend more hours studying and performed at lower results than the group before. The students subject to the new rule were fixed on collecting as many study points as they could instead of collecting as much knowledge as possible. In the national newspaper 'De Volkskrant' recently the young historian Rutger Bergman calls this 'diploma inflation', and I agree. (Bergman 2013) What follows is worse. To prevent the lowering of the average result in the Faculty of Social Sciences of the Erasmus University a set of rules was installed for compensating failing marks. A student can compensate for a 4 (out of 10) with an 8 in another course. The installment of this rule resulted in an immediate upwards explosion of output. With Bergman I call this entirely artificial - and thus unjustifiable in the context of academia. In its defense, the Faculty of Social Sciences of the Erasmus University pertains that this is compensated by a renewal of teaching methods resulting in a more intense involvement of students. I would say that **if** that is possible, it should have been done before anyway.

The second change in academia that I think adverse and want to mention is the way we presently deal with our PhD candidates. When I came in, the school gave young researchers a job and paid their salaries out of the first or second money streams, albeit it a temporary job for the four years intended duration of the research. These jobs were granted for predetermined research subjects within a chair, section or department, but also for other interesting research initiated from outside academia by individual candidates, out of society you might say. Nowadays this is only possible when there is also financing from the outside, in the so-called third money stream. Often the source of subsidy explicitly determines the possibilities, for instance for PhD or post-doc positions. Then there is the situation of who we now call external PhD candidates: researchers or practitioners, many times not so young anymore, that for instance want to consolidate their experience in practice in a formal dissertation, and do so out of their own initiative. They come to us asking for guidance and supervision, for the

open exchange of ideas between fellow researchers and for access to the academic facilities like the library and the repository of scientific literature. As Adriaan Geuze said in an interview in the newspaper 'NRC/Handelsblad' of this year (my translation):

"I see the university as the chapel, a place for thinking and discussing, free from the madness of real estate, politics and bureaucracy. Because that is the world in which we [designers] have to swim."

"Ik zie de universiteit als de kapel, een plek om na te denken, te discussiëren, los van de waanzin van vastgoed, politiek en bureaucratie. Want dat is de wereld waarin we [als ontwerpers] moeten zwemmen." (Geuze 2014)

In the many discussions that we had these last years on how to deal with the problem of a generally too low effectiveness of our PhD trajectories, almost always this last type was overlooked, while I think it is part of the basic task universities have to help create research with an effect on society, and/or based on societal demands. I would argue that when a person comes to the university wanting to write a dissertation on a certain subject, that **is** a societal demand towards which we should have an open attitude and welcome it. Of course an important consideration for accepting is the experience and interest in the subject with the promoter, but that is most often the case as through the mechanisms of effectually global access to digital data the person approaching a certain chair or professor will have found a reason in their website and publications to do so. I am most certainly aware of the efficiency of having a consistent and focused research program, in which successive dissertations lead up to a broader result than an unstructured collection of individual results, like the series of researches commissioned by industry that adds partial solutions to a large and complicated problem as in the natural, chemical or mechanical engineering sciences. (Too bad that the building industry not only never developed a tradition in this sense and is now in such great stress to just survive that it will hardly spend any money on research.) Nevertheless, I strongly believe in the potential of research as it comes to us from the outside. In the last part of this publication I will show how this has worked out in the research in my chair. But before I do that, let me make a few remarks about research in general and research in a design school specifically.

3. On Different Characteristics of Research

Doctoral research in my opinion should include at least two of these characteristics:

1. what I call 'the monk's work' of painstakingly and meticulously collecting existing knowledge in the field,
2. combining this knowledge, resolving the discovered contradictions, and in so doing establishing, defining and defending an individual position,
3. through this adding new knowledge and new ideas to the discipline.

The Department of Urbanism consist of different sections, of which Urban Design, Landscape Architecture and the Why Factory are focused on design, and Spatial Planning and Strategy is focused on planning, both seen as engineering sciences, and both conducting research. This is based on the particularly Dutch idea that true urbanism integrates these different aspects. No doubt this is at the basis of our international reputation and attraction, as elsewhere in the world this is usually very different. Elsewhere, urban design is most often seen as an extension of architecture, and planning as a sociopolitical science.

One would hope that within a department like ours everyone would indeed be working within her or his own style, but in appreciation of the other. Even though many of my colleagues share this attitude, there exists rather a tension regarding the requirements for research between on the one side the designerly approach and on the other the planning approach. The last tends to hold onto the classical criteria for scientific research, combining the approaches in the natural sciences with empiricism, and is focused on finding and constructing proof of the answer to a research question. This is different from what I and most of my design-oriented colleagues call the designerly way of thinking, that in addition applies creative, inductive and abductive thinking and the associative and interpretative combining of ideas in new ways, and in which the steps of the argument can rely on probability without delivering proof beyond all doubt. It works from images, real or in the mind; it is literally 'imagined'. The intention, and the value, lie in the furthering of the argument, and may even partly be based on intuition.

Described this way, as Karl Popper did, I think one could conclude that this is also the case in many a pre-stage of the so-called hard scientific research. A scientific researcher will have to get the idea for doing a research from an insight, a hunch that she or he then wants to prove to be true. A designer wants to use such insights to achieve a working solution.

This is something else, but there is no reason to think of it as something less. As Nikky Fleurke, one of my PhD candidates, concluded from her research, and I cite her, partly citing Herbert Simon, professor of psychology at Carnegie-Mellon University in Pittsburgh and Nobel Prize winner for economy in 1978.

“[We might] expect the activity of design to play a highly important role in science over the coming period since the world requires more and more independent ‘designed’ arrangements that can cope with the present complexities. This view was already expressed half a century ago by Simon in his study *The Sciences of the Artificial* of 1969: “[...] few scientists today know anything about design as a process for understanding, creating and managing complex systems; but by the end of this century [...] design will be required study for complex systems science, alongside mathematics, statistics, computation and other core topics. Many of the systems that we find hard to understand are socio-technical - systems of systems - with tightly coupled physical and social subsystems. Most of these systems are artificial, meaning that they are in part or whole man-made - they are designed.” (Simon 1969). At present though, design is still highly regarded as a side-field on its own and hardly related to major scientific fields and developments. It is surprising that, despite these early insights, the field of design as an exploration domain and as relevant to the broader scientific framework stayed behind like this.”

The term abductive thinking may need some explanation, best given by citing professor Kees Dorst of the Eindhoven University of Technology. “This is often what designers and engineers do - create an object that works within a known working principle, and within a set scenario of value creation. [...] Performing the complex creative feat of the creation of a thing (object, service, system) AND [emphasis added by author] its way of working in parallel is often seen as the core of design thinking.” (Dorst 2010)

Thus it is really unfortunate, and actually rather strange that within a school of architecture, or more generally a university of technology, researchers have difficulties to combine these approaches. Alas, there seem to be mutual reservations, if not feelings of downright distrust. The bigger problem is that this is also the case in the context in which our universities operate, especially in the institutions that decide on the allocation of research funds and that show a strong bias towards the ‘hard sciences’. In the Netherlands these are mainly two:

The Netherlands Organization for Scientific Research (Nederlandse Organisatie voor Wetenschappelijk Onderzoek/NOW) and the Royal Netherlands Academy of Arts and Sciences (Koninklijke Nederlandse Akademie voor Wetenschappen/KNAW). On a higher level it plays a role also in the allocation of European subsidies.

This is worsened by the over-emphasizing of publication and citation counts in academia. Recently, a group of Dutch scientists called Science in Transition has provoked a discussion on this, explaining the resulting perversities. This is maybe best exemplified by last year’s criticism of the so-called self-plagiarism by publications champion Peter Nijkamp, professor of Regional Economy and Economic Geography at the VU University (Vrije Universiteit) in Amsterdam, winner of the prestigious Dutch Spinoza price for excellent science in 1996 and - nota bene - former chairman of the Academy of Arts and Sciences (KNAW). The newspaper *De Volkskrant* found out that professor Nijkamp has used paragraphs of his own publications, many with co-authors, in other papers without always explicitly citing himself (and with that his co-authors). I am here not criticizing him - I think the whole media upheaval about it has been rather shameful - I am criticizing the system that on the one hand leads to his behavior and on the other to this ridiculous accusation, happily stirred up by the media trying to create the next scandal. Even just the word self-plagiarism makes your stomach turn. But seriously, the academic world experiences a dilemma here. On the one hand the scientific value of persons and groups is measured largely by publication points, especially when trying to win applications for the third money stream from the outside, but also in the furthering of individual careers inside. On the other we are more and more aware that this system has grown out of hand. It is big business outside as well. Harvard University Librarian professor Robert Darnton explains how 42 percent of all academic peer reviewed articles are published by three giant publishers: Reed Elsevier, Wiley-Blackwell and Springer, and that Reed Elsevier makes 39 percent profit on an income of £2.1 billion from its science, technical and medical journals. As subscriptions are prohibitively expensive and rapidly growing higher, this is largely paid for by academic institutions that are generally funded with public money. No wonder that all over the world scientists and librarians are trying to find ways out of this system that is becoming more and more perverse. Recently the Chairman of the Association of Cooperating Dutch Universities (Vereniging van Samenwerkende Nederlandse Universiteiten/VSNU), Karl Dittrich announced that in the visitation rounds as of 2014 the counting of publications is not going to be a criterion for assessing the level of scientific quality anymore. Still, our university seems to

strengthen and enforce this system, and of course as long as we rely on those points for winning external subsidies and commissions, we can hardly do otherwise. I do hope, however, that this will change, and in the near future, though I am aware that this might be wishful thinking. The excessive focus on research also tends to take away attention from education. Fortunately this is not so much the case in our school because we still retain the intensive teaching model of the design studio. And in a design school this leads also to research by design.

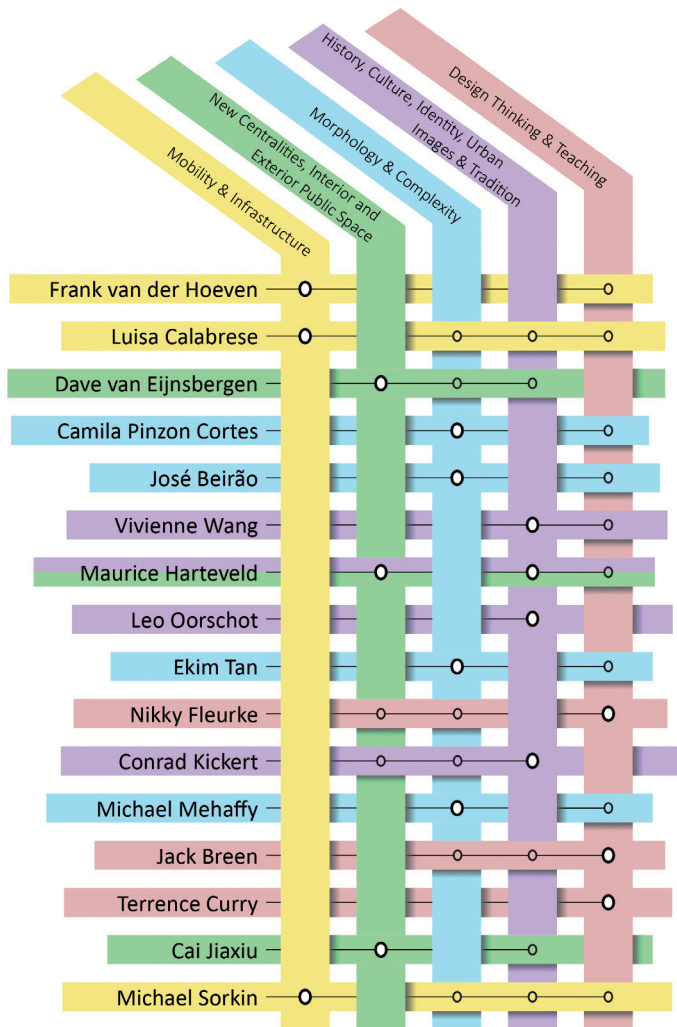


Fig. 8. Matrix of Doctors and PhD candidates of the chair of Urban Design (graphic design Klaas Akkerman)

4. On the PhD Research in the Chair of Urban Design

The following is an overview of the PhD research in the Chair of Urban Design over the years I was in charge. That is: in a very simplified way. I will be talking about years and years of intensive and concentrated work by each candidate, and the outcomes are of course too extensive and/or too complex to truly summarize within the limited scope of this publication. The intention is to give you an idea of how these different research efforts relate to each other.

The chair has so far delivered seven PhD's and nine more are in progress. (Fig. 8) Luckily, Dutch law allows an emeritus professor to continue supervising PhD candidates for five years after her or his retirement. As actually this is what I have most liked in the job, I am entirely happy to have the chance to keep my brain active for a few years more this way and keep in contact with my former colleagues in the university and these wonderful people that are 'my' PhD candidates and their work and thinking.

Each candidate came to me on the basis of the recognition of the relation of her or his intended research to the stated fields of interest of the chair. Fortunately, and very naturally, this has over time led to a broadening and deepening of these fields of interest, and a spreading and increasing of capacities, as I was fortunate in keeping a few of the researchers for the long term, after their doctorates. The matrix of the 16 names of the researchers chronologically arranged on the vertical axis and five more or less consolidated themes on the horizontal helps the overview. Below I follow these themes.

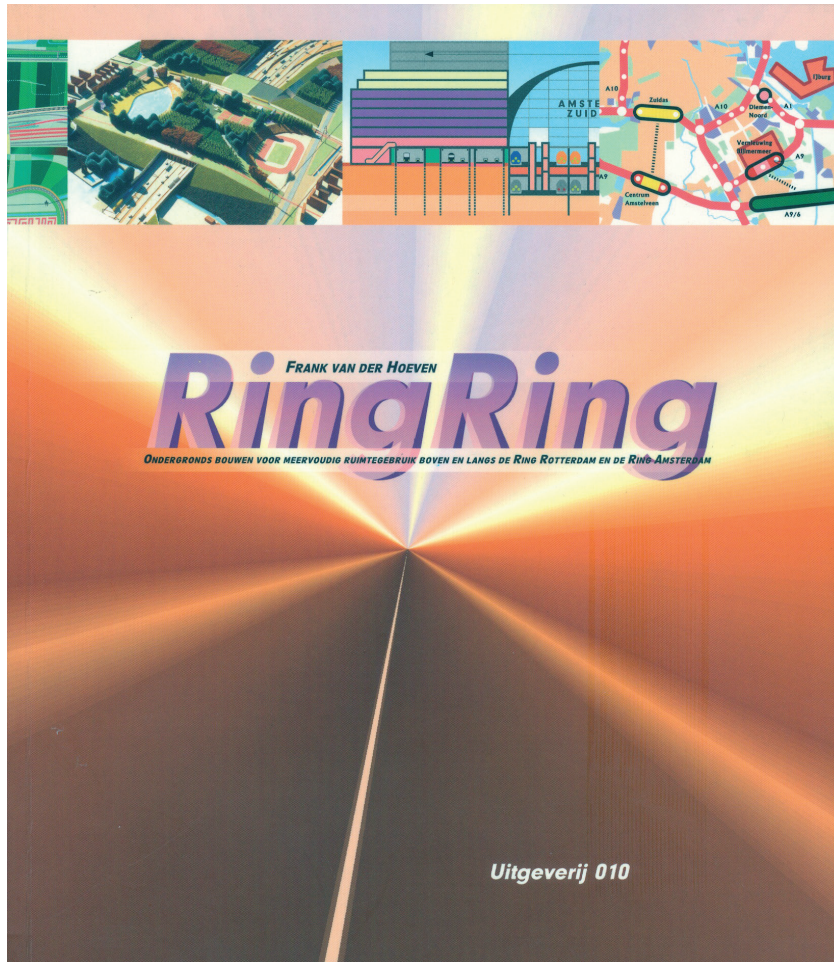


Fig. 9. RingRing. *Ondergronds bouwen voor meervoudig ruimtegebruik boven en langs de Ring Rotterdam en de Ring Amsterdam* (RingRing. Underground building for multiple use of space over and alongside the Ring Rotterdam and the Ring Amsterdam) Frank van der Hoeven, 2002

1. Mobility and Infrastructure

My way of coloring the chair was from the beginning to choose a specific subtheme within the official name of the chair: 'Stadsontwerp' or Urban Design. My choice was for public space, the design and the making, and including the cultural aspects: the meaning and significance of public space. Early on, this led to infrastructure and mobility as a more specific field of interest, movement being an essential and very influential part of the functions of public space.

Frank van der Hoeven

'RingRing. Ondergronds bouwen voor meervoudig ruimtegebruik boven en langs de RING in Rotterdam en Amsterdam', 2001 (Fig. 9)

This was initiated by Frank van der Hoeven, Dutch urban engineer, who had worked for Van Berkel en Bos, now UNStudio, and the municipality of Rotterdam, and grasped the opportunity suggested by John Westrik and accepted by Bandi Horvat, professor of Underground Building in the Faculty of Civil Engineering in Delft, to research the characteristics, possibilities and impossibilities of covering parts of the ring roads of Rotterdam and Amsterdam in either under- or aboveground tunnels to achieve multiple land use and integration in the urban environment. (Fig. 10) His work proved influential in practice for years to come, strengthened by his participation in a series of so-called 'MER'-committees assessing the environmental impact of planned large-scale infrastructure in the Netherlands. His technical engineering work showed, among many other things, how 'Rijkswaterstaat', now the part of the Ministry of Infrastructure and the Environment preparing actual projects, was sometimes using false arguments of safety to obstruct the building of tunnels for traffic. Van der Hoeven's research showed that safety in regard to the transport of dangerous and combustible goods did not depend so much on openings in the roofs of tunnels, but on partitions between the different lanes of traffic. He is so far the only one in the chair who has incorporated a design for a project in his PhD thesis, something the school would want to see more often. This design for a green link, the 'Carnisseplaat' offers the legally required compensation for the loss of green space as a result of the broadening of the south branch of the ring road of Rotterdam to locally 15 lanes through multiple use of space, capping the zone with the highway and the railroad tracks allowing for park space, recreational facilities and a light rail connection. (Fig. 11)

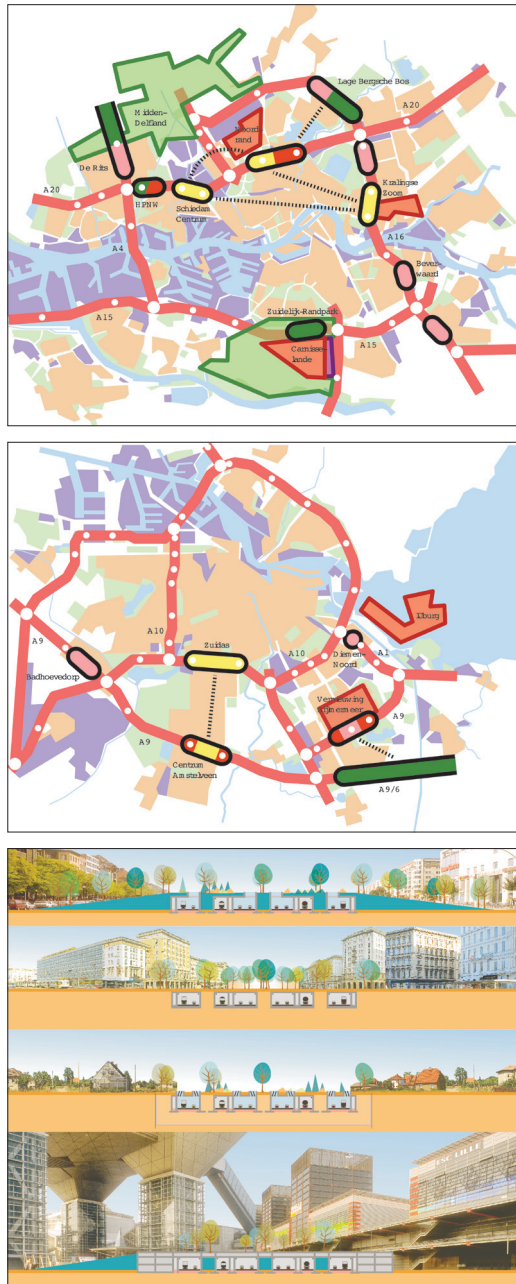


Fig. 10. Ring roads of Rotterdam and Amsterdam, The Netherlands (Hoeven 2002)

a. End image Ring Rotterdam

b. End image Ring Amsterdam

c. Section principles, top to bottom: Hollow dam partly covered;
Concrete troughs fully covered; U-polders partly covered;
Underground tunnels covered with an urban floor

a. Model

b. Plan

c. Context of infrastructure:
highway, railroad and pipe zone

d. Urban context of Rotterdam South

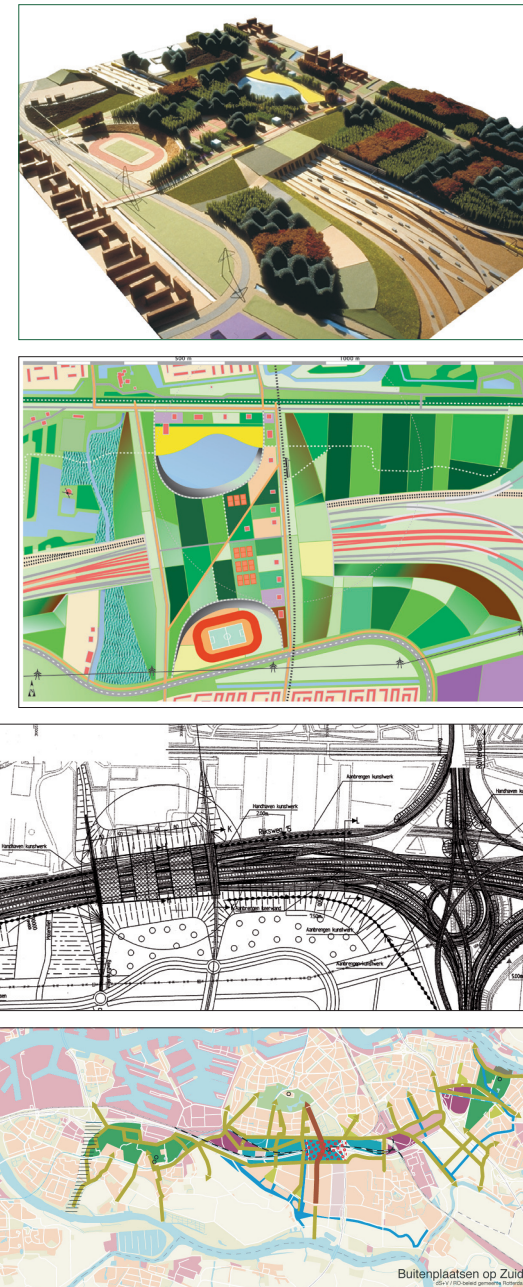


Fig. 11. Carnisseplaat, Rotterdam, The Netherlands (Hoeven 2002)

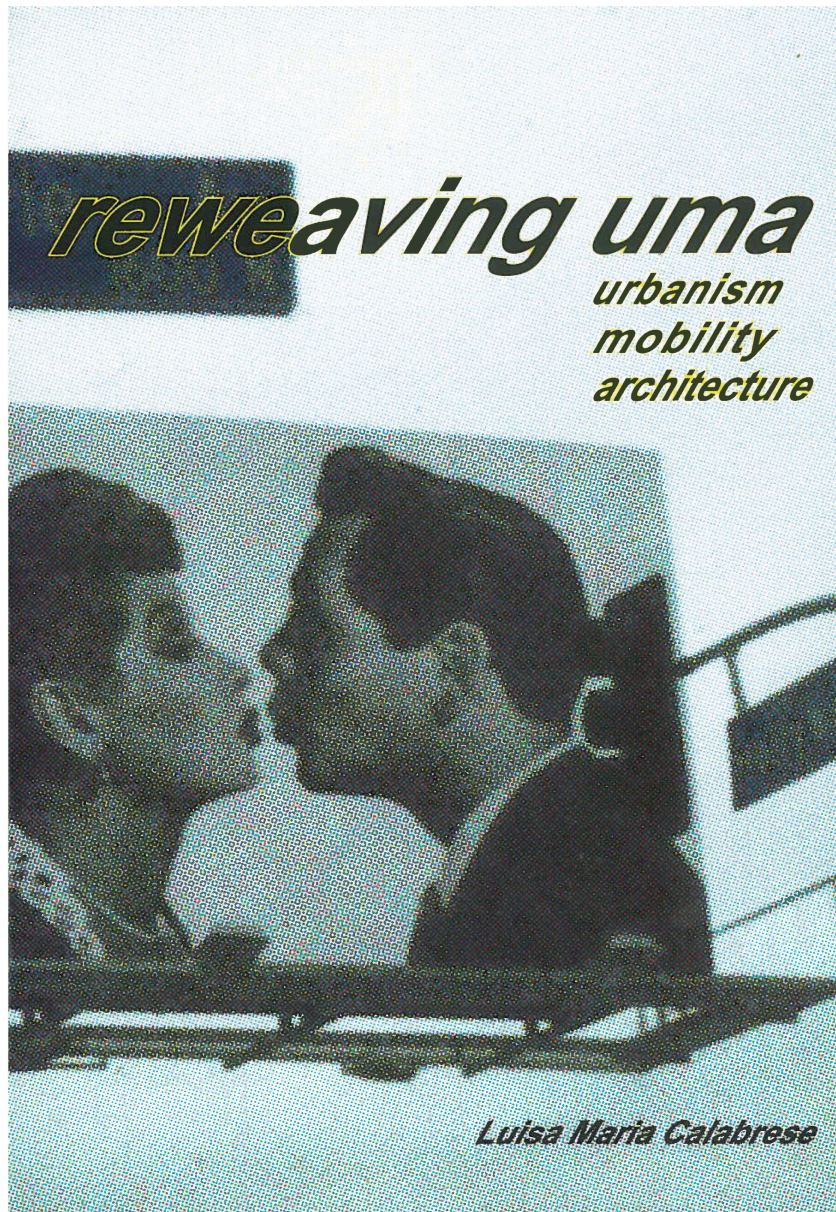


Fig. 12. *Reweaving UMA. Urbanism Mobility Architecture*. Luisa Calabrese, 2004

Luisa Calabrese

'Reweaving UMA. Urbanism Mobility Architecture', 2004 (Fig. 12)

A few years after Van der Hoeven, Luisa Calabrese applied to the chair bringing a grant from the Italian government to do preliminary research on the design for the integration of infrastructure in public space and developing this into her PhD research. So, though her and Van der Hoeven's work is definitely not the same, it is strongly related. Calabrese was the first in the chair to construct important parts of her argument from historical research. She indicates how a series of paradigm shifts in the fields of architecture, urbanism and transportation and traffic engineering since the mid nineteenth century has resulted in the growing apart of these now separate and independently operating disciplines, much to the disadvantage of our cities that tend to break apart in fragments because of the impact of large scale infrastructure on their urban tissues. (Fig. 13) She shows "how mobility is solely concerned with traffic and transportation, urbanism with city planning and design, while architecture is seen as solely related with the production of artifacts." (Calabrese 2004 p 19) Her thesis is a plea for integrating the design of mobility in urban design again. It is consciously developing new theory for the discipline of urban design, strengthening its position in the processes of planning cities and urban transformations. Her dissertation is named *Reweaving UMA. Urbanism Mobility Architecture*. At the time promising developments were taking place "especially in The Netherlands where designers are offered more opportunities to participate actively in the design of the spaces of mobility." (Calabrese 2004 p 21) (Fig. 14) Her research was nevertheless strongly international, as the development of the discipline of urbanism has always been. The research had a follow-up even during the preparations for her thesis when Calabrese became Director of Research of the second Biennale of Architecture in Rotterdam in 2003, which served as the basis for the main exhibition in the 'NAI', the Netherlands Architecture Institute. (Fig. 15)

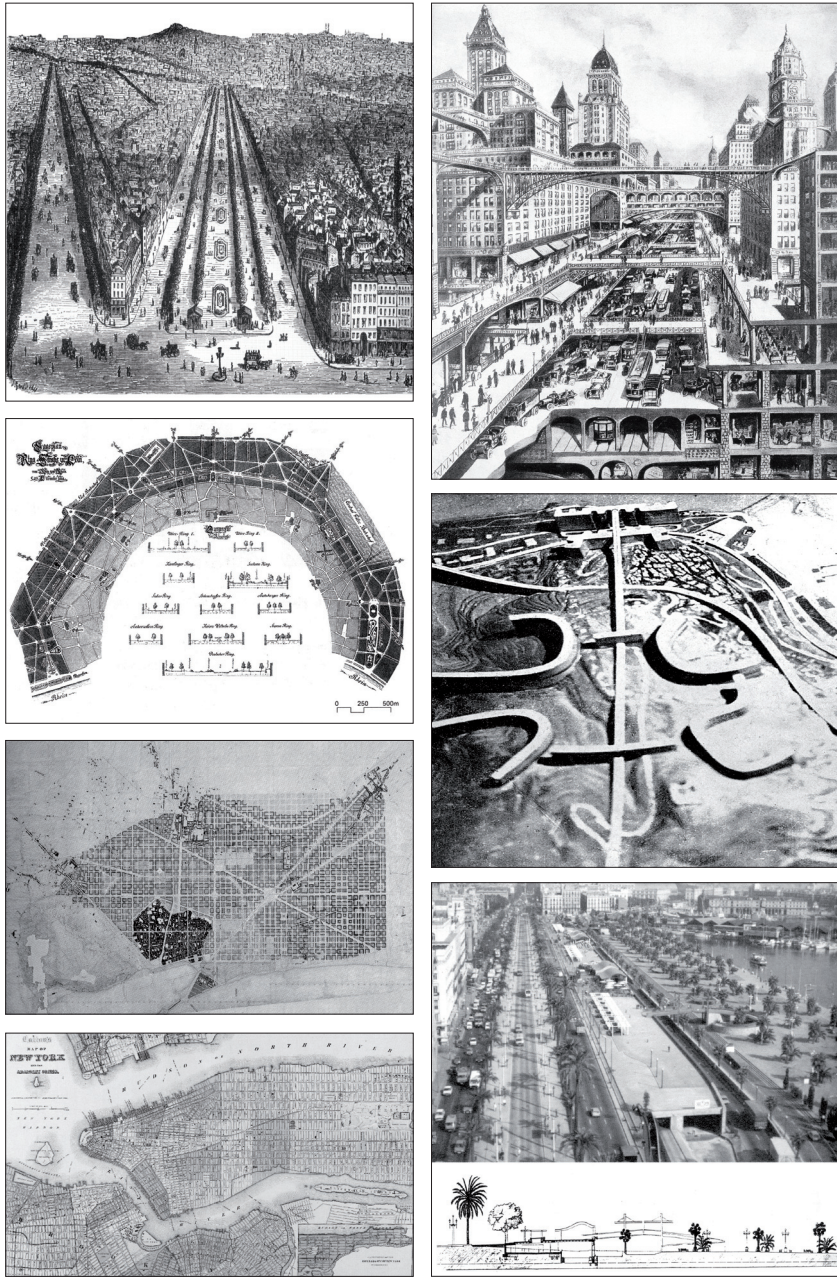


Fig. 13. Paradigmatic urban designs (Calabrese 2004)

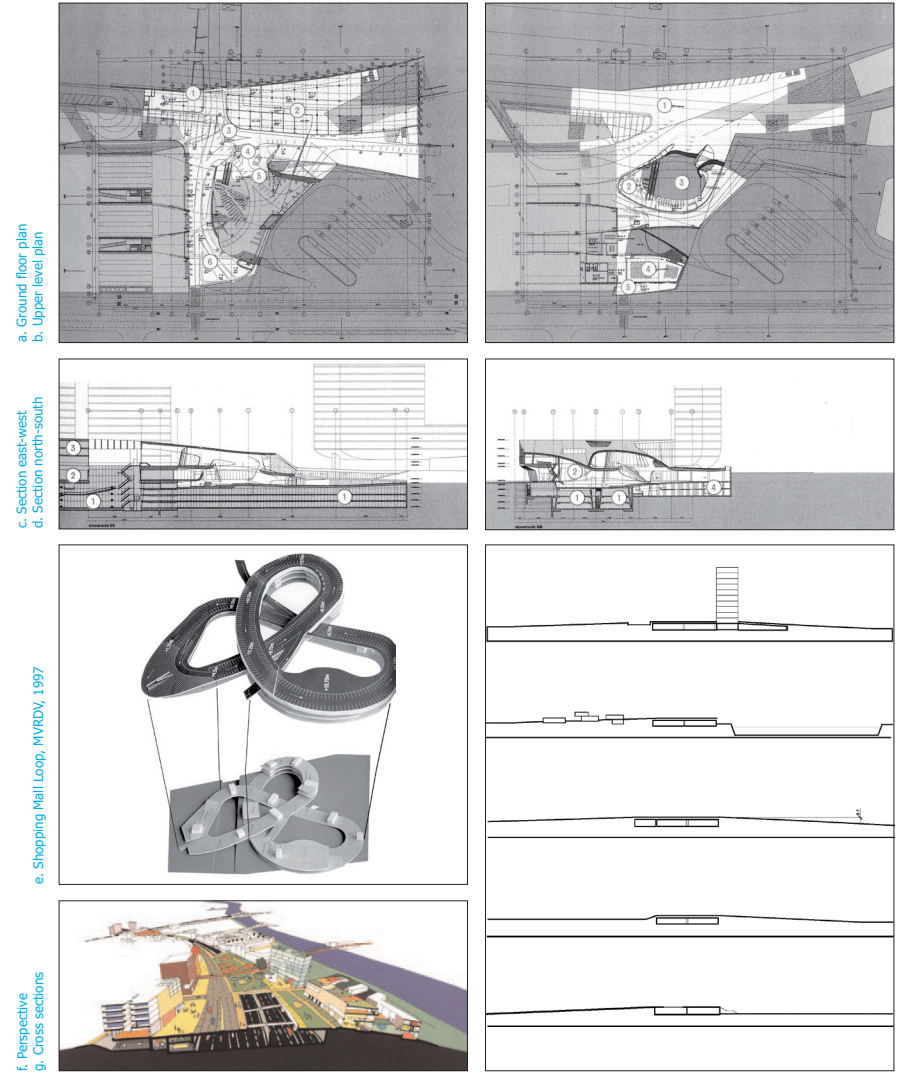
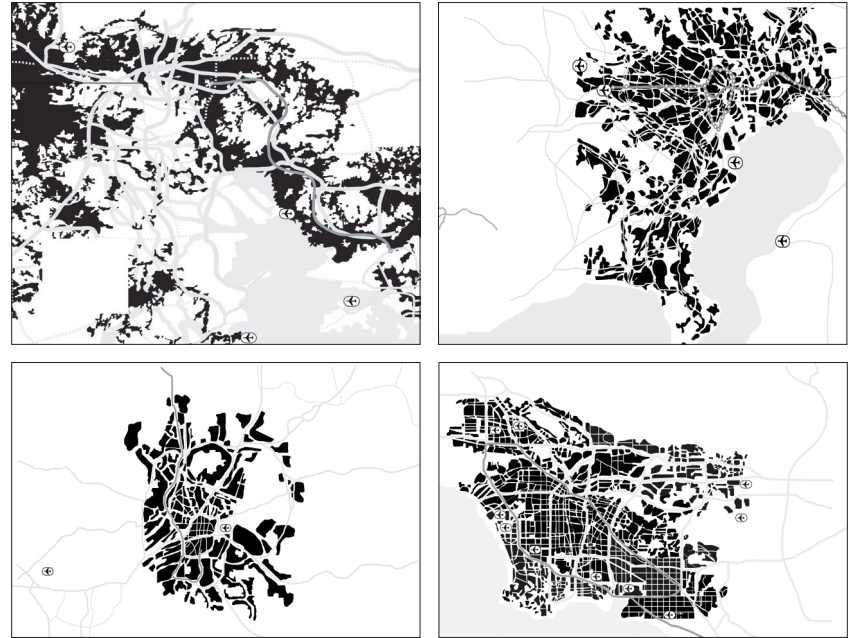


Fig. 14. Dutch examples of the integration of urban design and infrastructure design (Calabrese 2004)
 a-d. Station, Arnhem, The Netherlands, UNStudio, 1996-2010
 f, g. Leidsche Rijn, near Utrecht, The Netherlands, covering highway A1, MaxOne, 1997



a. Randstad, The Netherlands
b. Beijing, P.R., China

e. Ruhr Area, Germany
f. Jakarta, Indonesia



c. Pearl River Delta, P.R., China
d. Tokyo, Japan

g. Mexico City, Mexico
h. Los Angeles, CA, USA

Fig. 15. World metropolises (Calabrese 2004)

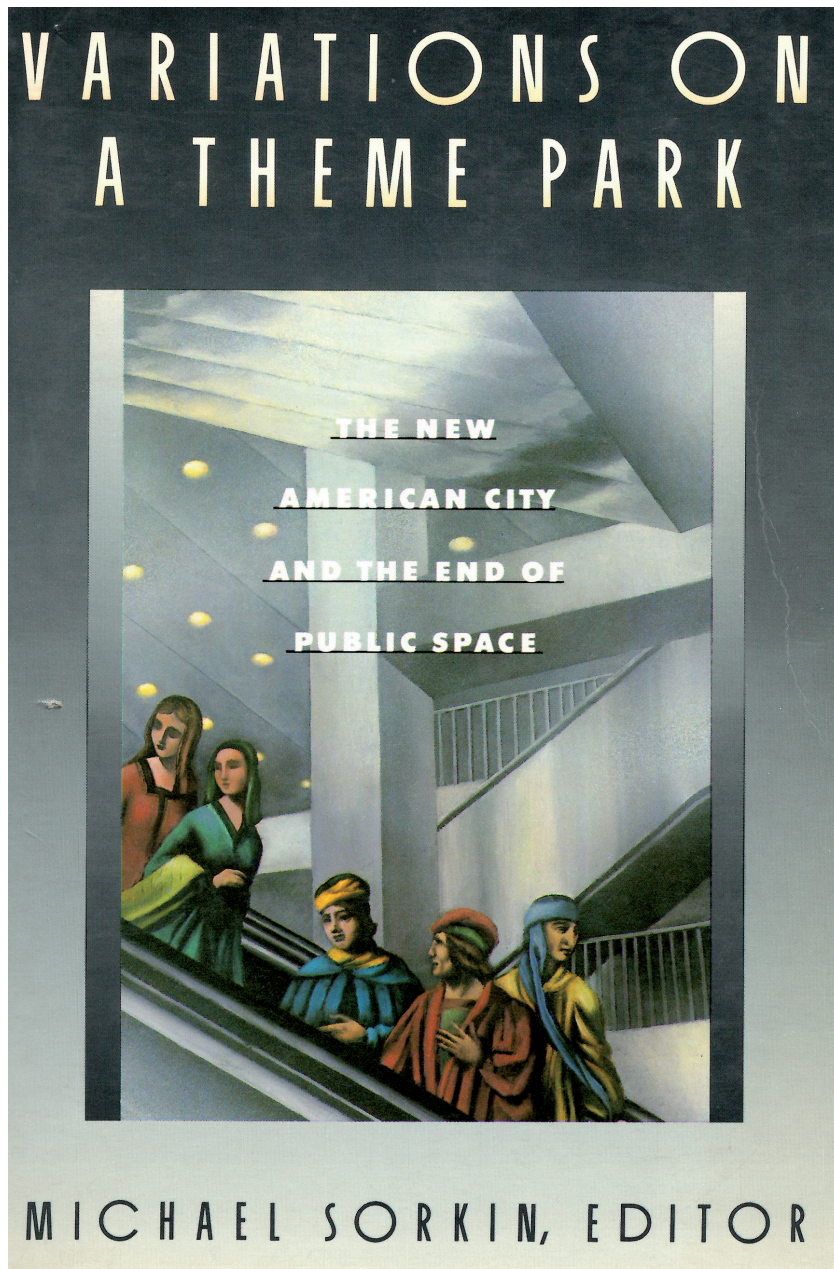


Fig. 16. *Variations on a Theme Park. The New American City and the End of Public Space.* Michael Sorkin (Edit.), 1992

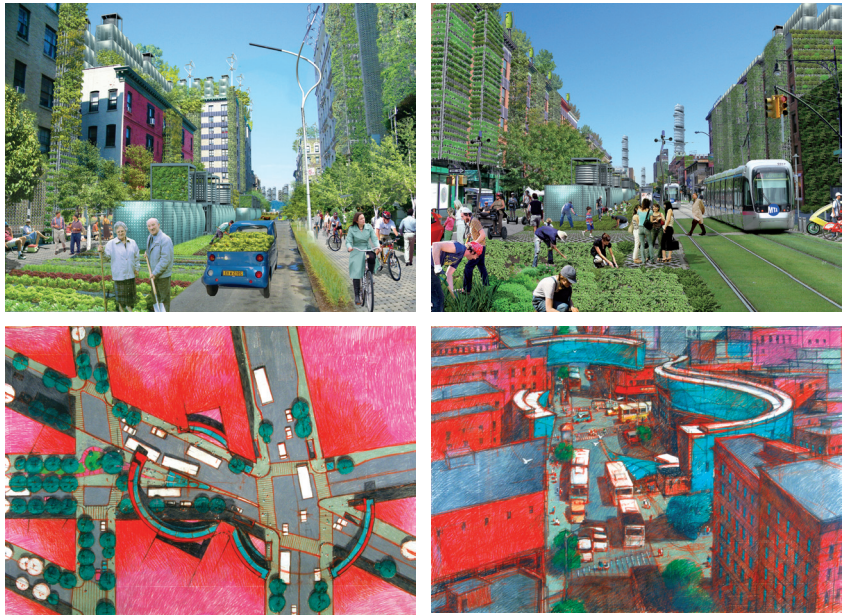
Michael Sorkin

'Mass Movement' (expected 2017)

At the end of my career, there is again an urbanist from the outside who wants to connect to this aspect of urban design in the chair: professor Michael Sorkin of the City College of New York. His edited volume *'Variations on a Theme Park'* has been an eye opener for me when it was first published in 1992. (Fig. 16) I am very proud that he is interested to write his next book as his PhD thesis with us. His subject is related to Calabrese's in that he too starts from the observation that transportation technologies are designed without consideration for their impact on urban form. I cite his research proposal:

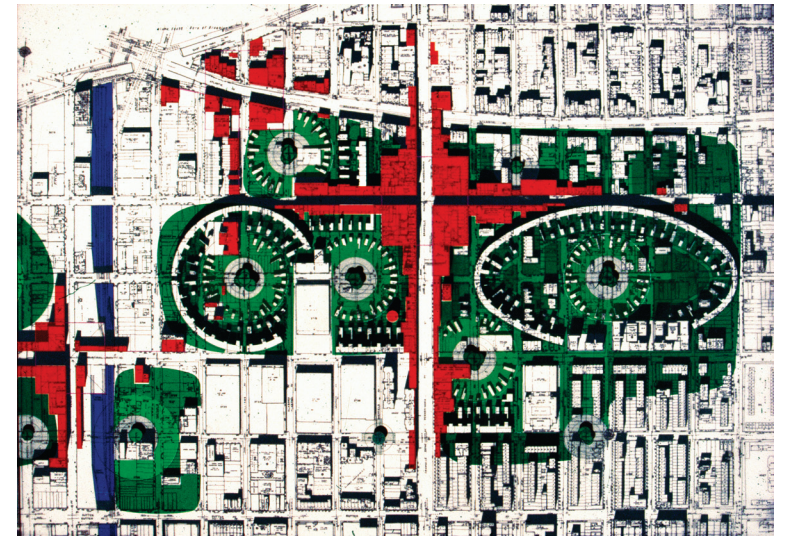
"[the research] aims to be [-] a prescriptive epistemology of urban movement. It will examine mobility as a mode of being and knowing and theorize urban transportation as the outcome of differing conjunctions of necessity and desire."

Sorkin will explain why people and things must move, and "the pleasures of the ride", from the experience of driving a car to the amusement park ride, but also the inherent dangers. He will include a concise history of the effects of mobility on cities, from horseshit to the contemporary environmental threats and from present traffic jams to new technologies. He will then relate movement to urban morphology and design, and thus connect to one of the other research themes in the chair. (Fig. 17, 18)

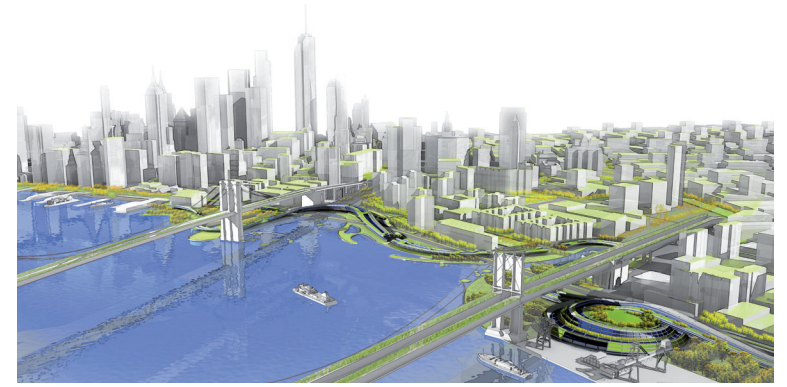


a. Harlem, 147th Street
b. Rotterdam Avenue

c. Bronx Hub, plan
d. Bronx Hub, view



a. East New York Acupuncture, New York, NY, USA



b. Our Cities Ourselves



c. Weed

Fig. 17. New York projects, Michael Sorkin Studio, New York, NY, USA

Fig. 18. Terraform projects, Michael Sorkin, New York, NY, USA

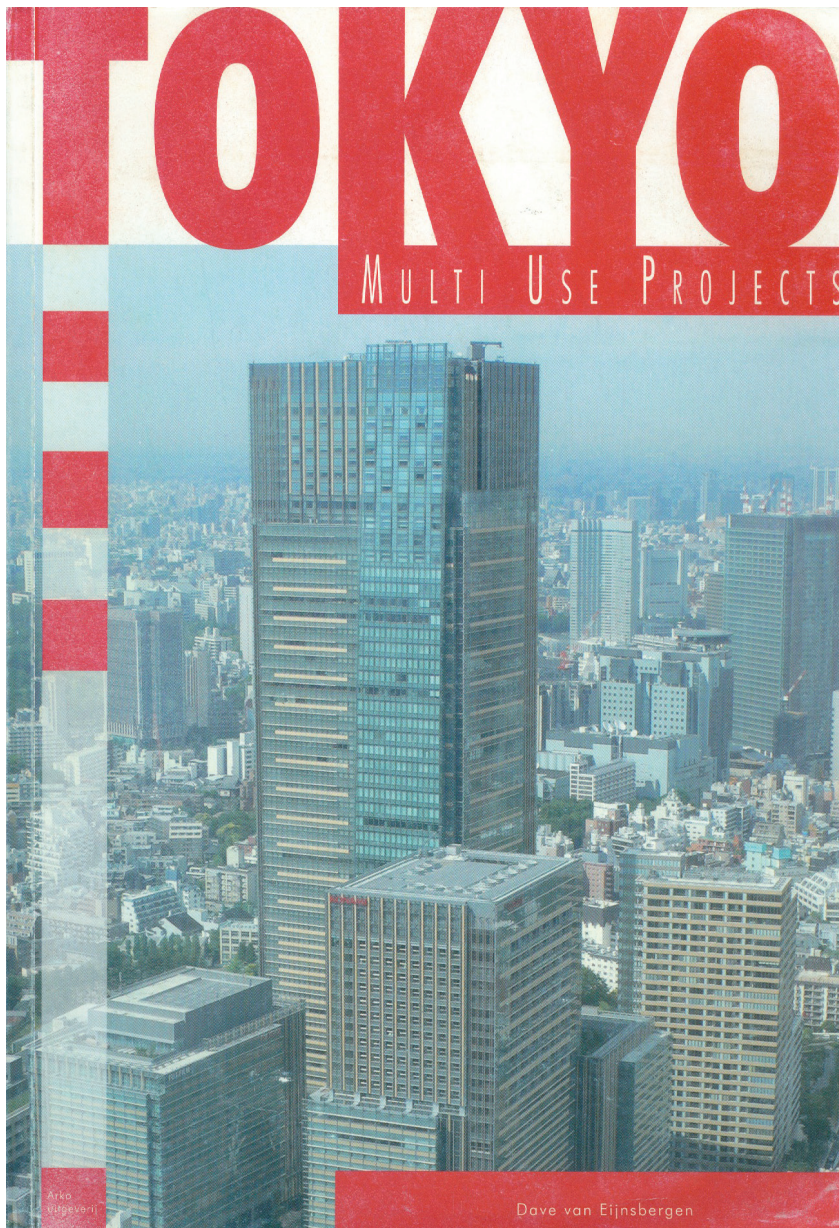


Fig. 19. *Tokyo Multi Use Projects*. Dave van Eijnsbergen, 2008

2. New Centralities, Interior and Exterior Public Space

The next grouped theme is that of the new centralities in the world metropolises, and of interior and exterior public space.

Dave van Eijnsbergen

'Tokyo Multi Use Projects', 2008 (Fig. 19)

Dave van Eijnsbergen, a Dutch architecture historian specialized in Japan, researched, documented and helped understand the new urban phenomena of Tokyo in the light of its historical development. As the city grew to its huge size, with now over 35 million inhabitants, it stressed its emphasis on public transport ever more. To supply the necessary urban facilities, it needed what we call New Centralities, new centers of high density and mixed use, including offices, apartments, hotels, shopping centers, restaurants, cultural facilities, schools and public gardens. (Fig. 20) The rich mix of functions ensures a populated environment during most hours of the day and night. As for a series of reasons it is only possible to build large complexes of new buildings in Tokyo on redundant industrial or military sites, historical boundaries help thus create a contextual urban setting. The municipal authorities as well as the commercial developers know that success depends on excellent connections to public transport, so most centralities are closely connected to train stations on the Yamanote Circle Line or one of the many metro lines that serve the city. Even though in most cases western architects were involved in the urban and architectural design of these centers, with the intention to generate an international appeal, often there is a distinctive Japanese feeling in the choice of materials and the detailing, and the references to Japanese architecture and especially garden architecture abound. (Fig. 21, 22)



Fig. 20. Yamanote Circle Line with new urban centralities, Tokyo, Japan (Eijnsbergen 2008)
 Fig. 21. Aerial photograph of Roppongi Hills, Tokyo, Japan, The Jerde Partnership and KPF, 1998-2002 (photo Hans Keijzer)

a-d. Roppongi Hills: a. From garden



b, c. Interior of shopping mall



d. In urban context
 e-g. Tokyo Midtown

f. Garden
 g. Functional mix

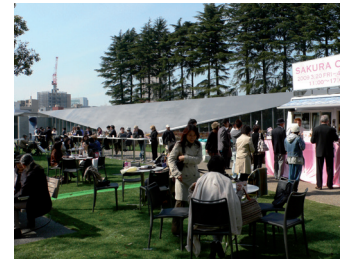


Fig. 22. a-d: Roppongi Hills, The Jerde Partnership and KPF, 1998-2002 and e-g: Tokyo Midtown, SOM, 2004-2007 (e-g), Tokyo, Japan (Eijnsbergen 2008)

In his dissertation Van Eijnsbergen included two maps that hold what I think is an important lesson for urban research. (Fig. 23, 24) One shows the dispersion of cultural facilities in the central areas of the metropolis, clustered around important stations on the Yamanote Line; the other shows the dispersion of large shops over the metropolitan area. As Tokyo is a city heavily relying on public transport, the patterns are more or less the same. This means that - in a designerly way of thinking - one does not necessarily have to research each function in detail to nevertheless understand the overall workings of the city.

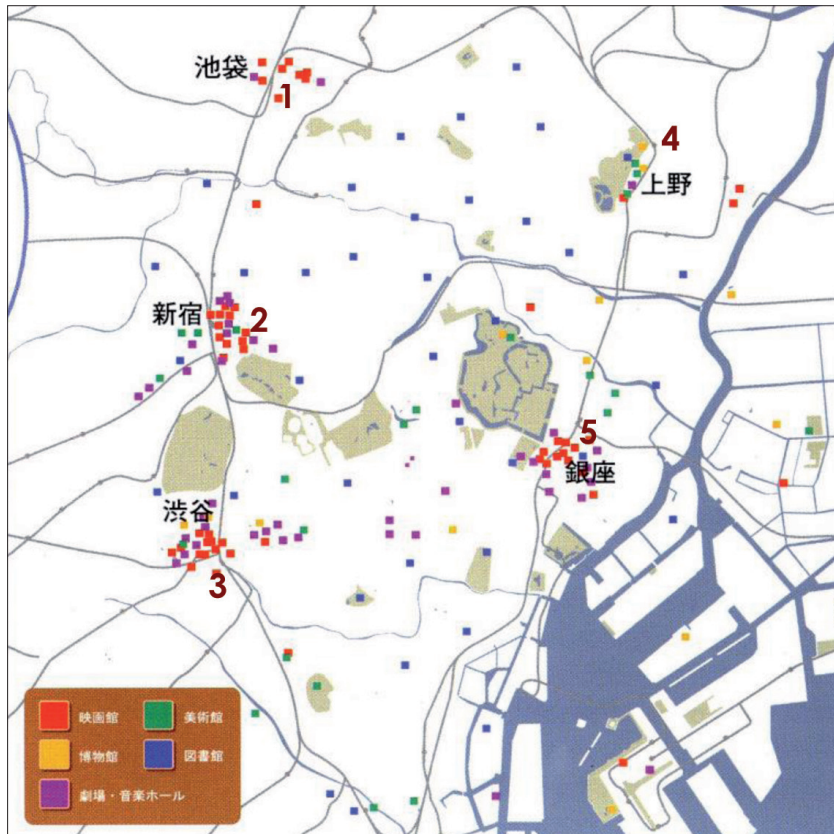


Fig. 23. Cultural facilities, Tokyo, Japan (Eijnsbergen 2008)

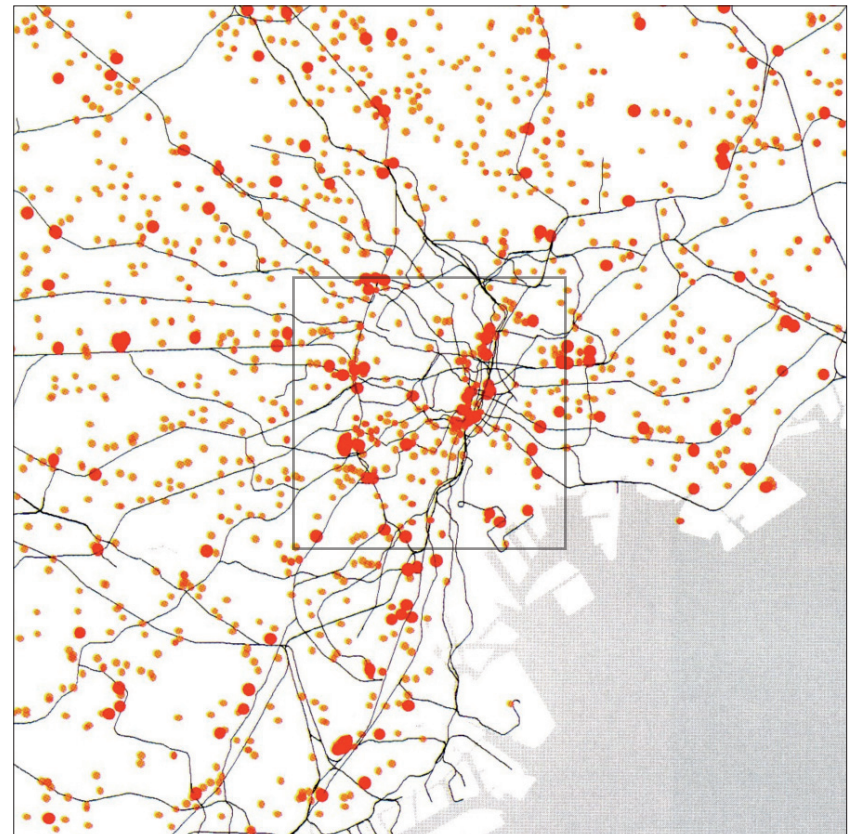


Fig. 24. Large shops, Tokyo, Japan (Eijnsbergen 2008)

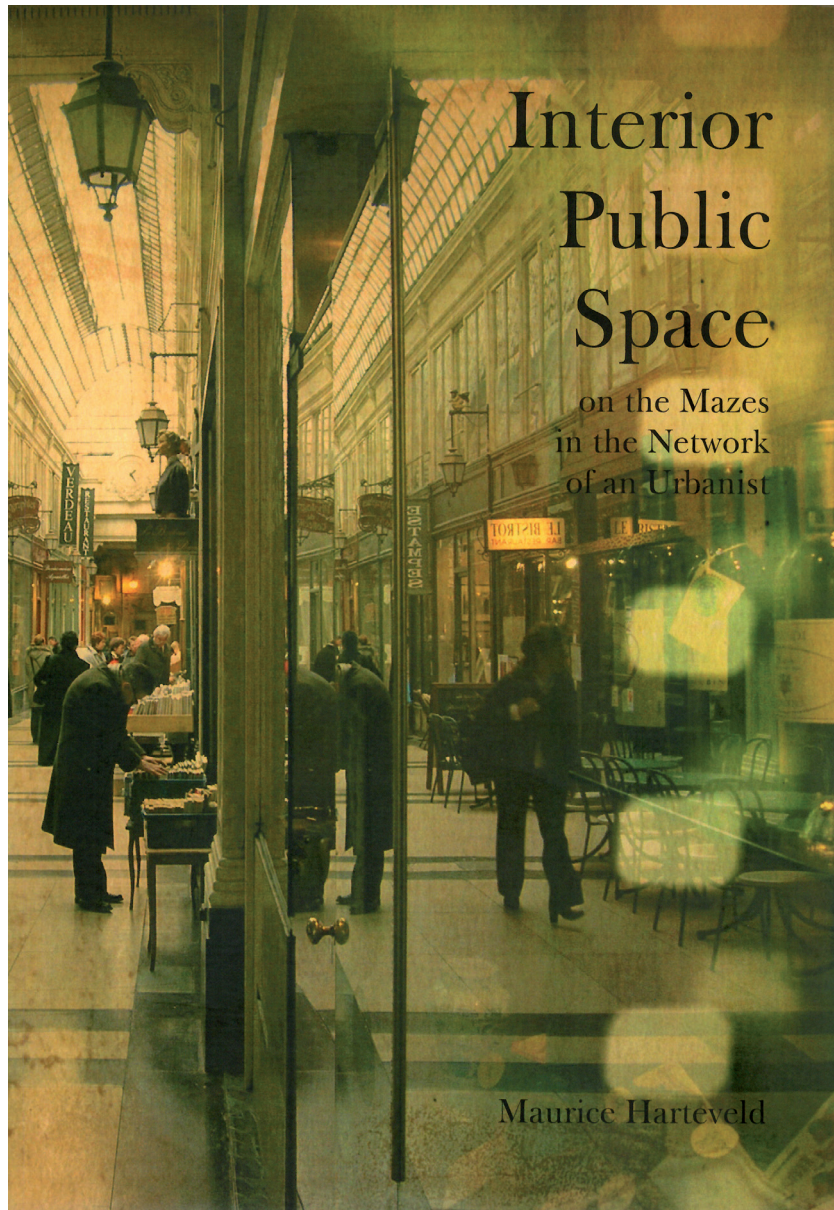


Fig. 25. *Interior Public Space. On the Mazes in the Network of an Urbanist*. Maurice Harteveld, 2014

Maurice Harteveld

'Interior Public Space. On the Mazes in the Network of an Urbanist', 2014 (Fig. 25)

Maurice Harteveld, Dutch Master of Urbanism and Architecture, started from the observation that interior public space has become an important constituent of the contemporary city and of our urban experience, yet rarely is it designed as such. His was a major historical research, leading to a taxonomy of interior public spaces, for instance the passage, arcade or galleria, the mall and the underground systems of metropolises. His research thus also relates to the theme of History, Culture, Identity, Urban Images and Tradition. By reconstructing the evolution of the most important types of public interiors and their meaning, he rediscovered lessons to be learned for today. It was very much 'a monks' work', including searches in archives all over the world and the use of 'non-scientific', but contemporary sources like newspapers and brochures of all kinds and sizes. The subject is, and the research has been, very international and thus intercultural, stressing the importance of local cultural contexts for the form of the projects and the meaning they acquire for their users. Relatively unknown knowledge has been uncovered and recombined to achieve new and unexpected insights. (Fig. 26-28)

Harteveld's research is another example of what I call designerly thinking, actually inventing new ways of interpreting historical development. Recently in the New York Review of Books Robert Darnton, writing about Arlette Farge's book 'Le Goût d'Archives', newly translated as 'The Allure of the Archives', calls this, and I cite him: "historical imagination. It is like a sense of smell." (Darnton 2014) You have to develop a nose for it, one might say. As such it shares characteristics with the disciplines of history and cultural sciences, and at the same time shows clearly that historical research done by a designer is different from historical research done by a historian.



Fig. 26. Passages, arcades and galleria's (Harteveld 2014)

- a. Passage des Panoramas, Paris, France, 1916
- b. Arcade systems in Paris, France

- c. Passage Jouffroy viewed from Passage des Panoramas, Paris, France
- d. Some of the major public interior systems in New York, NY, USA

- e. The new Piazza del Duomo, Giuseppe Mengoni, Milan, Italy, 1865

- f. L'Arcade des Champs-Élysées or Nouveau Passage, Paris, France, by Maurice Lauro, 1927
- g. The Souk, Abu Dhabi, Norman Foster, 2011

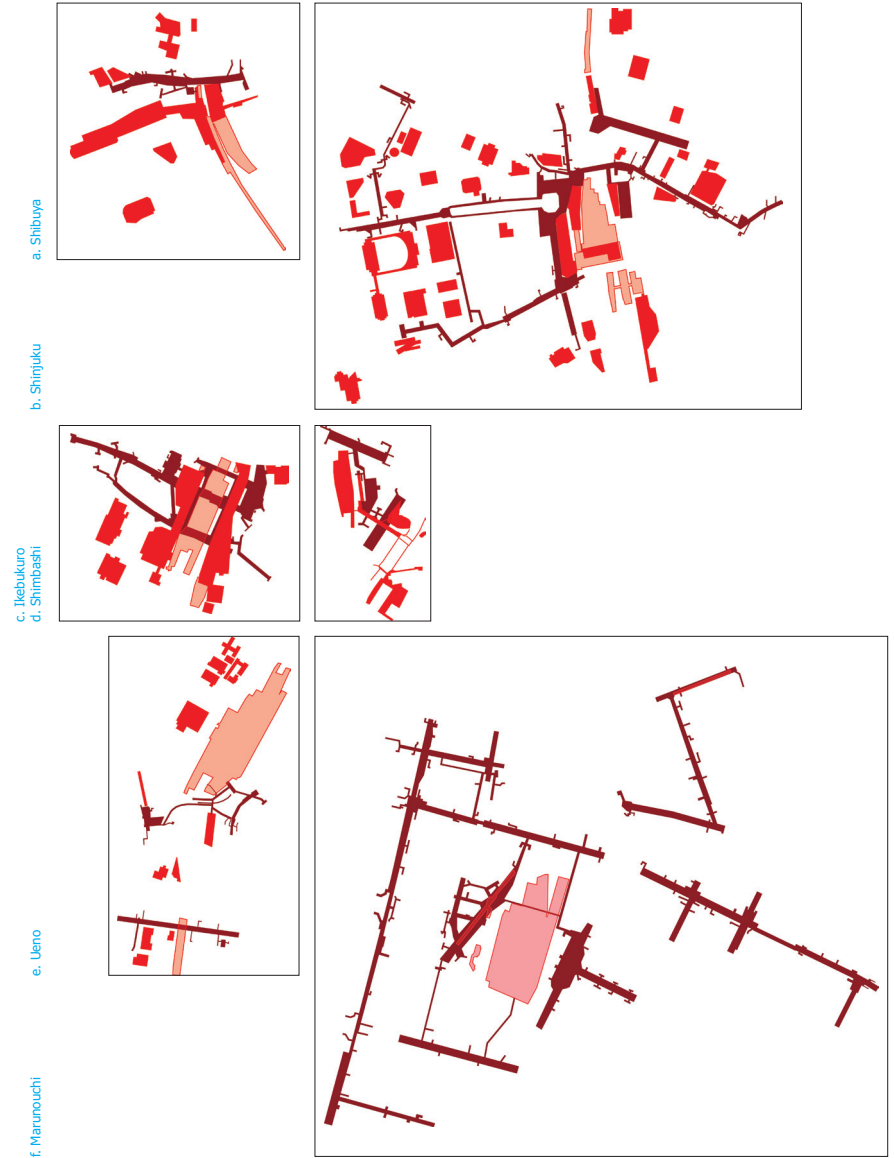
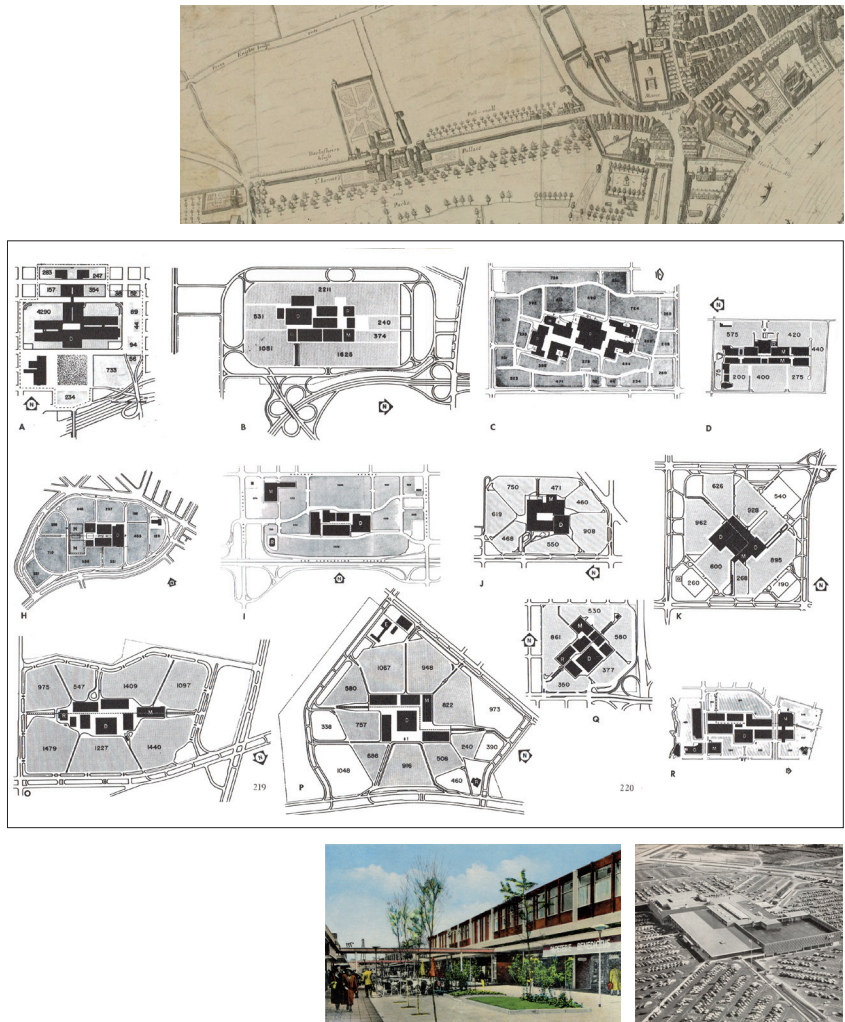


Fig. 27. Underground systems Tokyo, Japan (Harteveld 2014)



a. Pall Mall, London, England, by Richard Newcourt the Elder, 1658

d. Mall comparison in Shopping Town USA, Victor Gruen, 1960 (2nd part on page 47)

f. Lijnbaan, Rotterdam, The Netherlands, Van den Broek en Bakema, 1960s
 i. West Edmonton Mall, Europe Boulevard, Edmonton, BC, Canada, Maurice Sunderland, from 1981
 j. Santa Maria replica, West Edmonton Mall, Edmonton, BC, Canada, Maurice Sunderland, from 1981

b. The urbanized Pall Mall, London, England, by Samuel Read, 1852

h. Galleria Post Oak, Houston, TX, USA, Gyo Obata and Harwood Taylor, 1970-71
 i. West Edmonton Mall, Europe Boulevard, Edmonton, BC, Canada, Maurice Sunderland, from 1981
 j. Santa Maria replica, West Edmonton Mall, Edmonton, BC, Canada, Maurice Sunderland, from 1981

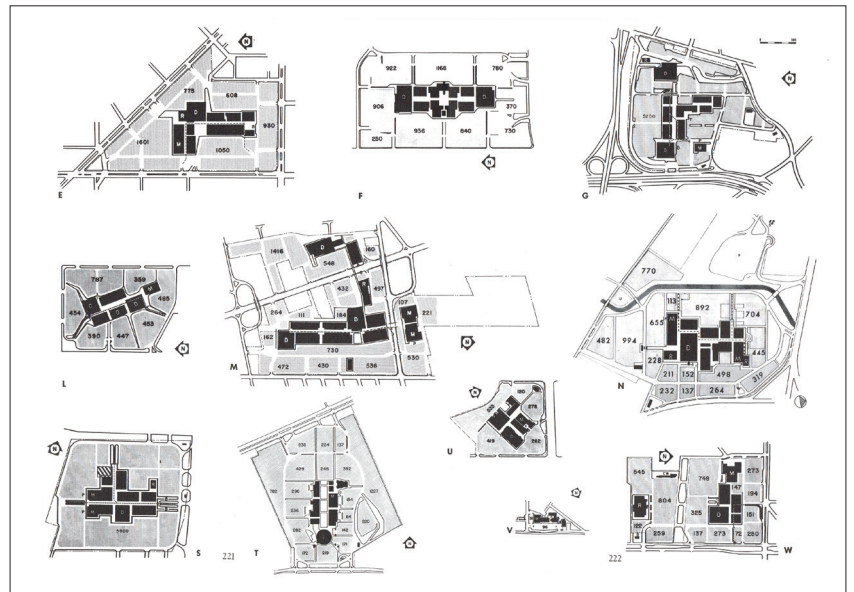


Fig. 28. The Mall (Harteveld 2014)



a. Heng Mount Ancestor Memorizing Ritual, Baoqing 7th Alley, Wuhan, P.R. China (photo Deng Xiaoming)
 b. Cour et Passage des Petites Ecuries, Paris, France

Fig. 29. Street life in Wuhan, P.R. China and Paris, France (1) (Cai)

Cai Jiaxiu

'Collective Space. Urban Streets in Chinese and French Context' (expected 2016)

Cai Jiaxiu, also called Amily, is a young Master of Architecture from Wuhan, China. The focus of her research is parallel to that of Maurice, but on public space outside instead of inside. It is on the scale of the immediate urban environment for dwelling, in the broad philosophical meaning of the word. In her comparison of Chinese and European urban environments that are actively being used for social life, she introduces the subtle differences between the categories of public, collective and communal space, different also between Eastern and Western cultures and traditions. (Fig. 29, 30) Often the notion of an independent person who has broken free from the constraints of society and nature is seen as central to modern Western culture, while the rest of the world is better characterized by sociocentric, holistic notions of the self (Morris 1994), described with the term 'interdependent self', where the boundaries between individuals are fuzziier and they are more dependent on group characteristics (Moghaddam 1998).

The basic type of outside public space is the street, though much of the intense social interaction locates itself on plazas, squares, and the small spaces adjacent to streets and buildings Cai calls interstitial. In general, streets have three properties: as paths for transportation, as defined space and interface between buildings, and as a place for people's social interaction. (Fig. 31) Important for the effect on the gathering of people and their appropriation of a space are its morphological characteristics, but also for instance pavements, elements in the adjacent architecture like windows, canopies for rain and sun shelter, and entrances to buildings, as well as subordinate artifacts like signs and advertisements, small, often movable tables and chairs, or green elements like trees, other plantings and patches of grass. (Fig. 32, 33) The research will regenerate the professional awareness of the importance of people's use of space, and identify spatial parameters for streets facilitating collective use by the people.

So far, from the researches described relations to other themes can be indicated: Frank van der Hoeven and Luisa Calabrese to Design Thinking and Teaching; Luisa Calabrese, Dave van Eijnsbergen and Michael Sorkin also to Morphology and Complexity and History, Culture, Identity, Urban Images and Tradition; and Maurice Harteveld and Cai Jiaxiu to History.



Fig. 30. Street life in Wuhan, P.R. China and Paris, France (2) (Cai)

a. Dancing beneath infrastructure, Wuhan, P.R. China (photo Lili)
 d. Rue St. Denis, Paris, France

b. Funeral ceremony, Baoqing Jie, Wuhan, P.R. China (photo Zhaocong)
 e. Public life in a dead end street, Paris, France

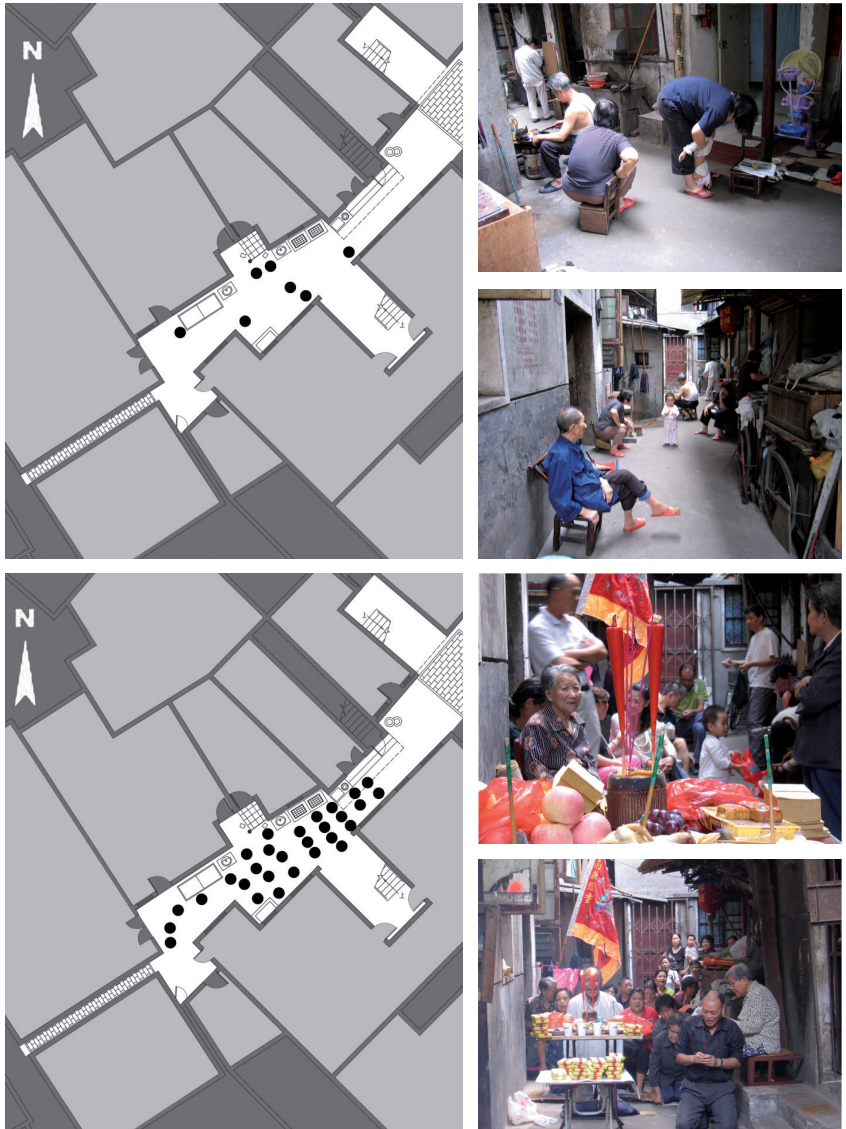
c. Movable cinema in a street, Wuhan, P.R. China
 f. Appropriation of a street at night, Paris, France



a. Street-in-street, Hangzheng Jie, Wuhan, P.R. China (photo Mazhenhua)

b. Street-in-street, Paris, France

Fig. 31. Street life in Wuhan, P.R. China and Paris, France (3) (Cai)



a-c. Public life on a normal day

d-f. Heng Mount Ancestor Memorial Ritual

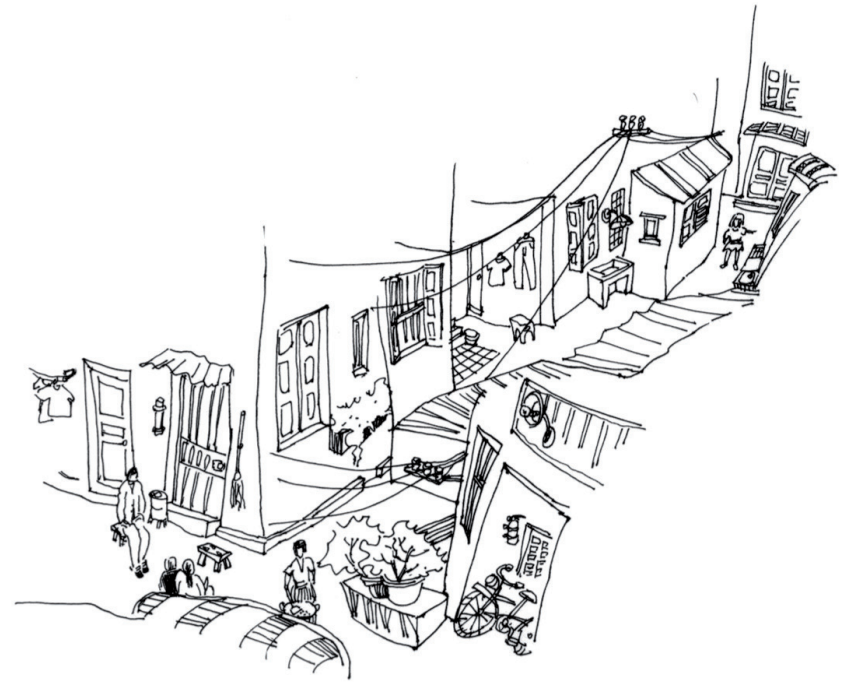


Fig. 33. Sketch of public life in interstitial space: Baoqing 7th Alley, Wuhan, P.R. China (Cai)

Fig. 32. Baoqing 7th Alley, Wuhan, P.R. China (Cai)

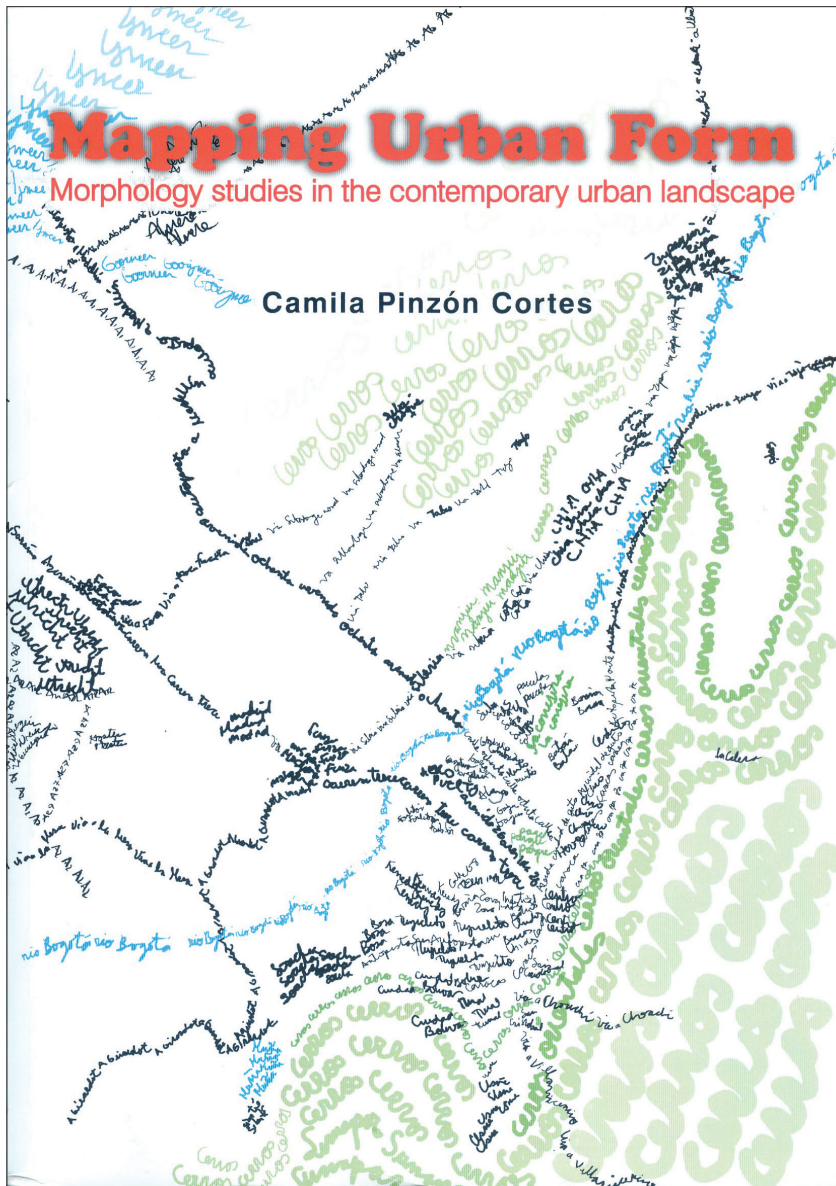


Fig. 34. Mapping Urban Form. Morphology studies in the contemporary urban landscape. Camila Pinzón Cortes, 2009

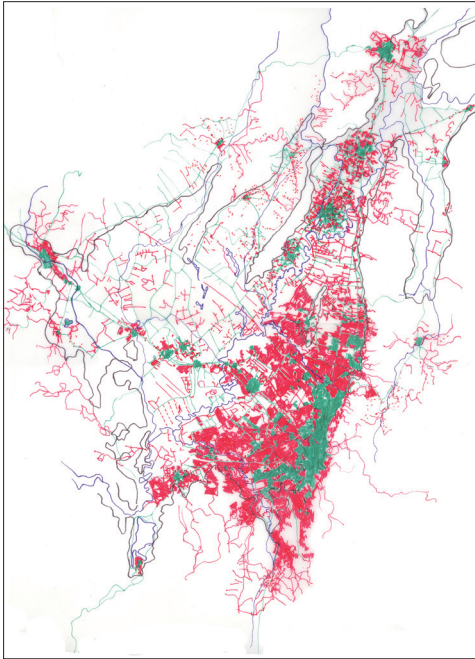
3. Morphology and Complexity

The next theme is that of urban morphology and complexity. Earlier, I mentioned Delft has in the Delft School a tradition of morphological and typological research. The development was more or less halted in the 1990's, as other themes came up in the Departments of Architecture and Urbanism. I was lucky to get researchers who wanted to follow up on this tradition, in their own ways, adding to the technique and the body of knowledge generated by this method.

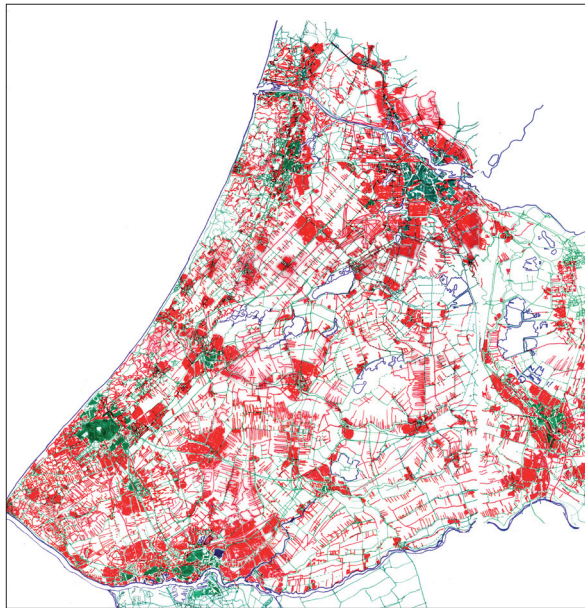
Camila Pinzón Cortes

'Mapping Urban Form. Morphology studies in the contemporary urban landscape', 2009 (Fig. 34)

The first was Camila Pinzón Cortes, Master of Architecture from Colombia, comparing the Bogotá-Sabana region in Colombia and the Randstad in The Netherlands through techniques of morphological analysis. (Fig. 35) To be able to do this, first an overview was needed of the different existing techniques: the original Italian, French and British Schools, and in addition the American School, and the Dutch, or rather the Delft School. This chapter in her thesis is a welcome addition to the famous paper by Anne Vernez-Moudon of 1997: 'Urban Morphology as an emerging interdisciplinary field'. Pinzón Cortes found that the four basic elements of the different schools of morphological research - plan units, urban tissue, homogeneous areas, and fringe belts - were not sufficient for her research. In addition she needed the layering of scales and aspects originating from the Delft School. (Fig. 36) She needed this to be able to make the comparison between the present urban forms of Bogotá and the Randstad. The two cases are chosen as different as possible, to test the technique of analysis. Pinzón Cortes shows how in Bogotá roads between homogeneous areas form a local network, while in the Randstad each development has its own connection to the regional level. In the Randstad this causes discontinuities on the local level, while in Bogotá no regional network exists (though this has started to change recently). That said, on the level of homogeneous areas there are remarkable similarities. She concludes that the contemporary urban landscape can be understood as structured by overlapping layers of homogeneous areas with the infrastructure and the open space in between as potential binding elements. These areas offer a chance for the design of a regional structure for the urbanized landscape shaping a local identity. (Fig. 37)

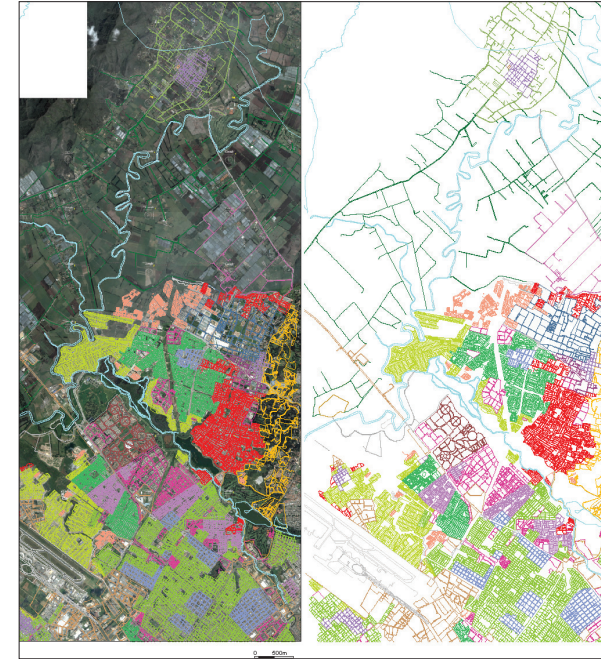


a. Bogotá-Sabana Region



b. Randstad

Fig. 35. Bogotá-Sabana Region, Colombia and the Randstad, The Netherlands (Pinzón Cortes 2009)

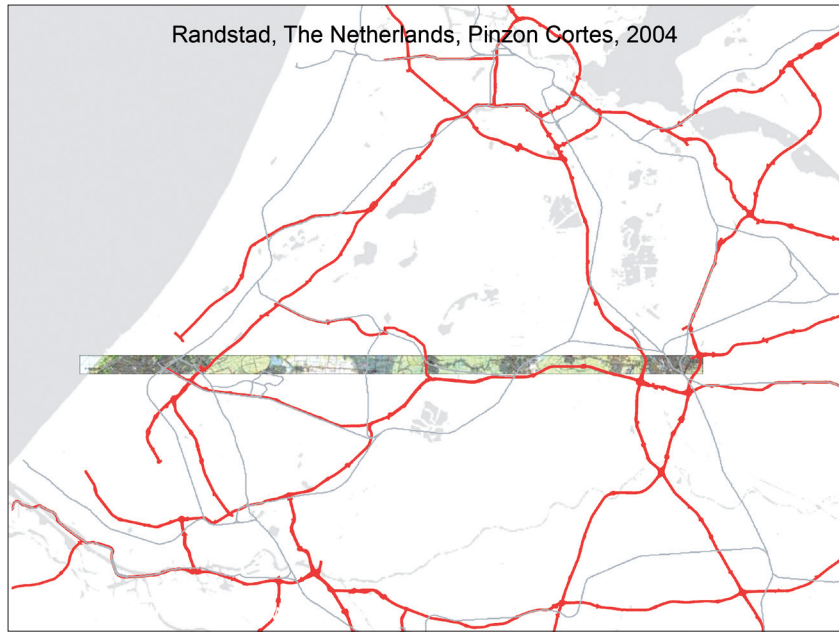


a. Bogotá-Sabana Region

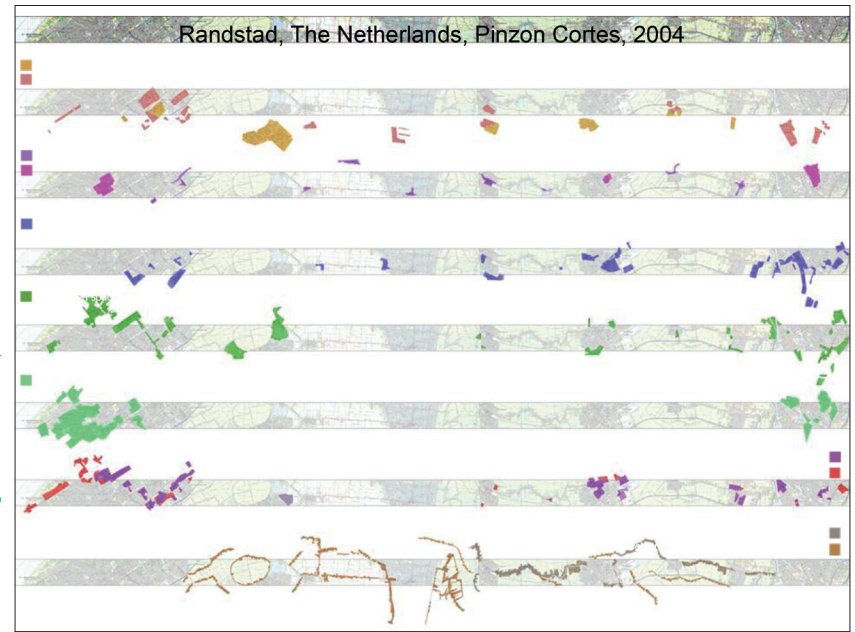


b. Randstad

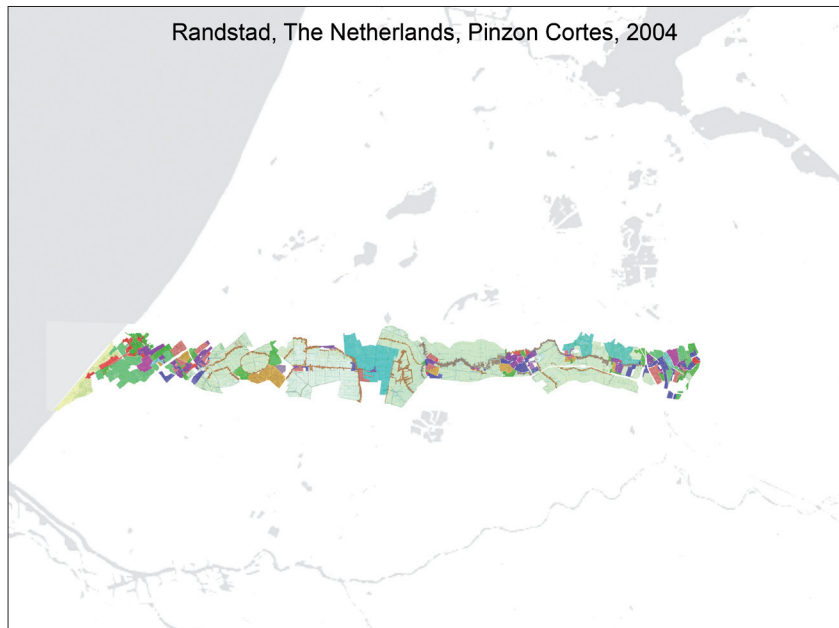
Fig. 36. Bogotá-Sabana Region, Colombia and the Randstad, The Netherlands, morphological analysis: homogeneous areas (Pinzón Cortes 2009)



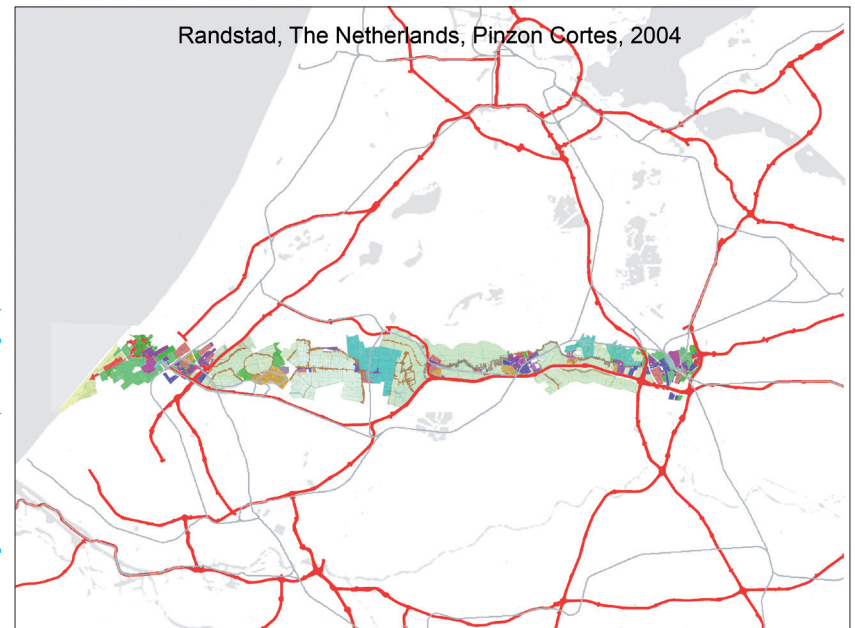
a. The strip and the highway network



b. The different homogeneous areas in the strip



c. The homogenous areas of the strip



d. The homogenous areas of the strip and the highway network

Fig. 37. Randstad: morphological analysis of east-west strip (Pinzón Cortes)



José Beirão

'CityMaker: Designing Grammars for Urban Design', 2012 (Fig. 38)

Pinzón Cortes was followed by José Beirão from Portugal, who used computational and morphological insights to develop computer software for generating urban designs through shape grammars. I was second promotor next to professor Sevil Sariyildiz of the Department of Architectural Engineering + Technology for the computational knowledge. When Beirão came to ask for my supervision, he showed me an amazing map of a student's plan for the extension of a Portuguese village, designed according to rules deduced from the existing situation by the computer. If ever I had had a job applicant for my office showing me this plan, I would have immediately hired her or him. (Fig. 39)

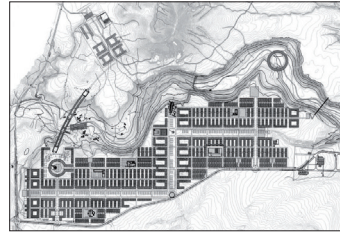
For the following I rely on Beirão's thesis summary. (Beirão 2012 p 10) The complexity in the evolution of cities can be identified at two levels: on a micro level it emerges from the multiple relations between the many components and actors in cities, whereas on a macro level it stems from the geographical, social and economic relations between cities. However, many of these relations can be measured. Urban designs can only be structurally improved if designers are able to address the measurements of some of these relationships or urban indicators during their design process. This will help them understand the meaning and effect of the changes they propose. In his thesis Beirão developed a method and a set of tools to generate alternative solutions for an urban context by a combined set of design patterns encoding typical design moves used by urban designers. As cases to deduct the design steps from he used designs by the Portuguese urban designer Chuva Gomes and the Dutch Frits Palmboom. (Fig. 40) The patterns were developed from observation of typical urban design procedures, first encoded as discursive grammars and later translated into parametric design patterns, here exemplified in the steps reconstructing the design for Praia in Cabo Verde by Gomes. (Fig. 41)

Fig. 38. CityMaker. Designing Grammars for Urban Design. José Beirão, 2011



Fig. 39. Extension of a Portuguese village based on design rules resulting from computer analysis (Beirão 2011)

a. Praia, Cabo Verde, Chuva Gomes
c. IJburg, Amsterdam,
The Netherlands, Frits Palmboom



b. Méta, Portugal, Chuva Gomes
d. Ypenburg, near The Hague,
The Netherlands, Frits Palmboom



Fig. 40. Cases used to deduct the design steps by Chuva Gomes and Frits Palmboom (Beirão 2011)

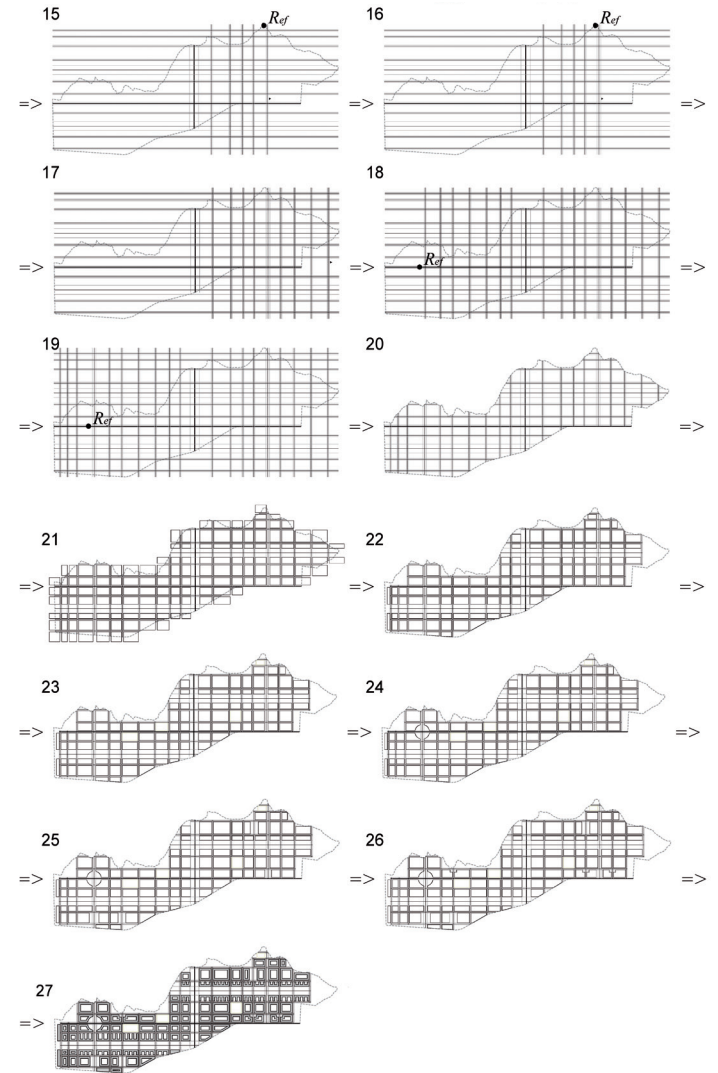
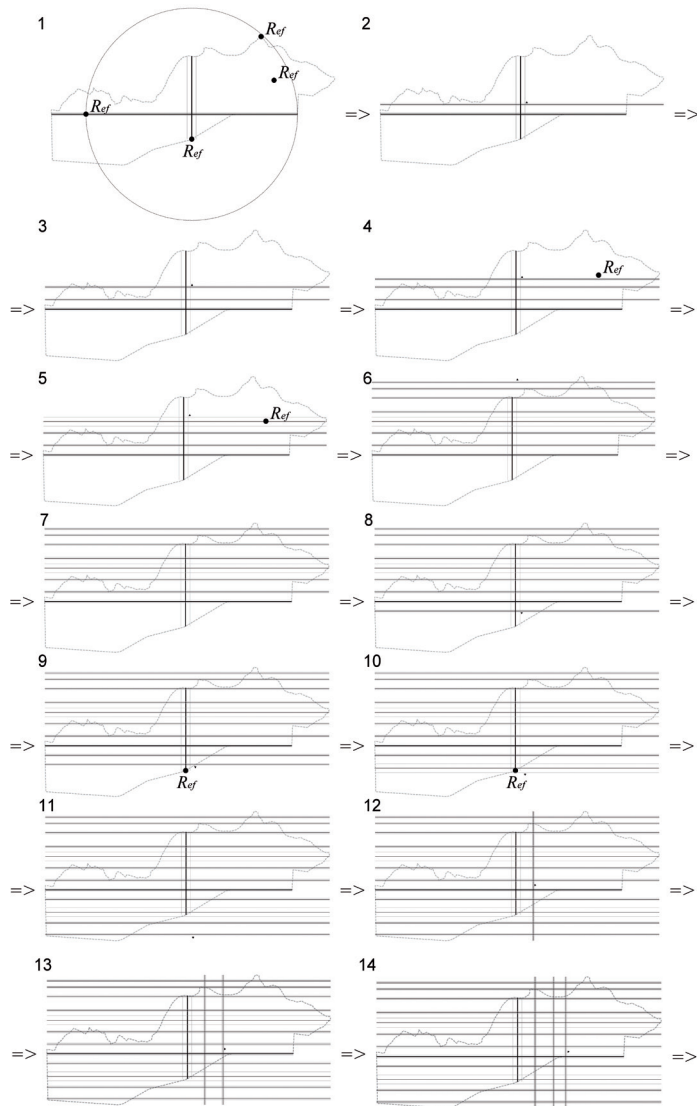


Fig. 41. 27 Steps in the design of Praia, Cabo Verde, Chuva Gomes (Beirão 2011)



Fig. 42. Players in Playnoord on the north bank of the IJ, Amsterdam, The Netherlands

Ekim Tan

'Negotiation and Design for the Self-Organizing city: A Game-Based Design Approach to City-Making', 2014 (Fig. 42)

Awareness of the complexity of the urban world also led to the PhD research of Ekim Tan from Turkey, Master of Urbanism from Delft, who developed from societal insights and insights in complexity theory a series of urban design games of increasing complexity allowing for self-organization in which stakeholders all have actual influence on the urban design they are cooperating on. Fully aware of the drawbacks and limitations of participation, she argues that the debate on participation will be influenced more and more by complexity theory. Professor Yuval Portugali, visiting professor in our department, wrote in 2000 his seminal work 'Self-organization and the City' that is a most worthy attempt to translate abstract notions of self-organization into the formation and evolution of cities. (Portugali 2000) Tan started her research with detailed analyses of three cases in very different contexts that all three show degrees of self-organization in their spatial and programmatic arrangements. She has studied and documented how the inhabitants and users change their environment to their wishes (Fig. 43):

- Almere Haven in The Netherlands, envisioned by several state institutions with a blueprint plan without foreseeing any future structural change, but after 40 years changing nevertheless,
- Quinta Malagueira in Evora, Portugal, designed by Alvaro Siza Vieira for predetermined changes
- and Gulensu in Istanbul, incrementally planned and built by thousands of inhabitants, an example of an entirely self-organized neighborhood of which the nature is that it permanently changes.

Although planners and designers are aware of the high urban qualities of functionally mixed environments, they cannot achieve those, partly because of their own attitudes, partly because of governmental and bureaucratic procedures and rules. These neighborhoods show that bottom up acting individual parties can insure a desirable mix. From this understanding of the way people act to change their environment, Tan developed a series of urban design games for real locations and programs. (Fig. 44)



a. Almere Haven, The Netherlands, Dutch state institutions, 1970s



b. Quinta da Malagueira, Evora, Portugal, Alvaro Siza Vieira, 1977



c. Gulenst, Istanbul, Turkey

Fig. 43. 3 Degrees of self-organization (Tan 2014)

'Play the City' is a multiplayer interactive platform of diverse city games for real time city making with three roots:

- 3D rule-based urbanism: for a socio-spatial urban design,
- gaming: for a rule-based, transparent, negotiatory and multiuser environment,
- and social media: for the emergence and evolving of collective intelligence.

It is a platform for analogous and online communities playing diverse serious games to increase collective intelligence in city making. *Tan* is now searching for clients that dare decide to turn a game into a real decision instrument. Because of the strong social aspects of the research, shared supervision is with professor Arnold Reijndorp of the University of Amsterdam.

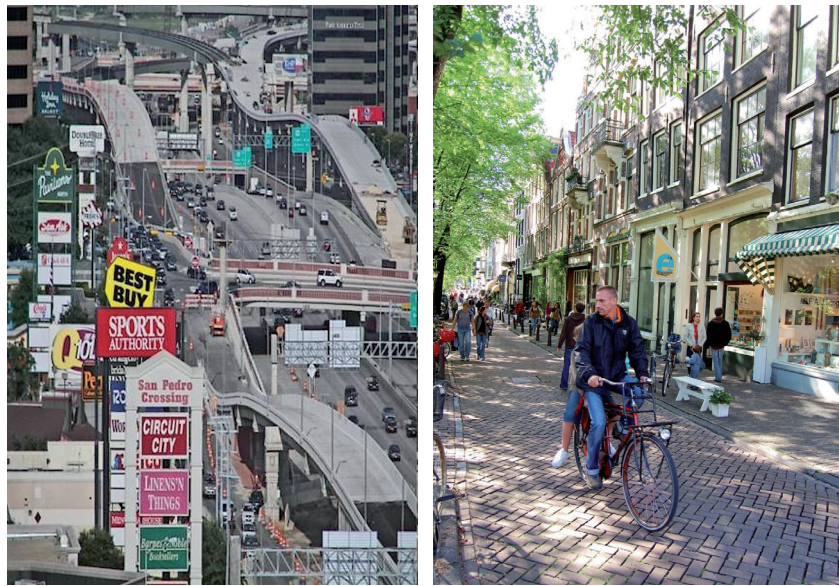


a. The players and the model



b. The outcome model

Fig. 44. Playing Yapyasa, Istanbul, Turkey (Tan 2014)



a. San Antonio, TX, USA
b. Amsterdam, The Netherlands

Fig. 45. Urban contexts and design variables

Michael Mehaffy

'Urban Form and Greenhouse Gas Emissions: Dynamic modeling of urban design variables' (expected 2015)

Michael Mehaffy from the United States, former Director of Education for the Prince's Foundation in London, is developing a decision support system for making more environmentally responsible urban designs, relating different urban morphologies to their environmental effects. Because of the relevance for urban design and morphology, I am promotor next to professor Andy van den Dobbelsteen of the Department of Architectural Engineering + Technology in our School. Mehaffy sees an urgent need for a clear dynamic model of the urban design variables in specifically greenhouse gas emissions. (Fig. 45) The first idea for the research was presented at the 2009 Scientific Conference on Climate Change in Copenhagen. He sees complexity as resulting from the interacting influences of economic, socio-political, ecological and technological factors, fragmented management and information systems, lack of awareness of the magnitude of the problem, and current inefficient design methodologies. Urban morphologies in inefficient configurations are unnecessarily generating high levels of waste and reducing opportunities for high-efficiency energy and resource systems such as district energy and heating, and waste heat recapture. Design methodologies for assessment of effects will be developed as the basis for a dynamic model that will be used to generate alternative urban design scenarios. The model will take a comprehensive approach to a range of factors, including density, spatial distribution of urban building mass, program and circulation networks, and building and energy technologies, including modifications for new construction and retrofits of existing construction. The system is being developed within a new kind of 'peer to peer'-software, in collaboration with the inventor of Wiki, Ward Cunningham. Expected is that this will help reduce greenhouse gas emissions by a percentage up to 30, in an economically, socially and politically feasible way.

Luisa Calabrese's, Dave van Eijnsbergen's, Maurice Hartevelde's, Cai Jiaxiu's, Leo Oorschot's, Conrad Kickert's, and Nikky Fleurke's work also relates to this morphological approach.

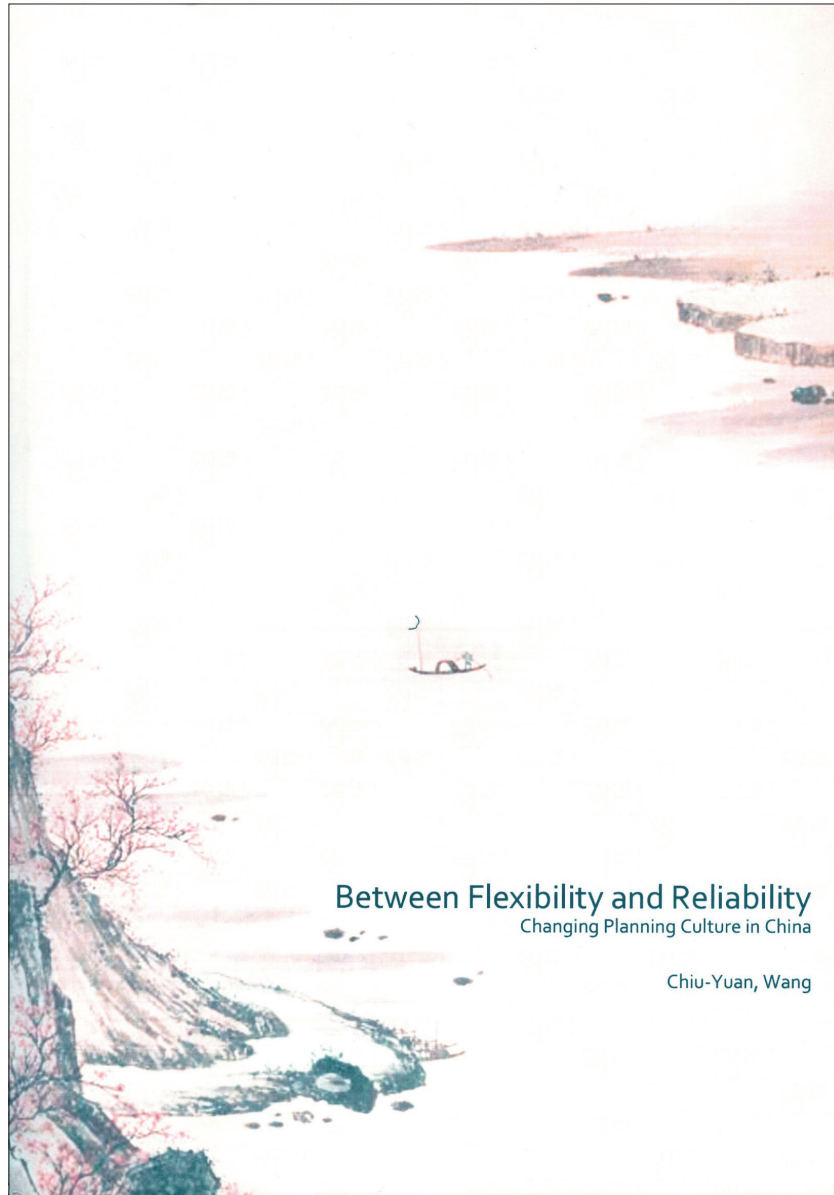


Fig. 46. *Between Flexibility and Reliability. Changing Planning Culture in China.* Wang Chiu-Yuan (Vivienne), 2013

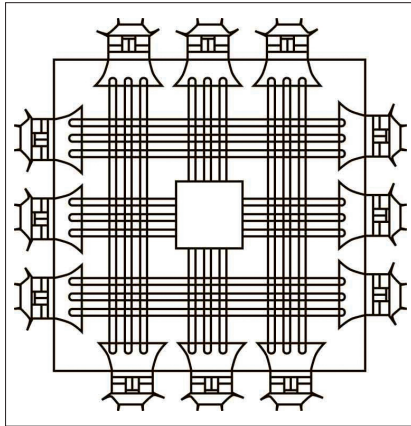
4. History, Culture, Identity, Urban Images and Tradition

Another big theme is that of history, tradition, culture, identity and urban images in general. It is interesting that after I held my entrance speech, introducing this theme among others, it took five years before I was asked to lecture on what was called Traditionalism by professor Leen van Duin, then chairman of the Department of Architecture. The world has changed since then and the topic is very much alive within a part of the school and especially the student body.

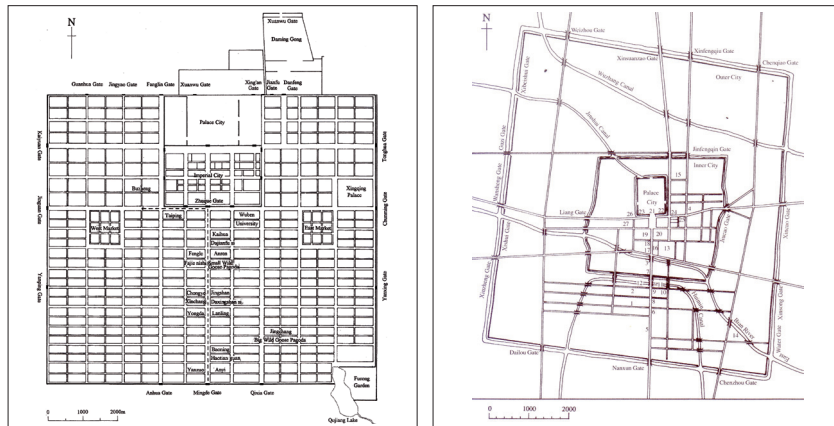
Vivienne Wang

'Between Flexibility and Reliability. Changing Planning Culture in China', 2013 (Fig. 46)

Vivienne Wang, or Wang Chiu-Yuan is from Taiwan and holds a Master of Urbanism from *Delft*. She started her research with professor Jürgen Rosemann, then in our school, and professor Hsia Chu-joe of the National Taiwan University, who was second promotor here, and also her promotor in Taiwan. Her research is on planning, but she has conducted it at least partially in a designerly way. The following is largely taken from the summery of her thesis. "Based on the theory of planning culture, planning traditions, concepts, systems and decision-making processes are always related to the cultural context and cultural background of the people and societies involved. [-] The changing role of urban planning is strongly embedded in the political, economic, and social domains and is part of [a broader] cultural innovation. (Fig. 47) [-] In recent years, China has [-] undergone a dramatic process of urban growth and transformation. Apart from its speed and scope, it is less recognized that these processes are confronting the Chinese planning institutions with new and unexpected demands [-]. In reference to the increasing importance of private investments and developments within the urbanization process, a new balance between public planning and private developments, and between top-down and bottom-up approaches is required to be able to generate both a reliable and responsible framework for long-term urban development and a flexible system of implementation that meets the needs of changing conditions and new demands. [However,] it cannot be disconnected from the roots of Chinese history and tradition and as such is an alternative to Western paradigms." (Wang 2013 p 387-389) Based on her argumentation, she decodes the recent transformation of contemporary China by introducing the concept of 'critical modernity', and interprets it as a part of the continual 'cultural turns' that China is experiencing, and has been experiencing throughout its history.



a. Wang Cheng (Kao Gong Ji) basic scheme



b. Chang'an (reconstruction by Heng Chye Kiang)
c. Kaifeng (reconstruction by Heng Chye Kiang)

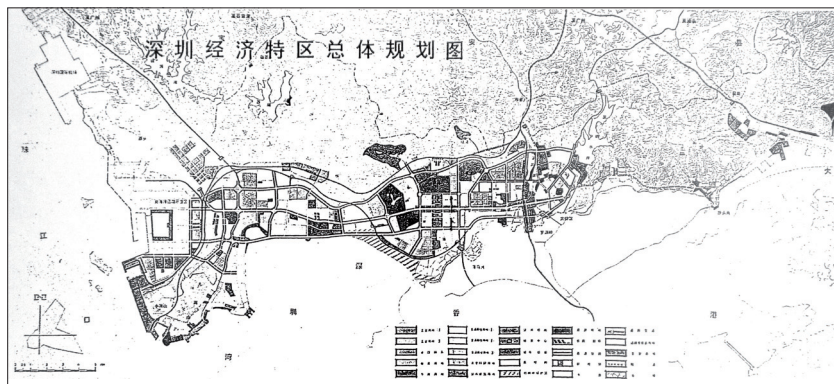


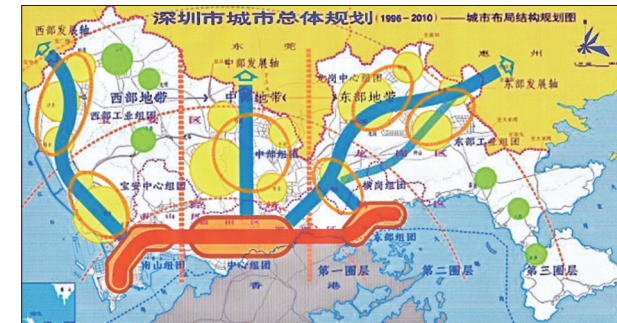
Fig. 47.3 Historical Chinese urban plans (Wang 2013)
Fig. 48a. Master Plan Shenzhen 1986-2000, P.R. China (Wang 2013)

Shenzhen was chosen as the research case. This city is located in the Pearl River Delta adjacent to Hong Kong, and designated a Special Economic Zone in 1979 allowing for experiments in planning. It can almost be regarded as a newly constructed city with approximately 300,000 inhabitants in 1980 and reaching 10.5 million in 2011. (Fig. 48) The processes of realization of three different developments on different levels of scale and in successive years are documented to show how the needs changed and the experimental planning approaches evolved (Fig. 49, 50):

- the newly built Futian Central Business District,
- the functional transformation of the Overseas Chinese Town or OCT-Loft into a mixed function cultural hotspot and tourist attraction, designed by Urbanus Architecture & Design,
- the revitalization of the urban village of Dafen by celebrating its economy of reproducing paintings, organized by the inhabitants led by Urbanus.

Outcome of the research are recommendations for the future of planning theory and practice in China.

b. 1996-2010



c. 2010-2020

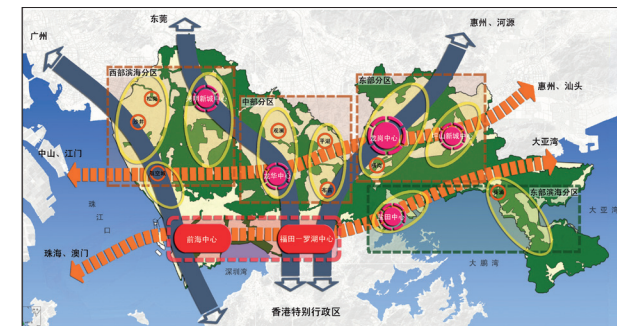
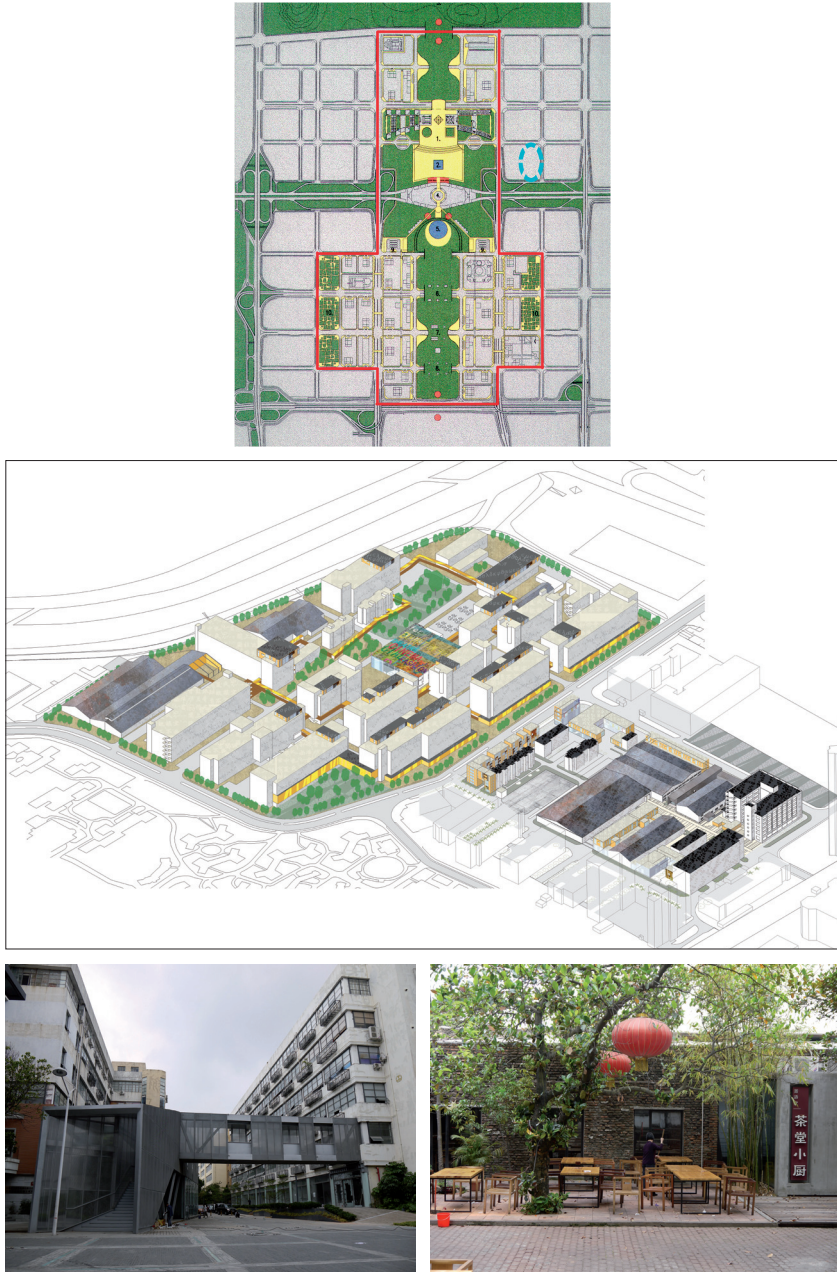


Fig. 48b, c. Master Plans Shenzhen, P.R. China (Wang 2013)



a. Futian Central Business District

b-d. Overseas Chinese Town/OCT Loft, Urbanus Architecture & Design; b. Phase 1 and 2; c, d. details of public space

Fig. 49. Futian Central Business District and Overseas Chinese Town, Shenzhen, P.R. China (Wang 2013)



a. Gangxia before demolition
b. Gangxia after demolition

c. Urban villages in Shenzhen

d-f. Dafen with Dafen Art Museum, Urbanus Architecture & Design, 2006-07

Fig. 50. Urban villages, Shenzhen, P.R. China (Wang 2013)



a. Deel 1/Part 1



b. Deel 2/Part 2

Leo Oorschot

'*Conflicten over Haagse stadsbeelden. Van Willemspark tot Spuiforum*' (Conflicts about the City Images of The Hague. From Willemspark to Spuiforum), 2014 (Fig. 51)

Leo Oorschot, Delft Master of Architecture and architect in The Hague, has written his thesis on the successive urban images that have been influential in that city and that have followed up on each other without in many cases ever being finished. His research highlights the societal and governmental background for these changes. Thus he explains the fragmented character of the city today. Urban images have come up and been fought for by protagonists like national or local politicians, industrialists, bankers, real estate developers, and groups of architects and critical citizens. This caused controversy often already during realization, and was fought against by the general public, sustained by the media.

Walking through The Hague one experiences many different urban ensembles with each its own spatial qualities, buildings and atmosphere. (Fig. 52) Oorschot shows how the successive images were meant to convince inhabitants and visitors of the future qualities of the city, and to influence public opinion. (Fig. 53, 54) Next to the explanatory description of the history of The Hague in a series of case studies, the research is especially relevant in bringing together traditionally separated disciplines like architecture, urbanism, history and political science. To help cover these broad fields, copromotor is Dr. Herman van Bergeijk of the History section in our School. Like Harteveld's, Oorschot's is not a historical study in the narrow sense that would imply unity and causality, as these do not exist in the object of study. It shows the complexity of the processes of realizing a specific urban image and the impossibility to control this above a certain level of scale and beyond a certain stretch of time. A consistent urban image emerges at a certain moment of time in a certain part of the city on the level of scale of an urban ensemble. In many cases there are just too many parties involved and in the Netherlands power is spread too thin to sustain these images for the longer term. The tenability varies, but is seldom more than thirty years.

Fig. 51. *Conflicten over Haagse stadsbeelden. Van Willemspark tot Spuiforum* (Conflicts about the City Images of The Hague. From Willemspark to Spuiforum). Leo Oorschot, 2014

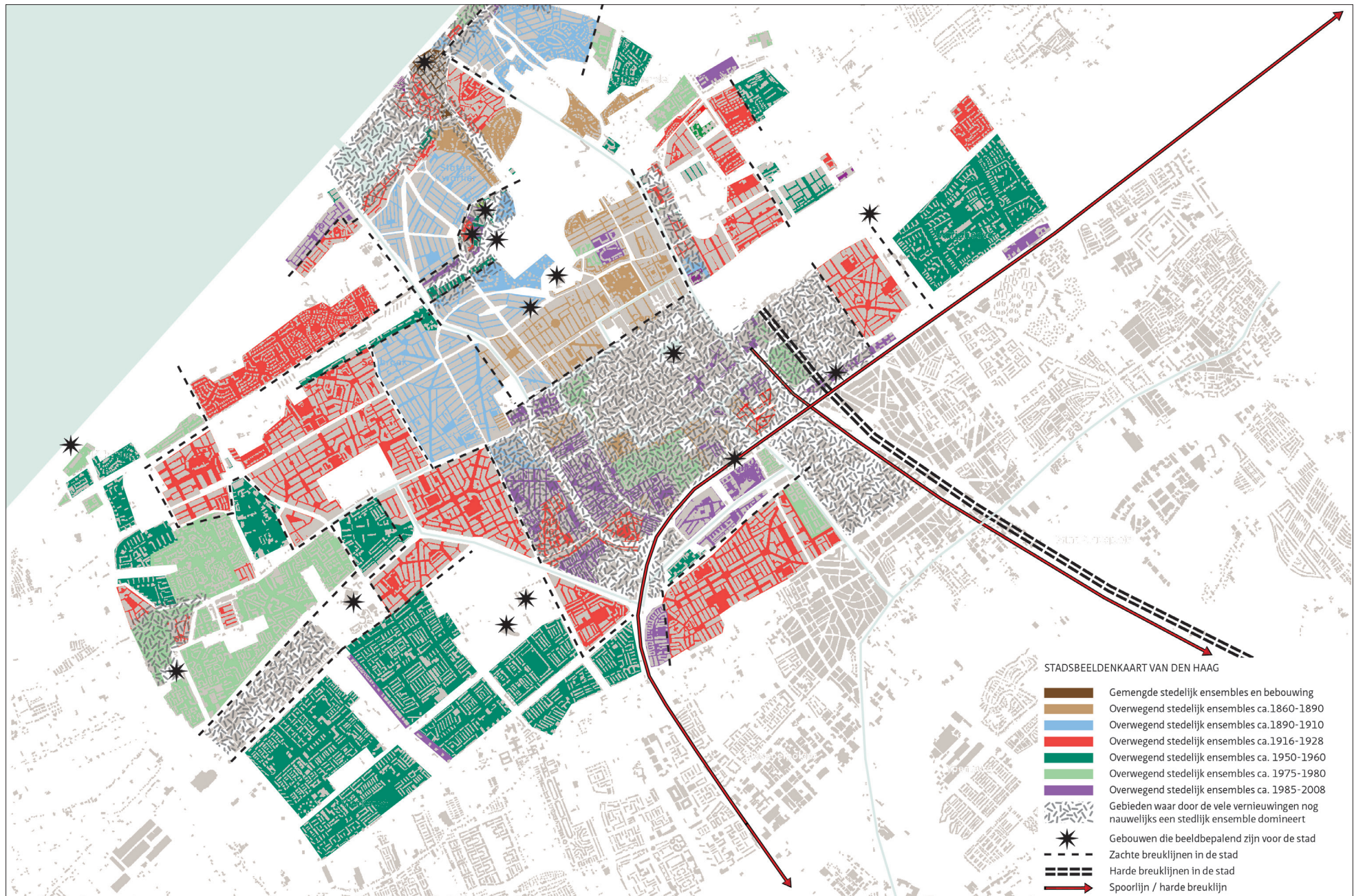
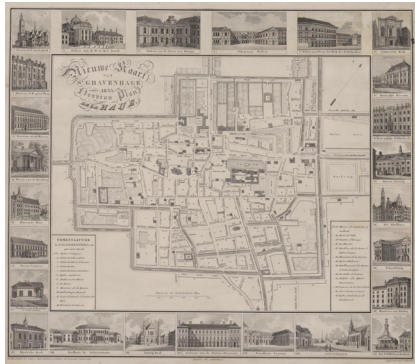
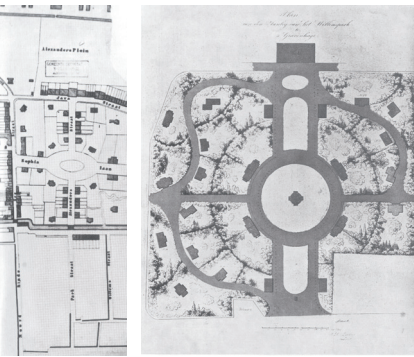
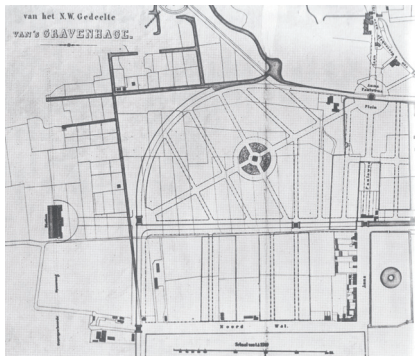


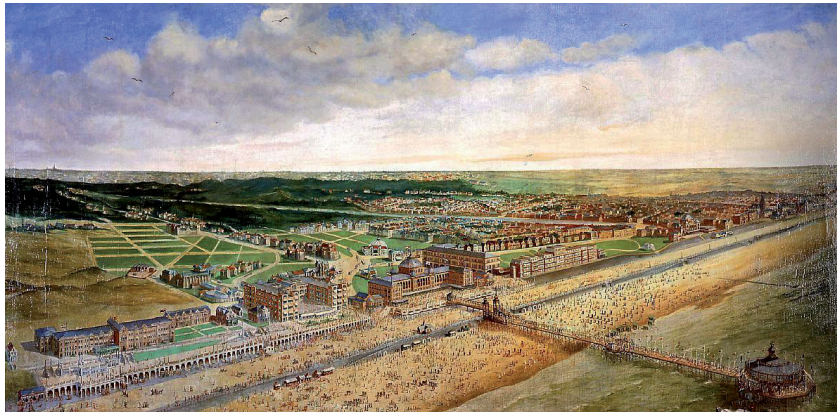
Fig. 52. Map of fragments of urban images, The Hague, The Netherlands (Oorschot 2014)



a. Nieuwe kaart van 's Gravenhage (New map of The Hague), by Zegers Reijers, 1833
 b. Noordeinde, by Augustinus Wijnantsz, 1848



c. Zeesheldenkwartier, 1866
 d. Willemspark, J.D. Zocher, 1856



e. Scheveningen, Panorama Van Liefland, by Andreas Carl Sommer, 1902

Fig. 53. Historical images for The Hague, The Netherlands (Oorscot 2014)

a. Masterplan Binckhorst, Office for Metropolitan Architecture/OMA, 2011

b. The M, Office for Metropolitan Architecture/OMA, 2010

c. Spuiforum, Neutelings Riedijk Architects, 2012



Fig. 54. Recent images for The Hague, The Netherlands (Oorscot 2014)



a. The Hague, corner of Hofweg and Spuistraat



b. Detroit, parking garage New Street

c. Detroit, Renaissance Center, John C. Portman Jr., 1973-76

Conrad Kickert

'Active Centers - Interactive Edges. Frontages in The Hague and Detroit 1911-2011' (expected 2014/15)

Conrad Kickert, Dutch Master of Urbanism, is doing his PhD research at Taubman College, University of Michigan in the USA, where I, as I mentioned before, was a visiting professor for a semester in 2009. His doctorate committee consists of professors Robert Fishman, Linda Grout and June Manning Thomas. I am an external promotor. His research intends to generate insights in the transformation of architecture on street level in relation to public space in the inner cities of Detroit - partly deserted and experienced as unsafe - and The Hague - vibrant and attractive. (Fig. 55) While most of us agree that architecture should interact with public space, and designs are made or policies implemented to ensure that this happens, this research delves into what has made and still makes inner city architecture increasingly less attractive and interactive. What are we fighting against? What creates "The Deadly Dull", as urban scholar William Whyte has described contemporary defensive architecture? (Whyte 1988) This perceived de-activation is measured by matching changes in ground level architecture and land uses with the internal patterns and external forces that have contributed to it and continue to do so. The research is based on the conviction that downtown environments are worth preserving and enhancing. Beyond merely functioning as centers for consumption, entertainment and employment, the layered history of downtowns can provide visitors and residents with meaningful places that are becoming increasingly rare. Furthermore, downtown public spaces can be considered the last vestiges of serendipitous encounter and open, walkable access in an environment that favors controlled and exclusive spaces arranged for the convenience of car drivers. The research is therefore necessarily cross-disciplinary, cross-cultural, and cross-temporal. It presents the situation in the two cities at different moments during 100 years, for which archives, maps and telephone books had to be painstakingly searched and combined. (Fig. 56, 57) Deserted Detroit has more in common with thriving The Hague than one might think. The resulting series of maps are meaningful, but also I think very beautiful.

The last two PhD researches mentioned thus also relate to the theme of morphology and complexity. Similarly, the work by Luisa Calabrese, Dave van Eijnsbergen, Michael Sorkin, Cai Jiaxiu and Jack Breen relates also to the theme of history and tradition and especially that by Maurice Harteveld who invented actually new ways of seeing such relationships in history. Do you see how the density of the network of interrelationships within the research of the Chair of Urban Design has been increasing?

Fig. 55. Images of the centers of The Hague, The Netherlands and Detroit, MI, USA



1911



1936/37



1961



1981



2011



Fig. 56. Urban form and interactivity in The Hague center, The Netherlands (Kickert)



1911



1921



1951



1961



1977



1929



1938



1988



2001



2011



Fig. 57. Urban form and interactivity in Detroit center, MI, USA (Kickert)

5. Design Thinking and Teaching

The last theme is that of educating, design teaching and design thinking.

Nikky Fleurke

'Directive Architecture' (expected 2015)

Nikky Fleurke, Delft Master of Urbanism and of Architecture, has been searching for the way the extremely large and complex building complexes with hybrid programs and multiple functions that have lately come up in the world metropolises are designed, how their architects are able to effectively cooperate with the many other disciplines involved in the design process. Examples of these mixed-use complexes in architecture and urban design are taken from a series of international competitions: among others Genoa Harbor in Italy, Penn Station in New York and Vestbanen in Oslo, Norway. (Fig. 58) These projects tend to hold both exterior and interior public spaces. For this reason emeritus professor Umberto Barbieri of the Department of Architecture in our school is second promotor. Architects studied are for instance Rem Koolhaas with the Office for Metropolitan Architecture (OMA), Norman Foster, Richard Rogers, and Farshid Moussavi and Alejandro Zaera-Polo with Foreign Office Architects (FOA). The technique of data scaping plays a role.

The research develops a vocabulary, theory and methodology to discuss and direct the design process of these complex design assignments. The first part of the research is analytical and critically discusses the current state of the art in architecture and urban design as well as its perceived theoretical hiatus since the 1990s. It is argued that this theoretical meltdown went hand in hand with the current fixation on fashionable concepts and computer-driven design technologies, while design complexity rapidly increased over the last two decades. The second part of the research is instrumental and proposes a framework to handle the increased number of design factors in a complex design. Fleurke discovered parallels with the way composers of contemporary music use schemes to structure their work, and particularly with the use of storyboards in large film productions like those of the Walt Disney Studios. (Fig. 59, 60) She develops this into what she calls 'archboards' that integrate researching, designing and directing into a visual strategic design scheme apt for the conception of very large and complex programs and spatial structures.



Fig. 58. Competitions for large hybrid building complexes (Fleurke)

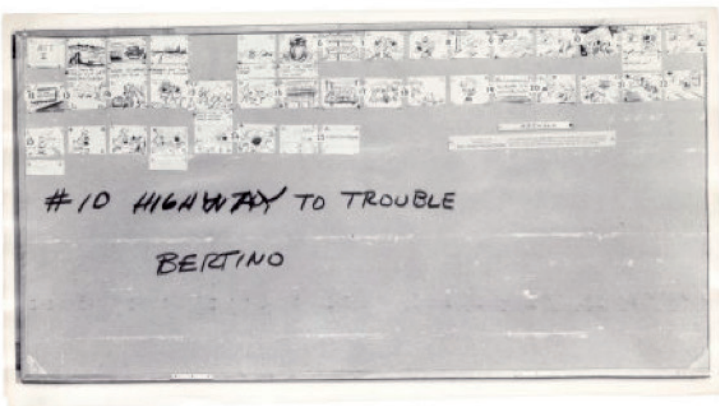
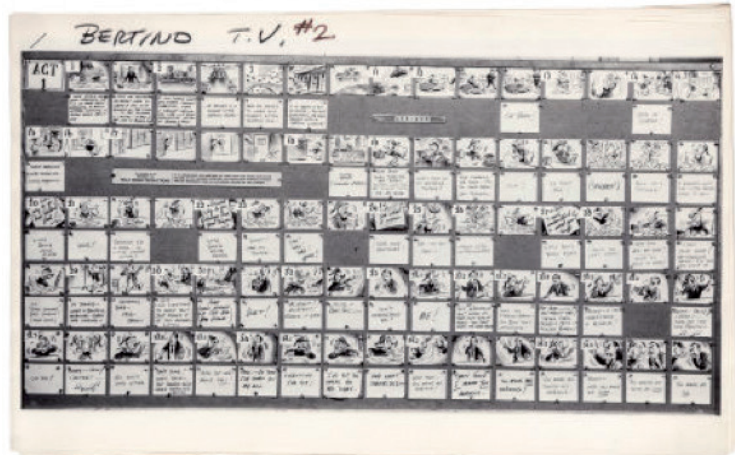
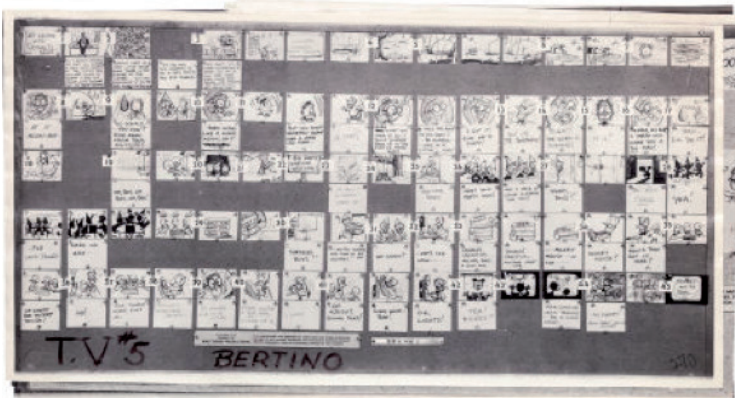


Fig. 59. First known film storyboard, Walt Disney, 1960 (Fleurke)



Fig. 60. Storyboard for The Genie's Song, from Aladdin, Disney Enterprises, 1992 (Fleurke)

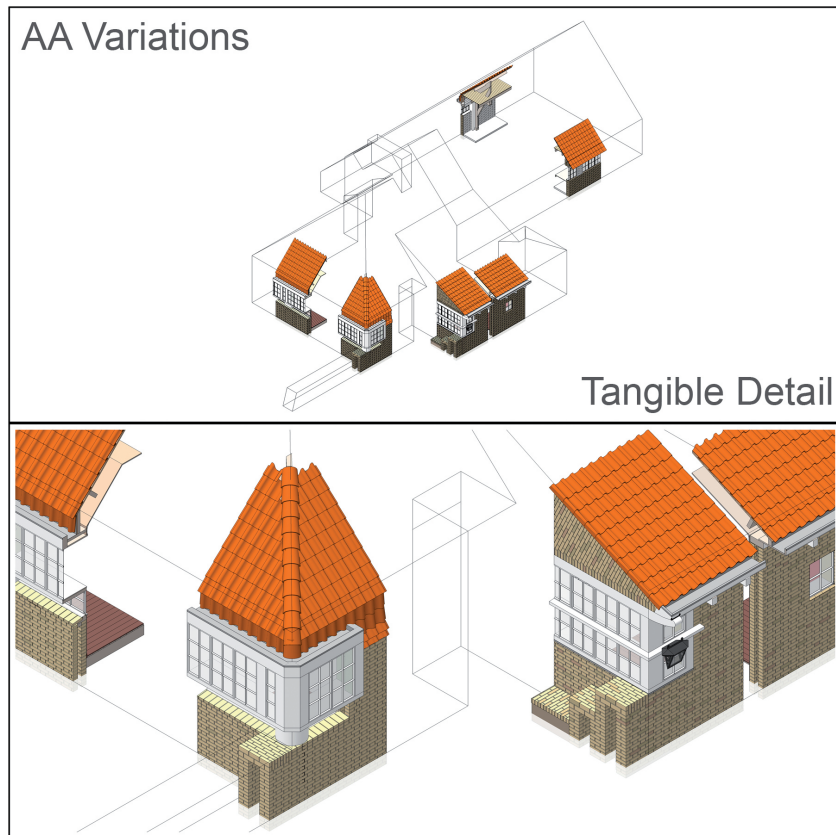
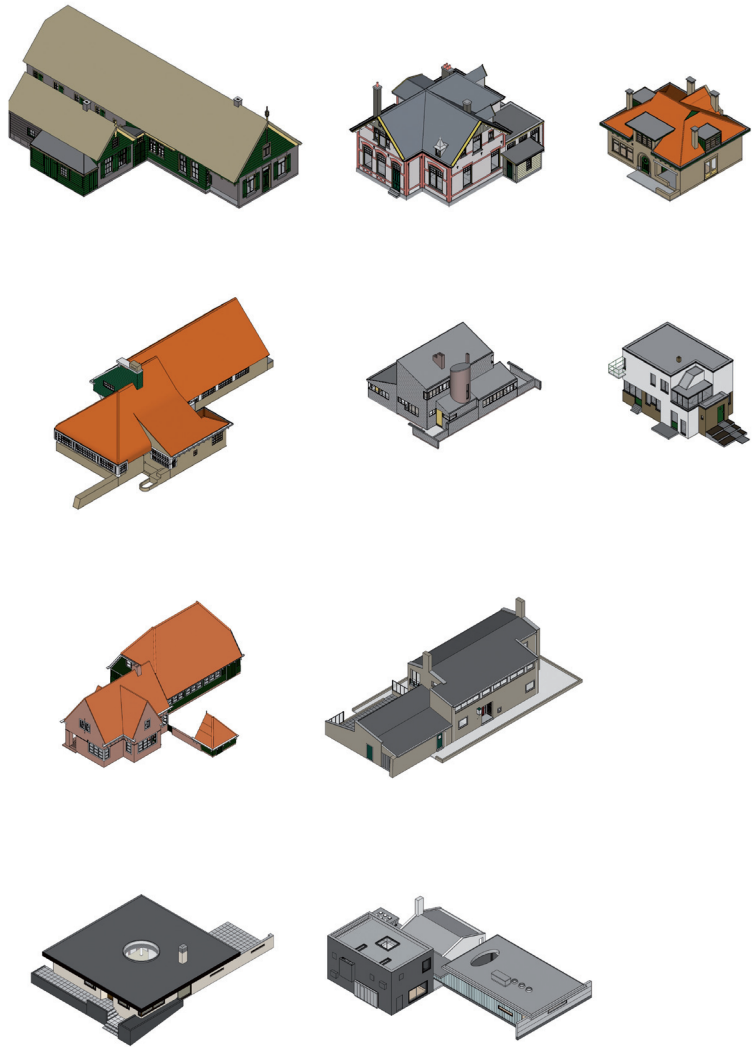


Fig. 61. Variations in the design of a villa in Aalsmeer, The Netherlands, Michiel de Klerk, 1923 (Breen)

Jack Breen

'Patterns and Variations: Designerly Explorations of Architectural Form' (expected 2015)

Jack Breen, of Dutch and English education, partly in Singapore, and Master of Architecture from Delft, is head of the Faculty's Form and Modeling Studies group. In education as well as in research, his focus is on the study of elementary composition, perception and visualization, relating these to the domains of architecture in the broadest sense. His research is directed towards the furthering of insights and knowledge concerning the formal issues of design and the evolution of systematic and thematic - 'designerly' - methods of study. It applies evocative representation and communication techniques. (Fig. 61-63) Second promotor is professor of Methods and Analysis Tom Avermaete of the Department of Architecture in our School. To cite Breen's summary: "The aim of this explorative study is to interpret - or re-interpret - characteristic formal issues in architectural design as to their composition and perception. To reach a more objective understanding and appreciation of aesthetic considerations in architecture, there is a need to evolve conceptual and analytical instruments, which may facilitate and stimulate the methodical investigation of architectural form."



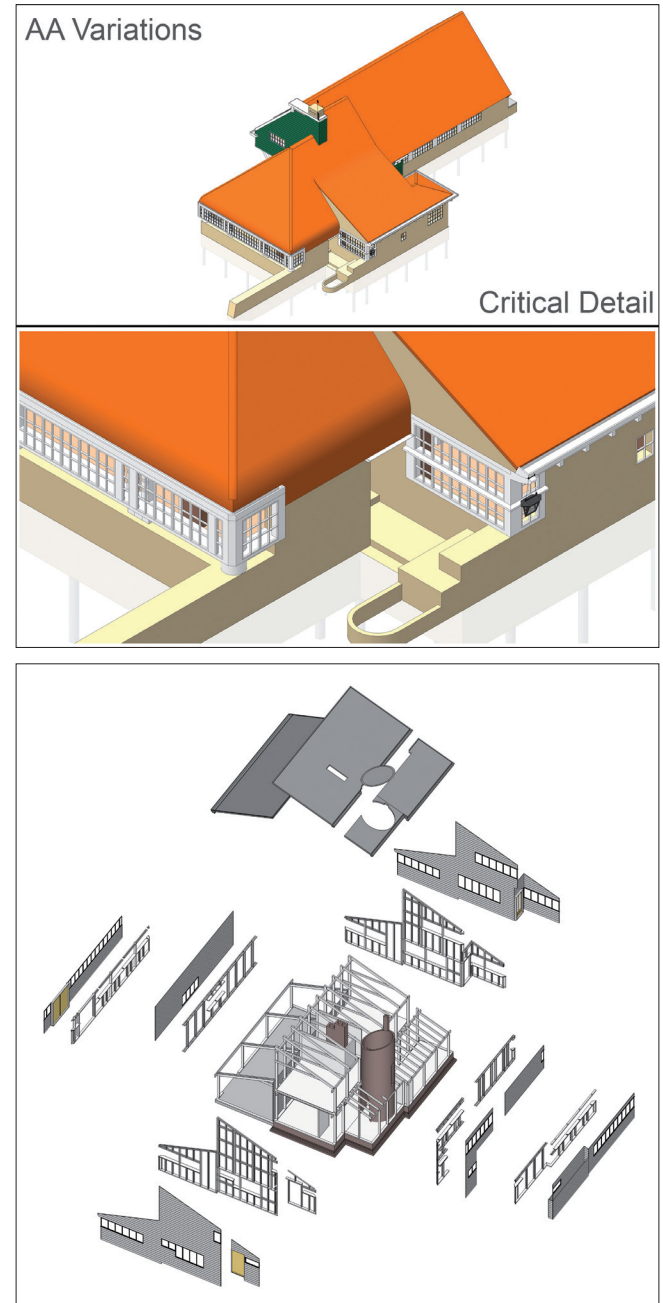
a. Traditional vernacular farmhouse, 1825
 b. Volkert Visser, 1903
 c. Jacobus Johannes Pieter Oud, 1912

d. Michiel de Klerk, 1923
 e. Jan Dulker & Bernard Bijvoet, 1924
 f. Jan Gerko Wriebenga, 1930

g. Johannes Berghoef, 1926
 h. Architectenbureau Berghoef & Klarenbeek, 1957

i. H.R. Aiking, 1970
 j. Banke, Van der Hoeven Architects, 1990-2006

Fig. 62. Villa's in Aalsmeer, The Netherlands (Breen)



a. Critical detail villa Michiel de Klerk, 1923

b. Deconstruction villa Jan Dulker & Bernard Bijvoet, 1924

Fig. 63. Critical detail and deconstruction (Breen)

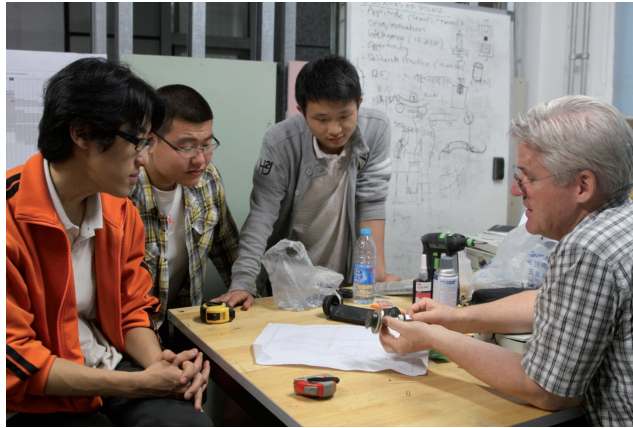


Fig. 64. Studio teaching (Curry)

Terrence Curry

'How Students Design: A theoretical framework with a special emphasis on the place and role of aesthetic judgment in the design process' (expected 2016)

For Terrence Curry, professor of architecture at the School of Architecture of Tsinghua University in Beijing, China, understanding how one learns to design is the heart of his research, but many of the others I have mentioned (he is the last) relate to this theme as well. There is of course good reason for this in an academic environment, where open discussion is valued and the relation is sought between research and teaching. Curry states that: "it is the goal of design education, among other things (including socializing, passing on standards of professional practice, technical knowledge, critical thinking, civic responsibility, etcetera), to facilitate the effective acquisition of design expertise." He combines the newest insights from neurosciences and cognitive thinking with his own over twenty-five years of teaching experience into a framework for understanding how inexperienced designers develop their design skills and can become expert designers. (Fig. 64) These insights should lead to more effective ways of teaching. I cite the abstract of a recently finished paper by him: "The aim [-] is to provide a theoretical basis to encourage the use of design methods as a teaching strategy in the design studio. Learning to design involves more than developing innate abilities and capacities in a studio setting, solving incrementally more complex design problems based on a model of expert performance under the guidance of an experienced tutor. Rather, it's a developmental process where effective methods for approaching design problems evolve with increased knowledge and experience. [Curry] propose[s] that by understanding the acquisition of design expertise as a cumulative developmental/cognitive process, design education can be greatly enhanced [and] made more effective by the introduction of specific design methods as a teaching strategy at incremental stages of development." Curry argues for the conscious development of aesthetic judgment in the design processes of student work, as in those of expert designers. It is fascinating to see how these insights are fed by and consistent with the most recent developments of knowledge on the workings of the human brain.

My intention has been to show you how all these research projects, that may at first sight seem unrelated, in fact add up to more than the sum of their individual results. I hope the chair has thus helped forward a bit our beautiful discipline of urban design.

And I am extremely thankful for having had this opportunity.

I do want to thank people personally. The list is long, way too long, so I have to single out just a few, in many cases representatives of larger groups of people that I have cooperated with and learned from.

The family that I come from:

My father **Dick Bekkering**, for developing my appreciation of making things and of engineering and showing me the thrill of being a professor.

My mother **Elly Bekkering-Evers**, for her intellectual attitude and introducing me to the arts.

My successive office partners in HKB stedenbouwkundigen:

Especially **Jan Heeling**, till his retirement colleague also here in Delft, who saw me as an asset to his office when I did not even want to become an urban designer, for the endless discussions we had on just about everything, and for his introducing me in Delft.

My office colleagues:

Especially **Eric van der Kooij**, for his eagerness to learn and the discussions we had on designing as both problem solving and aesthetic exercise.

My colleagues in the Chair of Urban Design:

Luisa Calabrese, for her support and the extremely easy way we cooperate.

Maurice Hartevelt, for his enthusiasm and loyalty to both the discipline and the academic tasks the School has asked of him.

Willem Hermans, for his unrelenting support of students and the lively links to practice.

Frank van der Hoeven, for his attitude as engineer and scientist that he combines with that of the designer and the administrator.

Stefan van der Spek, for his organizational input and his engineering inventiveness.

Here I should add all PhD candidates of the chair as well.

Colleagues in the School of Architecture:

Jaap Dawson, for the joy of tutoring students together and introducing them to the values of tradition.

Mitesh Dixit, for the excitement of stimulating students in the Vertical Cities Asia Studios and pushing them up to competition winning levels.

Deborah Hauptmann, for her theorizing and making me understand the importance of theory for design.

Liliane van der Meer, for her supporting the School and me in the attempts for internationalization.

Han Meyer, for his fraternal attitude in our section and Department and his early attention for the integration of large-scale infrastructure in the city.

Robert Nottrot, for the cooperation in setting up and leading the Bachelor 3 studio program on urbanism and housing design.

Stephen Read, for the cooperation in the theory course of the European Masters of Urbanism and his Master studios.

Jürgen Rosemann, for introducing me to China, Taiwan and Singapore and taking me into the International Forum of Urbanism.

Carel Weeber, for his often humorous but also sometimes irritating interventions in the education and the organization of the School, and supporting my application as a professor.

Agnes Wijers, for her support of different events I wanted badly and needed help for, and of my sabbatical.

Secretaries of the Department of Urbanism:

What would one do without the support of a well functioning secretariat?

I single out my personal secretary **Danielle Karakuza**, for her unrelenting support and total lack of complaining, the head of the secretariat **Linda de Vos**, for her support of whatever idea we come up with,

and who I would call the Business Director of the Department of Urbanism **Amber Leeuwenburgh**, for her helping me through the many organizational and financial pitfalls of academe, during and after my being the Chair of the Department of Urbanism.

Without all of the secretaries the functioning of all of my colleagues in the Department of Urbanism would be severely impeded.

Colleagues at Taubman College, University of Michigan:

María Arquero de Alarcón, for her enthusiasm as a newcomer like me and her contribution to Mapping Detroit.

Robert Beckley, for his explanations of the shrinking region and the workings of the Flint Land Bank.

Margaret Dewar, for her accessibility for Ria concerning community reach-out programs and her contribution to Mapping Detroit.

Eric Dueweke, for leading the excursion through Detroit.

Robert Fishman, for sharing his erudition and supporting my initial analysis of the maps and history of Detroit.

Lars Gräbner, for his beautiful argument and maps of Detroit's potentials in Mapping Detroit.

Jen Green and Nicole Scholtz of SAND Lab North, for their help and inventiveness in fitting the series of maps for my research on Mapping Detroit to each other

Joseph Grengs, for his contribution to Mapping Detroit.

Larissa Larsen, for her friendship, letting me co-teach her class on urban theory with her, and her contribution to Mapping Detroit.

Jonathan Levine, for his friendship and support in having my own student assistant.

Yanyia Liu, for his unrelenting enthusiasm and energy in preparing the exhibition The Memory of the City on Dutch urbanism and doing the mapping of Detroit, and for his extremely pleasant attitude

Kit McCullough, for her contribution to our studio with urban codes.

Monica Ponce de Leon, Dean of Taubman College, for her suggestion to collect and publish contributions from Taubman staff in a book that became Mapping Detroit.

Sophia Psarra, for the extremely interesting discussion on the use of the Space Syntax method for analyzing urban history.

Roy Strickland, for sharing his teaching experience and introducing me to the American studio system, for his open cooperation in the studio, and showing part of his collection of films that celebrate particular cities. And we had some good dinners together.

June Manning Thomas, for taking upon her the co-editing of Mapping Detroit together with me and persevering forever till its publishing

Jean Wineman, for her support of the Dutch exchange professor at Taubman and the supervision of the PhD research of Conrad Kickert

Colleagues at the Tsinghua University School of Architecture:

Liu Jian, for her support of my visiting professorship and leading me through the mazes of Tsinghua bureaucracy.

Mao Qizhi, for sharing his professional wisdom.

Wang Ying, for her input and support in teaching the urban design studio.

Wu Weijia, for his sharing the 'secret' findings of his research on the future of Beijing.

Zhong Ge, for running the urban design studio and allowing for my idiosyncrasies.

Zhu Wenyi, the Dean, for his friendship and support.

Colleagues in the International Forum on Urbanism (IFoU):

Hui Xiao Xi, for his helping me understand the conditions of working in China and showing us unknown parts of Beijing.

Joaquin Sabaté Bel, one of those colleagues that I have from our first meeting on felt a great congeniality and kinship with.

Vivienne Wang, the lady from Taiwan, for the way she bridges Western and Eastern culture in a most natural way, without ever losing her Chineseness.

Wu Liangyong, the most impressive architect of age that I personally know.

Closest family:

And then there is and has been my family.

Pien Bekkering-Beliën: my first wife who should have been here but has not been with us for more than 13 years now. She, next to running my family together, has not only supported my professorship from the beginning but continued to do so when she became ill and I nearly left Delft for that.

Consequently, our three sons **Dirk**, **Jaap** en **Koen Bekkering** have sometimes seen less of their father than one would want in hindsight, but they too always made me feel they supported my professorship.

And last, but certainly not least, my wife **Ria Wiegman** who brought back the joy in my daily life and joined me in my double sabbatical.

Henco Bekkering
maart/mei 2014

Bibliography

- Beirão, J.N. *CiTYMaker. Designing Grammars for Urban Design*. Technische Universiteit Delft 2011
- Bekkering, H.C. "Meaning and Tradition" in A.D. Graafland (Ed.), *Cities in Transition*. Rotterdam: 010 Publishers 2001
- Bekkering, H.C. "On Permanence in Urban Design" in H.C. Bekkering, D. Hauptmann and others (Eds.), *The Architecture Annual 2006-2007*. Delft University of Technology. Rotterdam: 010 Publishers 2007
- Bergman, R. "Twee woorden, vijftien letters" in *De Volkskrant* September 6 2013
- Calabrese, L.M. *Reweaving UMA. Urbanism Mobility Architecture*. Technische Universiteit Delft 2004
- Calabrese, L.M., F. Houben. *Mobility: A Room with a View*. Rotterdam: NAI Publishers 2003
- Curry, T. *A Theoretical Basis for the Use of Design Methods as a Teaching Strategy in the Design Studio*. Unpublished paper 2014
- Darnton, R. "The Good Way to Do History" in *The New York Review of Books*, January 9 2014 p 54
- Darnton, R. "A World Digital Library Is Coming True!" in *The New York Review of Books*, May 22 2014 p 8
- Dorst, K. "The Nature of Design Thinking" in *Proceedings of the 8th Design Thinking Research Conference, 2010* p 131-132
- Eijnsbergen, D.H. van. *Multifunctionele gebouwencomplexen in Tokyo*. Technische Universiteit Delft 2008 / *Tokyo Multi Use Projects*, Nieuwegein: Arko uitgeverij 2009
- Fleurke, N. *The Design Process in Progress*. Unpublished part of PhD thesis 2011
- Fleurke, N. *The Great Realm of Complexity*. Unpublished part of PhD thesis 2011
- Geurtsen, R. *Locatie Zuidpoort Delft. Stadsmorfologische atlas*. Delft: Delftse Universitaire Pers 1988
- Geurtsen, R., B. Leupen, S. Tjallingii. *LAS-boek: Landschapsarchitectuur, Architectuur en Stedebouw*, Delft: Faculteit Bouwkunde 1980 and later
- Geuze, A. Interview in *NRC/Handelsblad* January 4 2014
- Granpré Moillière, M.J. "Brief aan het Bestuur van de Bond van Nederlandse Stedebouwkundigen", 1961. In H. de Haan, I. Haagsma, W. Ramselaar. *Jan de Jong. De monografie, deel 1*. Haarlem: Architext 2013
- Harteveld, M.G.A.D. *Interior Public Space. On the Mazes in the Network of an Urbanist*. Technische Universiteit Delft 2014
- Hoeven, C. van der, J. Louwe. *Amsterdam als stedelijk bouwwerk. Een morfologische analyse*. Nijmegen: SUN 1985
- Hoeven, F.D. van der. *RingRing. Ondergronds bouwen voor meervoudig ruimtegebruik boven en langs de RING in Rotterdam en Amsterdam, Technische Universiteit Delft 2001 / RingRing. Ondergronds bouwen voor meervoudig ruimtegebruik boven en langs de Ring Rotterdam en de Ring Amsterdam*, Rotterdam: Uitgeverij 010 2002
- Leupen, B., C. Graphe, N. Körnig, M. Lampe, P. De Zeeuw. *Ontwerp en analyse*, Rotterdam: Uitgeverij 010 1993 e.v. / *Design and Analysis*, Rotterdam: 010 Publishers and later
- Morris, A.E.J. *History of Urban Form: Before the Industrial Revolution*. Routledge 1994
- Moghaddam, F.M. *Social Psychology: Exploring Universals Across Cultures*. New York: W.H. Freeman Publishers 1998
- Oorschot, L.M. *Conflicten over Haagse stadsbeelden - Van Willemspark tot Spuiforum*. Delft: Architecture and the Built Environment 2014
- Palmboom, F. *Rotterdam, verstedelijkt landschap*. Rotterdam: Uitgeverij 010 1987
- Portugali, Y. *Self-organization and the City*. Springer 2000
- Pinzón Cortes, C.E. *Mapping Urban Form. Morphology studies in the contemporary urban landscape*. Technische Universiteit Delft 2009
- Simon, H.A. *The Sciences of the Artificial*. Cambridge: MIT Press 1969
- Sorkin, M. (edit.) *Variations on a Theme Park. The New American City and the End of Public Space*. New York: Noonday Press 1992
- Tan, E. *Negotiation and Design for the Self-Organizing City: A Game-Based Design Approach to City-Making*. 2014
- Vaessens, prof. Dr. T.L. Interview in *NRC/Handelsblad* June 21 2013
- Vernez Moudon, A. "Urban Morphology as an emerging interdisciplinary field" in *Urban Morphology* (1) 1997
- Wang, C.-Y. *Between Flexibility and Reliability. Changing Planning Culture in China*. Technische Universiteit Delft 2013
- Whyte, W.H. "The Design of Spaces" in W.H. Whyte. *City: Rediscovering the Center*. New York: Doubleday 1988

Image sources

- Fig. 13a. Source: Giedion, S. Space Time and Architecture. Cambridge, MA, USA, Harvard University Press, 1954
- Fig. 13b. Source: Meyer, H., Westrik, J. De stadsplattegrond. Amsterdam, The Netherlands, SUN, 2001
- Fig. 13c. Source: Meyer, H. De Stad en de Haven. Utrecht, Jan van Arkel, 2001
- Fig. 13d. Source: Arxiu Històric de la Ciutat: Fons Cerdà 11241
- Fig. 13e. Source: Collection AAM, Brussels, Belgium
- Fig. 13f. Source: Foundation Le Corbusier, Paris, France
- Fig. 13g. Source: Casabella nr. 533-534/1989
- Fig. 14e. Source: MVRDV, 1997
- Fig. 14f,g. Source: Leidsche Rijn, BVR/MaxOne, 1997
- Fig. 26a. Copyright Commision Du Vieux Paris, Paris, France
- Fig. 26f. Copyright Norman Foster + Partners, London, England
- Fig. 28a. Copyright British Library, London
- Fig. 28f. Star Tribune, Minneapolis, MN, USA
- Fig. 28i, j. Copyright Matthijs Huigen, Utrecht, The Netherlands
- Fig. 45a. Wikimedia
- Fig. 50d,e,f. Courtesy of Urbanus, Shenzhen/Beijing, P.R. China
- Fig. 51. Gemeentearchief Den Haag (The Hague), The Netherlands
- Fig. 53b. Copyright Haags Historisch Museum, The Hague, The Netherlands
- Fig. 58a. Source: UNStudio website
- Fig. 58d. Source: Steven Holl Architects website
- Fig. 58e. Source: UNStudio website



Faculteit Bouwkunde

Julianalaan 134
2628 BL Delft

Tel: +31 (0)15 27 89805

www.tudelft.nl

ISBN: 978-94-6186-361-4