

# CityScape - Analysing Modern Urbanism

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*Understanding scale is a major concern and a condition of working in the field of architecture and urban design. The project described in this case originates from Blauwe Koffer, a method developed in the 80's by the Dutch architects Dolf Dobbelaar and Paul de Vroom. The method is devoted to analysis of form and function of important architectural and urban design projects in the last century and is a flexible model for searching architectural solutions at an early stage of a project. In the paper I will describe how a group of faculty transformed the Blauwe Koffer into a digital method serving as an introduction to urban design in the second year curriculum.*

*The project introduced topics of modern urbanism defined as cityscapes. Through a series of mapping analysis the students studied variations of scale, extension, volume, density, borders, overlaps, bricolage, diversity etc.*

*The students were required to do analysis in the form of a matrix of 6 x 7 cells. Categories in the analysis were three scales of figure / ground studies, bricolage and studies of the urban raster. DataTown was a particular category inspired by MVRDV. The project data derived from digital maps, and project presentations in books and magazines.*

*At second year the students are assigned to do digital projects as a part of the curriculum and the students are required to have their own computer. The project was the first digital assignment in studio and previous computer courses and skills were limited to a one-week course in desktop publishing.*

*The CityScape project was a successful experience in integrating computation in studio, in group work and in analysis of modern urbanism. The paper will show some of the projects and discuss the assignment as a part of the implementation of an IT-strategy.*

**Keywords:** *CAAD-curriculum; Urban Morphology; Mapping; Education & Practise;*

## Introduction

The paper deals with a project in the second-year curriculum at the Aarhus School of Architecture entitled „Scale in modern urbanization“. The assignment is given in studio and has the duration of one month. It is carried out as group work with 5 – 6 students in each group and up to 16 groups in the class. There are 5 faculty members involved who are more or less computer illiterate and an IT-skilled faculty member (me) is also part of the group, not responsible for teaching computation, but able to explain how computation can enhance the project. The paper has rather unforeseen become the continuation of a paper given at the ECAADE Conference in Warsaw in 2002, where I discussed what would be the next challenge to overcome when the IT infrastructure was in place at the school of architecture and every student was connected to the Internet and intranet in studio, in meeting places, and at home. In Warsaw I stated that the integration of IT in the project assignments taking place in studio would be the real challenge. In this paper I will describe and reflect upon a successful example of such integration.

### The assignment: Cityscape - scale in modern urbanization

The Cityscape Project has as the overall aim to introduce the second-year students to urban design. This is broken down to a number of fundamental topics and methods that can be described as:

- approach the problem of understanding the morphology and the scale of the city
- conceptualize the build-up spaces as architectural typologies
- adopt mapping as a method of analyzing the cityscape

### Morphology

Firstly the project aims to study and discuss the

morphology of the city and what happens to the urban fabric when the city grows and expands over time. An important source to this discussion is the work of Colin Rowe and Fred Koetter expressed in the term Collage City.

“Collage City discusses the status quo of the architectural object in relation to the city, introducing design strategies like collision and the figure-ground / poché as urbanistic devices. Collage itself holds a double function in Collage City: Along with ‘the politics of bricolage’, it is used first as a metaphor against modernist ideology. Collage is further used as scriptural technique for the intertextual process of the reading-writing / analysis-design of urban space.“

Ebert 2002

The concepts of Rowe and Koetter are discussed and applied to case study areas. Figure – ground analyses are pretty easy to understand while the concept of bricolage that expresses time, growth, and change in building culture is more complicated to deal with.

### Typology

The idea of understanding the build structure as architectural typologies or basic types is much disputed but well known in architectural theory. Camillo Sitte and Rob Krier advocate the concept and in the PoMo period it was the approach to architecture. Reducing the richness of architecture into few types is of course an abstraction and a simplification, but in this project typology was intentionally introduced as a way of finding order in a complex and apparently chaotic urban fabric.

### Urban fabric

Typology addresses the variations of the built forms and masses of the city. The urban fabric is a concept that reads the anonymous fabric as consisting of repetitive elements of streets, squares, and blocks legible by their typological homogeneity. The

urban fabric is studied as 'urban raster' focusing on the street pattern and as a bricolage addressing the zone or the edge between different building types. Scale.

The concept of scale in architecture derives from the measures of the human body as shown by e.g. Leonardo da Vinci and later Le Corbusier. However, the scale of the city or the scale of a site can hardly be understood by reference to the body measures, taking the insignificant size of the body into account. Therefore we define another concept of scale defining the idea of scale as a relation between objects. Understanding scale is highly important to the making of form and thus to urban design, and the development of this ability and sensitivity to shifts of scale is a major aim of the project in general.

### **Mapping**

Studying morphology, typology, the fabric and scale of the city requires registration and representation.

"As a graphic register of correspondence between two spaces, whose explicit outcome is a space of representation, mapping is a deceptively simple activity. To map is one way or another to take the measure of a world, and more than merely take it, to figure the measure so taken in such a way that it may be communicated between people, places or times"

Cosgrove1999

As the project was done in groups, mapping made an obvious opportunity of working together, of sharing information and putting the outcome of the mapping into words

„Acts of mapping are creative, sometimes anxious, moments in coming to knowledge of the world, and the map is both the spatial embodiment of knowledge and a stimulus to further cognitive engagement.“

ibid.

Part of the work consisted in extracting data from geographical databases. In this respect the map represented more than a mere visualization of an area in a city. It exposed hidden and virtual information, and made it questionable and open for manipulation.

"As a creative practice, mapping precipitates its most productive effects through a finding that is also a founding; its agency lies in neither reproduction nor imposition but rather in uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds."

Corner 1999

### **Method**

Mapping is not a particular method but choosing to map as part of analyzing the cityscape asks for a method that can be described to and applied by the students.

The chosen method origins from Blauwe Koffer, a method developed in the 80's by the Dutch architects Dolf Dobbelaar and Paul de Vroom. The method is devoted to analyse the form and function of important architectural and urban design projects in the last century and is a flexible model for searching architectural solutions at an early stage of a project. Dobbelaar and de Vroom brought the model into work in OMA, when they were employed there, and from there it might be familiar to some.

Dobbelaar and de Vroom developed a matrix, with categories suited for describing morphological elements in the city. The idea is that by mapping an urban area in transformation one could get an understanding of which elements constitutes the morphology. The method is meant to expose and extract elements that can be used as design parameters when new buildings are to be located in an existing urban setting.

In our project the Blauwe Koffer was transformed into a digital method, and I shall briefly explain the categories in the matrix (see table)

The table has 3 scales or levels: District, building

complex, and building (level 1-3). Each group of students has 3 case areas for the purpose of comparing and thus understanding the particularities of a case (case A - C). Additionally the groups have a 'project site', being an 'empty' area, which is also the location for the succeeding assignment in studio.

The analysis of the cases has four main categories: Figure / Ground, Bricollage, Urban Raster and Data-Town.

*Figure / ground* depictions are the basis for analysing space, density, and scale of built masses. Figure / ground images are also the basis for superimposing the 3 case areas and studying similarity and difference of extension and volume.

*Collage* describes the process of superimposing a 3D solid model of the built masses of each case on the empty project area.

*Montage* offers a particular opportunity for creativ-

ity, as elements from the 3 case areas are brought together at the empty project site. The analysis is not described further in this paper but will be dealt with in the paper presentation.

## The process in studio

The assignment is guided by the structure and categories of the table, and the task can be described as simply to fill out the table, but to do so requires data about the three areas. The project is to be computerized and the rest of the paper is devoted to a description and reflection on this process.

The project is made from existing material, primarily digital maps and drawings found in books and journals. The material is edited and turned into a unified form, facilitating the comparison of the areas and offering ways of manipulating data. The operations

	Case	Figure / ground Level 1	Figure / ground Level 2	Figure / ground level 3	Bricollage	Urban Raster	Datatown
Analysis	A						
Analysis	B						
Analysis	C						
Superimposition	A+B+C						
Collage	Project site + A						
Collage	Project site + B						
Collage	Project site + C						
Montage	Project site						

Table 1

and techniques brought into use are listed below:

- GIS software gives access to extract geographical data (maps) from databases.
- CAD and drawing tools produce plans and sections from maps and scanned images and bring them to a unified form chosen by each group of students for their project.
- CAD produces simple 3D solid models
- CAD and drawing tools facilitates superimpositions, collages and montage.

The operations needed to accomplish the assignment are simple and only a little computer training is required. The students are not familiar with the adequate software but have to learn it while doing the project. It has been an endeavour to limit the time spent on traditional IT-courses and rely in introductions given as lectures supplemented by short texts explaining the process rather than giving detailed prescriptions. An important source to the success of this strategy is the number of 'IT-freaks' who can be found in any studio, and whom are eager to assist their fellow student in the studio.

We managed to carry though this strategy for the majority of software packages including the GIS. The 3D-course is the only exception, and that was merely because of tradition than of necessity.

### **Why is the project interesting?**

From a professional and pedagogical viewpoint the project offers a valuable method to achieve an understanding of the morphology and the scale of the cityscape. Succeeding urban design projects have proven this. Anyhow - that is not the topic of this paper and is not elaborated any further. But the project is also interesting from an IT-perspective, because it copes with important pedagogical and strategic discussions on:

- how to teach IT
- how to integrate IT in studio

- how IT creates new ways of working.

These aspects will be dealt with in the final part of the paper.

The project is important because we have experienced that it is possible to do a complex project with simple IT-tools while in contrast, you can hardly think of accomplishing the project without digital tools. IT performs in several and different ways and demonstrates its capacity in architectural projects and collaboration among students. By doing the project the students learnt to:

- acquire data from data bases
- treat digital data and work back and forth between analogue and digital material
- import and export data between various software packages and choose the adequate format and software for each task to be carried out
- share and exchange data among group members
- create new data and refine existing data
- collaborate in the virtual space in the small group and with the entire studio
- assemble project information created in various environments into a single presentation
- use the same project data for several purposes: a screen presentation, posters and portfolio

The project showed the students that architectural computing benefits from sophisticated expert software systems like GIS and CAD, which turns out to be quite simple to handle when you are part of a team. But it also showed that the general „daily“ software familiar to most students offers valuable tools in architectural projects. The students were enthusiastic about the project and in spite of the very firm description of the assignment, it turned out to be a creative process. The excitement moved the project from mere reproduction to creative analyses. The Montage was the great eye opener to both students and teachers and proved that 3D-models help

you to see the unexpected.

The role of the faculty members in this process has been continuously discussed. The great majority of faculty at the Aarhus School of Architecture are experienced and highly respected for their professional qualifications, but they do not feel comfortable with digital media and often tries to avoid confronting themselves with questions concerning IT. In this project faculty members had important roles to play in order to the success of the process. Firstly and most important they fully accepted the project as a digital assignment and never questioned the idea. Although teachers of architecture do not teach IT they have responsibilities in bringing the media into studio and can do so in the assignments they give to their students. The subject and requirements of assignments should consider integration of IT, and assignments should be planned to give time and room for trial and error in the field of IT. And most important the studio teachers should focus on giving overview and describing the processes in the project considering new ways of working.

## **A brief and simple conclusion**

The next step to be taken to fulfil the IT-strategy of the school of architecture should be to give up IT-courses as we have experienced that architectural IT can only be developed in studio projects and in the ambience of the studio. As a consequence of this conviction IT-faculty members should serve as consultants to faculty members in their effort to develop new ways of working in studio projects.

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