

# IT in Urban Regeneration Projects

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*This paper is about the development of new tools for the residents to use for participation in the planning process and by the professional generating proposals for projects. It deals with two actual research projects, which might be described as transition projects. The projects are Digital 3D City Model of Copenhagen and Urban Architecture in Urban Renewal, - in dialogue between professionals and residents. These projects take their point of departure in the architects traditional working methods and working tools, but they focus on new methods for the dialogue between professionals and inhabitants and on a new visual language based on the digital technology.*

*In this transition situation we see the educated architect as well as the politician and the inhabitant as students in a common learning process. In the end of the paper we introduce a planned project about IT in Urban Renewal. The project is based on an ongoing governmental experiment with involving inhabitants actively in the renewal of their urban area. This project is intended to combine dialogue methods with the use of interactive 3D-digital City models on the Internet.*

**Keywords:** *Urban regeneration, participation, dialogue method, 3D digital city model, urban architecture*

## Introduction

IT and the Internet offer quite new perspectives for architects and planners and also a new challenge in solving design problems. Not only to develop existing design-methods, but basically to find new methods that come from ideas connected to IT.

Projects in urban renewal are normally made by technicians depending on decisions coming from the municipality. This planning method based on an overall impression often lacks the knowledge about the local qualities as they are seen by the residents in the area.

Protests from the residents are not only an expression of the lack of understanding the projects. Evaluation from the residents may also be an expression of a more or less conscious knowledge

about their urban area and its aesthetic and other i.e. mental meaning. From this point of view the professional can learn from the inhabitants and thus improve his analyses and proposals for plans and projects.

## Political will

Besides the new IT tools, there is also a new political will to start projects with participation of residents and to support the collaboration between professionals, authorities and residents with different backgrounds. Following up this political will the need of developing new tools for planning and communication is obvious.

Recently, our government in Denmark have started a series of pilot projects in so-called "mixed

inner suburbs", where residents now are participating actively in the preparation of proposals, plans and their implementation. The government is investing lots of resources for these new kinds of urban regeneration projects. [1]

Therefore, involving the inhabitants is not only a question of improving the information level in the democratic process. A basic problem is also the different languages and values which indicate a gap between professionals, authorities and residents. To overcome this gap the language has to be developed. It must include the visual medias, which can support words in the dialogue between professionals and inhabitants. And where inhabitants who cannot describe precisely their impressions and evaluation of urban architecture can point out and comment on their impressions either on the spot or from pictures and videos.

For this task the IT and the Internet give quite different and very relevant opportunities for a public, interactive dialogue between the different parties in the urban regeneration process. A dialogue which is independent of place and time.

## **A new language needed**

Traditional project material can be difficult to understand for an ordinary residents and often invoke protests when you see the result. Therefore, it is fundamentally important that the dialogue can support the representation of the spatial proposals.

Together with the Internet the interactive 3D-Digital models can not only support the dialogue but also at the same time form an interface or link to relevant information.

By developing the language, different values and meanings can be better illustrated and give more precise discussions and constructive decisions to improve urban renewal areas. Different meanings are basic for the development, but the different values have to be known to make a good dialogue. Thus the language must be developed in a common learning process where as well professionals as inhabitants

change their position. The architect, the politician and the inhabitant are teachers as well as students in this process. Therefore, dialogue-methods as well as language have to be developed in a process, which is also relevant in the education of future architects and planners. One of the case studies, Urban Architecture in Urban Renewal, covers the dialogue methods and their practical and theoretical results. In one of the other case studies, "Indre Nørrebro", - a part of the digital 3D City Model of Copenhagen - the Local Council uses the IT model for analyses and for instance to describing ecological projects.

The two research projects are:

- Digital 3D City Model of Copenhagen  
The Royal Danish Academy of Fine Arts. The School of Architecture, and
- Urban Architecture in Urban Renewal, - in dialogue between professionals and residents.  
Ministry of Housing and Urban Affairs and The Danish Building Research Institute.

The following gives a report on the methods used in designing the digital city model and in the dialogue research activities and as well as the results obtained from the actual use in the case studies.

## **Digital 3D City Model of Copenhagen**

The work with the building of the structure forming a digital spatial model of Copenhagen has now been going on for 2\_ year, and the first period is expected to be finished next summer. One of the experiments during the period has been to testing the model in communicating the architecture through the Internet and work with the level of details and functionality of the moving around. One of the most well known squares in Copenhagen, "Kongens Nytorv" was selected as subject for the model. The model is describing the situation in 1750, 1997 and 2000?

Our research concerning the digital model and the communication via the Internet inspired to new points of view in the understanding of conception of the digital city model.

Professional contacts to the project within the urban renewal, Local Councils and urban regeneration projects gave us opportunity to form and to test the digital city model for the first time as a tool to supporting a democratic way to involve the residents in the planning process.

The Local Council is bound to solve the administrative issues and need in connection with the development of the local democracy new methods and tools to manage the projects in the communication and the debate.

In this area approx. 30% of the residents has access to the Internet, and the Local Council has its own web-site. In the spring '99 a spatial model has been created in a co-operation between the Local Council and Architect School. The model consists of approx. 850 houses. The model has been used in the communicating via the Internet, but also shown on wide screens on meetings between Local Council and residents.

In a densely built-up area we still find open spaces which can be used in the coming planning process. The purpose is depending on a number of different parameters that have been collected and linked to the "spatial city map" on the Internet to be used in the coming debate.

Apart from that there is a EU-supported experiment "EcoCity" in the "Indre Nørrebro". The various projects are part of a more long-term plan reducing the need of resources and improving environmental conditions. In connection with the plan it is an important part of the project that the results of the tests are communicated to the public. In the first place we have used a combination of the "spatial city map" and the digital model to give an overview and links between map and model.

Our experiences from the projects in "Indre Nørrebro" has shown us new ways to use the digital city model as well in communication as a facility for

planning and management. The co-operation through the project has shown us that developing the model from a tool only for presentation into an IT-system we will need the development of quite new methods and affect the organisation in the Local Council radically.

In our next project, *IT in Urban Renewal*, we find it important to look at:

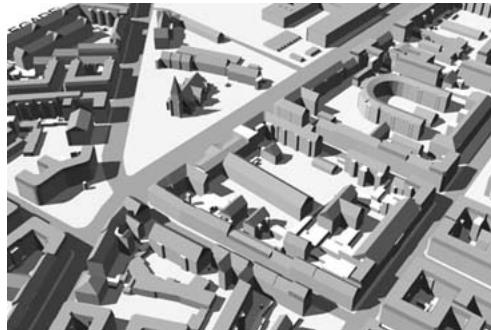
The model used in dialog and communication during the project.

The model as an interface for a management tool, the need of experts, how to get data and how to handle the responsibility for updating the geometric model and data.

### **Urban Architecture in Urban Renewal , - in dialogue between professionals and residents**

This research project deals with two related trends: urban architecture as a subject within urban renewal will be attended to in co-operation with authorities, professionals and residents, and recently built, complex inner suburbs are the object of urban renewal to an ever-increasing extent.

Now that residents have been invited to become involved as clients in the design of plans as well as their implementation, the professional must also acknowledge the residents' judgement. One-way communication is not sufficient for presenting the finished plans. The professional must also participate in two-way communication – dialogue with the



*Figure 1 (left). Part of Indre Nørrebro. The model is created in Acadmap and connected to a data base (GIS) and will be developed as a planning and managing tool. In the first place it is used to generate the pictures in form of a "spatial city map" and wrml model.*

Figure 2 (top right). The case area is Holmbladsgadekvarteret, a mixed inner suburb in Copenhagen of about 1.5 km<sup>2</sup> with 16,000 inhabitants and about 10,000 workplaces. Most of the housing and industries were built around 1900. A large part was renewed between the wars and now a regeneration process is going on.



Figure 3 (bottom right). Map of general architectural values in the case area. The study of urban architecture is based on methods, which are primarily aimed at architectural values in homogenous, historic districts. But their limitations become evident when the task is to attend to urban architecture in an inner suburb that is neither homogenous nor historic, but nevertheless has its own identity

residents – before preparing plans and perhaps also during their implementation. This is a new and demanding situation. The professional must know how to react to the residents' judgements with plan proposals that can be acknowledged by the residents and accepted by the responsible politicians.

## Dialogue research

In dialogue research we enter into dialogues (actions or conversations) with the actors in the urban regeneration project. As researchers we are independent of the regeneration project in financial and practical matters. But we have the responsibility of interpreting the results of the dialogue.

The development and testing of these dialogue methods have produced results at two levels: 1) direct exchange of different kinds of know-how between professionals and residents; 2) interpretation of the results of the dialogue, based on theoretical considerations.

## Dialogue methods

The dialogue methods take their point of departure in the professionals' know-how and views of urban architecture. In the dialogue professionals see through the eyes of the "locals" that see things that are not of

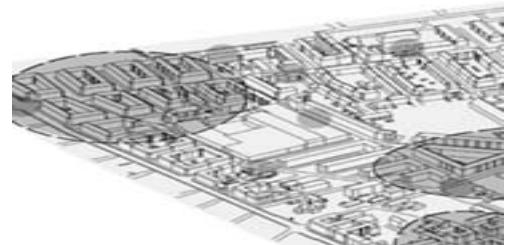
any immediate significance for professionals. The dialogue method is a qualitative method. It does not give quantitative information on the inhabitants' opinions on urban architecture. Different groups of inhabitants – school children, "key persons" and pensioners - about 75 out of 16000 inhabitants - were involved. But the dialogue methods have improved the professionals' understanding of local urban architectural problems and qualities.

Here dialogue methods mean action-oriented initiatives and conversations that the professionals have with the residents. The project used new methods like *3-dimensional-map interviews* and *photo-safaris for children* as well as more known methods like *walk-through evaluations* and *picture sorting tasks*. These methods were developed and tested specifically to reduce residents' difficulties in understanding the methods and language of the professionals and to involve the residents' (conscious and unconscious) knowledge and judgements about their urban area.

See figures three to five for illustrations of the dialogue method.

## From dialogue to design - an example

Children on a photo-safari i.e. pointed to *entrances* as beautiful. The children do not assess the entrance as architects, but they have an eye for its significance – as an entrance to the pleasures of the home or the shopping centre.



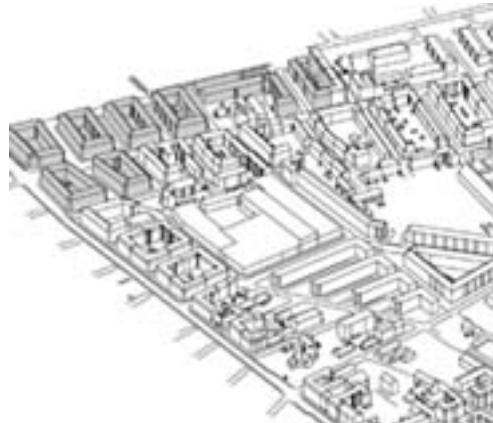
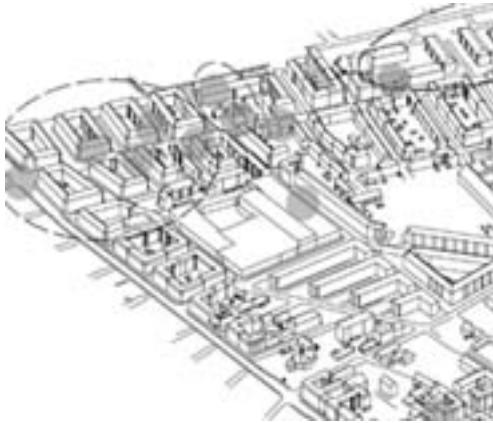


Figure 4 (far left). Map of specific values and problems as seen by inhabitants. The map is a result of the dialogues between inhabitants and professionals.

Figure 5 (left). A synthesis. The professional interpretation of the dialogues results in a new synthesis of the general and the specific. A picture of the urban architectural identity of a complex urban area.

### **Professional Interpretation**

This observation is important and may be interpreted by i. e. professor Ashihara's theory of hidden orders in Tokyo's townscape (Ashihara, Yoshinobu (1986) *The Hidden order*). He discovered that the entrances in the chaotic urban streets of Tokyo form a complex order which gives the street a unity.

In a mixed urban area there are divisions everywhere. The streets pass through the divisions and make a lot of "entrances". So the entrance is a very special theme which tells about the identity of the whole urban area.

### **Possible design strategy**

The entrance or the gate motive can be used in a strategy to strengthen the urban architecture. Entrances could be given i.e. a particular architectural design and thus add a new coherence to the mixed area. On the other hand, entrances might heighten the perception of variety given the form of "gates" between different parts of the urban area: The entrance to the urban area, to a sub-area, to a street, to a square, to a block or a house.

### **Conclusions and the next projects**

These research projects are a kind of a transition

projects bridging from traditional methods and techniques to dialogue methods and new information technology.

In *Digital 3D City Model* the case study shows, that development of the digital model from a tool for presentation to an informational system will demand a different method and change the structure of the organisation of the Local Council

In *Urban Architecture in Urban Renewal* important aids during the dialogues are photos and 3-dimensional maps and drawings which can be read by non-professionals without difficulty. For the use in this project a 3-dimensional digital urban model has proved to be very useful as a common reference in the dialogue with residents and for illustrations in the publication.

As mentioned there is now a political will to involve residents more active.

The planned project, *IT in Urban Renewal*, can improve the dialogue method by involving a lot more people in an interactive dialogue. But in the long term it may support the democratic process by developing the language on the basis of an IT city model as a common and public forum for the different parts in the urban renewal process.

For this process a project which combine the use of dialogue research methods with the use of interactive 3D-digital City-models on the Internet is

thought to be very useful. And we also expect to use and develop the model as an interface for a professional planning tool. But we would like to invite comments and proposals on this!

## Notes

- [1] Urban Regeneration Projects (National Secretariat for Urban Regeneration) There are 7 projects, among them the “Holmbladsgade Kvarteret”. ([www.kvarterloeft.dk/uk\\_version/uk\\_main.htm](http://www.kvarterloeft.dk/uk_version/uk_main.htm))
- [2] Local Council (Copenhagen municipality). There are 4 different areas involved. Among them “Indre Nørrebro”. ([www.kk.dk](http://www.kk.dk)) in danish only.



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