

DECOMB

Design Concepts and Simulations¹ of Built Environment – Ventures and Creative Approaches?

Background

Planning and designing of built environment is a dynamic multi-stakeholder process in dialogue with actual individual building design. How singular entities could be interpreted in a holistic framework supporting the planning system, controlling urban forces and creating opportunities at the same time? This Feasibility Study defines a background to launch a research project for creating practical tools for different stakeholders in a dynamic urban design process. Currently, we lack dynamic and informative processes and tools for comparative early stage analysis, scenario building and public participation parallel to the contractual procedures in production of urban environment. A potential outcome of the research project is a set of guidelines and services suitable for each stakeholder role. Additionally, the results could be used for enhanced computer aided design processes, simulations and programs.

In early spring of 2003 the Association of Finnish Architect's Offices ATL contacted all the Finnish universities that give architectural education. At that time the idea of a holistic urban design platform was described as a product model of the built environment, but on a thematic level. This was followed by a series of discussions and seminars refining the idea into a set of tools and creation of the DECOMB network.

Identification of emergent innovations and potentials in urban and building design often requires a holistic viewpoint on the design context. Plural and multi-stakeholder creation of urban environment is a complex system with input from numerous sectors of expertise. The interaction of specialized stakeholders creates the environment and the overall image of it. This dynamic interaction that sometimes includes confrontations needs to be coped with. The world seems to be going towards culture of expertise, and specialists are and will always be needed. But what is the role of a holistic approach? As a matter of fact, experts will emerge in this story, also.

Working through different scales of planning and designing of the built environment is a quintessential starting point in search of new methods for creating added value in urban generation. Mainly, because this becomes a holistic system or platform for specialists to work on and still maintain the overview and design information in comprehensible and layman friendly form. By putting this into a perspective of a specific site and location and even in a time frame i.e. project based approach, we need to identify what are the tools for dealing with site dependent dilemmas, aims, claims, expectations, requirements, hopes and emergent qualities transferring the creative flow of design and planning decisions into a realized built environment.

In Finnish context this search for new alternative approaches for urban environment production and generation takes place in a transitional phase of urban planning tradition. Privately produced consultation and planning services are likely to have a greater demand in the future. Likewise the supply of services should be prepared to answer the demand of the public sector and other stakeholders who need to generate methods for project development and planning objectives. These methods should be developed through research. We may even speak of national need for new solutions for producing urban environment, although it is assumable that similar issues have to be dealt with globally but in a different cultural and legislative context.

The whole system of real estate markets, construction, investors and consumer behavior including lifestyles has changed yet our urban planning and design methods still rely on the early

¹ The expression "Simulations" was changed to "Management" in the project development phase of the DECOMB.

20th century zoning and representation methods despite of the technological applications. We have come to a point in which the planning system barely manages to keep up with the other stakeholders in the creation of built environment and cycle of urban renewal. The current planning system has several advantages but it still needs to be responsive to new opportunities. The creation and testing of alternative methods and productive synergy may fill in the identified gaps and lead into a gradual influence on the entire planning and regulation system. The gaps in the traditional planning system are both contextual and procedural. In a multi-stakeholder environment the meaning of strategic planning together with conceptual scenario approaches has become more important and this sets new requirements for the planning system. Also the phases of planning act from early stages to approval and realization needs to be re-evaluated in dynamic multi-stakeholder approach with eventual public-private-partnerships methods. In contextual meaning the traditional planning system may prevent emergent innovations and creative solutions by predefining the townscape in a fixed manner without questioning. The pursuit of unified townscape aims to fulfill adopted qualitative aims that can be a basis. When the system becomes too ridged or concentrated on secondary details, there is a danger of losing responsiveness and creativity in dynamic unpredictable environment.

Structure and Organization of the Feasibility Study

The DECOMB network is an informal and open consortium of ATL Association of Finnish Architect's Offices, HUT Helsinki University of Technology Department of Architecture and YTK Centre for Urban and Regional Studies, TUT Tampere University of Technology Department of Architecture, UO University of Oulu Department of Architecture and YIT Group.

The network has currently following members who also participated in the Feasibility Study:

Dr. Architect SAFA Antti Ahlava, Senior Lecturer in Urban Design, HUT
Architect SAFA Harry Edelman, ATL
Architect SAFA Trevor Harris, Professor in Urban Design, HUT
Dr. Architect SAFA Helka-Liisa Hentilä, Professor of Urban Planning, UO
Architect Anssi Joutsiniemi, Senior Lecturer in Urban Planning, TUT
Architect SAFA Vesa Juola, ATL
Dr. Marketta Kytä, Researcher, YTK
Architect SAFA Jani Lahti, Senior Lecturer, TUT
Architect SAFA Panu Lehtovuori, Researcher YTK
MScEng Wisa Majamaa, Director YIT

The Feasibility Study was sponsored by National Technology Agency TEKES and led by Terttu Pakarinen TUT Department of Architecture in collaboration with Harry Edelman ATL Association of Finnish Architect's Offices.

The study was based on series of meetings and working papers both on national and international level. This Feasibility Study refers to the individual summaries of the DECOMB network members.

The culmination of the process was situated in networking with the American colleagues during October 27th – November 2nd 2003. During those days the group met with following persons and organizations:

Asymptote

Lise Anne Couture, Architect AIA

Architectural Research Office ARO

Stephen Cassell, Architect AIA

Leeser Architecture

Thomas Leeser, Dipl. Ing. Architect (M. Arch.)

Reiser + Umemoto RUR Architecture P.C.

Jesse Reiser, Architect AIA and Nanako Umemoto, Architect – Landscape Architect

Columbia University

Andrea Kahn, Adjunct Associate Professor of Architecture

Milano Graduate School of Management and Urban Policy

Dr. Robert Beauregard, Professor

Yale University

Edward Mitchell, Assistant Professor (Adjunct.). Nina Rappaport, Editorial Consultant and Robert A.M. Stern, Professor and Dean

GSD Harvard University

Dr. Luciana Burdi, Founder. Wilson Lee, Project Manager and Media Designer. Mark Meagher, Project Manager & Research Associate. Joe McDonald, Assistant Professor of Architecture. Daniel Schodek, Kumagai Professor of Architectural Technology and Marco Steinberg, Associate Professor of Architecture

MIT Massachusetts Institute of Technology

Dennis Frenchman, Professor and Director. Paul E. Keel, PhD Student. Kent Larson, Architect and Director. William Lyman Porter, Norman B. and Muriel Leventhal Professor of Architecture and Planning. Carlo Ratti, Architect Researcher

FFVA Finnish Foundation for the Visual Arts

Marko Tandefelt, Project Director

Objectives

The Feasibility Study targets to launch an international R&D project for creating a dynamic set of Urban Design Management tools. The Urban Design Management working concept is actually one of the main conclusions of the FS. This means coordination of multiple stakeholders' impacts, interests, expertise and variables of urban structure through design and planning related activities on a specific site or area. Urban Design Management is an elusive concept and it escapes definition easily due to the multiple stakeholders, open-ends and variety of conditions. The same applies for more administrative Urban Management concept which was introduced during the 80's in planning organizations of developing countries (since then it has also been used with different context in post-industrial countries mainly in discourse on competition between cities). The working hypothesis of Urban Design Management consists of a SUPERTOOLS concept which characterizes the technique combining infrastructure, urbanism and scenario anticipation with information technology methods.

Main objectives:

- Refining the research hypothesis and its potential real life solutions with commercial and qualitative benefits for investors, real estate owners, communities and designers
 - Investor and real estate owner interest is in sustainable and creative project development with positive environmental effects enabling the core activities of the stakeholder
 - Communities interest is in flexible production of sustainable and good architectural quality environment increasing the vitality of the community
 - Designer interest is in designated services offering the tools and methodology for fluent win-win processes with minimum mental and material losses.
- Networking with potential R&D partners
- Cross-cultural reference and feedback on the concept by taking a peek from outside in.

Conclusions and Findings of the FS

American and Finnish cultural perspectives on architecture and urban design

One interesting comparative view point for the visit in the United States was the potential interaction of differing structure of real estate and construction business stakeholders and their

relation in urban planning and design. This question is extremely vast including naturally legislative and governance aspects. At this point the focus is on perceived research significance and interest on the subject matter. The following is written through Finnish perspective although many of the discussion that we had in the US showed a mutual identification and interest on the research problem. This confirms the belief on the universal character and architectural quality related context of the discourse despite of the different cultural positions of the stakeholders. Therefore it might be fruitful to research the topic from different cultural aspects and see what kind of combinations and added value could be produced. Another approach which might come into question is based on research packages with different content, but in relation to one another. In the following chapter there are suggestions for a mutual framework in which the research can be implemented. Third educational alternative which could be a supportive operation for the research is a collaborative design studio.

Urban Design Management

At the final stage of the Feasibility Study it has been rewarding to notice that the same notions and practical demands have emerged from different stakeholders of the creation of urban environment. This includes planners, designers, academics, real estate owners, communities, governmental bodies, constructors and developers. In Finland many of the major stakeholders in the real estate and construction market have been tackling with these questions and by definition this gives a sense that the starting point for formulating a research outline for a feasible project with practical demands is justified.

One of the leading principles derives from this concluding that the development of the Urban Design Management tools needs to be implemented in collaboration with the stakeholders. In Finland communities have a monopoly in jurisdictionally effective land use planning based on democratic decision-making and public participation. The communities have a sort of hub role in the process and therefore a city should be involved in development and piloting of the research outcomes. The results of the research can give the communities tools for dealing with the interest groups operating on its jurisdiction and also strengthening the vitality and quality of the city structure.

Vice versa the interest groups such as real estate owners and developers need their own set of tools parallel to the community approach. A practical eventual example of this is a cumulative process for creating the substance of land use agreements and the initial argumentative formulation or expression of interest for the Brief and its background information leading the future development of the community. The Finnish concept of justice separates the land use planning subject matter from the land use agreements concentrating on cost divisions of infrastructure. The physical substance and content of planning cannot be fixed at the land use agreements. This aims to ensure public participation in land use planning leaving the actual land use planning outside the scope of agreements. Paradoxically, the costs often define the scope of environmental quality and even physical forms. The agreements are vital financial tools for urban renewal in all scales and for sure in all cases there are at least silent contextual and qualitative objectives which are naturally bound to costs, also. Currently we lack dynamic and informative processes and tools for comparative early stage analysis, scenario building and public participation parallel to the agreement procedures.

These processes maybe catalyzed by Urban Design Management. From the viewpoint of designer and consultant there is a potential for offering services through e.g. Designated Services with the mutual set of tools. It is obvious that win-win principles and partnership concepts are core questions in this process. Partnership can eventually be defined as using the same mutual tools and procedures for a specific project. This could ensure better understanding and argumentation between stakeholders with parallel procedures. Partnership does not mean a lifelong journey with full commitments but it is an investment in organizational climate of a project that consequently may have effects on the creativity and added value of the outcome. The tools and processes need to maintain at the same time objectivity, good governance, transparency, equal opportunities, rationality and expediency. The solutions are formed with informative tools together with applicable diagrams, scenarios, visualizations, simulations and typologies.

These components formulate together a predictable package of delivering urban design with the project based approach. The delivery can be implemented in value networks crossing the organizational borders involving both private and public stakeholders. In order to make this happen each stakeholder must identify him or herself with a scope of work, responsibilities, deliverables and schedule. This is likely to be successfully developed on a limited comprehensible area or site. In Finland the majority of urban production is concentrated on urban renewal, increasing density or developing specific sites or facilities.

Communication and eventually ICT based tools have a key role for cumulative design information which is a basis for political decision-making, also. The management aspect in urban design may have a foundation in communication and communicative planning. This can be a tool for implementing many of the jurisdictional objectives of the renewed Finnish Land Use and Building Act (2000). The Finnish Government has pursued a holistic approach to land use planning in its proposal (HE101/1998) leading to thorough renewal of the legislation.

Process and Tools vs. Qualities of Urban Environment?

Currently it seems that the approach is based more on identifying appropriate processes and tools than defining urban solutions or products with quantities and qualities. Therefore this is less of a question of ideology. During the visit in the United States the words New Urbanism arose many times. This movement has its own approach to urban design and its sprawl and regeneration related dilemmas. Naturally, the final goal needs to include improved urban quality but preferably with a creative open-ended process including alternatives without manifestos and so called stated facts in given quality but creative problem solving without pulling the same rabbit out of the hat every time (it *maybe* the same but only after value driven analysis and scenario based evaluation!). Physical measures or typologies may come into question as communication tools of course, but their informative role has to be presented in a communicative way, not as stated facts without alterations and alternatives.

Necessity of Real Life Situations

In previous chapter it was emphasized that different stakeholders should be involved in the research and development process. This gives a clear advantage for taking the results in praxis and testing them. The City of Jyväskylä has already expressed its interest in participation.

Most likely the counterparts of the research will have a fluxating role. In the first hand they are needed in the creation of the tools for producing the raw material for the research and secondly, the outcomes or tools need to be tested. In this phase there is a need for designers to participate in the research with physical design proposals by testing the tools.

Comparison of Urban Production Models

The administrative and managerial aspects on cutting edge urban environments need to be researched to find out the mechanisms benefiting the creation of the tools. The Dutch examples are likely worth exploring. In Dutch urban production Architectural Design Management has been implemented in ambitious multi-architect projects. More specifically, it needs to be studied what are the experienced benefits and eventual negative effects of multi-architect projects. This concept may eventually be expanded in multi-stakeholder approach in urban design sense involving mixture and multiplicity of *all* types of stakeholders, not just architect planners and designers.

Definition of Urban Planning, Design and Management and Their Relations in the Process

The structure of planning mechanism needs to be evaluated in the sense of involvement of different stakeholders especially in project based planning or urban design. The definition of roles and tools for architect consultants, experts, investors, developers and communities is the main focus on project based approach. A project on a limited area offers a natural framework and mutual connection to one and other for all the stakeholders to research the urban environment. Practical demands of urban production rise from the level of a specific site and therefore it seems

logical to begin from there. Relations to larger territorial and administrative questions need to be clarified even though if they were not specifically researched. The Finnish legislation permits a so called Development Area which could be currently a legal environment of the research. This means possibilities for broad interpretations of the Finnish Land Use and Building Act in order to experiment with sustainable and high quality environment.

The Land Use and Building Act also demands public participation and evaluation for the planning procedures to maintain transparency and equal rights for the land use. The Urban Design Management concept offers equally potential solutions for enhancement of both participation and evaluation. Especially, evaluation has received less attention in practical interpretation of the law, but both aspects still need refining and described procedures within the process of urban production.

It seems that the roles, processes and tools need to be developed keeping in mind at least two different levels. Firstly, the ideal way of achieving optimal results and secondly a local way bound to legislation and governance. Practical and theoretical models may have to be studied parallel assuming that the research is situated in a real site or area.

Management and Communication - Potential of Questions

Communication is by definition a vital research area for the Urban Design Management. The tools that have communicative aspects are the means for delivering information for stakeholders who may have different values and objectives. There are numerous experiences from Design Review type of procedures in building design processes such as CABE (the Commission for Architecture and the Built Environment) in the United Kingdom. What is the potential of questions in multi-stakeholder Urban Design Management and how can we make them intelligent? This means supporting the planning process by cumulative design information in an easily understandable format. One potential approach is moving between different scales and scenarios. Theoretical research tradition is eventually in mixed scanning concept (Etzioni, Amitai 1967. "Mixed Scanning: A "Third" Approach to Decision-making").

Different type of management typologies and their relevance should be studied, also. The relation of current managerial procedures of urban design process is subject to research both in national and international level to define the current stage. Additionally, management of creative organizations with the tools can be a relevant question. Creativity and positive forward looking thinking may benefit the win-win situations.

Research Project Identification and Development

This comes back to the original question of the holistic approach. The initial research effort should be concentrated on the platform that can serve a diversity of different expertise needed in the urban environment production. The platform is created by the documented project approach that describes the roles, tasks and deliverables of different stakeholders. The outcome is a set of guidelines and services suitable for each stakeholder role. The initial research produces content of processes and tools eligible for a computer program, also. A use of game technology may come into question. This is especially interesting in transferring the design information from one stage to another gradually leading into actual building design. Relations with building design programming and urban planning are some what vague and often create the gap between planning and emergent innovations with creative solutions. However, the outcomes of the research should be utilized and tested in practice at least in some extent. Obviously, some of the services and procedures can utilize advanced ICT based tools e.g. traffic simulations and visualizations which have both already been studied at the TUT Tampere University of Technology. A preliminary working title for the upcoming research project could be "*Urban Design Management: structure and tools of project based urban design production in value networks*".

Implementation of the research project may run from general to specific with a defined site or area that has its connections to the general urban planning on a regional level. Therefore, both detailed and generic questions may have to be coped with almost simultaneously and the research is unlikely to be linear. Basic background research should however be implemented first as well as adjustment of the research scope and methods based on the findings. It seems that

this research area contains several topics that could be studied separately within individually financed projects, also. YTK Centre for Urban and Regional Studies has a preliminary interest for developing virtual research and participation methods. TUT Tampere University of Technology has ongoing research on Development Areas and Land Use Agreements that could most likely to be utilized in the upcoming research efforts.

Helsinki University of Technology and Association of Finnish Architect's Offices will draft a research outline for the initial project defining the framework of project based Urban Design Management and its tools in January 2004. The outline is a first draft for searching the research counterparts, stakeholder representatives and financiers, including National Technology Agency TEKES. The detailed definition of research methods and eventual models is a preliminary phase of the project.

Summary of the starting points for the preliminary research outline:

- The research should be bound to an existing defined area to maintain a practical approach. Therefore a city or municipality is an initial stakeholder in the research. City of Jyväskylä has expressed its interest on the research.
- The practical approach has its basis on theoretical scientific studies e.g. PhD and master's thesis defining the structure of Urban Design Management concept.
- The research should involve at least following active stakeholder roles: municipalities, private land owner, real estate owner, investor, developer (constructor) and designer consultants.
- The content of the research needs to be formulated to produce immediate utilizable practices and content for potential computer programs.
- International comparative analysis should be made on management procedures and cultural aspects e.g. in relation of potential use of typologies.

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