RESEARCH
CENTER FOR
SOCIAL URBAN
MODELLING **SUMO**

The Modus Approach

A New Design Methodology for Prototyping Socially Sustainable Housing Estates

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Based on an interdisciplinary investigation of past and present associational life in Danish social housing estates, the research project Fleksible Fællesskaber (Flexible Communities) develops new prototypes for socially sustainable urban development. Introducing the Modus Approach, a collaborative and multifaceted interdisciplinary alternative to conventional prototyping inception in architecture and social design.

Despite differences in design traditions, prototyping processes in architectural model-design usually run through a sequence of five steps:

The ordinary prototyping-process:

1. Wicked problem (identifying the problem)
2. Collection (collecting data)
3. Comprehension (what is at stake)
4. Spark (conceiving the idea)
5. Concretisation (making the prototype)

The five steps are typically a progressive sequence involving individual and specific groups of actors (1). In step 1, the problem will be given by a contractor or client. step 2 might be performed by a variety of data collectors and may involve residents or potential users, finally, architects will perform step 3, 4 and 5 by conceiving a design and developing the architectural prototype-model in a studio or workshop. Our argument puts forth the idea that this conventional prototyping-process suffers from a lack of sequential integration and is organized in a way that is detached from relevant residents and users. This project therefore introduces The Modus Approach to challenge and strengthen architectural prototyping by reconfiguring the individual steps as 'modes of investigation', each integrating several actors and interdisciplinary tasks.

The Modus Approach
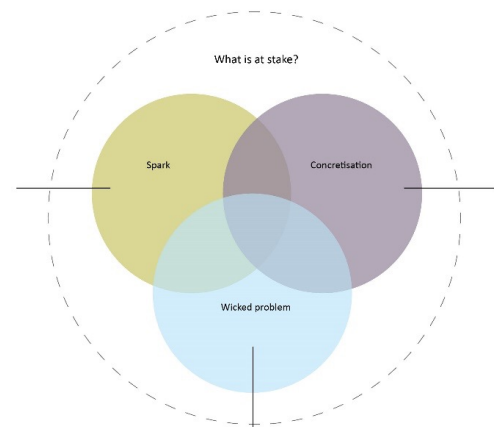
In the Modus Approach, all modes are centered around 'collection of data' and figuring out 'what is at stake'. the 'wicked problem', 'concretization' and 'spark' have been reconfigured from the previous design (steps in a process) to three modes of investigation, by connecting each of them to specific methods explained below. Breaking down the sequence allows the research and prototyping of models to take place simultaneously, and to inform each other. It also ensures continuous iterative and interdisciplinary collaboration both within the project, and with external interlocutors.

The new Modus Approach allows for:

- Insights to arrive from the collaboration of diverse actors and disciplinary methods throughout all modes.
- Heightened awareness of what each mode is offering for the research and modeling process.
- The incorporation of residents' insights in the modelling arrives from the insights of residents' lives throughout all modes.

Concretization

Using the mode of Concretization is a means of gathering insights and exploring the interrelation between life and architecture through concrete material objects.

This mode includes the methods of:
- Building 3D prototypes placed at estates for interaction and testing
- Co-creational small-scale modelbuilding workshops with researchers and residents
- Archival research: how have residents dealt with issues by manipulating the materiality of the estate fx rebuild, altered, or removed
- Observations and interviews on residents' reactions in specific spaces and why
- Live-space building with researchers and residents

Wicked Problem

Investigating through the mode of Wicked Problem identifies both local and general controversies at social housing estates concerning built space and life activities.

This mode includes the methods of:
- Archival research: what problems have engaged residents through time?
- Observing conflicting actions and space utilization
- Mapping places of friction at the estates
- Interviewing residents on the situations and locations where life and space conflict
- Analyzing architectural drawings
- Gathering local solution-models

EXAMPLE

At one estate, residents had expressed dissatisfaction with an indoor common-area which included a shared kitchen and living-room. Though great architectural care had been made to design the common-area for communal interaction, residents categorized the area as socially dysfunctional. By Running a series of live-space building workshops on the common-area, researchers and residents explored how the area could become socially functional. Rearranging furniture and functions in the common-area allowed residents to negotiate and align expectations among themselves to allow the common-area to serve everyone. It was concluded that designing space must allow for a dialogue on diverse social life and expectations. To build for socially sustainable communities, it has proven vital to develop architecture that allows for continuous reconstruction and negotiations between social life and built space.

EXAMPLE

By Combining observations and interviews with archival research on residents' newspapers, garbage handling was identified as a reoccurring problem in social housing estates. Analyzing architectural plans shows how estate features, such as circumvented car traffic, narrow path systems, and peripherally placed communal garbage stations, complicate the handling of garbage (e.g., assorting and recycling it). However, the problem of garbage handling has in some cases motivated residents to make their own informal solution-models (e.g., making an informal system of using shopping trollies to transport garbage through narrow footpaths to various recycle stations spread out across an estate). Such local solution-models prove highly important as they show clever, simple ways of solving complex problems in the cross-field between life and architecture. This is vital in both the refurbishing of estates and in developing prototypes for new housing estates that consider how to deal with pressing problems - like the present and future increasing requirements of garbage handling.

Spark

The mode of Spark is a way to gather information on the relationship between an estate and its residents by exploring intuition, ideas, affective relations, and intentions.

This mode includes the methods of:
- Architectural analysis on the ideas and ideals behind the physicality of estates
- Archival research on residents affective and moral relations to estates
- Mapping residents' affective and moral relations to places through participation, observation and interviews
- Campaigning and workshopping to collect residents' spontaneous and intuitive ideas for estate improvements
- Intuitive small-scale model building workshops

EXAMPLE

By Mapping residents affective and moral relations to places at an estate, it was observed that female residents with children perceived the estate-mall as an immoral place filled with unhealthy food, alcohol and theft, whereas gardens and small green pathways were understood as a good and safe environment. Exploring the sociocultural history of welfare landscapes from the 50's, the 70s, and the 80s, showed that the moral status of malls have changed drastically. In contrast, gardens and small green paths have kept their moral status as 'good'. As sustainability also concerns securing the continuous appreciation and use of built spaces, the story of the estate-mall raises questions concerning how architecture can avoid being morally labelled as "problematic". Prototyping sustainability creates architectural designs that build on long-term sociocultural and historical perspectives, utilizing what is perceived by residents as being morally 'good' or 'bad'.

The Modus Approach
Prototyping sustainable housing

It is evident from the examples shown that collaboration across the disciplines is essential when identifying and developing prototypes. Using The Modus Approach, the relationship between the project and residents is likewise intrinsic to the process.

When building for sustainability, the Modus Approach can identify informal local communities and the types of problems that not only preoccupy them, but also inspire them to mobilize and develop their own solutions-models. By conducting the modes of investigations throughout the development of architectural prototypes, the Modus Approach allows for a flexible incorporation of new and surprising insights from both the estates and their residents. Thus, the Modus Approach is well apt for identifying a wide range of local social resources and informal models of problem solving that relate to built space. Furthermore, it allows information to be prototyped into concrete suggestions for the sustainable development of social housing in the future.

References and notes
(1)
Elizabeth B.-N. Sanders & Pieter Jan Stappers, 2008. Co-creation and the new landscapes of design. CoDesign Taylor Francis March 2008 CoDesign Available Online Httpjournalsonlinetandfcouk 2008. Friis, S.A.K., 2016. The 6C Model: The contribution of design to open, complex problem solving. Int. J. Des. Soc. 10, 13–30.

Flexible Communitues

One of the largest challenges of our time is the generation and implication of sustainable urban development. Especially challenging to urban planners, developers and researchers is the question of what it takes to create sustainable city-development for growing populations. Populations that progressively challenge the social fabric of cities as well as their infrastructures.

The challenge is to develop cities in a way that considers both the architectural and technological challenges. This is compounded by the need to incorporate the massive social resources for sustainability that are immanent in citizens self-organizations, initiatives and local knowledge. Dealing with this challenge requires knowledge of both technologically and socially sustainable ways of living in urban environments.

So far, there is no established tradition of integrated interdisciplinary collaboration in city-development. Thus, new robust methodologies must be developed that combine cultural history and architecture to establish fundamental knowledge about the relations between social life and the builtenvironment. in a collaboration between the Aarhus School of Architecture and the National Museum of Denmark, Fleksible Fællesskaber explores how this can be realized in praxis.

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