CA2RE
Conference for Artistic and Architectural (Doctoral) Research

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**'Prototyping Residential Subdivisions.
Experimenting with prototyping for collective learning.'**

Keywords

Prototyping; Collective learning; Residential subdivisions; Sustainability.

Context


In Flanders (Be), **suburban neighbourhoods and particularly residential subdivisions** made of single-family detached houses still represent the most common way of living. Supported by long-standing anti-urban policies, economic possibilities and the stimulation of homeownership (De Decker, 2011), the persistent Flemish housing sprawl saw its acceleration after World War II with the establishment of **the Flemish 'housing dream' : a private house with a garden in a quiet suburban setting** (Bervoets and Heynen 2013).
The focus on a plot-by-plot development and private initiative and life has resulted in the prioritisation of individual dwelling over the collective dimension and context of inhabiting (De Meulder et al., 1999).

Challenges

- **economic** (e.g. lack of services, costs of infrastructures, space underuse...)
- **ecological** (e.g. car-dependency, lack of green, high energy demand, impact on natural landscapes...)
- **social** (e.g. ageing population, housing affordability, increasing diversity...)

Whereas on a macro- and meso-level visions and plans for a more sustainable urban development exist, they have so far failed in having a wide spread impact on the everyday mode of living of the Flemish inhabitants.

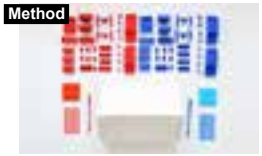
Aim

For residential subdivisions to become more sustainable, **residents, local authorities and other local actors need to learn from each other to develop their capacities** to reach collective objectives (e.g. sustainable urban development). The project investigates and develops **design related processes, tools and techniques for collective learning** to facilitate the democratic and participatory discussion, envisioning and sustainment of retrofitting alternatives and new meanings for residential subdivisions.

Questions

- **How to engage the actors of residential subdivisions in collective learning processes to unlock and develop their capacities?**
- **Is it possible to trigger collective learning starting from the everyday of residential subdivision and namely by together unveil, evaluate and rework everyday dwelling patterns toward more sustainable alternatives?**
- **What role can design play in collective learning?**

Method




Participatory design methods and particularly **making and prototyping** (Binder et al.,2015; Brandt et al., 2013; Hillgren et al., 2011) are advanced to **enable opportunities and challenges to contextually emerge and be discussed** and open up and generate new meanings for residential subdivisions.
Prototyping is advanced as: **a shared tangible language, a way to make issues experientially available for debate and evaluation, and to develop democratic decision making**.To facilitate collective making and prototyping with multiple actors in different contexts and scales, the research is supported by **the open source system OpenStrucutres that enables people to design modular objects according to a shared greed.**

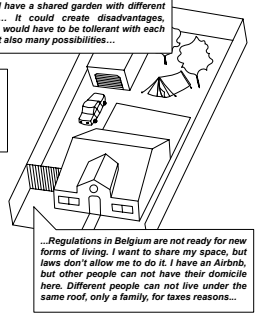
Case Studies: First experimentation with prototyping

The research developes through two long-term and on-going case studies: 'De Waterstraat' in Lanaken and 'De Witte Wijk' in Vosselaar (Flanders, Be)

'De Waterstraat'
Lanaken

'De Witte Wijk'
Vosselaar

A number of inhabitants and few other local actors have so far been involved in interviews during which they visualised and reflected on how they live in residential subdivisions and how they wish to live in the future. The individual sessions have been mediated by a model of an average house of the area and several paper components focusing on the use of the individual plots and their relation to the wider area of the neighbourhood.

Discussion

The models supported trust and reduced the distance between the participants and the researcher. Their use enabled the sessions to take place in a space where participants felt comfortable. Using the material provided, participants were able to tangibly explain how they live and wish to live. At times, the visualisation helped them to evaluate and reconsider their dwelling patterns leading sometimes to the prototyping of proposals for alternatives. Making alternatives tangible enabled both opportunities and dilemmas about future ways of living to emerge and be discussed. Furthermore, the sessions highlight existing spaces where micro- (inhabitants) and meso- and macro- (municipality, region) visions don't coincide. Finally, the sessions showed that although residential subdivisions are characterised by individualistic modes of living, sharing practices exist with sometimes the hybridisation of individual and collective, private and public spaces and practices.
The first experiments with models will informe the further development of prototyping tools and techniques for collective learning in residenatial subdivisions that will be developed using the open source system OpenStructures.

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Prototyping Residential Subdivisions. Experimenting with Prototyping for Collective Learning

In Flanders, the single-family house remains the most common dwelling form, representing approximately the 80% of the total housing stock (De Decker, 2011). This is clearly distinguishable in residential subdivisions, where privately owned, single-family detached houses and large plots form the typical Flemish residential suburban landscape. Today these environments are confronted with considerable economic, environmental and social challenges. Whereas on macro- and meso- institutional level these challenges are evident and urgent, on the micro-scale of the neighbourhood the inhabitants commonly maintain to live their "housing dream".

The research aims at developing democratic and participatory processes to discuss, initiate and sustain the transformation of suburban residential areas into more sustainable urban ecosystems, starting from the hypothesis that this change can only be durable if supported by capacity building.
To do this the research advances prototyping as a way to involve residents, local authorities and organisations to learn from each other and develop new meanings and capacities for the future of these environments by unveiling, debating and (re) working the everyday contextual dwelling patterns of residential subdivisions.

This paper particularly focuses on the role that prototypes have to initiate and articulate processes of collective learning and future-making. It does this by analysing and reflecting on two case-studies in Flanders where prototypes (e.g. a paper sketch model of an average local house and plot with different paper components, furniture, trees, cars...) have been used and developed with inhabitants and other local actors to unveil, discuss and sometimes reframe and rework contextual individual and collective dwelling patterns toward the development of new meanings and more sustainable alternatives for residential subdivisions. In particular prototypes are analysed and discussed according to four roles for prototypes so far emerged during prototyping sessions: prototypes as language, prototypes as mediators, prototypes as experience and prototypes as technologies of the imagination (Halse, 2013).

The analysis and preliminary conclusions will be presented through a PP presentation and an illustrated poster of the role and potential of prototypes emerged from the experiments so far developed.