Proficient

State-of-the-art of CSO energy-efficient new districts

Executive Summary

Executive Summary Proficient D7.4 – State-of-the-art of CSO energy-efficient new districts

PROFICIENT; SME network business model for collective self-organised processes in the construction and retrofit of energy-efficient residential districts
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Colophon

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Publishable executive summary

The aim of the **Proficient** project funded under the FP7 programme 'Energy efficient Buildings' (EeB) is to facilitate and promote Collective Self-Organised (CSO) housing for energy-efficient neighbourhoods. In CSO housing, a group of individuals organize themselves within a contractual agreement on a collective level for the realization of their settlement, either newly built or retrofitted. The target group of the project consists of end users on the demand side of products and services and SMEs on the supply side.

This report (Deliverable 7.4) describes the state-of-the-art of CSO energy efficient new districts. Together with Deliverable 7.5 (energy efficient district retrofitting), it describes a number of CSO projects. The difference between new construction and retrofitting is that in case of new construction, there is no pre-existing condition that dictates the direction of development. There is more freedom to cater to specific needs and to custom create according to wishes and desires. The decision making process however can take very long.

In case of retrofitting, there is an existing structure, and sometimes existing end-users and existing connections between SMEs and building owners, e.g. in the form of a maintenance contract. The pre-existing conditions may limit the freedom of decision making. Individual home owners or tenants may have different opinions about what needs or does need not to be done, while the existing structure may steer the retrofitting solutions in a certain direction.

This report describes the result of the first 18 months of the Proficient research, focussing on CSO case studies. The cases described are collected in collaboration with the different Proficient partners. They describe the state-of-the-art and serves as a reference point for the results of the Proficient research.

Case studies

Based on a process flowchart developed by WP1 (see also Figure 1), WP1-6 have been asked to draft two questions per process-step they would like to ask to a CSO project that would help them with their research. All the questions have been gathered in a list containing 55 questions that has been presented to five CSO projects. The results of the questionnaire have subsequently been bundled and made available with the information grouped both per WP and per phase.

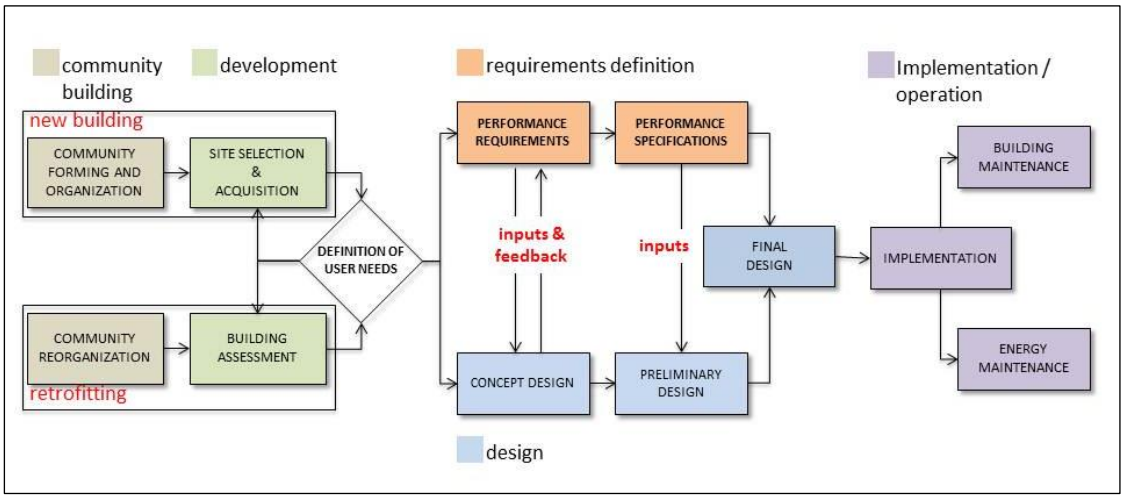

Figure 1: process flowchart

Following the first round of information gathering, with the help of a number of Proficient partners, additional information was gathered from a much larger group of CSO case studies: 23 new-development case studies and 16 retrofit case studies. Not every case could be described with the same level of detail, but based on the information available, a general description was given, as well as an analysis of the most important factors that contributed to the case studies' success.

The cases can be divided into three categories:

1. Demonstration case studies
2. Observatory case studies as described in the Description of Work (DoW) of Proficient
3. Additional observatory case studies

Demonstration cases

The demonstration case studies are connected closely to Proficient as some of the participants in those projects are partners in Proficient. For this reason, more detailed information is available, and a certain amount of information exchange can exist between the demonstration case studies and the results from Proficient work packages. Not all demonstration cases are able to provide the same amount of feedback, as not all projects are in the same developing stage. Some are close to being finished, others are ongoing or are still in the start-up phase at the time of writing.

Two demonstration cases listed in the DoW are classified as new construction: Lancaster CoHousing near Lancaster, United Kingdom, and Erasmushove in The Hague, The Netherlands.

Observatory cases

The observatory case studies are similar to literature studies. Relevant information is gathered from available sources, and used to give a general description of the specific projects. Although important to determine the current state-of-the-art of CSO energy efficient building projects, they have a lower status than demonstration projects, in the sense that they do not provide the feedback and validation of results that the demonstration case studies provide.

The observatory case studies listed in the DoW are not all equally relevant to the Proficient research: not all fit the criteria of CSO housing. Despite the lesser relevance of some, all are listed with information about the specific project, as they might be helpful by giving a frame of reference or provide a link to other interesting information. The cases vary in size and type, and the information given is adjusted accordingly, based on the information available and the relevance of the case.

Additional observatory case studies

In addition to the demonstration and observatory case studies described in the DoW, information about a number of CSO projects in Europe has been collected by the Proficient partners, based on their own judgement and availability of information, and is described in the following paragraphs. Not every case has the same amount of information available, which is reflected in the descriptions.

Results

Within Proficient, the workload is split into eight work packages that focus on different topics. Of these eight work packages, six (WP1-WP6) deal with specific aspects of a CSO project: they deal with the process, or with technological aspects. Two WPs, WP7 and WP8, have a more general approach. WP7 is tasked with the demonstration aspect of Proficient, providing the link between the demonstration projects and the Proficient research results, while WP8 is tasked with the dissemination and valorisation of the knowledge produced by the different WPs, providing the link between the 'outside world' and the Proficient research.

The more general approach gives WP7 the unique opportunity to look at case and/or demonstration studies as a whole, instead of a collection of separate elements. Through this helicopter view, many cases can be compared side by side, to determine not only what separates them from each other, but also what the commonalities are, and what factors play a role in the success of a case study.

The helicopter view also entitles WP7 to take a more distant look at the case studies. Because there are many cases, and there are many different topics that play a role, it is difficult to take every individual aspect separately, assess it, and weigh it against another individual aspect. WPs 1 through 5 focus on the individual aspects, grouped into the five topics each individual WP focusses on. WP7 takes a different approach by taking a step back and looking beyond the little details. The underlying elements that form the driving forces behind successful CSO projects become visible.

Error! Reference source not found. lists in a condensed form the most important drivers behind the different case studies described in this report.

Table 1: driving forces behind case studies

Project	Project drivers
Lancaster Cohousing, UK	Core team from community
Erasmushove, NL	Individual initiatives, enabled by municipality
Livorno, IT	Urban regeneration program, cooperatives lead, public funding
FutureBuilt, NO	Government program
Broset, NO	Government program
GEN, NL	Government program
CSO examples, NL	Individual initiatives, municipalities stimulate, corporations support financially, most used professional process support
Derwenthorpe, UK	Foundation and housing trust
LILAC, UK	Core team from community
Mura S. Carlo, IT	Housing association in collaboration with municipality
Quattropassi, IT	Promoted by a cooperative
De Schrijver, NL	Core team with process consultant
Het Kwarteel, NL	Core team with process consultant, corporation financial guarantor
De Kersentuin, NL	Core team with process consultant, corporation financial guarantor, municipality stimulated
Vrijburcht, NL	Core team with architect in lead, corporation financial guarantor
Maison d'Elite, IT	Prototype of private developer
Ghandi, DE	Architect together with tenants, municipality stimulated
Kleehäuser, DE	Core team with process consultant and architect, municipality stimulated
Lindenhof, DE	Core team containing two architects
Prisma, DE	Core team with architect
Tannenhof-Süd, DE	Core team with architect, municipality stimulated
Westend, DE	Collective with architect as lead, municipality stimulated
Wolfsbusch, DE	Initiative from architects

Success factors for projects are dependent on the type of project. The type of project can be split into two main driving forces:

1. Bottom-up initiatives, where the initiative started with the end-users
2. Top-down initiatives, where the initiative started with professional developers or the government

Success factors for bottom-up initiatives are:

- A process consultant that assists the end-users with the decision making and design and construction process
- An enthusiastic core team of end-users that act on behalf of the full CSO
- A financial guarantor that acts as a safety net for financial issues

Success factors for top-down initiatives are dependent on the specific business model of the initiators. As top-down initiatives are SME or developer driven, their main incentive is a financial one: to make business. The specific success factors are dependent on the SME, the target group and/or size and potential collaboration of a (local or national) government.

In most of the studied case studies, the municipality plays a supporting role. In some cases, the municipality takes the first initiative by assigning a plot of land specifically to CSO initiatives and actively bringing together (groups of) people to develop a collective project. In other cases, the municipality stimulates through providing support, either through providing a process consultant, or by providing some sort of subsidy. In almost all cases though, the municipality is supportive of the CSO process.

Conclusion

Demonstration and observatory case study projects that are realised as new construction demonstrate that there is a market for residential construction projects where the end-users are involved in the design and decision making process, the so-called Collective Self-Organised housing projects.
The form or type of organisation behind these projects however, differs, with the different types having different characteristics in terms of duration of the design and construction phase, financial constructions, and parties involved.

The most 'pure' form of CSO housing, where the initiative and process management is strictly limited to the end-users (maybe in the form of the board of an association representing all members of the association), in its current form is very limited in potential. The often very democratic process of these CSOs means that the decision making process is tedious and can take very long. Sometimes even to the point that initial members or participants may give up in frustration and resort to the more standard form of development. (i.e. buying an existing home or newly built home from a developer). The biggest progress, in terms of new process models, technical solutions, financial models or business models aimed at CSOs, can be made in this group or form of CSO.

Within the scope of Proficient, this would mean products aimed at CSO end-users to facilitate non-professional building commissioners in the decision making process and in communicating with SMEs.

A more pragmatic form of CSO is one where a developer takes the initiative and designs and builds a group of houses or apartments specifically for a group of people. The challenge in this solution is to provide the end-users with enough influence to meaningfully impact the design of the building they will move into. The exact amount of influence will lie somewhere between none or substantial. In the former case, the developer (or architect) makes all of the design related decisions, effectively building for an anonymous group of people which is currently the status quo in most projects. This gives the developer optimal control but leaves the end-user irrelevant. At the other end of the spectrum, the end-users are in full control, which, in the traditional way of building, will lead to customised homes for each individual member of the CSO, which foregoes any benefits for the builder achieved by economies of scale.

The optimum amount of influence on the design then will be somewhere between both extremes: the developer is able to control (part of) the design and building process, while leaving enough freedom for the end-users to customise their future homes to their specific needs and wishes. Within the scope of Proficient, this would mean developing products aimed at SMEs to help them better understand the needs of CSO end-users and facilitate incorporating the design process with CSO members into the company-specific workflow.