



CASE STUDY

Urban Garden of the Future

KEY FACTS

- Climate adaptation project in a 3.1000 m² Courtyard
- Before the courtyard consisted of 1670 m² green spaces, this is now 1900 m² of green spaces
- First fossil and emission free construction site in the Municipality of Copenhagen.
- Reuse of soil, concrete, windows, and wood.

DO'S

- Reserve enough time for engagement of citizens and other stakeholders.
- Use atmospheric pictures and bring artifacts/ materials to spark creativity. As an example, the ideation workshops for the "Urban garden of the future" made use of Legos, straws, small sticks etc. to make it easier for especially kids to express their wishes for activities in the garden layout, both in the green and the blue infrastructure of the climate adaptation system.

CONTEXT

Denmark salvages large quantities of materials and have one of Europe's largest material footprints. In fact, 4.2 earths would be needed to suffice if all people on earth lived as Danes. Around 40% of these materials are used in the building sector and most of these are mineral materials (sand, rock, gravel) which is applied to make e.g., concrete, road fill, noise abatement and- coastal protection walls, etc. However, these minerals are becoming increasingly scarce and difficult to retrieve, since it is both expensive and difficult to locate potential gravel pits and the ocean is also suboptimal, since it can have negative consequences for the seabed. Moreover, it is also a matter of salvaging the right qualities of sand and gravel, especially when it is applied as concrete aggregate. In terms of the local situation in Copenhagen, these non-metallic minerals are especially scarce, as the nearest gravel pits are expected to be emptied within the next ten years. For this reason, it is important to minimise the use of all materials, and especially to identify solutions to minimise the use of materials with the most significant climate impact; namely, concrete (sand, gravel), glass and metals.

PILOT DESCRIPTION

The project, "Urban Garden of The Future" plays into sustainability on various levels, as it concerns both climate adaptation and mitigation. The offset in this project is foremost to create vibrant and beautiful urban spaces for the residents and to create Sustainable Urban Drainage Systems (SUDS) to handle heavy rain and cloudbursts. Furthermore, trying out different and more circular ways to create these systems and all the interior of the garden has also been a desire from the beginning. As a result, many materials, and components either from the site or from other municipal projects has been repurposed in the project. Old windows have been used to make a common patio for the residents, old concrete aggregates have been repurposed to make concrete-elements in the Drainage System (SUDS), same as edges around basement entries and tiles around the garden. Furthermore, when the rainwater is handled in the SUDS, tunnels and a pool get filled and the water rise angle high and is clean enough to use for recreational purposes.



DONT'S

- Do not present ideas to the project stakeholders from the beginning, namely the residents. Instead, create an inviting space for ideation and creativity.

LESSONS LEARNT ON COLLABORATION

- All stakeholders learn from engagement processes, sometimes it may be insights very specific to the concrete project. Yet, it can also breed new ideas and be an offset to structural changes in the general approach to cooperation and engagement in future projects.
- It is a great satisfaction to be a part of creating something. It creates a sense of ownership and this is important in terms of caring about, i.e., an urban garden. When people care about something, they wish to keep it, and therefore it has a better change of lasting longer. Making something proper and beautiful is de facto more sustainable.

OPPORTUNITIES AND CHALLENGES

The “Future of Urban Gardens” has been very fruitful and exemplifies how the circular agenda can add to the quality of a project. In this case it has been a part of creating a garden space with unique details that would not have been the same with “of the shelf” building components. Above all else, engagement and cooperation has been the key focus and the path to success.

However, the process has also been long, five years in total, of which the first six months was assigned to citizens engagement and design ideation. The length of the project is not a challenge per say but inevitably adds costs the project. It is important to leave enough time, especially, for the non-professional stakeholders to be properly engaged. Residents’ opinions need to be at the centre of decision making. In this project, the ideas of the residents were the foundation of the professionals’ design process. Yet, this could be done in many other ways and variations. such as drawing up different project-designs and solutions from the beginning. Yet, before the non-professionals stakeholders decide on anything, they are educated and enlighten by impartial experts, which then prepare them to choose solutions and designs based on a sound foundation.

Lastly, it should be noted that the residents who took part in the project is from three different housing associations, one of them a cooperative association. Oftentimes, it can be difficult to create cohesion, especially when more than one association with numerous residents are to find common ground for such decisions, namely in project of this scale. However, the “future of urban gardens” project stands as an example of a project in which both team-efforts and holistic sustainable solutions co-existed. These consisting of; improved biodiversity, a Sustainable Urban Drainage System (SUDS) and less use of virgin raw materials.

WHAT'S NEXT?

The experiences and insights from the project are valuable and even though it may not be completely transferable to the work in Integrated Building Renewal projects, the approach to citizen engagement is something that can be transferred to many situations where public agents, external professionals and citizens create in building projects together. One extra dimension is the matter of financing these projects. In this pilot, the expenses were paid by the municipality and a utility company. However, alternative ways of financing are worth to explore and those that create more and better opportunities for citizens to make green investments. Go to the [project webpage](#) for more information.