REGREEN
NATURE-BASED SOLUTIONS

GREEN ROOF STRATEGY OF HAMBURG

Adressed SDGs:

Image: BUKEA / Isadora Tast

> OBJECTIVES

The Green Roof Strategy Hamburg (Germany) was initiated in 2014 with the first green roof symposium, making Hamburg the first major German city to launch such a comprehensive green roof strategy. Its goal is to green at least 70 per cent of both new buildings and suitable flat or gently pitched roofs undergoing renovation. The Ministry for Environment, Climate, Energy, and Agriculture supports the project with three million euros in total until the end of 2024. The strategy is based on four pillars: promotion, dialogue, policy and research. Green roofs and facades have different positive ecosystem services and support several SDG's. They improve environmental conditions by reducing noise, reducing fine dust particle concentration, lowering surface temperatures, offering retention and evaporation, reducing drainage system congestion and reducing risk of flooding. They can, in general, be seen as actions for climate adaptation.

> DESCRIPTION

Integration of the green roof strategy into overarching strategies (e.g. Hamburg's climate plan) gave the strategy a wide and stable foundation. While pushed forward by the environmental ministry, the Green Roof strategy was developed in close cooperation with different special authorities. In implementing the strategy, the ministry needs the support of the district authorities – to apply the developed instructions for green roofs and facades.

Hamburg has incorporated a binding green roof regulation in many land-use plans for 20 years. In accordance with the Nature Conservation Act, green roofs and facades are considered possible measures for compensating the impact of building on nature. The city of Hamburg regularly reviews its green roof legislation, in particular the ecological quality standards for the roofs. The following elements were crucial in the early stages of the green roof strategy: 1) developing an urban land-use planning guide w.r.t uniform installations for extensive roof greening throughout the city and making them mandatory in the long term; 2) introducing a split wastewater fee; 3) launching a 3.5 million euro support program for green roofs and facades; 4) organising a publicity campaign with international outreach; 5) promoting roof greening as an eligible flagship for sustainable companies in the city; and finally 6) launching a green roof and facade competition to generate best practice examples and promote the funding program.

Within large parts of the city, the green roof area increased from 124 ha to 168 ha over the last six years. Within projects, such as CLEVER Cities Horizon 2020, there is a chance to test ways of improving the implementation of green roofs and facades to raise the positive benefits derived from the NBS. For example, experimenting is done to design roofs in ways that create biodiverse hotspots for different insects, for example by bringing nesting aids and other materials for bees on the rooftop. Another project will implement smart flow control by creating retention basins on roofs to retain water during heavy rains and release it upon need during dry periods. There is also a plan to combine green roofs with solar panels for energy production. These solar panels will work more efficiently over green roofs, as evaporation cooling lowers the microscale air temperature and increases energy production in the solar cell. Other than this, the HafenCity University Hamburg will monitor the retention capacity of green roofs. This long-term observation is important to determine the retention capacity of green roofs and prove the effectiveness of green roofs, especially during heavy rain events.[1] There are about 16.000 housing units in planning to adopt green roofs and/or facades in the coming years.

> CHALLENGES

Low technical knowledge and trust: The lack of knowledge in regard to fire safety but also maintenance have been barriers in the continuous progress of the strategy. It has also been questioned whether green roofs indeed provide the needed water retention capacities especially with a heavy storm water event. Since the evidence stems from small scale experimental settings, there is a concern that real and large roofs would not provide adequate retention service. To understand this better HafenCity University is currently researching this question. Further, when initiating the Green Roof Strategy, it was challenged whether Hamburg has sufficient flat roofs to be able to succeed with the strategy. GIS-based research answered this question, showing that over 40% of the city's roofs are flat and suitable for greening.

1 Richter, M.; Dickhaut, W. (2016): Evaluation of green roof hydrologic performance for rainwater run-off management in Hamburg. Conference Proceedings of the International Conference on Sustainable Built Environment, Hamburg 07th-11th March, pp. 536-545.

Lack of scientific evidence: In a few cases, the scientific support is missing as little on-site real scale measurements have been made. For example, it is still difficult within the land-use planning sector to implement greenery on buildings for noise mitigation and air quality improvement owing to lack of research on the correlations. In order to make initiatives like green facades mandatory, there is a need for good scientific evidence.

> OPPORTUNITIES

Political will and common goals: The initial binding political decision was very effective giving the strategy the needed political force in discussion with other governing bodies of the city. Another very critical factor is the link to other overarching strategies of Hamburg, the Hamburg Climate Plan, RainwaterInfraStructureAdaptation (RISA) Strategy, and the Qualitäts Offensive Freiraum (quality offensive for open space). Incorporating common goals from these strategies into the green roof strategy and vice versa increased the strategy's legitimacy.

Financial incentives and knowledge exchange: As most of the roofs are privately owned, the ministry's influence remains limited to future planning. In that regard, financial incentives are relevant to realise NBS and bring on board the general public, experts and get media attention. With the incentives, the motivation for private partners increased leading to implementation activities. In the end, the support by national funding programs from the federal ministry of environment is helpful as those programs foster the exchange also beyond the city scope.

> LESSONS LEARNED

Whenever trying to implement a NBS strategy, all bodies of the city should be included in the process and regularly updated about the progress to raise the awareness of the topic and show the successful implementation. Taking into account a wide range of planning tools, it was possible to identify a number of factors that could positively influence one another and thus contribute to the success of the strategy. The advantage in Hamburg was that the challenges (reduced green space within a growing city, climate change, biodiversity loss) were omnipresent.

One success factor for this strategy is also the participation of different stakeholders in the strategy creation and aim definition. This increased both awareness and acceptance of the project. The public relations work included the creation of a "brand", a website, brochures and flyers, posters in the urban area, film contributions, and publications in daily newspapers and trade magazines as well as on social media. In order to address the target groups in an adequate manner, there are regular meetings with multipliers from professional associations and contributions to trade fairs, lectures and events for different stakeholders. Hence, communication and dialogue/involvement is key to changing practices and creating a demand for green roofs among residents and companies. This requires a dedicated full-time communication officer and structured co-creation processes.

Nevertheless, disservices of green roofs – e.g. the case of many seagull pairs breeding on a large green roof during spring– necessitates a lot of dialogue and awareness raising as well as management needs.

> INSPIRATION FOR OTHERS

The Green Roof strategy Hamburg is a successful story of how a citywide agreement fostered an NBS implementation. The fundamental pillars of this strategy can be repeated elsewhere, as they allow for adjustment in focus to accommodate distinct local context and conditions.

Here are some tips for cities wanting to develop a similar strategy:

- Integrate into overarching strategies (e.g. climate plan, etc).
- Work together with all stakeholders to take into account their concerns.
- Combine support and promotion programs with accessibility of practical examples for the public and experts.
- Produce content and images for the public, experts and media.
- Distribute advice and training content for different target groups.
- Provide regular feedback and update meetings with partners.

Thus, a combination of regulation, promotion and dialogue, financial incentives, science advice and evaluation are key for successful implementation. Nevertheless, application to an entire country might be difficult due to a risk of oversimplification and lack of knowledge or consideration of local contexts.

FURTHER INFORMATION

All fact sheets were produced from questionnaires and interviews conducted by the ICLEI team. Contact ICLEI Europe for more information or access Oppla: https://oppla.eu/casestudy/21219

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THAMESMEAD NATURE FORUM OF LONDON

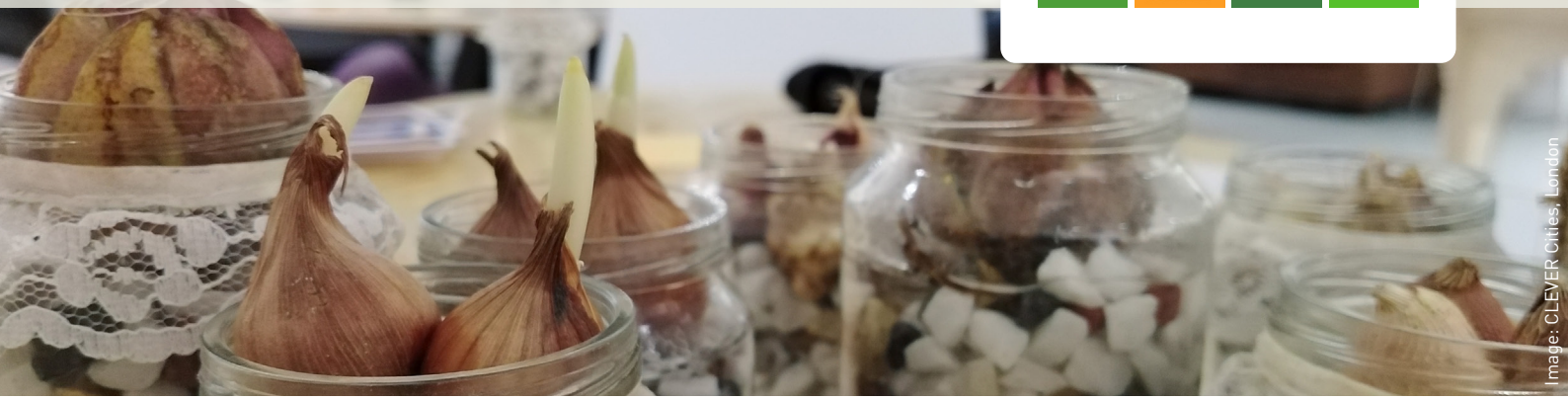

Image: CLEVER Cities, London

> OBJECTIVES

The Thamesmead Nature Forum, as part of the CLEVER Cities project in London, was established in 2018 to create an "Urban Innovation Partnership" that would help shape and guide the CLEVER Cities work in Thamesmead, London. The idea is to provide an open forum for all people in Thamesmead to discuss nature and environmental issues that can lead to collaboration amongst multiple partners from diverse backgrounds. The forum also challenges involved parties to think out of the box and curate interesting content that could appeal to a variety of audiences with a wide range of interests. The aim of the forum is thus to act as a first step towards creating a more bottom-up governance and decision making model.

> DESCRIPTION

Thamesmead district, in South East London, is managed by Peabody Trust and has a current population of about 45,000 people. Quite a diverse place in London, Thamesmead is typically 50% Black and Minority Ethnic, and 50% White. Large parts of Thamesmead are currently the subject of a billion-pound estate regeneration and renewal project that forecasts to double the district's population by 2050. The project involves complete revitalization and redevelopment of parts of the estates to create new homes suitable for the future, keeping in mind the health and wellbeing of residents as well as the nature around. The remainder will undergo a series of interventions to improve and enhance social connectivity within and throughout the estates, ensuring more social cohesion and community building.

CLEVER Cities is involved with retrofitting NBS into a 1960s housing estate in South Thamesmead. The solutions to be installed will mostly focus on the use of green and blue infrastructure to create more resilient neighbourhoods. Chosen solutions will aim to:

- Promote healthier living by providing spaces for physical activity and relaxation.
- Cool the city and absorb stormwater to lessen the impacts of climate change.
- Filter pollutants to improve air and water quality.
- Make streets clean, comfortable and more attractive to encourage walking and cycling.
- Create better quality and better-connected habitats to improve biodiversity and ecological resilience.

Similar to other areas undergoing regeneration projects, the issue of gentrification looms large, resulting in a lot of mistrust in the authorities by many people in Thamesmead. To encourage trust building and to enable co-creation and socially inclusive decision-making with local communities, the CLEVER Cities project partnership of Peabody, Groundwork and Mayor of London, created a new governance instrument: the Thamesmead Nature Forum.

Forum attendees are a mix of people working in local authorities, residents of Thamesmead, and members of local interest groups, all united by a shared interest in nature and community governance. The forum is co-chaired by the social housing association responsible for the delivery of the public realm works (Peabody) and a local environmental regeneration NGO leading on community engagement and communications (Groundwork) (Wilk et al., 2020b). Peabody will continue to administer the forum after CLEVER concludes. The aspiration is that this may eventually be a self-governed group.

The forum is currently established with the aim of making a wide range of stakeholders heard. Open to all interested residents, it sponsors events and informal chats to create connections between existing community groups, initiatives and actions underway in Thamesmead. A new, non-traditional position of community Gardener in Residence has been created to undertake outreach work within the local community and make on-the-ground connections with residents. Apart from traditional "green-keeping", the gardener provides hands-on experiences on gardening through workshops, drop-in gardening sessions for residents of all ages, and other events that are advertised by social media, posters, and their website (Wilk et al., 2020b).

The Nature Forum is also acting as a springboard for a new Community Design Collective that will act as a co-client for the CLEVER nature-based solutions in South Thamesmead Estate.

> CHALLENGES

Other forums focusing on culture and business have been successfully established in Thamesmead, but a forum focusing on blue and green spaces is new. The ambition from the outset was to create a group that could help guide decision-making in CLEVER

Cities and give direction to the implementation in Thamesmead. Striking the balance between an informal network and a strategic group proved challenging at first. It was important to understand what would work in the forum in terms of curated content or more strategic discussions. The administrators have found a good balance by using a ***learning by doing*** approach. Attempts to co-create areas of focus and encourage a self-led approach felt clunky and didn't resonate with attendees, so instead we moved towards a more traditional set up, with a pre-agreed agenda and sharing updates, with shorter time at the end for members to feed in or give announcements.

Another severely limiting factor in such engagement activities is the time that people in the neighbourhood can invest. This leads to difficulty in building a core group and thus enough momentum to keep the forum running smoothly. Interestingly, the move to online meetings, due to Covid-19 restrictions, resulted in better and more consistent attendance.

Balancing the varied interests of all participants is an ongoing challenge. Providing opportunities for all to contribute as much or as little to the agenda as they wish, helps. In terms of engagement, it has been easier to recruit new arrivals to Thamesmead, such as an emerging artist community, than some of the older, more established residents. Efforts continue to reach more broadly to ensure a good balance of new and established residents of Thamesmead.

> OPPORTUNITIES

Prior to the CLEVER Cities project, there was already an ambition to create a 'blue green' group in Thamesmead. However, the CLEVER Cities project helped to motivate all the partners and provide additional resources to get such a community engagement platform up and running and also maintain momentum.

> INSPIRATION FOR OTHERS

A few key tips to create, run and maintain a similar format for a community forum for discussions on NBS and their implementation are:

- Find a few key members of the community who are really passionate about the subject area. Work with them to test ideas for the group and then refine the approach as you proceed.
- Be honest and upfront if this is the first time you are convening a group – don't act like you have all the answers.
- Know when you need to adapt an approach or style – ask for feedback early.
- Work towards empowering the group – some will want to participate only a little, some will want to be more heavily involved – find a way to devolve decisions to those who are keen.
- Consider paying people who want to be more involved, to formally include them. "We get paid for our work, why shouldn't they?"
- Feedback on the impact the conversations have. Show people that their attendance is valuable.
- Be mindful of people's time – it is limited, and generosity runs out.

> NEXT STEPS

Building on the learning and experience of the Nature Forum, CLEVER Cities team are now establishing a Community Design Collective, to support the co-design process for the NBS. This group of residents will be recruited and paid for their time, approximately 15 hours per month. There is a need to recognise that people are time-poor and have challenging lives, hence paying for them to invest their time is a way to enable a wide range of people to be part of the Collective. They will participate in a number of training and design sessions to ensure that emerging designs truly reflect local need.

In terms of the Nature Forum: there is ongoing promotion to try to involve every willing resident. The move to online has been a success, but it is important to be mindful of the digital divide. Many people can have limited internet access, so a 100% online presence is not desirable in the long run.

By reaching out to a diverse group of community members there is a possibility of finding people who could be future community leaders and champions. Nicola, the CLEVER Cities project manager from GLA says "We have had to adapt our ways of engaging with people, especially in response to Covid-19, as just stopping wasn't an option. Through the Nature Forum and the Community Design Collective we are testing different approaches to creating strong networks. If at the end of CLEVER, we get one local group formally established, we would consider it a win."

Most importantly, from an upscaling perspective, it has been vital to gather learning to help share the results, such that successful elements may be replicated elsewhere in London and Europe.

FURTHER INFORMATION

All fact sheets were produced from questionnaires and interviews conducted by the ICLEI team. Contact ICLEI Europe for more information or access Oppla: https://oppla.eu/casestudy/21469

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