Circular Green Blocks: sustainable city quarters as circular economy business promoters

Scored by name(s): Joni Askola, Charles University (joni.askola@yahoo.fr) and Alexander L. Q. Chen-Florea, Roskilde University (alq@ruc.dk)
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Is the project a case of…:

☒ State-initiated co-creation

☐ Entrepreneur-driven co-creation

☐ Grassroots-based co-creation*

**For an elaboration of the typology, please consult the GOGREEN theoretical framework p. 25.*

Integrated case analysis

Before proceeding to the scoring of the GFs, please provide a *3–5 page case analysis* in which you describe the background, history, and national, regional, and local contexts of the case, the problems and goals addressed by the local collaboration, the participating actors and their relationships, the unfolding of the co-creation process, the most important governance factors (this may include factors other than those in focus in this project), and the generated outputs and outcomes. The conclusion may specify a few lessons learned from the case study.

1) Background, history, and national, regional, and local contexts of the case

The Circular Green Blocks project started in early 2021, organized by HSY Helsinki Region Environmental Services Authority in collaboration with Forum Virium Helsinki, Metropolia University, and Aalto University. HSY **played a key role** in setting up Circular Green Blocks, as they have coordinated the whole project, serving as initiators and facilitators. The project transitioned from its initial planning phase in early 2021 to its full launch in August 2021, after which ten thematic pilot projects and experiments in the form of local housing companies were invited onboard.

The project selected ten pilot projects and experiments in the Helsinki region to serve as platforms for experiments. Circular Green Blocks provided companies an opportunity to test their business ideas in a real urban environment and allowed housing companies to test solutions suited for their local needs. The solutions were related to shared use of spaces, the development of yard areas, and sustainable mobility. The project involved collecting 3D location data and 360-degree footage of the block environment and exploring how modelling could be utilised in solutions and design that promote circularity. In addition to this, the project mapped out what kind of circular and sharing economy solutions residents need. Companies were able to propose their digital sharing economy solutions to be tested in the pilot blocks through an open call for projects.

Our case study is on the whole Circular Green Blocks project, but we have been paying specific attention to one specific sub-project, which is the e-cargo-bike pilot program. During our data collection, it was the only ongoing pilot project. The e-cargo-bikes were located in a container in the Katajaharju neighbourhood of the Lauttasaari area of Helsinki. It is an area by the sea with relatively high square metre prices and that explains why relatively resourceful people live there. It was the only pilot that was going on during our data collection process. The e-cargo-bikes were available from the 18th of April 2023 to the 31st of August the same year. Lauttasaari is a rather wealthy area of Helsinki. The other pilot programs took place in other areas of the cities of Helsinki and Vantaa.

The project was funded by the European Regional Development Fund. The funding was part of the EU-REACT programme, meaning that the project is being funded as part of the European Union's COVID-19 recovery efforts. The authority responsible for supervising the funding was the Helsinki-Uusimaa Regional Council. The project also received funding from the City of Helsinki. The project had a total budget of 1,173,241 euros, of which Forum Virium Helsinki's share was 296,600 euros. This was for the whole project. For the pilot project, the budget for the redesigning of the container was of 20 000 euros + VAT. The maximum budget to be used for the e-cargo-bikes and services provided by the private company were set at 69 000 euros.

2) The aims of the project and the sustainability problems that it seeks to address

The Circular Green Blocks project helped companies identify and develop business opportunities as part of the transition towards circular and sharing economy. To this end, it leverages co-creation processes to engage relevant and affected stakeholders to receive inputs. In particular, the project's target groups were companies and housing companies that support digitalisation, green growth, and develop solutions that utilise new technologies.

The main objective of the Circular Green Blocks project was to promote the circular and sharing economy in city blocks and housing companies and to contribute to the development of a smart and functional city. During the project, participating businesses received help in developing business activities that promote the circular and sharing economy. Housing companies, on the other hand, learned to recognise what kind of circular economy solutions they could implement in their own properties or neighbourhoods. Through these pilot/prototypical programs, the project has aimed to develop and synthesize relevant knowledge and knowhow that enables similar circular and sharing economy services and products to be scaled up. All the knowledge from these pilot projects will be aggregated and documented as an informational booklet that is intended for prospective businesses and housing companies that might want to introduce similar products and services.

Another objective was to promote the utilisation of 3D geospatial data and increase businesses' knowledge and understanding of its potential uses in areas such as the development and planning of city block yards. The project involved utilising 360-degree photography, digital environmental data and 3D modelling to promote circular economy solutions and planning at the city block level. The potential use-cases of modelling were illustrated to potential service providers as well as to housing companies. More broadly, 3D modelling and visualization allowed the participants to envision and carefully design the prototypes prior to implementation, ensuring that relevant inputs were included throughout the pilot project. The

application of such digital technology also serves as a proof of concept to demonstrate how it can aid design thinking in co-created circular and sharing economy solutions in urban contexts.

In the case of the pilot program that we collected data on, the sustainability problems that the project sought to address was linked to mobility. The project aimed to improve mobility in an environmentally-friendly way for a housing block in Helsinki. The electrically-powered cargo-bike project was for housing companies consisting of 10 buildings, with a potential of around 450 users. The integration of shared e-cargo-bikes within a local residential block serves as a dual catalyst for the circular and sharing economy. From a circular perspective, these electrically-powered cargo-bikes promote resource efficiency by extending the lifespan of a single asset across multiple users, minimizing the demand for new resources. Concurrently, the environmental impact is mitigated as the electric nature of these bikes aligns with circular principles, reducing emissions and energy consumption associated with transportation. On the sharing economy front, the cargo-bikes foster community engagement and cooperation, as residents collaboratively utilize and maintain the shared resource, promoting a circular community ethos. Moreover, the sharing of cargo-bikes replaces the necessity for individual vehicle ownership, curbing carbon footprints and traffic congestion.

As part of the sharing economy solution, the project partner (CoReorient oy) also integrated a digital platform for booking and tracking usage, which aimed at enhancing the efficiency of the sharing system but is also anticipated in future iterations to contribute valuable data for optimizing maintenance and resource management. Economically, the shared cargo-bikes offer residents a cost-effective alternative to private vehicle ownership, dovetailing the principles of both circular and sharing economies.

Picture of the redesigned e-cargo-bike container in Katajaharju (source: HSY)

In this co-created pilot project, the Circular Green Blocks team, in cooperation with stakeholders such as the housing company, citizens living in it, private companies, and local universities, looked for a sustainable solution to improve mobility for citizens living in housing blocks in the Katajaharju neighbourhood of Helsinki. The solution they developed using co-creation includes offering and storing shared electric cargo-bikes for the housing blocks. As a result of feedback from the local citizens, they also decided to redesign the cargo container used for their storage.

The project also provided the city of Helsinki with information on circular and sharing economy solutions with respect to how to take them into account in area development. The pilots carried out with housing companies in the pilot blocks in Helsinki were a part of the supported development efforts in urban renewal areas. The experience gained and lessons learned in the project are planned to be utilised in the measures of the city of Helsinki's circular and sharing economy roadmap and circular economy cluster program.

3) The participants and their interaction and communication in and between meetings

The Circular Green Blocks cargo-bike pilot project participants are:

a) **Core actors** that had an active role in the cargo-bike part of Circular Green Blocks, some of which were members of the steering group as well:
   1. **HSY Helsinki Regional Environmental Services**: project initiators, facilitators and coordinators
   2. **The housing association of Lauttasaari:** citizens living in ten apartment blocks in the katajaharju neighbourhood of the Lauttasaari area in Helsinki
   3. **CoReorient Oy:** private company providing the cargo-bikes for the project
   4. **Forum Virium Helsinki:** responsible for selecting the pilot blocks in Helsinki. The selected blocks and housing companies acted as Living Labs for the circular and sharing economy themed pilots. Through an Open Call, Forum Virium Helsinki was seeking digital sharing economy solutions to be tested in the blocks.
   5. **Aalto University:** Aalto University helped with the 3D modelling of the container.
   6. **Metropolia University:** Metropolia University helped private companies involved in the project with sparring.

b) **Other actors** that had a less active role in the cargo-bike project or had a big role in the Circular Green Blocks project as a whole through the steering group for example:
   7. **Helsinki Region Cyclists:** there is a yearly event to promote cycling in which Circular Green Blocks also participated.
   8. **The Lauttis Mall in Lauttasaari:** the local mall advertised for the project.
   9. **Helsinki-Uusimaa Regional Council:** the Helsinki-Uusimaa Regional Council is responsible for the allocation of the funds given by the European Union. Circular Green Blocks reports to them.
   10. **The City of Helsinki:** minority funder, funding the share of the budget going to Forum Virium Helsinki
   11. **The European Union:** main funder. The funding was part of the EU-REACT programme, meaning that the project is being funded as part of the European Union's COVID-19

recovery efforts. The authority responsible for supervising the funding was the Helsinki-Uusimaa Regional Council.

12. **EG-Trading oy:** private company that redesigned the container to make the area look nicer for local citizens living around it.

The number and range of participants in the cargo-bike phase of the project is quite similar to the other pilot programs. Some of the actors are not the same, as the private companies and local citizens vary based on the pilot project and location. The actors seem to be **unified** with the idea of improving life in housing companies, with sustainability being a key driver for most actors except local citizens and their housing companies.

4) How often do they meet, and do they communicate between meetings?

The steering group brings many of the actors together three to four times a year during the Circular Green Block project. HSY, the Helsinki-Uusimaa Regional Council, other core actors and external consultants are included in the steering group. The steering group takes care of bigger decisions such as how the funds are used. There is **some communication** between actors between the meetings but most of it is spontaneous and informal. If one of the actors has a question or issue, it is always possible to contact other actors on it. This happened several times with the actors from the private company CoReorient oy spending time at the container to help the local citizens with the e-cargo-bikes. However, there is not much formalized or mandatory communication between the meetings.

For the cargo-bike pilot program of Circular Green Blocks, which is the specific project that was investigated for data collection, there was an introductory meeting in the spring of 2023 and an ending event in September. In between, there were a few meetings. There was always the possibility of contacting each other but no formal requirement to do so. Some of the actors did communicate between meetings. All stakeholders have not been at the same place at the same time except for the ending event in September, in which most actors participated. All in all, the cargo-bike part of Circular Green Blocks is a rather **tight knit partnership** with quite frequent formal and informal communication and a quite high level of trust between the participants. This applies to the whole project but also to the e-cargo-bike pilot project.

5) The role and forms of knowledge sharing, coordination and joint problem-solving

Knowledge sharing feeds into joint problem-solving efforts and the implementation of solutions is coordinated to **avoid mistakes made in past multi-actor collaborations**. The four guidelines produced by Circular Green Blocks combined with the personal experience from actors involved and the 3D mapping of the cargo-bike solution are the key forms of knowledge sharing in the Circular Green Blocks project.

The activities of Circular Green Blocks can be divided into planning and implementation of the pilot projects. Joint problem-solving played a key role in this project, as the pilot project has revealed how residents in the housing association were vocal about the sharing economy solution. Bringing user-inputs into the pilot project was thus a prerequisite for its success, as earlier iterations of the shed in which the cargo-bikes were stored were subject to criticism due to its bland appearance. This was later rectified as flowers were placed on the walls to embellish its bland appearance.

Like many co-creation projects, Circular Green Blocks' e-cargo-bike pilot program **operates at three levels**. At the meso-level, it aims to integrate relevant actors or stakeholders to develop sustainable housing solutions through collaboration. At the micro-level, it aims to reach out to local citizens to find new solutions for sustainable mobility, to then test them and to potentially create awareness and new sustainable habits for the citizens that are involved. At the macro-level, it aims to provide the public sector with information on circular and sharing economy solutions and understanding of how to take them into account in area development. The guidelines created by Circular Green Blocks work at all those levels.

6) The relation between consensus and conflict and the handling of the latter

During the interviews, every informant was satisfied with the work of facilitators in this co-creation project. Informants saw collaboration overall as **good and well-organized**. Informants involved in this project that were also involved in earlier ones agree that lessons have been learnt and collaboration has improved.

Consensus seeking is enhanced by facilitators from HSY. There were **hardly any conflicts**, but when a conflict arose, some actors accepted to let it go, seeing it as a necessity in their role. In the case of the design of the container, there was a quick reaction by the coordinators to redesign it and please local citizens. Consensus seeking is enhanced by **mostly bilateral exchanges** in case of disagreements. If one stakeholder is not satisfied with something, they will express their disagreement to a stakeholder that can do something about it. A potential area of improvement is to facilitate multilateral conflict mediation, which does not depend on individual actors to negotiate and resolve their conflicts independently. There is a risk in such cases that the more resourceful or powerful actors are likely to overpower the other actors, which in turn will potentially jeopardize the collaborative network. Some of the minor/secondary actors involved did voice a general concern that they were forced, as smaller associations, to be more accommodating to the stakeholder interests of the larger actors, although recognized that as a general fact of life. However, upon being asked about the nature of such conflicts, they reassured that they did not directly result in any conflict or yield a low level of trust but was rather the latent power dynamic that permeated the project.

The biggest issues in this project were related to the differing interests of the actors involved and to the lack of planning for when the pilot is over. It was clear from the beginning that the cargo-bike project is a temporary pilot project, but some of the informants would have liked to see a plan for a potential continuation of the project in another form after the testing. This reveals a potential discrepancy between the goal of HSY and that of other stakeholders. Whereas the former intended to execute pilot projects with the aim of developing and synthesizing knowledge and know-how for future scaling in the form of informational booklets, the housing associations, as well as the businesses, hoped to have a streamlined process that planned the potential full-scale implementation of the project.

7) The role and form of leadership: lead actor, steering group and/or collective leadership

Leadership has been very important in this project as there are various actors from the public and private sector and the local citizens living in the housing companies. All actors involved must be aligned for planning and implementation of the pilot program.

The representatives from HSY served as lead actors, initiators, facilitators and coordinators in this pilot program. All informants agree on their leadership and leadership style. None of the informants felt any discontent about their leadership. Most informants agreed that co-creation projects require active participation and a somewhat equal role for all stakeholders in terms of power.

The **steering group** met three to four times a year during the whole Circular Green Blocks project (which lasted from September 2021 to September 2023), with the Helsinki-Uusimaa Regional Council, the city of Helsinki, other core actors, private companies and external consultants involved. The steering group serves mostly for big decisions such as finances. Smaller details are dealt with separately between the affected actors.

8) The temporal unfolding of the co-creation process: major shifts and ups and downs

Circular Green Blocks as a whole ran from the 1st of September 2021 to the 30th of September 2023, while the **cargo-bike part of the project** lasted from April 2023 to the 30th September 2023. The planning of the cargo-bike pilot and the public bids for private services happened early 2023. The cargo-bikes were available from the 18th of April 2023 to the 31st of August. During the months of May and June the cargo-bikes were used 19 times for a total of 130 kilometers. There is no data on the months of July and August. The data for May and June seems like a quite small amount but it is likely that the usage increased with the summer weather during the next two months.

One of the major shifts that happened during this co-creation project was based on the feedback of local citizens who complained about the design of the container in their backyard. Their voices were heard, and the container was redesigned. The ending event of Circular Green Blocks as a whole took place on the 6th of September 2023.

9) The most important governance factors (may include factors other than those in focus in this project)

Governance Factors **7, 11, 14, 15 and 16** are the key governance factors of this project.

The construction of narratives about successful multi-actor collaboration, **governance factor 7,** plays an important role in Circular Green Blocks in the sense that it is a project based on co-created pilot programs. Past similar projects initiated by the same actors are used as learning experiences and examples. Informants self-report that experiences and narratives about successful **multi-actor collaboration increase their motivation** to participate and support collaborative processes. A majority of stakeholders report increased motivation. The creation of guidelines that are free of access is also an example of this. The experience that has been transformed into guidelines can then be used to build future projects.

The inclusion and empowerment of relevant and affected actors, **governance factor 11,** is an important governance factor because the facilitators of Circular Green Blocks aimed at including and empowering all actors involved in the whole process. None of the informants felt irrelevant or unheard and in that sense the input and feedback of **potentially marginalized actors** have been actively included. Facilitators did a good job at including every actor that wanted to be included.

The use of experimental tools for innovation, **governance factor 14,** is clearly present in the Circular Green Blocks project as a whole, and also in the cargo-bike pilot program that we analysed. Aalto University's role in the **3D mapping** of the area and the potential use of these 3D images with the container for future similar projects is a good example of the use of experimental tools for innovation. **Prototypes** were also used at the annual biking event. The **redesigning of the container** holding the cargo-bikes could also be seen as an innovation. The experimental tools for innovation employed in Circular Green Blocks **define the whole project** and play a massive role in the project reaching its goals of creating knowledge on how to help companies and citizens create green outcomes in housing companies.

The ongoing critical self-reflection and learning, **governance factor 15,** is key in this project. The example of redesigning the whole e-cargo-bike container is a great example of self-reflection and learning. The project's stakeholders realised that this would be the only way for local citizens to accept having the container in their backyard and decided to act on it. **The active use of inputs** from evaluations and informal feedback has advanced the project's collaborative nature and problem solving processes. The project reflected critically on the way that they collaborated in past pilot projects and learned from it. The template of the broader collaborative design was from Forum Virium and was also based on past experiences.

The exercise of facilitative leadership, **governance factor 16**, is the final key governance factor for Circular Green Blocks. The facilitative leadership in this project was appreciated by all actors that were interviewed in this project. None of the informants challenged the facilitative leadership by HSY. The efforts made by the facilitators to drive the project's collaborative problem-solving process forward were in that sense successful, and that these efforts enabled **collaborative interaction between stakeholders**.

10) The generated outputs and outcomes

In two years, the project **provided information** on the implementation and potential scaling of products and services for housing companies that utilise digitalisation at the city block level. The pilots provided an understanding of what kind of opportunities housing companies must implement to promote the circular and sharing economy, and what the implementation of new solutions requires. At the same time, businesses gained a better understanding of the implementation of **solutions with multiple housing companies**. In addition to businesses and housing companies, cooperation was carried out with property management and maintenance companies, circular economy experts and city administration.

The guidelines and **3D mapping** are the key outputs generated by the project. Being a pilot program, the cargo-bike project was not the implementation of a lasting green solution. It was a temporary green solution to create knowledge that can be used for future projects, including lasting ones.

In practical terms, we know that during the months of May and June the cargo-bikes were used 19 times for a total of 130 kilometers. We do not have data on the rest of the months, but we believe that the usage was higher, as the weather in Finland tends to be at its warmest in July and August. People were also likely more aware about the project at that point.

The project provided the city of Helsinki with information on circular and sharing economy solutions and understanding of how to take them into account in area development. The pilots carried out with housing companies in the pilot blocks in Helsinki also supported development efforts in urban renewal areas. The experience gained and lessons learned in the project will be utilised in the measures of City of Helsinki's circular and sharing economy roadmap and circular economy cluster program.

11) Lessons learned about the conditions for co-creating green solutions

The **DNA of Circular Green Blocks** that contributes to the planning and implementation of successful co-created pilot projects with a goal of developing sustainable housing in collaboration with housing companies and private companies promoting green growth consists of the use of facilitative leadership and innovative solutions. The **acknowledgement of the varying drivers and interests of different actors** is also a key lesson from Circular Green Blocks. As an example, the narrative used to reach local citizens is not the same as with other actors, because the sustainability side of the solution is not the key driver for them.

3D modelling can be useful for future pilots and scaling up. Several guidelines were produced in this project. These guidelines are free of access and can be used by anyone wanting to implement a similar project.

12) Points of interest in subsequent studies

There could be a plan for **potential continuation of the project** in another form after the pilot project ends, even in the case of a pilot program. That would be a good incentive for private companies involved. It is great to do pilot programs, but the goal of pilot programs is to implement lasting solutions thanks to the knowledge created. If there are too many pilot programs in a row, **local citizens or private companies might lose interest unless there are pathways to full-scale implementation**. For businesses, their overarching interest is to promote their products and find opportunities to commercialize them. For local residents, they would want to embrace pilot projects that they find useful, rather than being faced with a continuous flow of temporary installations that hinders them from developing habits around new solutions.

In the cargo-bike pilot project all actors involved understood their role and **none of them challenged it**, which also might have something to do with **Finnish culture**. Finns, in the Nordic tradition, tend to be consensus-oriented and transparent. The level of trust in society and public institutions is very high and people tend to appreciate honesty, which might help avoid misunderstandings.

Scoring and analysis of governance factors

1. Perceived importance of biosphere conditions

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☒ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Sustainability and environmental problems are an important driver in this project for almost all informants involved except for the housing company association and for the local citizens participating. The key organisational driver of Circular Green Blocks is to develop **sustainable housing** in collaboration with housing companies and private companies promoting green growth, hence concerns for sustainability are quite central to the overarching aims of the pilot not having this in focus but jects. However, the housing company association and local citizens do recognize environmental problems but care more about the practical side and benefits of the project. They see the sustainability part of the project more as a bonus but do not see it as a significant source of motivation. Most importantly, the importance of biosphere conditions is not a subject that is discussed much between facilitators and the local citizens participating in the project by using the cargo-bikes, hence it cannot be said to actively enable or support the co-creation processes.

2. Legislation, programs, and formal goals

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☒ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

HSY, as the initiator and facilitator, is a **public actor**, and is used to dealing with public projects. The project has not needed to adjust much for any legislation. However, when applying for the funding, every phase of the project needed to be legal and goals needed to be in accordance with the values of the institution deciding on the funding, which is the Helsinki-Uusimaa Regional Council.

There were some references to the **European Union,** as a majority of the funding for the project comes from the **EU-REACT fund**, which is a response to the covid-19 crisis. The EU-React fund is extremely important for Circular Green Blocks, and the project would likely not have happened without this funding. According to the European Commission, the EU-REACT programme supports investment projects that foster crisis-repair capacities and contribute to a green, digital and resilient recovery of the economy, including support for maintaining jobs, short-time work schemes and support for the self-employed. It can

also support job creation and youth employment measures, healthcare systems and the provision of working capital and investment support for small and medium-sized enterprises.

The informant that was dealing with the planning and applications for the project did say that the issues with legislation on a **national level** would have been more complicated if the project was a lasting one, and not temporary pilot programs.

3. Relative openness of public governance paradigms

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

On a municipal and local level, sustainable projects are clearly encouraged in Finland. Public authorities are ready to collaborate with private stakeholders. When interviewed, officials from the public sector all agree that these projects are important. Finland's commitment to civic participation, as part of its commitment to democracy more generally, extends from its Constitution to legislation, policy and practice, from the central government across the ministries and right down to the municipal level. **The Local Government Act**, allows for citizen initiatives at the municipal level Chapter 1, Section 23 states that all residents and corporate entities and foundations operating in municipalities have "the right to submit initiatives on matters concerning the municipality's activities".

Based on the interviews, it is safe to say that if citizens offer input, it will be listened to and often followed through public support (**monetary or provision of relative resources**). For instance, the organization of the annual biking events has been supported and facilitated by local authorities and are based on inputs from the biking organization.

In general, there is a perception that the local government is ready to help when asked. However, there is too much bureaucracy, which can in some cases discourage actors from offering inputs and initiating ideas. **Critique** is tolerated but in some cases it might not be in the interest of certain actors to point out issues when they occur.

4. Formalized institutional channels for citizen participation and community mobilization

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Finland as a country is quite **open to citizen participation** and community mobilization, especially on a local level. Cities such as Helsinki have been employing citizen participation for decision making for years. Different forms of participation, such as citizen juries, citizen committees, public hearings and online platforms are used in Finnish municipalities. Finland also has a few institutional channels that are relatively unique. There is the option to officially collect signatures online for issues to be addressed at the parliament. However, Finland is still a representative democracy in the sense that the formal decision-making power remains within representative institutions.

In order to enhance popular initiatives, Finland and the City of Helsinki decided to go further and open online services for its citizens' initiatives. The conditions in Finland for citizen initiatives are wide as every resident in the municipality over the age of 15 can take an initiative related to the operations of the City Council. Only 2% of participation for an initiative is necessary so the City Council must decide to rule, or not, regarding the issue within 6 months. Regarding referendums, the initiative must be shared by at least 5% of the citizens. As a part of the online service, citizens can submit initiatives directly to the City Register Office.

Local civil society influence groups have created strong channels of influence, particularly in Lauttasaari. Those are based on the organisational power of the local housing association. They have frequent communications with Circular Green Blocks, the service provider CoReorient and the Lauttis mall. Public official channels also exist, exemplified by the possibility of communicating directly to the local government. Local citizens can contact the stakeholders involved in this project at any time.

As an example, Forum Virium Helsinki is a non-profit innovation company owned by the city of Helsinki. It was for example responsible for selecting the pilot blocks in Helsinki, which is a quite big role in mobilizing the local community for the project. That part was financed by the city of Helsinki. In that sense, the local government creates initiatives on behalf of the project. That participation from the local government is both direct through the steering group and indirect through other actors such as Forum Virium Helsinki. Formal institutional channels exist for citizen participation and they are **integrated to the co-creation project** and they create a discernible improvement of the project.

5. Mechanism for ensuring top-down government and bottom-up social accountability

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Circular Green Blocks reports to the local authorities at the Helsinki-Uusimaa Regional Council once to twice a year. Actors involved directly in Circular Green Blocks do not have to report to anyone higher than that. A **financial statement** is a part of that report. The report is in depth and data from these reports are also used for internal reports at HSY. We do not know how the Helsinki-Uusimaa Regional Council has to report to higher instances about the project.

The **steering group** meets three to four times a year, and if changes are decided, it forces the project to do an **extra report**. A **bottom-up accountability** is found through the reports that Circular Green Blocks has to send to local authorities, but also through the steering group, where local authorities are involved. Responsiveness to formal and informal requirements is routinized and forms an integral part of the project. The communication with the local government is not superficial, but the local government does not really have many formal requirements or expectations during the project. The project obviously cannot misuse its funds or do anything illegal but the role of the local government seems to be more formal as an observer and controller than as a source of feedback. A **top-down accountability** is found at the meetings between the stakeholders involved. This is how citizens communicated their disagreement on the design of the container. They were listened to.

There is not much contact or reporting between project facilitators and authorities, but quite a lot between facilitators and other stakeholders. The private sector company is often in contact with local citizens. Most informants did not comment on this particular issue. However, several informants reveal that the use of inputs from evaluations has advanced the project's collaborative problem-solving processes, and the evaluation captures people's inputs. Accountability mechanisms were necessary to carry out the project.

6. Strategic agenda-setting by means of translation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☒ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

This subject was not discussed much or actively integrated but still a part of the whole project. Not a subject that is perceived as a strong source of motivation among all the stakeholders. Notably, **initiators and facilitators** from HSY and **public sector actors** involved in Circular Green Blocks see Sustainable Development Goals (SDGs) as key drivers, although this position does not seem to be shared by other informants. Every informant vaguely knows about the SDGs agrees with them, but they do not actively use them. When pressed to comment on SDGs, they all comment on it, but it does not seem like an important part of the project. Consequently, there has been no systematic efforts to actively translate the SDGs into concrete objectives or targets for the pilot project. Finally, rather than an active focus on the SDGs, local citizens and the housing company see the sustainability side of the project as a positive side-effect or

bonus than as its main driver. In conclusion, while the SDGs have a vague presence in the minds of all stakeholders, it is not significant and has certainly not enabled the co-creation process in any meaningful manner.

7. Construction of narratives about successful multi-actor collaboration

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Most stakeholders that were interviewed have positive things to say about past multi-actor collaborations they have participated in, and those that have not participated in multi-actor collaborations view this experience as a positive one. **Resourceful people** live in the Lauttasaari area of Helsinki and they tend to participate quite actively. It is an area by the sea with relatively high square meter prices and that explains why resourceful people live there. As described earlier, Finland has a quite long history of citizen participation, and multi-actor collaboration is not something totally new or unheard of for most people living in cities such as Helsinki.

Circular Green Blocks is not HSY's first multi-actor collaboration. Some of the facilitators involved in this project have **participated in several multi-actor collaborations in the past,** hence they actively reference how past experiences have shaped their outlook of the co-creation processes of the current pilot project. They admit to have learned from previous projects.

8. Building or harnessing institutional platforms and arenas

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☒ Medium confidence	☐ Documents
☒ 0.66	☐ High confidence	☒ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

For the cargo-bike part of Circular Green Blocks, which is the pilot that was followed during the data collection part of this research project, there was one introductory meeting and one closing event meeting at the end of the project. Those meetings were not at the same venue. The ending event was at the city hall of Helsinki. There was **no official single physical venue** for the project stakeholders to meet. However, the **e-cargo-bike container itself** was between some of the housing companies involved, and it had chairs around it. This was a place where the citizens and the private company providing the services would often meet and discuss. However, there were no attempts to systematically leverage institutional platforms

and/or arenas to support the collaborative process, for which reason the influences of the various meeting spaces did not reach a significant influence on the project.

There were some online meetings on virtual spaces such as teams. Channels were always open for communication, but some stakeholders have not even met all other stakeholders, and they do not seem to believe that there was a need for everyone to meet. As stated earlier, **the steering group** met three to four times a year, and that was at the **same physical venue**. However, the steering group did not include all actors involved in this project. The other pilot projects of Circular Green Blocks worked with the same principles as the e-cargo-bike pilot project.

9. Provision of access to blended financing

QCA score:	Scoring confidence:	Data sources:
☒ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☐ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Circular Green Blocks is a project that relies on **public financing only**. This public financing comes from two sources. 90% comes from the European Union's EU-REACT fund, which is a covid-19 response fund. The rest of the funding comes from HSY the city of Helsinki, which pays for the part going to Forum Virium Helsinki. The total budget for the whole project, including the ten pilot programs and experiments is equal to 1,173,241 euros. Forum Virium Helsinki's share in the budget was 296,600 euros. For the cargo-bike program that we looked into, the budget for the redesigning of the container was 20 000 euros + VAT. The maximum budget to be used for the cargo-bikes and services provided by the private company were set at 69 000 euros. The **absence of private funding** in this project explains the score of 0.

10. The capacity to leverage support from authorities to enable local collaboration

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☒ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Informants maintain that there have not been many problems that required the project to leverage support from the authorities. However, authorities are not pro-actively seeking to do any steps to enable the collaboration, but they will help if asked and are part of the decision-making by being in the steering group. When asked, they help but with rather limited resources, and only in cases that they strongly see as in their duty or in their interest. Authorities in Finland generally seem to **stick quite strongly to the role**

that has been allocated to them when planning the project. Finland is a transparent and quite bureaucratic country with low corruption and where public workers cannot improvise much. There are many rules and laws that have to be followed and obviously cannot be broken or bent by public authorities. According to informants, projects such as Circular Green Blocks are short-term pilot programs, and this makes dealing with laws and public authorities much easier because they are not subject to as strict formal requirements.

While there is some presence of local authorities to support the co-creation process if asked, it is unclear the extent to which they will offer major support in terms of financial contributions or in-kind resources. This uncertainty possibly also explains why the project only relies on local authorities if necessary or in pre-defined ways thourh the steering group. Consequently, while there is some latent presence that could be leveraged if necessary, it is **relevant but not necessarily that significant** for the project. It is possible to leverage support from public authorities but that support seems to be often limited to what was initially agreed when the project was started.

11. Inclusion and empowerment of relevant and affected actors

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☒ 0.33	☒ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Stakeholders are all welcome to participate and provide inputs, but there are no active mechanisms to reach out to potentially marginal actors. Concrete efforts have been made on **social media** to reach local citizens. There are also fliers at the apartment buildings and advertisings in the local mall at Lauttis. Key actors are covered but citizen participation is based on advertisement or knowledge through the housing company board. Therefore, it is possible that **they do not reach all citizens** living in the housing companies. Finnish people can sometimes be a bit reserved and private, which means that more efforts are required to reach and include them. In view of that cultural fact, the efforts of the project at reaching local citizens are quite superficial. This makes sense, as these are quite short pilot projects. The participation of all potential actors is not necessary for the project to go forward.

For those stakeholders that are included, facilitators from HSY have clearly made an effort to make anyone participating in the project feel welcome, heard and included. Informants have reported the responsiveness of HSY, which is also reflected in their positive evaluation of their facilitative leadership in the project. Consequently, while the project emphasizes empowerment of included actors, the project has not implemented any systematic measure to include potentially marginalized actors or ensured a broad enough representation that can be recognized as truly inclusive.

12. Clarification of interdependence vis-à-vis common problem and joint vision

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

All stakeholders that were interviewed agreed and felt that **each stakeholder is necessary** for the project to succeed. Each stakeholder brings something important, and the project could not have gone forward without one of the stakeholders. The facilitators and one of the private sector actors participated to other pilot programs than the e-cargo-bike pilot project. They felt that the interdependency was the same in all the pilot projects.

Some informants are certain that a **collaboration between the public and private sector** is important, and that involving local citizens is necessary. Co-creation is not only the future but also needs to happen now. Some informants point out that including many actors is necessary for successful multi-actor collaboration. All informants state that project participants are **dependent** on other's resources and competences for the project to go through properly.

13. Trust-building and conflict mediation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☒ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

A comprehensive evaluation of the different stages of the project reveals that there has only been small conflicts and frictions. . The consensus is that the project facilitators have created a good collaborative environment that instilled trust among participants by facilitating communication and ensuring that different perspectives are included in the collaborative process.

As an example, the cycling association is more submissive and adapts to the situation. All actors have confidentially (off the record) informed us about the housing company's behaviour. There is a slight distrust with them sometimes but there has been stable trust with the project facilitators.

There hasn't been systematic conflict mediation, but there have been attempts when conflicts have emerged. Citizens have been listened to, also in terms of **negative feedback**. An example of that is the fact that the container was redesigned when it appeared that local citizens did not like the look of having a container in their backyard. The project facilitators from HSY were conducting the conflict mediation when

small conflicts occurred. This was the case for the e-cargo-bike pilot project that was ongoing during our data collection, but the actors that participated in all pilot projects answered generally about all pilot projects of Circular Green Blocks on this question. The actors that were interviewed and only took part in the e-cargo-bike pilot program answered based on this particular pilot project. **External facilitators** have been hired for some of the events.

14. Use of experimental tools for innovation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☒ Documents
☒ 0.66	☒ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Prototypes, in the form of trialing and testing both at the local compound but also at the annual biking event, have been used to get input from the end users. **3D mapping and modelling** of the e-cargo-bike container has been done by Aalto University and has also been used to make future potential scaling up easier. It was done with the help of drones. This will also allow new housing associations around Finland to visualize how a similar project would fit in their neighbourhood and to test if solutions are possible or not. In that sense, the 3D mapping can be used for experimental purposes in a way that was either not possible or much more expensive in the past.

First, through prototyping, designers and stakeholders can create tangible models of the proposed urban solutions. This aids in visualizing and testing various configurations of e-cargo-bike infrastructure within the housing block. Iterative prototyping allows for rapid adjustments based on collaborative feedback, fostering a dynamic and inclusive design process.

Second, 3D mapping technology complements the prototyping process by providing a comprehensive and detailed overview of the urban environment. This technology allows designers to map out the existing infrastructure, traffic patterns, and spatial constraints. This technology has existed for a long time but has become much more affordable recently thanks to the use of drones that have replaced helicopters.

In sum, the synergy between prototyping and 3D mapping technology encourages collaborative problem-solving. Stakeholders can collectively visualize, discuss, and refine the shared cargo-bikes solutions, fostering a shared understanding of the project. This collaborative approach ensures that the final design is not only innovative but also considers the diverse perspectives and needs of the community. Overall, prototyping and 3D mapping technology serve as powerful tools in the collaborative design process, enabling a more inclusive, efficient, and informed development of local urban solutions for shared e-cargo-bikes in a housing bloc. The current tools that were experimented can be used for future experimentations but most of the tools, despite being new, had already been experimented before.

15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation):

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☐ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Project facilitators **meet every week** but there is no formal measurement or benchmarking for success. The steering group meets three to four times a year. Channels are open for feedback and feedback is listened to, but there is no formal measurement of end results. The redesigning of the container is an example of **self-reflection and learning**. The redesigning of the container was a collaborative project. Informants involved in the planning of the project admit that issues linked to previous multi-actor collaborations have been remembered, with the goal of not repeating them in this one.

The template of the broader collaborative design was inherited from Forum Virium Helsinki and their knowledge from past projects, but elements to the process have been redesigned based on inputs.

16. Exercise of facilitative leadership:

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☒ High confidence	☒ Observations
☒ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Project facilitators are actively participating in the facilitation of **every step** of the project except the very few cases where external facilitators were hired. They are the middlemen for the communication, and they make executive decisions when there is a disagreement or misunderstanding between other stakeholders. Most stakeholders declare that they felt committed to the project due to the competent facilitative leadership of the project facilitators, except for local citizens who are a bit less committed than the rest. Their ability to accommodate different interests, despite latent power differences and divergent interests, has allowed the project to progress smoothly. There was nothing negative said about the facilitatos by any of the interviewed actors. At the ending event of the Circular Green Blocks project, the facilitators were facilitating the event and the interactions between them and the various actors showed real trust and respect between them. It could also be seen that it wasn't the first time that the facilitators were facilitating events where those actors participated.

Outcome variable: Successfully co-created green transitions

The outcome variable 'co-created green transitions' will be scored in two parts. First, 'co-creation' will be scored based on an assessment of whether the participants in the initiative, project or process engaged in collaborative problem-solving that fostered creative ideas and innovative solutions (data will consist of survey data combined with interviews and documents). Next, 'green transitions' will be scored based on an assessment of whether the initiative, project or process has fulfilled or is expected to fulfill its green goals, ambitions and aspirations (data will consist of survey data combined with interviews and internal and/or external evaluation reports, including scientific publications).

The scoring of this variable is done in two parts:

1. *Is the developed solution based on collaborative problem-solving spurring creativity and innovative solutions?*
2. *Does the developed solution engender a green transition?*

This scoring should be conducted based on both the survey and complementary green outcome evaluations. Please consult Sections 4.4 and 6.10 in the Research Protocol for more details.

1. Is the developed solution co-created?

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Survey
☐ 0.33	☐ Medium confidence	☒ Interviews
☐ 0.66	☒ High confidence	☒ Documents
☒ 1		☒ Observations

Please elaborate on the reasoning behind your scoring for this part of the governance factor, including the data sources used for the scoring.

The developed solutions in the whole Circular Green Blocks project are co-created. Actors from the public sector, from the private sector and civil actors were involved in this project. All informants saw this project as a co-created one during the interviews. During the ending event of the whole project, it was easy to see the **co-created** side of the project when all the relevant actors from different sectors were united to discuss the project. The actors agreed that the collaboration created new knowledge on how collaboration can help make housing companies more sustainable. This knowledge was moved to the form of guidelines that were created to help future collaboration projects in housing companies around Finland and in the form of 3D mapping that can be used in a similar way. The experience from the whole project will also be useful for all the relevant actors when planning future collaborations.

In the survey, 70% strongly agreed, and 20% agreed that problem-solving mobilized different experiences and/or ideas, and/or forms of knowledge to develop new perspectives. 75% strongly agreed that those went beyond standard/textbook solutions. 75% strongly agreed and 13% agreed that the co-created solution meets the proposed goals of the project. 60% strongly agreed and 10% agreed that the actors involved in the project were engaged in collaborative interaction that stimulated creative problem-solving. 70% strongly agreed, and 10% agreed that they were supportive of the co-created solution.

If possible, please insert your survey responses in the table below (in % for each response), including the mean/average % for each survey item.

	Strong. dis.	Dis.	Slight. dis.	Neither agr/dis	Slight. agree	Agree	Strong. agree	Mean
1. Problem-solving mobilized different experiences, and/or ideas and/or forms of knowledge to develop new perspectives				10% (n=1)		20% (n=2)	70% (n=7)	2,5
2. Through the collaborative problem-solving process, different experiences and/or ideas and/or forms of knowledge have been mobilized to search for unconventional solutions					25% (n=2)	13% (n=1)	63% (n=5)	2,375
3. The collaborative problem-solving process mobilized different experiences, and/or ideas and/or forms of knowledge to search for solutions that go beyond standard/text-book solutions					25% (n=2)		75% (n=6)	2,5
4. The co-created solution breaks with established practices		13% (n=1)		13% (n=1)	25% (n=2)		50% (n=4)	1,5
5. The co-created solution disrupts conventional wisdom			13% (n=1)	25% (n=2)	13% (n=1)	38% (n=3)	13% (n=1)	0,75
6. The co-created solution offers new ideas to address the green transition problem					30% (n=3)	30% (n=3)	40% (n=4)	1,6
7. I'm supportive of the co-created solution					20% (n=2)	10% (n=1)	70% (n=7)	2,5
8. I'm content with the overall collaborative process of the project	13% (n=1)					63% (n=5)	25% (n=2)	1,625
9. I feel the multi-actor collaboration process was a prerequisite for the success of the project						30% (n=3)	70% (n=7)	2,7
10. I'm satisfied by the results of the co-creation effort in terms of expected impact on the welfare of the community	10% (n=1)		10% (n=1)		30% (n=3)	40% (n=4)	10% (n=1)	1

11. The collaborative interaction in the project has led to an innovative solution				22% (n=2)	11% (n=1)	11% (n=1)	56% (n=5)	2
12. The actors involved in the project are engaged in collaborative interaction that stimulated creative problem-solving				30% (n=3)		10% (n=1)	60% (n=6)	2
13. The co-created solution meets the proposed goals of the project				13% (n=1)		13% (n=1)	75% (n=6)	2,5
14. The co-created solution will be durable and robust in the long run		11% (n=1)		56% (n=5)		22% (n=2)	11% (n=1)	0,556
15. The co-created solution is expected to significantly improve sustainability for the whole community				10% (n=1)	60% (n=6)	20% (n=2)	10% (n=1)	1,3

2. Does the developed solution engender a green transition[1]?

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☒ Survey
☐ 0.33	☐ Medium confidence	☒ Interviews
☐ 0.66	☒ High confidence	☒ Documents
☒ 1		☒ Observations

Please elaborate on the reasoning behind your scoring for this part of the governance factor, including the data sources used for the scoring:

This answer is based on the interviews of stakeholders, observations, and their answers to the survey. The project itself is just a pilot that is not meant to be continued, but it produced knowledge to improve the sustainability of housing companies, and in that sense, it produced a green transition. The project lived up to its **predefined green outcomes.** The goal of the project was not to implement lasting solutions but to use pilot projects to build tools and knowledge to help future projects build green outcomes in the form of sustainable housing companies in Finland. In two years, the project **provided information** on the implementation and potential scaling of products and services for housing companies that utilise digitalisation at the city block level. The pilots provided an understanding of what kind of opportunities housing companies must implement to promote the circular and sharing economy, and what the implementation of new solutions requires. At the same time, businesses gained a better understanding of the implementation of **solutions with multiple housing companies**. In addition to businesses and housing

[1] By ”green transitions”, we mean objectives and aspirations that correspond to at least one of the Green SDGs (SDG 6, 7, 11, 12, 13, 14, 15). The project does not have to refer explicitly to the green SDGs, but the project’s green objectives

companies, cooperation was carried out with property management and maintenance companies, circular economy experts, and city administration.

The guidelines and **3D mapping** are the key outputs generated by the project. Being a pilot program, the cargo-bike project was not the implementation of a lasting green solution. It was a temporary green solution to create knowledge that can be used for future projects, including lasting ones. The guidelines that were made by HSY are publicly available and aim to disseminate knowhow and best practices concerning the implementation of circular and sharing economy services. With this knowledge, it will be easier for future projects to know should and should not be done. One of the guidelines is about improving sharing within housing companies, one is a guideline advising private companies on how to offer and provide services to housing companies, one is a guideline on circular neighbourhoods and the final one is a guideline with information about the e-cargo-bike project. The 3D mapping is also part of the knowledge created in this project that will be available for future projects. If some neighbourhood will want to try a similar e-cargo-bike project, the 3D mapping will help them with the planning to assess how the project would look and where the container could fit in the area.

When looking at the surveys of informants, 90% believe that the project did produce a green transition. 60% believe that the project is expected to produce a green transition solution aiming to avoid a worsening in the status quo. 60% believe that the project is not expected to produce a green transition solution aiming to main the status quo. 80% believe that the project is expected to produce a green transition solution to improve the status quo. The survey results generally point in the direction of other observations discussed in earlier paragraphs.

If possible, please insert your survey responses in the table below (in % for each response).

1. The project:	Yes	No	Don't know
…did not produce any green transition solution		90% (n=9)	10% (n=1)
…is expected to produce/has produced a green transition solution aiming to avoid a worsening in the status quo	60% (n=6)	40% (n=4)	
…is expected to produce/has produced a green transition solution aiming to maintain the status quo	30% (n=3)	60% (n=6)	10% (n=1)
…is expected to produce/has produced a green transition solution aiming to improve the status quo	80% (n=8)	10% (n=1)	10% (n=1)

Please list all the informants you have interviewed for the case study (list project role + interview date):

We interviewed 12 people through 13 interviews in connection to the Circular Green Blocks project, one of the facilitators being interviewed twice. Three of the interviews were in person, and the other ones were done online as teams-meetings. Three interviews were conducted in Finnish by myself and the rest were conducted in English.

All actors were interviewed between the 23rd of March 2023 and the 8th of December 2023.

List of informants:
Three were facilitators from HSY representing Circular Green Blocks
One was a representative of the mall in Lauttasaari that advertised for the project
One was a representative of the bicycle association of Finland
One was a representative of the housing company
One was representative from the private company providing the cargo bikes
One was a representative from Forum Virium Helsinki
One was a representative from Aalto University
Two were local residents living in the buildings that had the cargo bike pilot project
One was a representative from the city of Helsinki

The informants are displayed anonymously, but we have a full list of names.

Please list all the observations you have made (type of meeting/workshop/etc. + observation date):

On top of conducting the interviews, we made observations in the local residential complex at Lauttasaari to see the cargo-bike container and the housing area. We could observe the changes that had been done on the container, adding plants to embellish it based on the input derived from the co-creation process. Another observation and interview were conducted at Lauttis mall, as one of the key informants and stakeholders was the mall. As part of the interview, the local area where the advertisings for the project had been made were subject to observations.

Observations were also made during the final event of the whole project in Helsinki on the 6th of September 2024.

Please list all the documents you have analyzed (document name + source + year):

Circular Green Blocks (2023) Yhteiskäyttöä yhtiöön. Guideline for housing companies to get services from private providers

Circular Green Blocks (2023) Asukkaista asiakkaiksi. Guideline for private companies providing services to housing companies

Circular Green Blocks (2023) Kolmiulotteiset korttelit. Guideline on circular neighbourhoods

Circular Green Blocks (2023) Hankkeen tiivistelmä: information on Circular Green Blocks' e-cargo-bike project

Circular Green Blocks (2023) Tarjouspyyntö kontti koreaksi. Public bid for the transformation of the container

Circular Green Blocks (2023) Näin käytät kuormapyörää. Guideline on how to use the e-cargo-bikes

Relevant links:
HSY (2021) Introduction to Circular Green Blocks: https://www.hsy.fi/circulargreenblocks/

HSY (2021) Introduction to Circular Green Blocks: https://www.hsy.fi/en/environmental-information/projektit-ja-hankkeet/circular-green-blocks/

HSY (2021) Introduction to Circular Green Blocks: https://www.hsy.fi/ymparistotieto/tiedotteet/lauttasaaressa-kokeillaan-kuormapyorien-yhteiskayttoa-kymmenen-taloyhtion-kesken-circular-green-blocks/

HSY (2023) Introduction to the e-cargo-bike project: https://www.hsy.fi/ymparistotieto/tiedotteet/lauttasaaressa-kokeillaan-kuormapyorien-yhteiskayttoa-kymmenen-taloyhtion-kesken-circular-green-blocks/

HSY (2023) Twitter account: https://twitter.com/circularblocks

HSY (2023) Instagram account: https://www.instagram.com/circulargreenblocks/

HSY (2023) Facebook account: https://www.facebook.com/circulargreenblocks/

Forum Virium Helsinki (n.d.) Introduction to Circular Green Blocks: https://forumvirium.fi/en/projects/circular-green-blocks/

HSY (2023) Video on the e-cargo-bike project: https://www.youtube.com/watch?v=3uV_X-sAc8I

Forum Virium Helsinki (2023) Video on Circular Green Blocks: https://www.youtube.com/watch?v=7RKSqJYCEOc/

OECD (n.d.) OECD information on civic participation in Finland: https://www.oecd-ilibrary.org/sites/c323b805-en/index.html?itemId=/content/component/c323b805-en

International Observatory on Participatory Democracy (n.d.) Information on Helsinki's participatory model: https://oidp.net/en/practice.php?id=1230

European Commission (n.d.) Information on the REACT-EU fund: https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/react-eu_en

Please note the response rate for the survey/measurement of outcome variable:

We did 13 interviews on 12 informants, of which one informant was interviewed twice.

We sent the survey to all the 12 people involved. 10 out 12 answered the survey, thus producing a rather high response rate of around 83%.

The survey was administered online to the informants.