

Roskilde Craftsman Dormitory (RCD), Denmark

Scored by name(s): Alexander L. Q. Chen-Florea, Roskilde University (alg@ruc.dk) and Oda Hustad, Roskilde University (ohustad@ruc.dk)

Date: 19/11/2024

Cite as: Chen-Florea, A. L. Q. & Hustad, O. (2024). Roskilde Craftsman Dormitory (RCD), Denmark (GOGREEN Case Report Series No. 24), Roskilde: Roskilde University. ISBN: 978-87-7349-332-8

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

BRFfonden was founded in 1959 as a mortgage business. In 2020, BRFfonden established the Foundation for Craftsmanship Dormitories (Fonden for Håndværkskollegier) with the aim of building dormitories for craftsmanship students. The low intake in craftsmanship educations is a significant challenge in Denmark, resulting from a lack of recognition of the craftsmanship professions and a lack of continuous student community throughout craftsmanship educations. The BRF Foundation has therefore made it its goal to build socially inclusive dormitories for craftsmanship students and to create inclusive student communities throughout the course of their education. To this end, it allocated 700 million DKK (nearly €100 million) to build three dormitories in Roskilde, Horsens and Herning, respectively.

The plan for Roskilde Craftsmanship Dormitory (RCD) was agreed upon with Roskilde Municipality in 2021 and would be placed in the southern part of the municipality, known as the Musicon district. The area used to be occupied by a big cement factory and was thereafter bought by the municipality and repurposed as a creative urban space to promote a community of creative and cultural associations within the municipality and next door to the famous Roskilde Festival that assembles more than 100,000 visitors every summer. To this end, the area is also renowned for its citizen engagement and participation, as locals have frequently been included in local decision-making making. Roskilde municipality is also one of the frontrunners in promoting development projects that involve citizen participation and has placed the sustainability agenda high on its political priority. This is partly a product of the broader national, cross-

municipal plan DK2020, which is a pledge by most (94 out of 98) Danish municipalities to formulate and achieve ambitious climate goals.

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

BRFFonden decided that the broader visions of the Musicon district could be reconciled with the goals of RCD, which sought to create a dormitory that was made from sustainable materials, e.g., recycled or reused materials. In essence, the use of sustainable materials and construction principles would reduce the environmental impact of the building without sacrificing the quality of the living space. BRFFonden has stated that its broader goal is to create “the framework for people’s lives and activities”, which was envisioned in the form of a modern living space for students. Craftsmanship students were chosen in light of the recent public debates about the need to attract more students in vocational degrees, in response to which they argued that one way to make it more attractive to pursue vocational training would be to create dormitories that offer modern and high-quality living facilities for the craftsmanship students. BRFFonden has also decided to introduce a co-created element to the design of the RCD, as opposed to its prior dormitories, as it believed that it would enhance the quality of the design. By soliciting inputs from prospective tenants, it would be possible to envision how a modern dormitory could look that would accommodate the quotidian rhythms and lifestyles of craftsmanship students. Upon negotiating the RCD with Roskilde municipality, several secondary requirements and aims were added to the project, such as the need to certify the building according to the German Sustainable Building Council (DGNB) standard and that it was necessary to include components of arts into the design.

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

The project consisted of an advisory group, a core group of actors that participated in a series of co-design workshops, and a peripheral group of stakeholders that were concerned/influenced by the construction project. In the advisory group, the following actors were included:

- a) BRFFonden and its director
- b) Art advisory agency (Stenka Hellfach, Somewhere Public Art Agency), providing advice on how art can be incorporated in the project in compliance with the art requirement
- c) A master carpenter (Tømremester Nicolaisen), operating in the local area, who offered some technical support and expertise in facilitating the co-design workshops
- d) A business provider (Havnens Hænder) of the sustainable building materials based on which the co-design workshops would be based
- e) The municipality and its bureaucratic representatives, who would also partake in the architectural competition to choose the final design (this was the only public actor)

In the core group of actors, who were participating actively in the co-design component, the following actors were included:

- a) Hele Landet acted as facilitative leaders, represented by four employees, who conducted the co-design workshops, planning and execution
- b) Architectural representatives (LOOP Architects, Reværk Arkitektur, Perspektiv) who would partake in the co-design workshops and compete for the tender
- c) Artists (AVPD, Henrik Plenge Jakobsen, Jens Settegren og Nanna Abell) who were responsible for satisfying the art requirements

- d) The craftsmanship students from the local school (Roskilde Teknisk Skole) amounting to a total of 30 participants

Among the peripheral groups, the following groups were included at varying stages:

- a) Local businesses, who would be impacted by the new dormitory, as it would be expected to reshape the local urban space and the flow of people and potential customers in the local area

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

The co-design element of the RCD spans three workshops between 2022 and 2023. In addition to these workshops, the participants have also met on multiple occasions, e.g., for a study trip with the purpose of team building and getting inspiration from other dormitories that have been built according to sustainability principles. The participants have also been participating in external workshops that teach them about the utility of sustainable building materials with the aim of providing them with the prerequisite knowledge to actively participate in the co-design workshops. Following the series of co-design workshops, the architectural teams have compiled a design solution that is submitted for an architectural competition, which will elect the winning bid that will constitute the final design for the actual dormitory to be built. As of October 2023, the winners of the architectural competition have been chosen, and the next phase involves elaboration of the design plan and execution thereof. The project is expected to be finalized by 2027, after which the students can move in.

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

The co-design workshops are described as “strategic trials”, which is a concept developed and used by the project facilitators, Hele Landet, which is a social enterprise aiming to enhance quality in local communities and create social equity and cohesion. The idea is to get students to participate in a co-design project to experiment with different prototypical design solutions, which can be tested and revised. The purpose of building prototypes is to activate the different senses (olfactory, tactile, visual), such that students can experience the physical and material manifestation of their co-design ideas. In these strategic trials, the different teams are split into multiple groups, each organized around different types of co-design activities. Some involve the use of posters and collages made by artists and architectural representatives, in response to which the students give their opinions and suggestions. Others actively work with building materials to create small prototypical dorm rooms, after which they experiment with different layouts and design elements. The students can be involved extensively in these activities insofar as they are craftsmanship students, who are used to work with these building activities and disciplines as part of their education.

The knowledge-sharing and joint problem-solving aspect of the co-design workshops consists of the creative process of building and configuring living spaces through collective decision-making and deliberation. However, this process is aided by experts (artists, architects, and project facilitators), who provide input and support to enable the students to concretize their abstract ideas. One of the chief difficulties of designing the layout of rooms and the appearance of a building is that it requires a high level of abstraction skills and imagination that not everyone possesses unless trained. To this end, the co-design processes usually involve the pre-selected input materials in the form of a repository on which the students can draw.

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

During the interviews, the facilitators explained how consensus- and trust-building was an important aspect of their organizational philosophy. They aimed to create a good atmosphere (god stemming), which would ensure that all participants could collaborate freely, unlocking their creative potential and collective problem-solving skills. While conflicts have apparently not been a noticeable feature of the workshop sessions, the project facilitators do recount a few occasions on which they had to intercept a situation they found detrimental to the collaborative interactions, e.g., instances in which students arrived at the workshops intoxicated or had brought alcohol to the venue. However, the project facilitators emphasized that they tried to defuse the tension in these situations through calm reasoning, rather than reproaching them.

First, they succeeded in building trust by introducing various games and communal activities to create a strong group identity among the participants, especially the students. For example, they would play the telephone (Chinese whispers) game, where they had to transmit messages in the form of whispers along a chain of participants. Second, a noticeable communal activity was the shared dining rituals, as the workshops would schedule collective meals throughout the day. They have improved trust not only between the students but also towards the project facilitators themselves by promoting distributed leadership, that is, through the delegation of various organizational tasks to the students. Due to the extensive and sustained effort in creating a “joint capacity to action” (Emerson et al., 2012), there has been a relatively strong group cohesion and identity among the participants (see more in GF 13).

A final important reason that conflict has been relatively absent is possibly because there are no directly negative consequences to any of the stakeholders involved. The students are all compensated financially for their participation, and they do not have a direct skin in the game, as they will most likely have finished their degrees by 2027 when the dormitory is expected to be finalized. The architects and artists are also compensated for participating and competing in the architectural competition; hence they do not operate at any risk of a loss, only the upside of potentially winning the right to design the final dormitory design. These broader sentiments are also captured by various bureaucrats and the project facilitators, who argued (to paraphrase) “that no one complains that they have BRFfonden to place a dormitory here; it is, above all, perceived as a gift [to the local community]”. Consequently, there has been a strong cooperative attitude within the project among all stakeholders, especially the local authorities.

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

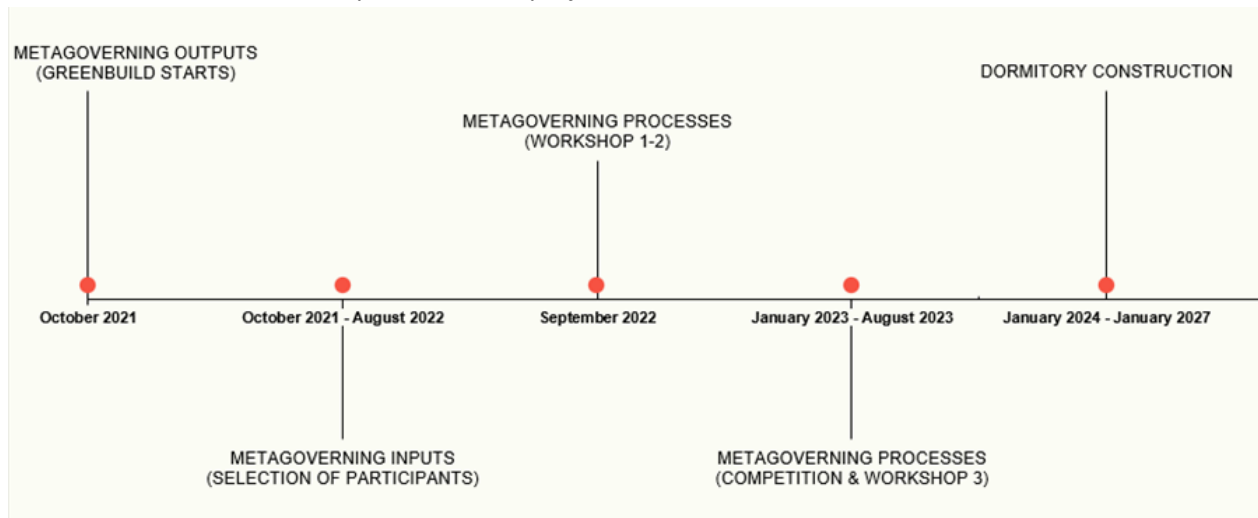
The extensive planning involved in the design of the co-design workshop cannot be understated. Hele Landet has assumed a proactive role in ensuring that the collaborative processes have been carefully designed to encourage an inclusive process. Prior to RCD, they had also been involved in the design of the other craftsmanship dormitories, although the past initiatives have not included the same degree of co-creation involving students as this project. Consequently, the introduction of extensive co-creation activities for RCD is the culmination of the accumulated knowledge and experience of Hele Landet. Hele Landet has been responsible for all the coordinating, convening, and facilitative processes within each of the workshops, which involves extensive planning of how the activities, games, and dining activities are to be organized. The project owners and funders BRFfonden as well as the municipality are not directly involved in the facilitative leadership, as the tasks are all delegated to Hele Landet. They have, however,

been involved in the final architectural program, as they sit on the evaluation board that decides which design proposal wins. In sum, Hele Landet is the “hands-on” metagovernors, whereas the BRFFonden and the municipality are “hands-off” metagovernors as they have imposed the broader requirements and visions upon the co-creation process. While this division of labor exists, the former is in continuous dialogue with the latter to ensure that the process remains accountable. The other participants in the co-design workshops, such as the students, are in less contact with the hands-off leaders, although they will occasionally see them at the co-design workshops.

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

The project has been scheduled from 2021-2027, marked by several major events. After the initiation of the project in 2021 and the preliminary negotiations with the municipality, Hele Landet spent the first year identifying the group of participants from the fall of 2021 until the following summer 2022. The co-design workshops have been conducted between 2022 and 2023 and have been accompanied by several minor external workshop events (as noted above). As of now, the final design proposal has been chosen and they are soon to begin the construction process once the details have been further elaborated. If everything goes according to plan, the dormitory is anticipated to be finalized by January 2027.

Timeline of the collaborative process in the project:



In other words, the program is divided into three phases:

- a) The project started in 2020 and entered an initial, first planning phase in 2021 as negotiations were made between BRFFonden and the municipalities. The plans were discussed with Hele Landet, who were already hired for the two prior projects as consultants. Subsequently, a lengthy process ensued where Hele Landet recruited participants (students, architects, artists, and local actors for the provision of building materials), which lasted between October 2021 to August 2022.
- b) The second phase was the co-creation workshop phase between September 2022 to August 2022, culminating with the competition program and the selection of a winning bid. The winning bid was made by LOOP architects and Reværk.
- c) The final phase involves the actual building process. After the winning bid was chosen, negotiations have ensued and the details about the building process are currently (as of November

2023) being deliberated. The dormitory will start its preliminary construction process by January 2024, the actual construction by April 2025, and is expected to be finished in January 2027.

To the best of our knowledge, there have not been any major delays in the scheduled program, although we are unsure if adjustments have already been made due to major delays in the past. The data collection process was started in the fall of 2022, at which point the project had already been ongoing for more than a year.

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

The most important governance factors are in our view, and in order of importance, (a) trust-building and conflict mediation, (b) experimental approaches to innovation, and (c) critical and ongoing self-reflection, and (d) facilitative leadership.

- a) Trust-building and conflict mediation have been a significant priority for Hele Landet, who has made considerable efforts to ensure that there is a strong group identity such that the co-creation process will be frictionless. This identity-building exercise is important for two reasons. First, they are working with young adults who have varying degrees of maturity, for which reason it is important to create a strong sense of social cohesion to ensure that conflicts and anti-social behavior do not arise. Young people, according to the project facilitators, are shy and need to feel a sense of community before they can effectively work in groups. Second, working with abstract processes such as designing a dormitory is a cognitively demanding task that can be tortuous and complex. It requires long-term commitment and patience from the participants, which cannot be readily secured without a strong commitment to the project. Trust-building has been an important step to ensure that all participants have taken the co-creation process seriously, rather than viewing it as an off-handed task.
- b) The use of so-called “strategic trials” in the form of prototyping has also reduced the level of complexity and abstraction of co-designing a dormitory. It has made it easier for the students to envision a potential dormitory by working with the building materials and experimenting with different layouts and configurations for the rooms and the broader design of the building. Insofar as they are craftsmanship students, we also observe a great synergy between their educational profile and the co-creation activities, which has improved the motivation and interest among the students to partake in the project.
- c) Critical and ongoing self-reflection has also been an important element that is built into these strategic trials, as the students are continuously evaluating solutions across the three co-design workshops. It has been important to solicit input and feedback from the students, such that the architects and artists could generate ideas that reflect their interests. However, this has naturally not been an easy or frictionless process, as communicating creative ideas on such a large scale requires time and reflection.
- d) Facilitative leadership has been an integral governance factor contributing to the project's success as they have functioned as the cohesive force bringing together the other governance factors. A notable aspect of this facilitative leadership is the careful planning and strategic foresight about how to organize the entire collaborative process, which started with the meticulous selection process of participants, the co-design workshops, and the subsequent competition program.

10) The generated outputs and outcomes

The product of the co-design workshops is an architectural plan for the dormitory's design. The plan was chosen based on an architectural competition as three teams, consisting of architects and artists. The output is thus the final design plan that is chosen based on the architectural competition, while the outcome is the finalized dormitory in Musicon by 2027. The concrete green outcomes that are entailed by the dormitory qualifies as sustainable housing as it is to be built based on recycled and reused materials.

The facilitative leaders also acquire a lot of know-how and experience in the design, convening, and facilitation of co-creation processes, which they can use in future projects. This might be particularly relevant if they are hired to do more projects on behalf of the Foundation for Craftsmanship Dormitories, as the Roskilde Craftsman Dormitory is the third dormitory funded by the organization. Hele Landet has also been involved in the two prior dormitories, for which reason it is also conceivable that they will be hired for potential future dormitories if they are to be made.

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

The case study exemplifies the importance of facilitative leadership and far-sighted planning to ensure that the co-creation process is effective. Hele Landet is professionally trained as process consultants and thus have the knowhow and competencies to provide the organizational prerequisites for a sound co-creation process, which reflects the overall high scores to all the governance factors over which they have a direct control. This is exemplified by:

- a) They have made significant efforts to build trust among stakeholders and ensured a strong sense of social cohesion to strengthen a sense of reciprocal interdependence.
- b) They have also ensured to make the co-creation process as inclusive as possible, which is evidenced by the thorough selection process of participants that have accounted for a plurality of factors to ensure that all relevant and affected actors were included
- c) They invested a lot of time in introducing prototyping elements

A few critical reflections must, however, also be highlighted. The costs of the project were wholly shouldered by BRFfonden, which also meant that all other participants had no direct conflicts of interests with the agenda set by them. Furthermore, insofar as the students were not the actual tenants of the dormitory (as they would most likely have graduated by 2027), they had no direct "skin in the game". After all, even if they did not like the final product, they would not suffer any consequences as such. It suggests that co-creation green solutions are less likely to encounter conflicts when there are no negative distributive consequences for other stakeholders, which is a narrow assumption that cannot be extended to most cases.

When architects were asked about the co-creation process, they recognized the novelty and excitement of the endeavor. However, they also argued that the reason that this is unlikely to be upscaled to a broader range of cases is simply that it is too lengthy and costly a process. An architecture envisioning a sustainable dormitory without any further inputs could possibly also achieve a high level of tenant satisfaction and meet the sustainability requirements. They were thus skeptical about whether such practices can be mainstreamed altogether.

The chief problem with the case study is furthermore that the project facilitators are too well-versed in the literature on collaborative governance, for which reason the overall project has scored high in almost all governance factors. It is thus difficult to clearly discern the individual effects of each governance factor in contributing to the successful co-creation of green solutions.

Scoring and analysis of governance factors

1. Perceived importance of biosphere conditions

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The perceived importance of the severe biosphere conditions is reported by interviewees to be an important motivational factor, as everybody recognize its relevance. BRFFonden has noted the centrality of sustainability as a key agenda of these dormitories, which is foregrounded in the organizational vision of the Foundation for Craftsmanship Dormitories. Particularly, the use of recycled and reused building materials that will lower carbon emissions is also an important priority for BRFFonden, for which reason it has been included in the repository of building materials to which students have access during the co-design workshops. In parallel, the local municipality mandated that the dormitory must meet a DGNB gold certification, which ensures that the building meets certain sustainability standards. The requirement is imposed due to the broader commitment of the municipality to sustainable urban development.

Hele Landet has heeded these sustainability requirements by incorporating them as central components in the co-creation workshop programs (strategic trials). The sustainability theme has thereby functioned as a cohesive force facilitating the collaborative processes and interactions, as it has been the central theme connecting all the strategic trials.

The project participants have also voiced their support for sustainability and show a great degree of reflection on the role of young people in advancing sustainability. They also express a sense of familiarity with these sustainable building materials based on their educational backgrounds as masons, carpenters, woodworkers, etc. The familiarity with the sustainable building materials thereby also complements their existing educational competences.

2. Legislation, programs, and formal goals

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The key national ‘legislation’ that influences the craftsmanship dormitory project is the national DK2020 plan, which was set up in 2019 to assist Danish municipalities in meeting the national political goal of climate neutrality by 2050. The DK2020 partnership has supported the development of climate plans for 97 Danish municipalities, one of which is Roskilde. Roskilde Municipality has pledged to reduce its CO2 emissions by, among other things, making buildings more energy efficient. More concretely, it aims to be carbon neutral in 2035 as an organization and 2040 as a geographical area. In conclusion, the DK2020 partnership has also served as an important catalyst for strengthening the climate agenda in the municipality, which, in turn, has supported and shaped the craftsmanship dormitory project. For example, the agreement to meet the DGNB Gold certification partly reflects the imprint from the DK2020 plan. However, this sustainability requirement did not shape the collaborative process per se, hence it was significant for the project but did not support collaboration as such.

Another notable aspect of the local implementation of the national climate goals has been the emphasis on citizen participation and co-creation as part of the solution and enablers for the realization of these climate targets. For example, the planning law (Planloven) mandates that municipal plans need to involve the general public in the planning of municipal development plans. For this reason, there has also been a general emphasis on citizen engagement in Danish municipal plans in accordance with the planning law. However, these legal requirements preceded the DK2020 plans, hence it is difficult to attribute the positive influence on community mobilization, citizen engagement, and co-creation to the legislation.

3. Relative openness of public governance paradigms

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

Roskilde Municipality is like other Danish municipalities steeped in bureaucracy and has also incorporated elements of New Public Management over the years, e.g., service contracting with private providers and performance management of public services organizations. However, collaborative governance and co-creation combined with trust-based management that gives more space for local collaboration and

innovation has gained increasing attention and provides an important although somewhat distant context for the dormitory project.

The urban development process of the Musicon area in Roskilde, which started in 2007, provides an important context for the dormitory project. A key feature of the Musicon district urban planning strategy is the so-called “urban development without a master plan”, the intention of which is to allow the area to develop spontaneously based on the collaborative initiatives of local stakeholders. Rather than designing a rigid template and vision for the local district's developmental trajectory, it has instead been placed on participatory and experimental planning. For this reason, the Musicon district has always been characterized by a high degree of openness, as it prioritizes the inputs of local stakeholders in shaping local urban development plans. Between 2007-2022, the area had its own urban development secretariat consisting of representatives from Roskilde municipality, seated in Musicon. Unlike in other urban development projects in Roskilde, the Musicon secretariat answered directly to the city manager and was thus able to bring inputs rapidly from the local community to the top management of the municipality for their endorsement.

The Musicon district and its developmental principles resonated with the collaborative design process (strategic trials) of the craftsmanship dormitory project, as local authorities were enthusiastic about the project idea. The approval of the project, despite its experimental strategy, was thus actively encouraged by the local authorities, which paved the way for its approval. The collaborative interactions between the local authorities, the project funders (BRFfonden), and the project facilitators (Hele Landet) was thus reportedly relatively frictionless.

4. Formalized institutional channels for citizen participation and community mobilization

QCA score:

0

0.33

0.66

1

Scoring confidence:

Low confidence

Medium confidence

High confidence

Data sources:

Interviews

Documents

Observations

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

Like other Danish municipalities, Roskilde Municipality has mandatory procedures for citizen participation in urban planning. It also has democratically elected user boards in public service institutions and frequently invites citizens to open town-hall meetings to discuss particular topics such as, for example, local flooding problems. So, all in all there are several channels for local citizen participation.

Moreover, due to the commitment of the Musicon district to citizen engagement, there has been a close collaboration with the local authorities (Roskilde Municipality) and the project funders (BRFfonden), and the facilitators (Hele Landet) to facilitate the project. The Musicon district was partly chosen as the ideal condition for this project because of its reputation for citizen engagement. Roskilde municipality and the Musicon district secretariat provided many institutional channels through which Hele Landet and

BRFfonden could establish collaborative ties with local stakeholders, e.g. the high school from which the students would later be solicited for the strategic trials. The close collaboration between these key stakeholders has been a prerequisite for the success of the project. The general enthusiasm towards the project partly stems from the societal norms and local familiarity with community mobilization and citizen engagement, which has enabled the project to mobilize a host of other relevant and affected societal actors in the project.

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

QCA score:

0

0.33

0.66

1

Scoring confidence:

Low confidence

Medium confidence

High confidence

Data sources:

Interviews

Documents

Observations

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

The progress of the project has been routinely communicated through various channels to ensure accountability. Downwards social accountability has been realized through the noticeable communication efforts of the project funders (BRFfonden and The Foundation for Craftsmanship Dormitories) and project facilitators (Hele Landet), as regular updates appeared on their websites during various stages of the co-creation process. The project has also received extensive coverage by various sources of media, such as construction, real estate, local newspapers, the architectural enterprises participating in the co-design workshops, the high school from which the students have been recruited, and the local district (Musicon) in which the dormitory will be built. In anticipation of the potential consequences for the local community by building the dormitory, the project facilitators have also contacted local businesses at various stages of the project. Some local businesses have been included as suppliers, whereas others have also provided input at an earlier stage of the co-creation process. From this perspective, the downwards social accountability has clearly shaped the collaborative process and increased the scope of inputs.

Upwards communication and accountability to the municipality has also been a significant priority for both parties, as both the project facilitators, funders, and the municipality have stressed its importance. The importance is due to the extensive planning that enters the building of large-scale projects such as dormitories, which will have wide-reaching consequences for the local community: (a) it will create for noise for several years that might disturb the local community, (b) it will change the aesthetic properties of the local community, and (c) it will change the local business and flow of people. Bureaucratic staff from the municipality has also stressed the importance of negotiating the terms of the project at an early stage, such that they are up to date about its progress. Thus, the municipality can be available to issues if they end up arising. The project has been in close contact and built rapport with the district secretariat in Musicon. For the district secretariat, it has also been an important priority to communicate upwards to Roskilde municipality, as they are held accountable for the activities within the district. In conclusion, there is a chain of accountability mechanisms, which has both been a prerequisite for the operations of the project but has also allowed the project to build rapport with the local authorities (district and municipal).

The accountability mechanisms integral to the dormitory project have facilitated collaborative contributions from both local authorities (upward accountability) and the local community (downward accountability). For instance, the introduction of the DGNB certification requirements emerged directly from the dialogue between project facilitators/funders and municipal authorities. Simultaneously, feedback from local communities led to the decision to source materials from a local business for strategic trials, underscoring the importance of supporting the local economy. In conclusion, these accountability mechanisms have played a noticeable role in shaping and enhancing the collaborative process through diverse inputs.

6. Strategic agenda-setting by means of translation

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The UN SDGs have not been foregrounded in the project according to various key actors, although BRFFonden is according to its annual reports committed to the six principles of the UN Principles for Responsible Investments (UN PRI). However, there has not been an active effort to frame the co-design workshops in relation to the SDGs, as sustainability issues have instead been anchored based on the concrete sustainability requirements issued by the municipality as well as overarching concerns for sustainable building materials. For example, the DGNB certification has been the primary sustainability-related requirement for the project, which has issued tangible sustainability measurements that can be pursued. Different interviewees report familiarity with the UN SDGs but do not recall any active attempts to translate these broader goals into the project's context. Thus, while BRFFonden is tacitly committed to the UN SDGs through its parallel commitment to the PRI, the governance factor is at most present but cannot be said to be significant.

7. Construction of narratives about successful multi-actor collaboration

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The Musicon district within Roskilde municipality is renowned for its participatory planning and its emphasis on developing creative urban spaces. Part of its slogan is “co-creation” and “livelihood precedes the city”, as it seeks to build a livable urban district where local citizens are empowered in shaping urban

development. Since the Musicon area's inception in 2003, several large societal stakeholders have been involved in the development of the district, e.g. Roskilde Festival and Roskilde University. Every year, the district also organizes a festival for arts, activism, research and community, representing a confluence of different societal stakeholders. These experiences with cross-sectoral collaboration, citizen participation, and co-creation have been important levers for improving the project's collaborative process.

Both students and the project facilitator (Hele Landet) noted that they were aware of the rich history of the local area with collaborative forms of citizen engagement. While Hele Landet expressed great enthusiasm about how these narratives about successful multi-actor collaboration enabled the strategic trials, the students placed less emphasis on them as a source of motivation for collaboration. Several students signaled awareness of these narratives but noted also that there was in general a lack of social cohesion and interaction within the school. Some students said that before they participated in the project, they had very little interaction with their peers. Thus, these broader narratives about citizen engagement originating from the Musicon district did not seem to act as a catalyst for the collaborative processes.

8. Building or harnessing institutional platforms and arenas

QCA score:

0

0.33

0.66

1

Scoring confidence:

Low confidence

Medium confidence

High confidence

Data sources:

Interviews

Documents

Observations

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

The project facilitators (Hele Landet) have been very conscious of the importance of building and harnessing institutional platforms and arenas. For this reason, they used Hal 11 in the Musicon district as the venue for all the co-design workshops (strategic trials). Hal 11 is in the area where the dormitory will be built. It is an empty industrial hall that provides a flexible and malleable working space to simulate the various co-design workshops. For each workshop, the venue is thus reconfigured to accommodate the co-creation workshop activities based on the inputs. The hall is also very spacious, so they can accommodate all the 40 participants each session. However, for most of the workshop activities, the students are divided into multiple groups to work with different strategic trials. The venue has also a dedicated area for dining, which is a communal activity on which Hele Landet has also placed a lot of strategic emphasis. They recognize that having a shared working and communal space will enable a stronger process of identity-building. Finally, insofar as the venue has remained the same throughout the co-creation process, the relative permanence of the shared space provides a sense of security and predictability, as they feel a sense of familiarity every time they gather.

Given the project facilitators' emphasis on the importance of collaborating in a shared physical space, digital platforms have played a relatively minor role. Although email threads and social media groups have been used for disseminating information and providing updates, they have not served as the primary medium for collaboration.

9. Provision of access to blended financing

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The project is exclusively funded by BRFFonden, which financially compensates all the participants and covers all the costs for the building project. The director of BRFFonden noted that it was a deliberate act to be the exclusive source of financing as it would grant them greater discretion to envision the projects according to their organizational requirements and visions. Thus, there was a rather explicit assumption that bringing other actors onboard would also complicate the collaborative process as it would entail accountability requirements towards more stakeholder interests.

However, the municipality has contributed in-kind resources by allocating dedicated administrative resources to work with the project. Thus, while they have not directly funded the project, they have contributed indirectly through bureaucratic-administrative labor that has facilitated the communication channels with the municipality to ensure compliance with regulations and the municipal development plans. However, these resources constitute a relatively minor part of the project considering that the provision of in-kind resources was not conditional upon additional requirements to which the project had to comply.

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

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

While the project has cultivated successful relationships with the higher-level authorities, this has not translated into substantive support in overcoming any obstacles within the project. The municipality has taken a hands-off position within the project, as it issued several certification and arts requirements for the dormitory but have not assumed either a proactive role in the collaborative process or provided with any significant resources (financial, administrative or otherwise). During the strategic trials, the bureaucratic staff from the municipality would occasionally participate as passive observers, hence it seemed like it was deliberate that they did not want to intrude in the co-design workshops as they were at the very least present at the premises. While the municipality has not proactively supported the dormitory project through the provision of in-kind resources, this is not to say that the project could not

have received the support if it was requested. Instead, it appears to be the case that the project organizers did not encounter any fundamental problems that required their intervention.

11. Inclusion and empowerment of relevant and affected actors

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The selection process for the participant pool has been based on a lengthy process. BRFfonden requested that the participant pool was as diverse as possible to represent the cultural and demographic diversity of craftsmanship students. Thus, 70 potential students from the local craftsman school in Musicon were interviewed, out of which 30-35 were selected for the final co-creation processes. The participant pool is thus differentiated according to gender, educational specialization, and age groups. The project facilitators also ensured that the collaborative process was accessible to all participants by creating a good atmosphere (an elaboration is provided in GF 13), one aim of which is to enable all participants to partake in the co-creation process without feeling vulnerable or facing social or cultural barriers. These efforts were particularly directed towards those who might be a bit quieter, shy, introverted, or qualify as marginal. More concretely, this has been realized through the facilitative role of Hele Landet, who have organized the sessions in a manner that is inclusive such that not one single group of individuals dominate the collaborative process.

To improve the accessibility of the project, it was also agreed upon by the project funders (BRFfonden) that all participants would be compensated for their time spent. This would mean that participants, who would otherwise have to work during weekends (during which the events took place), now could participate as their opportunity costs were offset. Particularly socioeconomically marginalized stakeholders thereby enhanced access to the project.

What results in a medium level of confidence is that during the selection process, participants have been chosen and filtered based on two criteria, which possible excludes some "unruly" stakeholders: (a) participants are (implicitly) selected based on their support for the sustainability agenda of the project, (b) and participants must be available for all the project meetings.

- a) Regarding the former, it means that potential detractors were filtered from the process in the beginning. It raises the pragmatic question about whether inclusion should also encompass those who potentially oppose the overarching project goals. It is nonetheless relevant to receive input from those who are opposed or indifferent to the sustainability agenda, as there might be a possibility that future tenants will fall into the same demographic group.
- b) Regarding the latter, all the events were scheduled on weekends and would last the entire day. It thus precluded actors who would not be available for all the co-design workshops, e.g., students

with children and families. The requirement appears reasonable, but it raises the question about to which degree all relevant and affected have been included in the collaborative process. For example, the project might end up not having sufficient input from stakeholder groups that have young children for the co-design workshops. However, it is unclear whether the dormitory is eligible for students with children.

Another effort to empower the students, as previously mentioned, involved the repository of materials and training workshops. These initiatives provided the students with the necessary knowledge and experience to effectively work with the sustainable building materials used for the dormitory. For example, the repository offered samples of various recycled and reused materials, allowing students to engage with the tactile, olfactory, and visual aspects. This approach made the otherwise abstract design process tangible, as one project facilitator explained. Given the high level of abstraction involved in dormitory design, such hands-on experience was crucial for enabling meaningful student participation in the co-design process. Similarly, the training workshops played a supportive role by educating students on the advantages and disadvantages of different sustainable building materials, thus dispelling potential biases or misconceptions about the quality of recycled or reused materials.

In conclusion, while there are arguably some potentially vulnerable or deviant stakeholders that are omitted, significant efforts have been made to enhance inclusivity in the project and to improve the accessibility of the co-design workshops, everything else considered, the project has made considerable steps to improve inclusivity within the project and the empowerment of the participants.

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

QCA score:

0

0.33

0.66

1

Scoring confidence:

Low confidence

Medium confidence

High confidence

Data sources:

Interviews

Documents

Observations

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

Various stakeholders interviewed all recognized the mutual dependence between the different actors to create a successful project. The representative of the BRFFonden (project funder) stated that the organization came to the realization very quickly that to create a high-quality dormitory that would attract craftsmanship students to their vocations would require their inputs. Thus, while they expected that the initial start-up costs would be higher by introducing co-creation as part of the dormitory design and planning, they reckoned that it would be economically feasible in the long run as you can anticipate a host of issues related to the user-experience in advance.

Second, the project facilitators were similarly committed to the organizational philosophy that it is important to have an inclusive design process to create good solutions that will be enjoyed by the end-users. The project facilitators argued explicitly that it was important to include all these actors, as you

would otherwise miss valuable information about designing a good dormitory for future craftsmanship students.

Last, the students also recognized the importance of receiving different inputs from each other to receive a breadth of them. The recognition of the importance of diversity is potentially a result of the prior efforts by the project facilitators in promoting it.

The students mentioned on a few select occasions that the inputs would vary in quality, thus expressing a small degree of skepticism about the necessity of a broad, inclusive co-creation process. However, no one would concede that there were any participants that were outright unnecessary for the co-creation process. In general, it seemed like the perceived importance of interdependence resulted in the general recognition that a prerequisite to a successful project was to create a good collaborative environment and being team players who share thoughts and ideas.

13. Trust-building and conflict mediation

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

Trust-building is highly prioritized by the project facilitators (Hele Landet), who aspired towards creating a good atmosphere (god stemming) to ensure that the co-creation processes would unfold smoothly. This was necessary insofar as they were working with young adults, who would likely be shy and hesitant to actively participate in the co-creation process otherwise. This good atmosphere was partly underpinned by a set of expectations that were communicated to the students about good collaborative practice and inclusivity but was also gradually built through social integration processes. For example, a significant portion of time was thus dedicated to promoting social cohesion through games during the morning and communal meals. In other words, a set of rituals were built to create a sense of collective identity and agency for the project, which also created more amicable relationships between the participants despite their unfamiliarity amongst each other prior to the project.

There were also noticeably no significant conflicts reported by the interviewees, which partly reflects the effort invested in creating a good atmosphere in the first place. An alternative explanation for the low level of conflict might also be the favorable conditions for co-creation, as the funders, BRFFonden, allocated large amounts of resources to create an enjoyable collaborative experience. All the participants were compensated for their participation, and they were sent on a fully paid trip as part of their team-building process.

A few smaller incidents were mentioned by the project facilitators. One case involved sitting in the parking lot to drink during the project. The project facilitators were conscious about the fact that they did not want to unnecessarily antagonize them, so they tried to calm the situation by reminding them that they needed to be sober for the events. According to the project facilitators, the prior trust-building efforts made it possible to appeal to the students without escalating the conflict.

All in all, the dedicated work to improve trust-building created an enabling environment for the co-creation process as the participants were generally amenable to be “good collaborators” that were open to deliberative and reflective sessions. After all, participating in these workshops also requires a great deal of patience, as they last for the entire day. The trust-building efforts (together with the financial compensation) have thus supported the co-creation process by strengthening the commitment to the ongoing project.

14. Use of experimental tools for innovation

QCA score:

0

0.33

0.66

1

Scoring confidence:

Low confidence

Medium confidence

High confidence

Data sources:

Interviews

Documents

Observations

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

The use of experimental tools has been an integral part of the co-design workshops (strategic trials), which have been defined as an inclusive process to create temporary fixtures and constructs (prototypes) that are subject to evaluation. During the interviews, the project facilitators reasoned that these prototypes were useful because they rendered the abstract concrete, thereby giving the participants a tangible solution to evaluate. In the absence of these tangible solutions, it is hard for laypeople to participate in the design of the dormitory, as it requires a high level of abstraction skills. The prototypes thereby revise the design process around concrete design solutions where the students have access to their visual, olfactory and tactile senses. In short, prototypes make the future concrete.

Both the students and the architect/artist teams expressed enthusiasm about the use of experimental tools for innovation as they confirmed that it enhanced collaborative interactions. The students noted how exciting it was to work around concrete ideas and comment on them (relative to if they only could imagine their design solutions through visual designs or as an idea). They also appreciated the fact that they were involved directly in the creation of these prototypes, which utilized their educational competences as carpenters, woodworkers, masons, and so on. By closely working together around shared designs, the students felt a greater motivation for participating in the project. Some also highlighted the excitement in co-creating these solutions, as there was a playful element to them.

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

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The project incorporates both process and developmental evaluation in two ways, which are actively leveraged by the project facilitators (Hele Landet) to adjust and improve the co-creation process.

First, the prototyping process in the form of the so-called strategic trials ensure that the co-creation process undergoes multiple iterations of design such that students can experiment and evaluate with different solutions. It encourages a deliberative process over the three workshops to ascertain if the participants support the design solutions. Furthermore, the co-creation process is also based on multiple parallel activities as the participants are divided into groups that engage with different forms of co-creation. Different solutions are thus engendered, and they can be juxtaposed and critically scrutinized to ensure that the co-creation process is continuously evaluated.

Second, all the students write logbook entries for every workshop that reflect upon the day, especially with respect to the co-creation processes and activities. During the debriefing sessions with the project facilitators, it is possible to glean insights from all the participants to understand what worked well and what did not. It thereby gives the participants a communicative channel to provide feedback and reflect actively upon their experiences throughout the co-creation activities.

The participants have in general expressed support for these evaluation practices and recognize how they have been an integral part of the collaborative process. However, the extent to which the students found them necessary has varied, as some have described them as a bit superficial, as they do not necessarily feel they have anything meaningful to say. There might be an element of pro forma feedback-giving in relation to the logbook feedback activity.

16. Exercise of facilitative leadership:

QCA score:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Interviews
- Documents
- Observations

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

The project facilitators (Hele Landet) have exercised an extensive role in facilitative leadership, as all the co-design workshops (strategic trials) have been carefully planned and organized to ensure a smooth process and a smooth collaborative process. Hele Landet dedicated considerable time to building a strong sense of collective identity through a range of social games and communal dining practices. At the same time, they also promoted the principles of distributed leadership by delegating some tasks to the students, e.g. choosing snacks and drinks. Distributed leadership thereby created a sense of collective agency, as it ensured that not all decisions were monopolized by the leader. All the participants generally expressed support towards their leadership and appreciated their accommodating role in creating a good social environment. Their extensive planning and preparation embody their broader organizational philosophy based on action research, participatory planning and design thinking.

In conclusion, Hele Landet has taken steps to act as facilitative leaders, in response to which participants have unanimously acknowledged their significant role in creating a positive experience with the collaborative processes.

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:

- 0
- 0.33
- 0.66
- 1

Scoring confidence:

- Low confidence
- Medium confidence
- High confidence

Data sources:

- Survey
- Interviews
- Documents
- Observations

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

Based on the observational data, the organization and planning of the co-design workshops revealed that there was a high degree of co-creation, as students, architects, artists, and the project facilitators worked closely together to deliberate, design, prototype, and revise solutions through an iterative process. Feedback and critical reflection were thus a crucial part throughout the process, which ensured that there was a high degree of collaborative interactivity as opposed to isolated processes of problem-solving. The architects and artists also made use of various experimental forms of co-design workshops that sought to engage with the students in a meaningful way, as they recognized the difficulty for laypeople to envision concrete design solutions. During the interviews, students also acknowledged the importance of the repository of building materials, which allowed them to touch, smell, and see samples of prospective building materials, thereby aiding their creative problem-solving skills by rendering the abstract concrete.

A careful examination of the survey data also reveals that the respondents have scored high on all survey items regarding the degree to which the solution (a) was collaboratively created, (b) inspired creativity, and (c) engendered an innovative output/outcome.

Collaborative

The survey items related to collaboration scored high, as respondents affirmed that the co-design workshops were able to mobilize different ideas and forms of knowledge from a plurality of actors. Furthermore, the respondents showed a great level of support for the project and its output, which they believe will positively impact the welfare of the local community (the tenants as well as their neighbors). There is also a consensus that the final solution realized the overarching goals, suggesting that the collaborative process was productive as it was not undermined by conflicts or tensions.

Creative

The survey items on creativity scored remarkably high, as most respondents either agreed or agreed strongly. The co-design workshops were viewed as creative insofar as they broke with conventional wisdom and introduced novel design processes that provoked new ways to collaborate and stimulate ideas for the co-design process.

Innovative

Survey items regarding developing new perspectives and moving beyond standard/textbook solutions have scored particularly high. The design solutions thereby break with established new design solutions based on the creative problem-solving processes. The co-design process can be considered innovative in two ways: (a) it was socio-technically innovative as it introduced extensive forms of co-design that had hitherto not been the norm, and (b) it engendered design solutions that were novel with respect to the high degree to which principles of inclusivity and sustainability were advanced.

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						41.7%	58.3%	2.58
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					9.1%	63.6%	27.3%	2.18
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						66.7%	33.3%	2.33
4. The co-created solution breaks with established practices				8.3%	25%	33.3%	33.3%	1.91
5. The co-created solution disrupts conventional wisdom			8.3%		33.3%	50%	8.3%	1.5
6. The co-created solution offers new ideas to address the green transition problem				8.3%	33.3%	50%	8.3%	1.58
7. I'm supportive of the co-created solution						41.7%	58.3%	2.58
8. I'm content with the overall collaborative process of the project					8.3%	41.7%	50%	2.41
9. I feel the multi-actor collaboration process was a prerequisite for the success of the project					8.3%	58.3%	33.3%	2.25
10. I'm satisfied by the results of the co-creation effort in terms of expected impact on the welfare of the community				10%	20%	50%	20%	1.8
11. The collaborative interaction in the project has led to an innovative solution				16.7%	16.7%	33.3%	33.3%	1.83

12. The actors involved in the project are engaged in collaborative interaction that stimulated creative problem-solving					8.3%	58.3%	33.3%	2.25
13. The co-created solution meets the proposed goals of the project					8.3%	58.3%	33.3%	2.25
14. The co-created solution will be durable and robust in the long run				8.3%		75%	16.7%	2
15. The co-created solution is expected to significantly improve sustainability for the whole community			8.3%	16.7%	16.7%	50%	8.3%	1.33

2. Does the developed solution engender a green transition¹?

QCA score:

0

0.33

0.66

1

Scoring confidence:

Low confidence

Medium confidence

High confidence

Data sources:

Survey

Interviews

Documents

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 green solution has been built into the co-creation workshop program, as the project facilitators ensured that the formal criteria issued by BRFFonden and the municipality were met. The architectural programs were also evaluated based on the degree to which the design solutions met these requirements, hence they were secured. Solution C, the winning design proposal, incorporates many sustainable building materials that are recycled or reused. Wood is one of the key materials, which are used extensively in building composition and design and using wood as building material rather than a fuel source helps to store carbon. The tangible green outcome reflects the mandated DGNB gold certification, which is evaluated based on:

- a) Building life cycle assessment (ENV1.1)
- b) Local environmental impact (ENV1.2)
- c) Sustainable resource extraction (ENV1.3)
- d) Potable water demand and wastewater volume (ENV2.2)
- e) Land use (ENV2.3)
- f) Biodiversity at the site (ENV2.4)

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

The DGNB has been issued since 2009, primarily in German-speaking countries, and qualifies as a second-generation certification scheme as it builds upon existing ones with a future-oriented outlook towards buildings built according to principles of sustainability and democracy. To obtain a gold certification, the construction needs to score 50-79% (NB: above 80% is platinum) by the six benchmarks. DGNB notably places an equal weight on environmental, people, and commercial viability, thereby ensuring that not only are certified buildings sustainable but also buttressed by a high level of technical quality.

This added emphasis by DGNB can be contrasted with competing certification schemes such as the Leadership in Energy & Environmental Design (LEED) and Building Research Establishment Environmental Assessment Method (BREEAM), which do not take into consideration technical building quality. Simultaneously, the weighted scoring allows for a certain degree of flexibility, which has paved the way for the co-design process.

The survey, which was partly filled in by industry experts such as the architects, overwhelmingly affirms (91.7%) that the final design solution is expected to produce a green transition aiming to improve the status quo, that is, a more sustainable dormitory than the average dormitory.

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

1. The project:	Distribution
...did not produce any green transition solution	0%
...is expected to produce/has produced a green transition solution aiming to avoid a worsening in the status quo	0%
...is expected to produce/has produced a green transition solution aiming to maintain the status quo	8.3%
...is expected to produce/has produced a green transition solution aiming to improve the status quo	91.7%

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

5x craftsmanship students
 3x bureaucratic actors from the municipality
 3x project facilitators from Hele Landet
 The project funder and director of BRFFonden
 2x representatives from different architectural teams

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

We have participated in two co-design workshops, so-called “strategic trials”, during respectively August 2022 and May 2023. For each workshop, the 30 craftsmanship students and a team of artists and architects participated alongside the project facilitators (Hele Landet) to experiment and co-design various elements for the dormitory. For the final workshop meeting in May 2023, the participants were split into four teams, each of which would experiment with different co-design methods. We were observing the co-design processes, particularly focusing on the dynamics of interactions and the role of the facilitative leaders in organizing the events.

Various secondary project participants would also be present, overseeing the process during the day, although they did not have a direct role in the co-design process.

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

BRFfonden (2023) Håndsværkskollegiet på Musicon - Dommerbetænkning

BRFfonden (2023) Vinderforslaget er fundet til Håndværkskollegiet på Musicon

BRFfonden (2023) Årsrapport for 2022

BRFfonden (2022) Årsrapport for 2021

BRFfonden (2023) BRFfonden har afsat 700 mio. kr. til opførelsen af håndværkskollegier

Fonden for Håndværkskollegier (2023) Følg tilblivelsen af Danmarks nye håndværkskollegie - Fra vision til hverdag

BRFfonden (2023) Se videoen: Afprøvningsforløb for Håndværkskollegiet på Musicon

BRFfonden (2022) Lærlinge bliver en aktiv del af byggeprogrammet for Håndværkskollegiet i Roskilde

Hele Landet (2023) Tilgang – Hele Landet

Roskilde Teknisk Skole (2022) Elever en del af byggeriet af Håndværkskollegiet i Roskilde

Roskilde Kommune (2021) State of the art kollegium i Roskilde til lærlinge i byggefagene

Fonden for Håndværkskollegier (2023) Mission og strategi

DGNB (2018) DGNB System for New Construction

Dagens Byggeri (2023) Arkitekter ser håndværkskollegiet i Roskilde for sig

Roskilde Kommune (2007) Musicon – Strategi of Spilleregler

Roskilde Kommune (2019) DK2020 Roskilde Kommune – Rapport, Aflevering, September2020

Roskilde Kommune (n.d.) Klimaindsats i Roskilde Kommune

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

12 respondents out of 20.