



RIVERS OF CONVERSATIONS

RELATING SYSTEMS THINKING & DESIGN
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NetWall Gigamap, Synthesis Map and DIY: More-than-human perspective to co-design

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The gigamap, synthesis map and the DIY recipe were codesigned during the winter semester 2023/24 studio at the University of Stuttgart. They were focusing on an urban intervention that supports biodiversity at the university's campus. This intervention offers insects, birds and bats habitats and more-than-human edible landscape and serves as a touch point for a blog with DIY recipes and citizen science application 'spot-a-bee'. The three posters were exhibited at the school's exhibition to bring the audience to the installation and motivate them to reproduce it. QR codes also serve to inform the public about our events, such as seed bombing and gardening.

The gigamap is overarching the whole codesign process, feedback looping from analogue (invited stakeholders) to digital (codesign amongst students) and developed from the initial minimaps from each students' 'universes' on the studio topic related to each other. When synergising the 'universes', the invited stakeholders intervened with their agendas in analogue form. This gets digitalised again with the students' synergising into the final gigamap that is realised after the installation. As mentioned, the synthesis map mainly serves for communication, whilst the DIY recipe is a pocket-foldable navigation on how to make part of the installation yourself.

The submission relates to the submitted paper: *NetWall: The more-than-human ecosystemic socio-technical intervention codesign*

KEYWORDS: systems oriented design, gigamapping, diy, more-than-human, synthesis map, urban ecosystem, urban intervention, systemic approach to architectural performance,

RSD TOPIC(S): Cases & Practice, Methods & Methodology, Socioecological Design

Description

The gigamap, synthesis map, and the DIY recipe are outputs of the winter COLife studio 2023/24. This studio, as opposed to the summer semester, is focused on full-scale prototyping and DIY recipes for the installation intervention. The gamification of the whole system is planned for the summer. The submission covers the final gigamap (see Figure 1) that was codesigned across the students and multiple stakeholders coming into the process, a synthesis map (see Figure 2) designed by the students for the project's better communication and the DIY recipe (see Figure 3) for the public hands-on interaction. A QR code leading to these documents is attached to the installation. They were also exhibited at the school's exhibition to attract the audience.

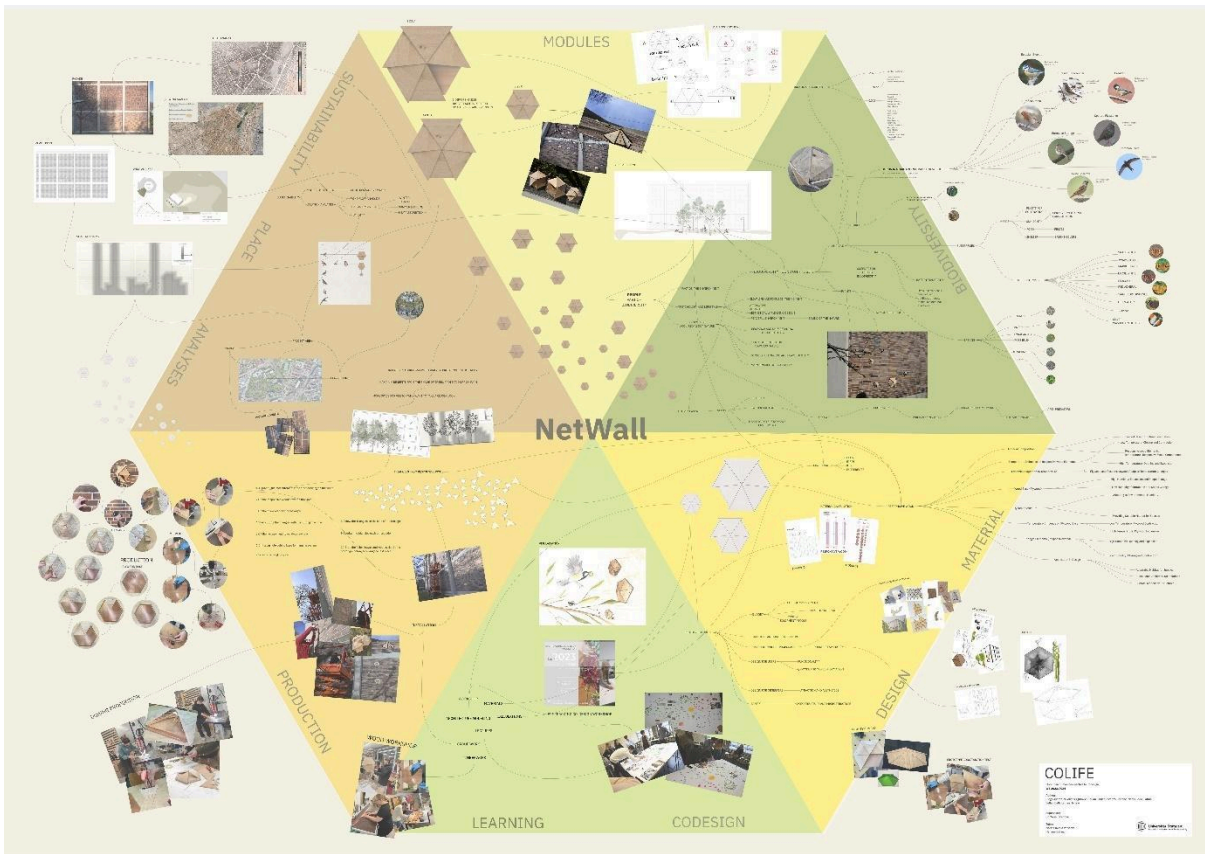


Figure 1: NetWall Final Gigamap (COLife Studio 2024)

NetWall: Peek into Biodiversity

CoLife Design Project 2023/2024

university: University of Stuttgart
 institute: Institute of Social Science - ITCE
 year: 2023/2024
 lecturer: Dr. Frank Dettwiler
 assistants: Claudia Savaris, Florian Behner
 partners: Francesco Romani, Mikaela Strömberg, Enzo D'Amico, Loris C. Pini, Irene Heide, Nina Gude, Marc Fabian Bell

The goal of this design project sets the foundations for understanding and harmonious coexistence of all biodiversity within cities and, consequently, in environments developed by the humans. This study focuses on certain animal species that particularly need assistance to develop properly and, at the same time, coexist within urban scenarios. Starting from here, the project sought to identify the environments and climatic characteristics of the site under the study and the animal species that could be supported in this project.

The study of animal species living in the city of Stuttgart that require environments to live and develop has focused particularly on specific birds, butterflies and insects. The prototypes are also characterized by having three different sizes, allowing them to adapt accordingly to the dimensions of the species that will inhabit them.

The proposed solution involves the installation of small wooden structures that will be integrated into the wall of a building owned by the University of Stuttgart, creating a small oasis for some of the most common animal species within the city of Stuttgart.

Two different types of wood: the base is composed of Plywood, while the triangular elements are made of Responsive wood which responds to different weather conditions. The strategic choice of materials allows us to achieve dynamic structures through the principles of responsive wood. By adapting to the ambient humidity, it alters its shape by opening in the direction of the wood grain, enabling animal species to have a full access to their new habitats.

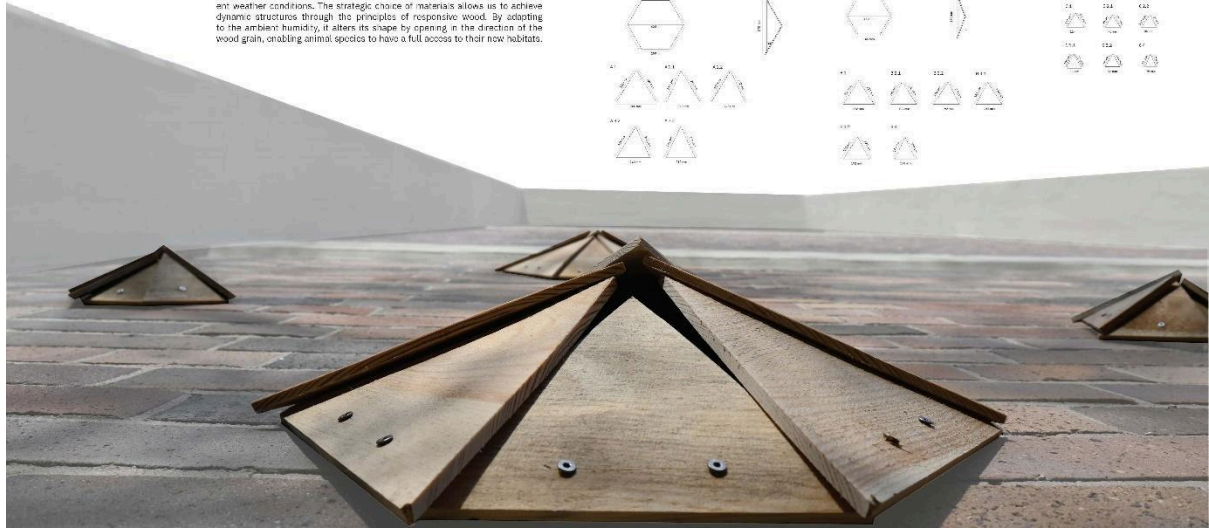
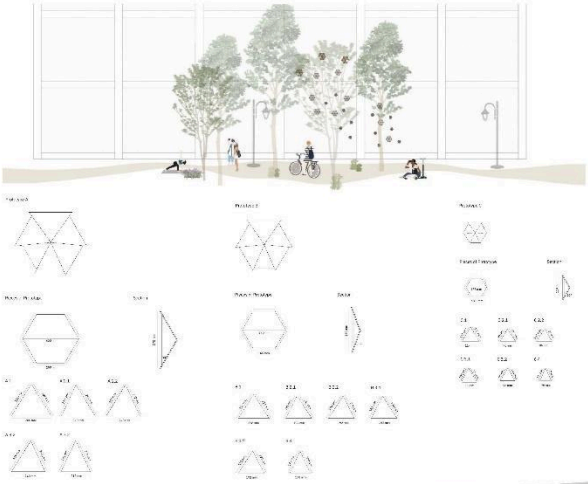


Figure 2: NetWall Synthesis Map (COLife Studio 2024)

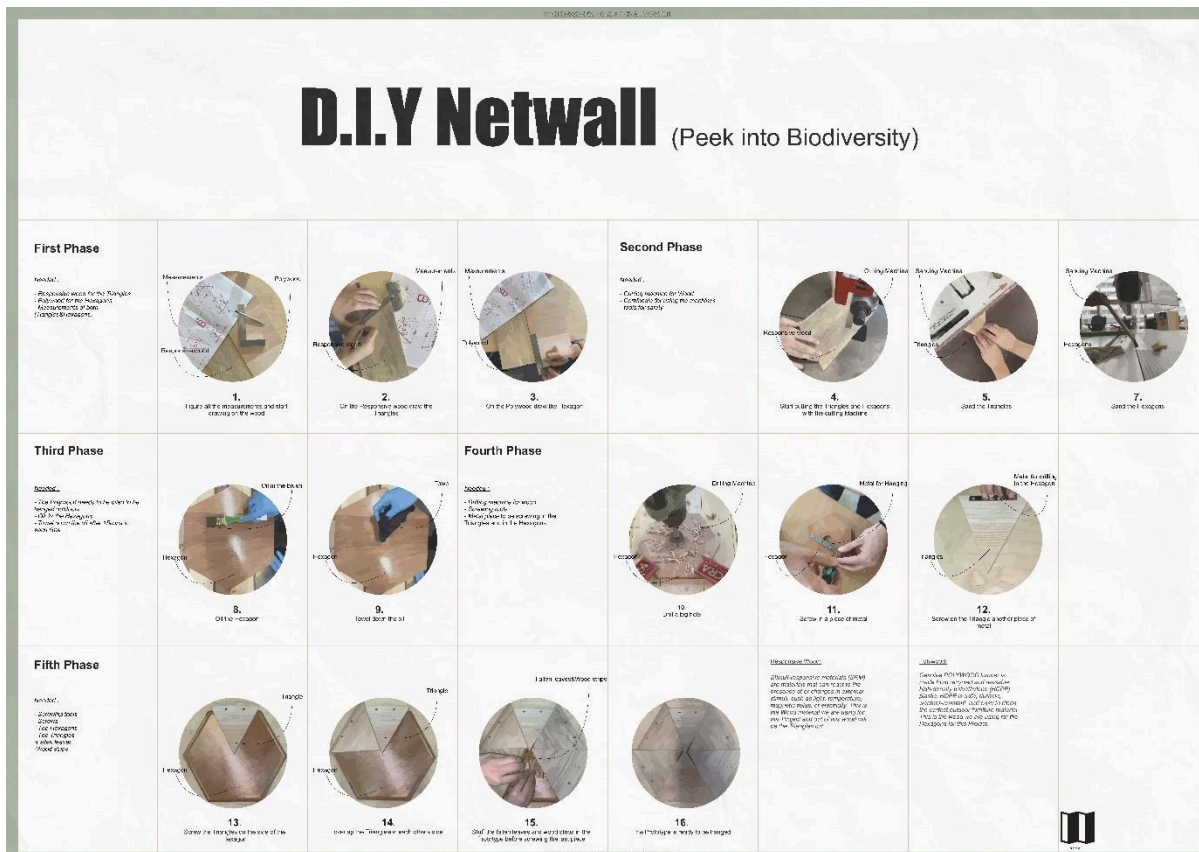


Figure 3: NetWall DIY Recipe (COLife Studio 2024)

Intentions and Concept

The presented work communicates the design process for more-than-human coliving in the central urban environment, here, the central campus of the University of Stuttgart. The work is to generate urban network connectivity across multiple species. Such work relies on the existing urban green, which extends through both the analogue installation as well as through human social engagement.

Creative Process

The creative process starts when the students start minimapping (Davidová, 2020b, 2014; Sevaldson, 2022), generating their own personal universe about the topic to understand themselves. When presenting to each other, they generate empathy (Davidová, 2020b) and start to understand the multiple perspectives of boundary critique (Midgley et al., 1998; Sevaldson, 2018; Ulrich, 2002). After that, they start

searching for synergy across each other (Davidová & Zimová, 2021). This part was by now digital in Miro platform (Miro, 2023). However, these WIP works are printed and intervened by transdisciplinary stakeholders. This is again integrated back in Miro, and this process goes in feedback loops. When there is a synergetic proposal for the installation intervention, this is intervened in the 'real-life codesign laboratory' (Davidová, 2020a). After this intervention, the files were finalised for communication purposes.

Reflection and Conclusion

We find it beneficial to finalise the files after the 'real-life codesign laboratory' intervention is installed because it enables space for reflection. We appreciate the feedback looping process going from messy to organised state and back again. We believe both states are important. At a certain point, it is more important to communicate, whilst at another, it is more beneficial to get lost. Equally, we appreciate the synthesis map for an easy introduction as well as the DIY recipe has to communicate easily to new users.

Acknowledgement

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References

1. Davidová, M. (2020a). Synergy in the systemic approach to architectural

- performance: The integral multi- and cross-layered agencies in eco-systemic generative design processes of the post-anthropocene. *FormAkademisk - Research Journal of Design and Design Education*, 13(2), 1–30.
<https://doi.org/10.7577/formakademisk.3387>
2. Davidová, M. (2020b). Multicentred Systemic Design Pedagogy Through Real-Life Empathy: Integral and Inclusive Practice-Based Education in the Research-by-Design Context. *FormAkademisk - Research Journal of Design and Design Education*, 13(5), 1–26. <https://doi.org/10.7577/formakademisk.3755>
 3. Davidová, M. (2014). Generating the Design Process with GIGA-map: The Development of the Loop Pavilion. In B. Sevaldson & P. Jones (Eds.), *Relating Systems Thinking and Design 2014 Symposium Proceedings* (pp. 1–11). Oslo School of Architecture and Design.
<https://rsdsymposium.org/generating-the-design-process-with-giga-map-the-development-of-the-loop-pavilion/>
 4. Davidová, M., & Zimová, K. (2021). COLreg : The Tokenised Cross - Species Multicentred Regenerative Region Co - Creation. *Sustainability*, 13(12), 1–23.
<https://doi.org/10.3390/su13126638>
 5. Midgley, G., Munlo, I., & Brown, M. (1998). The Theory and Practice of Boundary Critique: Developing Housing Services for Older People. *The Journal of the Operational Research Society*, 49(5), 467–478.
<https://doi.org/10.1057/palgrave.jors.2600531>
 6. Miro. (2023). *Miro | Online Whiteboard for Visual Collaboration*.
<https://miro.com/app/dashboard/>
 7. Sevaldson, B. (2022). *Designing Complexity: The Methodology and Practice of Systems Oriented Design*. Common Ground Publishing.
<https://doi.org/https://doi.org/10.18848/978-1-86335-262-8/CGP>
 8. Sevaldson, B. (2018). Beyond User Centric Design. In S. Barbero (Ed.), *Relating Systems Thinking and Design 2018 Symposium Proceedings: Challenging complexity by Systemic Design towards Sustainability* (pp. 516–525). Systemic Design Association.
<https://rsdsymposium.org/beyond-user-centric-design/>
 9. Ulrich, W. (2002). Boundary Critique. In H. G. Daellenbach & R. L. Flood (Eds.), *The Informed Student Guide to Management Science* (pp. 41-). Thomson Learning.
 - 10.

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