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AR3A010
Research Plan

AR3AE100
Architectural
Engineering
Graduation Studio

Resurgence of a Craft Guild

Re-inventing a New Role for Craft Guilds within the Value Chain of Geobased Materials in a Regional Landscape Setting

This booklet is designed for the AR3AE100 Architectural Engineering Graduation Studio and AR3A010 Research Plan (2024/25 Q1)

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Cover image by Botterweg Auctions of Glazed earthenware vase, by Pottenbakkerscollectief: Br.Matheus Notenboom, Br.Jan Rahder & Br.Michaël Ruijgrok, Pottenbakkerij van de St.Paulusabdij, Oosterhout / the Netherlands ca.1980

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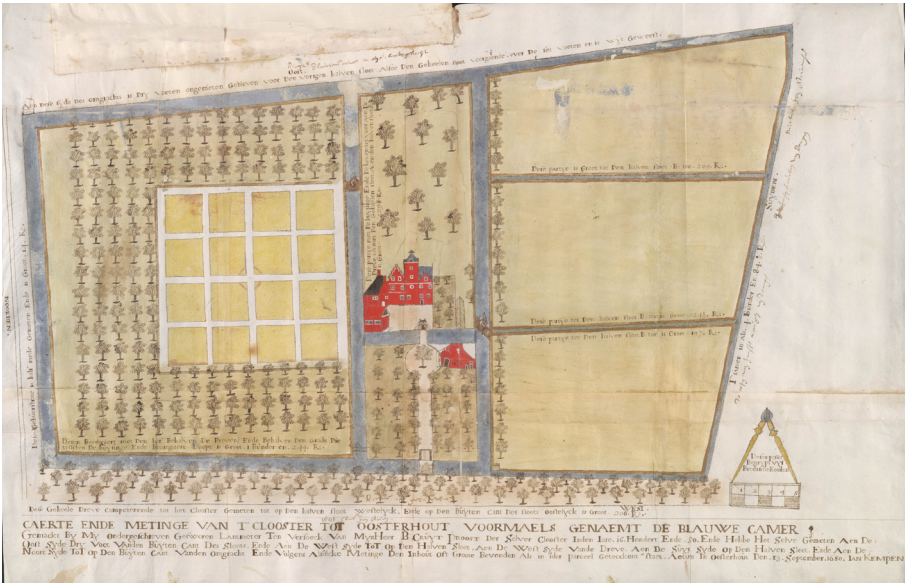

Kaart in vogelvluchtperspectief van het klooster in Oosterhout, getekend door Jan Kampen in vier uitvoeringen, 1650 [Archief BHIC]

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Research Plan
Architectural Engineering
Graduation

Author’s Note

When you walk along the Kloosterdreef in Oosterhout, the cobblestones disrupt your rhythm. Filtered light passes through the canopy of the double row of trees onto the old monastery walls, which have been overtaken by mosses and small plants that thrive on the lime mortar. A gate offers a glimpse of 'slotje' De Blauwe Camer. The religious residents of De Heilige Driehoek live here modestly and their diverse landscape interventions and related crafts have always been in a dialogue with the landscape.

In our architecture practice it is possible to neglect the world outside the drawing. Repetitive processes and non-site-specific character of our contemporary building practice does not ask practitioners to meet materials and how they are extracted, processed, manufactured, transported, installed, used and dismantled. [1] Knowledge and skills lack and through technification the knots and links within value chains are hard to grasp and understand.

1
Material Cultures. (2022). Material reform: Building for a Post-carbon Future.

For centuries, human activities have been intertwined to the landscape's capacities. Current processes in society show that this balance is disrupted, and a cascade of changes negatively affects the relationship between humans and ecosystems. 'Weeds' and 'pests' do not fit into our neat, meticulous planned lives (and gardens) and must be controlled. Studies have shown that only 38% of the Dutch population says to understand the word 'biodiversity' [2].

2
Motivation. (2020). Beelden van biodiversiteit

De Heilige Driehoek does show us how such a relation can be restored through their understanding of mosaic landscapes and related craftsmanship. This research derives from their practice.
The thematic research revolves around re-invention of the guild and their practical, educational, technical and communal values. Resembling a conductor of an orchestra, a guild knows how to extract a landscape regeneratively, is the material expert and knows how to build and maintain.
The design project revolves both around architectural and landscape architectural design, revitalizing De Heilige Driehoek, elaborating on their productive mosaic landscape and reactivating craftsmanship, using a set of biobased building materials.

Introduction

Aerial view on De Heilige Driehoek, 2004 by Johan van Gurp

De Heilige Driehoek in Oosterhout, Noord-Brabant consists of a continuous area with three adjacent monastery complexes at its core: Sint Catharinadal, Onze Lieve Vrouweabdij, and Sint Paulusabdij. Surrounding them is a unique cultural landscape situation with gardens, farmlands, and historic farms, set within a historical pattern of cultural landscape features so-called 'houtwallen', 'rullekes' and 'stinzebossen'. Also, the geological conditions, such as variation in soiltype and height differences and archeological finds of (biobased) Roman farms makes this landscape into a one-of-a-kind.

However, the monasteries and surrounding cultural landscape are threatened by many processes such as inclination of the number of religious inhabitants, lowering water tables for agriculture and eutrophication. Their buildings and craftsmanship are precious and deserve to be handled with kid gloves. [3]

3
Gorisse, J. J. A. M. (2023). De Heilige Driehoek: kloosterenclave te Oosterhout.

This location is the starting point from where the research will derive further in-depth on the theme of craftmanship as a binding factor. The research question addressed is: 'How can the resurgence of craft guilds socially, ecologically and technologically contribute to the performance of regional value chains of geobased materials, enhancing the regional landscape and built environment?'. The aim of this research is twofold; the investigation the traditional role of a craft guilds within regenerative landscape types and extraction, processing of materials into building products and finally maintenance and breaking down of these products. The second part of the research will be a projection of the principles on the design location as a means of testing.

De Heilige Driehoek will re-appear as the design location and will be further researched on, starting the design phase. Amongst all, addressing the above-mentioned, an architectural program will be proposed to re-activate the area. A similar approach like the research will be proposed, designing an 'Institute for Traditional Crafts and Landscape Relations' and secondly a proof of concept; a building that arises from this institute. Moreover, a landscape design and meshwork of design principles for the region will be designed.

Leemputten, Seeters close to Oosterhout (NB)
1937. Uitgave C. Jansen-Roelands, Dorst (N.Br.).
Postcard

Problem Statement

The built environment is one of the most polluting industries, making renewed ways of thinking and building inevitable. Linear economies are limiting our resources, while knowledge on circular economies has been forgotten. The way we work with our landscapes could mitigate the emissions and benefit the local ecosystems. Above all, the landscape could provide building materials with properties and qualities that are currently achieved by technification within the building practice.

The problem statement is threefold, with interrelated themes of *value chain of regional material, technification and a renewed interest in traditional crafts and potential of the guild.*

Value chain of regional material

Current supply chains are often critiqued as obscure; every time a material changes hands, its constituent parts become harder to trace [4]. Since this research will focus on regionality of materials, a more justified critique would dive into all the value related aspects of material cycles. *A value chain refers to the full lifecycle of a product or process, including material sourcing, production, consumption and disposal/recycling processes.* [5] This way, the research can also be elaborated on the social, ecological and technological aspects of biobased materials.

Biobased materials, derived from living organisms, are renewable and can be regrown or replenished over time. Mineral building materials such as air-dried clay brick or hempcrete are derived from non-living, inorganic sources. Extracting it in a responsible way, it could even benefit the landscape. After their lifespan, these building materials can be easily adopted back into the local ecosystem.

Instead of importing cheap products via transnational supply chains, a focus on locally sourced materials and practices will improve the construction

4
Material Cultures. (2022). Material reform: Building for a Post-carbon Future. (p.40)

5
Walker, T. (z.d.). What is a value chain? Definitions and characteristics. Cambridge Institute For Sustainability Leadership (CISL).

industry. Local materials will theoretically never be outside of the region, preventing depletion of commodities, beneficially for ecosystems reliant on those commodities.

Technification

Industrialisation has led to higher efficiency in production. Standardized flows within factories could not rely on small local material batches, leading to large-scale excavation landscapes, produced and used far from their origin.

For centuries we have lived in close relation with natural systems, that locally provided qualitative materials to build with, featuring comfortable material properties such as thermal insulation, acoustic insulation and moisture regulation, operating regeneratively within the boundaries of the landscape's elasticity.

The machine age envisioned a form of material production that eliminated the need for *sweat, dirt and skilled of manual labour*, relying instead on human beings merely as operators of mechanized industrial systems.[6] Architecture and production of building materials have become highly technocratic systems in the western countries. Architects are choosing materials of catalogues and rarely visit a carpenter's workshop or brick factory.

Material Reform argues that a reorientation in construction around regenerative resources and an understanding of construction as a regionally specific social and cultural process offers the real potential to make building simpler, moving towards practices of ongoing care that can be managed within a local economy.

6
Material Cultures. (2022). Material reform: Building for a Post-carbon Future. (p.40)

Renewed interest in traditional crafts & potential of the guild

In the preface of Epistemologies of Making / A Theory of Craftsmanship for Architecture Eric Crevels (2024, Phd Defence) describes the lack of attention to the craftmanship as a mean to design within architecture universities [7]. Based on my own experience, small initiatives arise within universities linking the practice to the universal world. Companies as BC materials, Material Culture partially act as research institutions, with strong connections to the universities, re-integrating (traditional) crafts and having students get their hands dirty. On Craftsmanship: Towards a New Bauhaus (2017) states that craftmanship has again become fashionable in high

7
Crevels, E. (2024). Epistemologies of Making: A theory of craftsmanship for architecture. [Dissertation (TU Delft), Delft University of Technology]. A+BE | Architecture and the Built Environment.

places. ‘Government ministers extol ‘the joy of technical accomplishment, the beauty of craft skills [in schools]’ and stress the need for a new, updated Arts and Crafts movement to re-energise good old British inventiveness’. Only whenever its dusty imago is replaced, its potential to become a serious productive industry again could be understood. [8]

Since this renewed interest in crafts, and the value chain of biobased products still needs a lift to become ordinary practice, this research searches for potential in a medieval social craft guild organisation. Economic historians argued that craft guilds fostered innovation and brought a very stable social and economic environment . [9] Re-examination of the idea that guilds formed obstacles of economic progress has led to a more positive attitude.

8
Frayling, C. (2017). On craftsmanship: Towards a New Bauhaus. Oberon Books.

9
Epstein, S. R., & Prak, M. (2008). Guilds, Innovation and the European Economy, 1400–1800. Cambridge University Press.

Een metselaar bouwt een muur van kloostermoppen. Ets van Caspar Luyken, naar Jan Luyken, uit 1694. – Collectie Rijksmuseum

Research

Research Objective

— This research aims for a deeper understanding of how to harvest materials from the landscape based on the principles of permaculture.

— This research aims for a deeper understanding how to process and apply the locally sourced materials in architecture.

— Creating a hypothetical future scenario; a conceptual framework to explore organisation of productive landscapes and value chains of geobased materials via new type of craft guilds. The research should eventually present a spatial layout of this new guilds.

Research Question

How can the resurgence of craft guilds socially, ecologically and technologically contribute to the performance of regional value chains of geobased materials, enhancing the regional landscape and built environment?

Research Sub questions

1. *How did masonry craft guilds historically operate in regional ecosystems?*
2. *How does the value chain of geobased materials currently operate?*
3. *How can the masonry craft guilds be modified to complement the value chain of geobased materials?*
4. *What would the resurgence of a masonry guild for geobased materials look like for the regional landscape and built environment?*

Hypothesis

A renewed craft guild carries the regional responsibility and forms the educational platform for a certain subtype of biobased materials (as seen in figure 1).

A renewed craft guild carries the responsibilities of a traditional medieval guild that become increasingly relevant in today's society; regulating the trade, training and admission, protecting interests, social security and political and social influence.

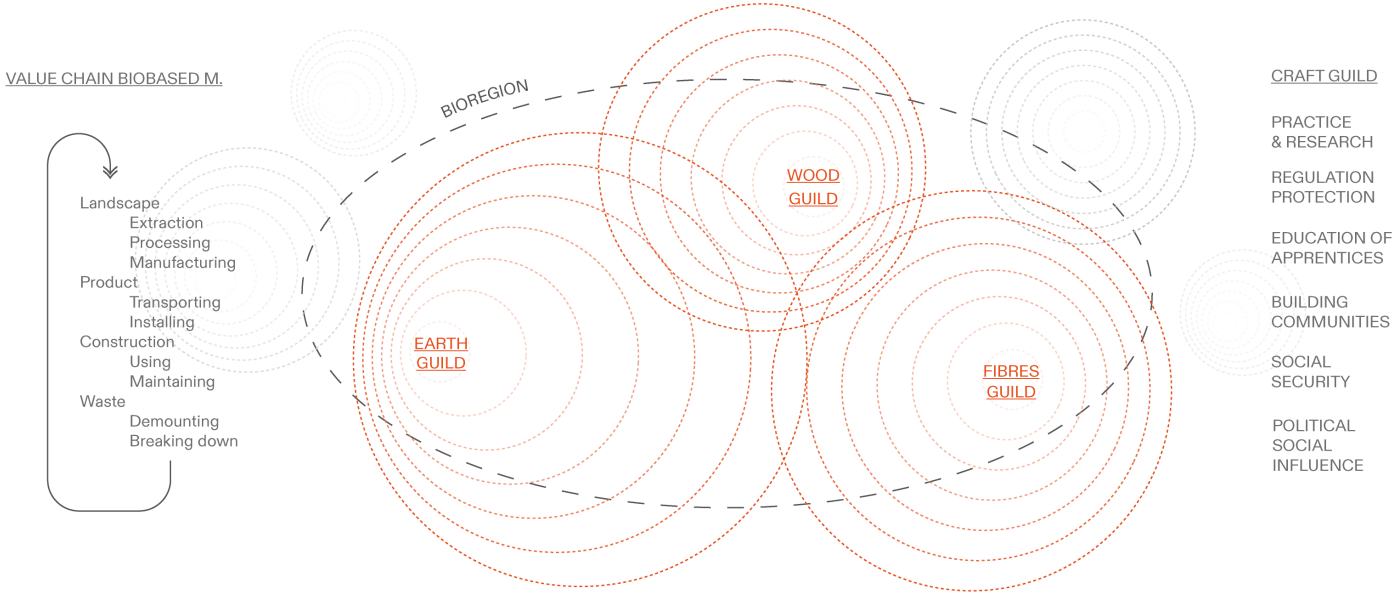
A renewed craft guild additionally contributes to the value chain of biobased materials by understanding the region's permaculture; healthy dependencies between the elements in a region and creates self-supporting systems.

A renewed craft guild knows their own material culture;

— The limitations of the landscape through understanding extraction and maintenance of landscapes (ecosystems and their nature services)

— Local building practices of manufacturing and maintenance (technology)

— Social, political, educational interrelations and communities (social)



Schematic overview of Regional Responsibility of Biobased Material Guilds, Author.

Research Methodology

1. Desk Research (literature review/network analysis)

Objective
— Acquire theoretical and historical knowledge on craft guilds, value chain of geobased materials and principles of permaculture. These three components will be connected through the SET analysis.

Execution
— Study of academic papers, books, reports and case studies that describe the historical role of masonry guilds and connect them to earth material value chains and the ecological principles linked to it.
— SET analysis: social-ecological-technical system (a research domain within environmental sciences). The guild represents the social component (collaborative system), permaculture the ecological component (landscape system), and materials and building methods the technical component (tectonic system).

Relevance
— This provides a solid theoretical foundation and insight into existing concepts, from this derives the opportunity to design a hypothetical future scenario of a guild for geobased materials.

2. Conceptual framework of the Renewed Guild and Ethnographic Research Method

— Based on theories found in desk research a specific hypothesis will be 'designed' of what a resurgence of a guild for geobased materials could look like.

— Ethnograpic research to get submerged in a community of craftsman to observe interactions.

— Additionally, Participation observations (workshops/ conversations/ interviews) will be conducted with f.e. Rokus Oskam, BC architects, Eric Crevers to test theory.

3. Deductive research (application of conceptual framework on site via Streekbouwketen)

Objective
— Apply conceptual framework to a situation (design location) and the design practice. The goal is to explore how the theory manifests in practice.

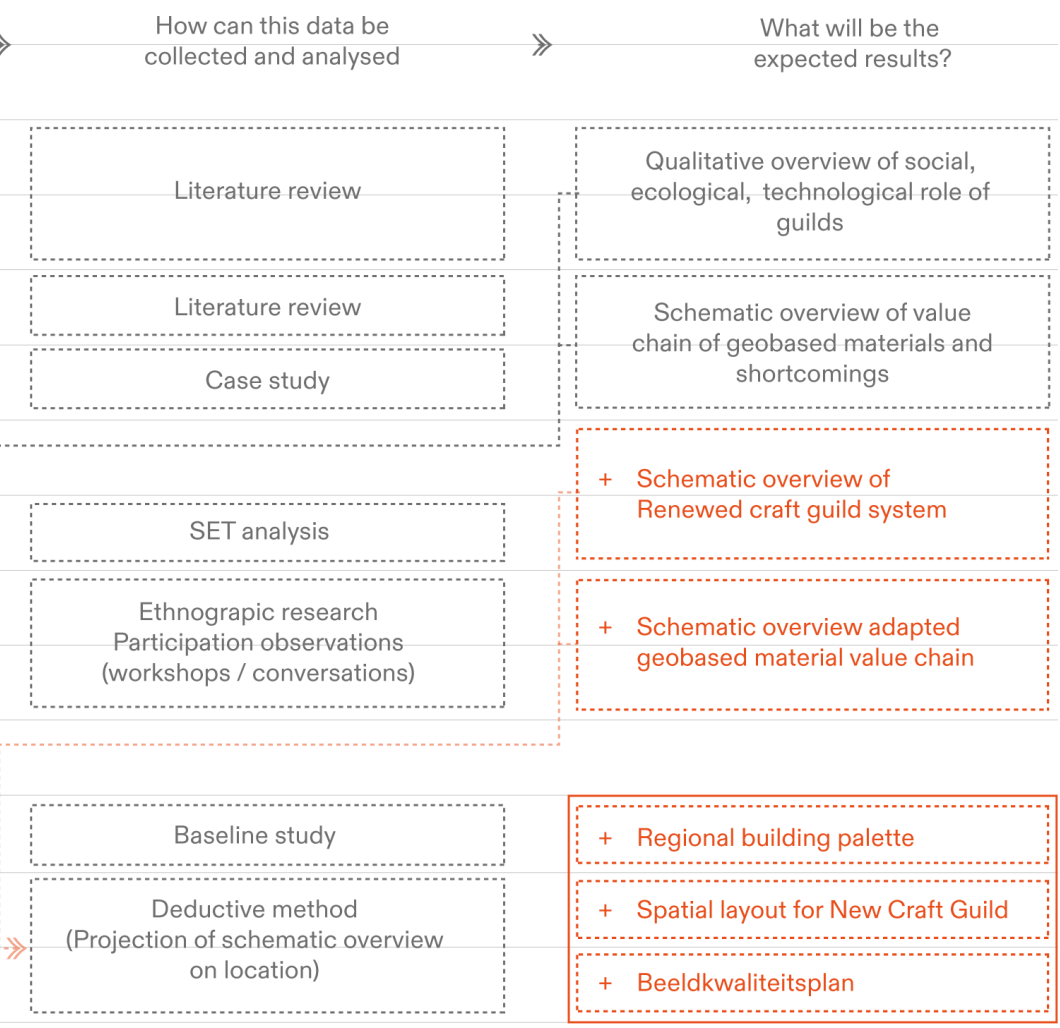
Execution
— This qualitative methodology of ethnographic research is arranged along the value chain of one of the three sub flows of biobased materials (earth, fibres, wood) and their extraction landscapes. Earth (f.e. quarry, machinery, rammed earth bricks, masonry)

— Streekbouw method:
    — Characteristic problems
    — Harvesting opportunities
    — Valorisation of raw materials
    — Regional building palette

Relevance
— Theory should prove itself and presents valuable insights on spatial (re)organisation of a guild and regional architecture.

Research Question	What data do you need?
How did masonry craft guilds historically operate in regional ecosystems?	Qualitative description on Guild Structure and Organization, regional building projects and materials, ecological and social
How does the value chain of geobased materials currently function?	Qualitative description of shortcomings of current value chain and quantitative data on regional excavations and their yield.
How can the masonry craft guilds be modified to complement the value chain of geobased materials?	Input of first two sub questions
What would the resurgence of a masonry guild for geobased materials look like for the regional landscape and built environment?	Site specific information: characteristic problems, harvesting opportunities & valorisation of raw materials

Schematic overview of Research Methodology, Author.


How can this data be collected and analysed
What will be the expected results?
Literature review
Qualitative overview of social, ecological, technological role of guilds
Literature review
Case study
Schematic overview of value chain of geobased materials and shortcomings
+ Schematic overview of Renewed craft guild system
SET analysis
Ethnograpic research
Participation observations
(workshops / conversations)
+ Schematic overview adapted geobased material value chain
Baseline study
Deductive method
(Projection of schematic overview on location)
+ Regional building palette
+ Spatial layout for New Craft Guild
+ Beeldkwaliteitsplan

Reflection on relevance

Meanwhile, in the economic historical environment, guilds are re-examined as very positive stimulators for innovation and very stable social and economic environment. [10] In the scientific world no research is found, projecting these new insights of a guild on geobased material value chains. My hypothesis is that many social, ecological and technological problems, described in the problem statement could be mitigated with a bioregional system of guilds. F.e. employment of highly functional materials as decoration simulating a construction of higher value [11], fighting process of decay with toxic chemicals instead of maintenance [12] or dangerous construction sites.

The *Streekbouwmethod* by *Bouwtuin* [13] will form the method to test the new theoretical framework of a renewed (earth) guild. This will provide the baseline study and spatial layout of a renewed guild as input for the elaborated design phase. Additionally, a regional building palette for architects and spatial layout for new craft guild is presented in combination with a beeldkwaliteitsplan (architectural quality plan) of what the resurgence of a masonry guild for geobased materials could look like for the region.

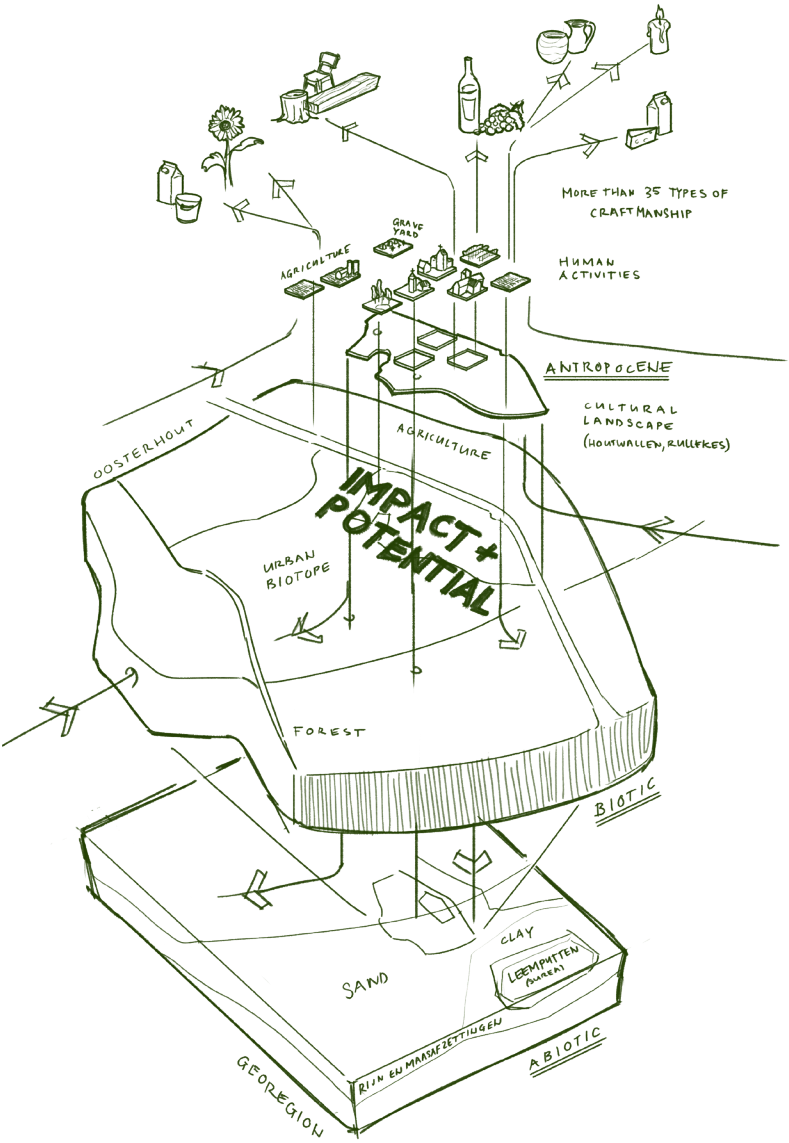
Although a renewed guild could likely also mitigate problems regarding legislation and building permits of geobased materials, the research will not touch upon that due to time.

10
Epstein, S. R., & Prak, M. (2008). Guilds, Innovation and the European Economy, 1400–1800. Cambridge University Press.

11
Material Cultures. (2022). Material reform: Building for a Post-carbon Future. (p.44)

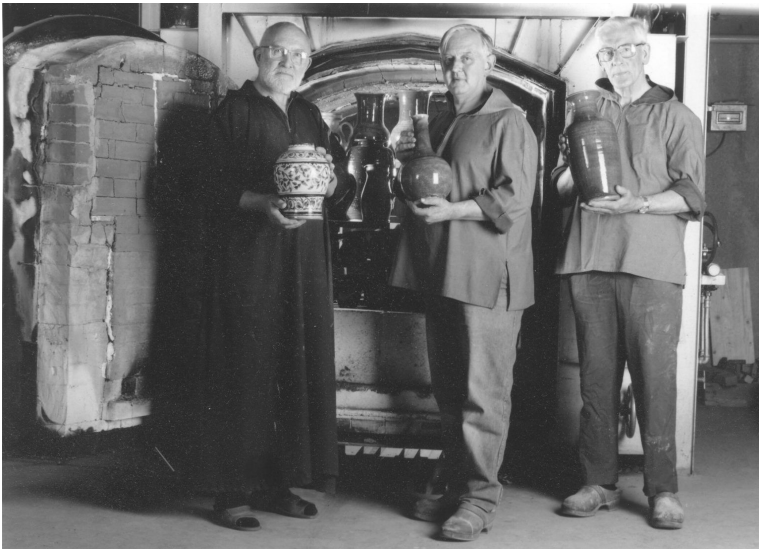
12
Ibid. (p.50)

13
Smit, M.J. Groenendijk, R. Köbben, R. Vélu, D. 2022. Stichting Bouwtuin Naar een Nieuwe Streekarchitectuur



Landscape excavations, commodities, process and products. De Heilige Driehoek as a bioregional system, Author

Zuster Dorothea (left), priorin Maria Magdalena and zuster Mechtild on the vineyards of norbertinessenklooster Sint-Catharinadal – Marcel van den Bergh, De Volkskrant



Pater Jan Rahder (left), Br. Matheus Notenboom, broeder Michael Ruygrok in front of the Kiln on the Pottery of Sint-Paulusabdij, Oosterhout

Design

Elaborated introduction to location

De Heilige Driehoek's special landscape features

Specific for the design location is its isolated characteristics, both on the level of each of the individual 'walled' monasteries, but also the area being enclosed by the A27 highway, Wilhelminakanaal and the built environment. Operating as quiet and enclosed spaces, protected from predators but also limiting possibilities to serve as steppingstone, connecting with other natural areas.

Another important noteworthy actor in the biodiversity story is the import of species, that the religious inhabitants brought from their exotic travels. This could be both beneficial in being attractive for flora and fauna and threatening once the imported species turn out to be invasive, oppressing native species.

Thirdly the design location had its own local seepage (infiltration area) filled with local rainwater, low in nutrients and minerals, slightly acidic. This area became smaller and is now not sufficient to prevent drought. Lastly the site is located on the edge of a sandy soil and clay, with height difference between the individual monasteries up to two meters. The transition in biotopes and vegetation is ecologically very interesting [14].

14
Gorisse, J. J. A. M. (2023). De Heilige Driehoek: kloosterenclave te Oosterhout.

Craftmanship

M. Mähler, author of 'De Sint-Paulusabdij van Oosterhout' (1991) elaborates on all the activities of the Sint-Paulus abbey by first listing all 34 of them categorised; agriculture, food preparation, textile department, service company (including crafts like carpentry, blacksmith and watchmaking) and lastly ateliers (including bookbinding, photography and a potting studio) [15].

15
Mähler, M. (1991). De Sint-Paulus Abdij van Oosterhout: onder het bestuur van haar eerste abt dom Jean de Puniet 1907-1941.

Vacancy of religious institutions due to secularization

The secularization in the Netherlands has led to an increasing number of religious institutions becoming vacant. Also, these three monasteries are – or have been – searching for new potential since the number of religious inhabitants is declining. The vineyards on Sint-Catharinadal, driven by a dynamic society of volunteers, are a perfect example of future potential to preserve the religious and cultural-historic heritage. Also, spirituality is gaining ground. *Above all, people today are particularly sensitive to authenticity in the testimony of life itself* [16]. Each of the monasteries has its distinct aspirations for the future, to continue their story.

16
Gorisse, J. J. A. M. (2023). De Heilige Driehoek: kloosterenclave te Oosterhout.

Design Objectives

Social — A nationwide challenge is significant drop in enrolments of practical education. Oosterhout is facing a similar challenge and is working on a new location. This project proposes a new potential location and ideology by designing an educational institute

Technical — The design should reconsider the value chain of geobased materials, including local productive landscapes and their (bioregional) resource availability; craftsmanship and (building)products. The design should also serve the clarity in supply chain: removing links from the supply chain can create greater clarity and increase responsibility by making processes more manageable and transparent. — A meshwork of interventions should benefit the region as a background.

Ecological — Regenerative landscape types, their yields and relation to culture and craftmanship and building materials. Mosaic landscapes.

Cultural — The project should deal with cultural values of the monasteries, cultural landscapes. — The theme of (spiritual) contemplation has always been a very important value in the area. The project should be in line with the theme of contemplation.

Design question

How can an institute on geobased materials help to revitalize the landscape of De Heilige Driehoek throughout introducing a reshaped model of a craft guild and new productive landscape typologies, while maintaining the cultural identity.

Design themes

1. Material culture (material + craftmanship) - processing, manufacturing, building elements
2. Landscape architecture (ecosystems and culture landscape)
3. Heritage, community and contemplation

Program

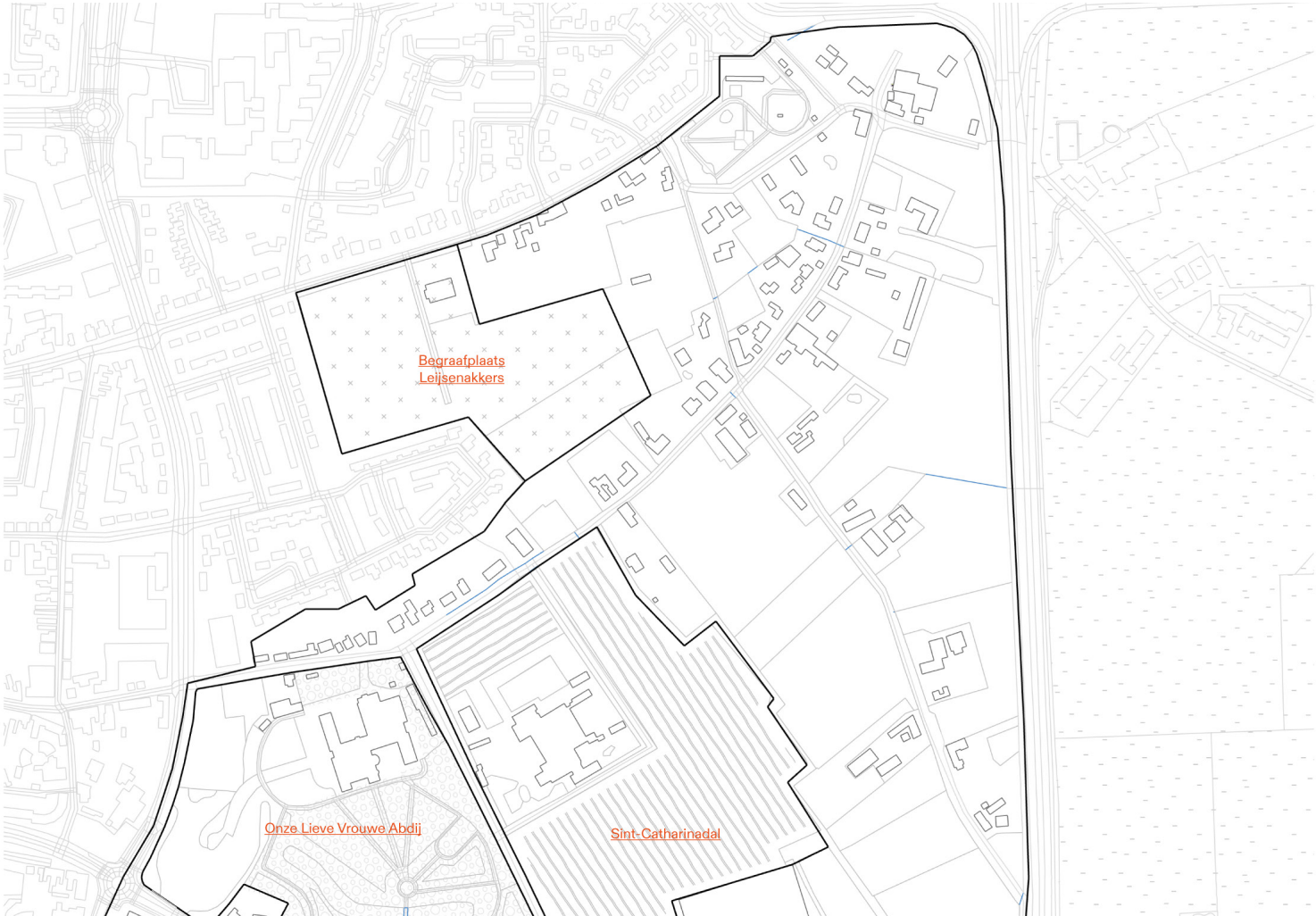
The program is divided into four categories, differing in scale and level of detail.

— The outcome of the project should provide a design for 'the Institute for Renewed Craftmanship and Landscape Relations'. The project should partially make use of existing buildings, but should not purely become a heritage value project.

— Proof of concept: a new cemetery building for Leijsenakkers (build out of geobased materials).

— Additional program will be part of a meshwork of interventions in the region. The following program might be added to the existing stock; covered market hall, ateliers (maakstad), museum, senior co-living, arboretum, landscape experience follies, material bank, drying houses (drooghuisjes), signage, doorhandles and lanterns.

— A landscape design will be presented with cultural extraction landscape typologies. Creation of a set typologies will pick up all available local combinations of landscapes and their production potential (silvopasture, permaculture, paludiculture, arboretum, vineyards allotment, graveyards)

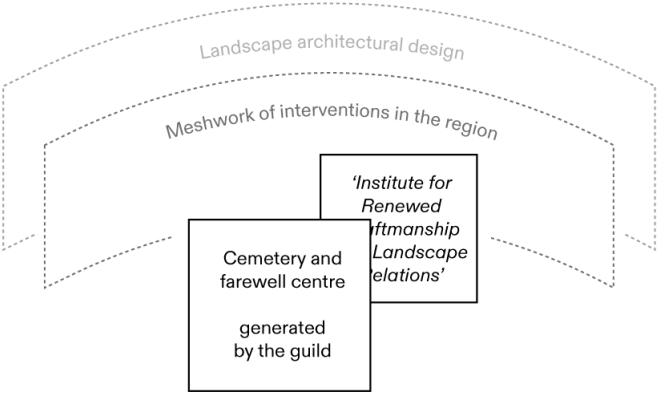

Begraafplaats
Leijsenakkers
Onze Lieve Vrouwe Abdij
Sint-Catharinadal

Map of De Heilige Driehoek ~ 1 : 7.500, Author.

Design Methodology

The design contains multiple stages and depth of field is clearly defined. Conceptual frameworks in the research will be translated to spatial layout of in the firstly designed building; The Institute for Renewed Craftmanship and Landscape relations. A secondly designed building will be the proof of concept; generated by a guild in the region: Cemetery and farewell centre Leijsenakkers.

A meshwork of interventions in the region will be designed in combination with the landscape architectural plan. This is the second layer and will be in the less detailed, but will form a proof how a region could thrive architecturally using the new models.



Schematic overview of Design Methodology and depth of field, Author.

1. Baseline study
2. Preliminary design (Basic concept, site model)
3. Elaborated design (climate design and building technology)
4. Final design (detailing, models)

Le Magasin Électrique, Lot 8 – Atelier LUMA and
BC Materials

Pool mit Poolhaus, Basel, Ersatzneubau,
2015 - 2017. picture by Philomène Hoel –
Vécsey*Schmidt Architekten

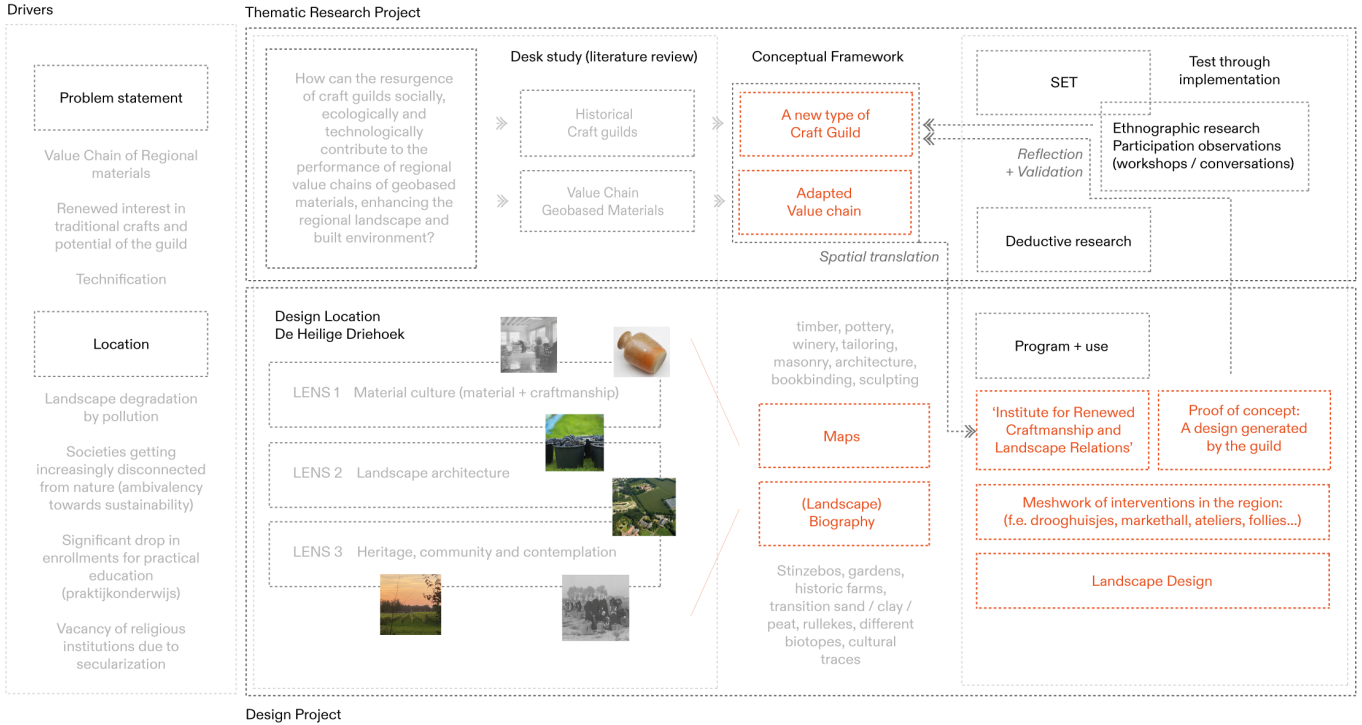
Charlie Bigham's Wests, United Kingdom - Somerset 2018 – Feilden Fowles

Filmstill At the Garden's Pace by Juan Benavides

Openluchtschool, Goirle, 1935 – Jos Bedaux

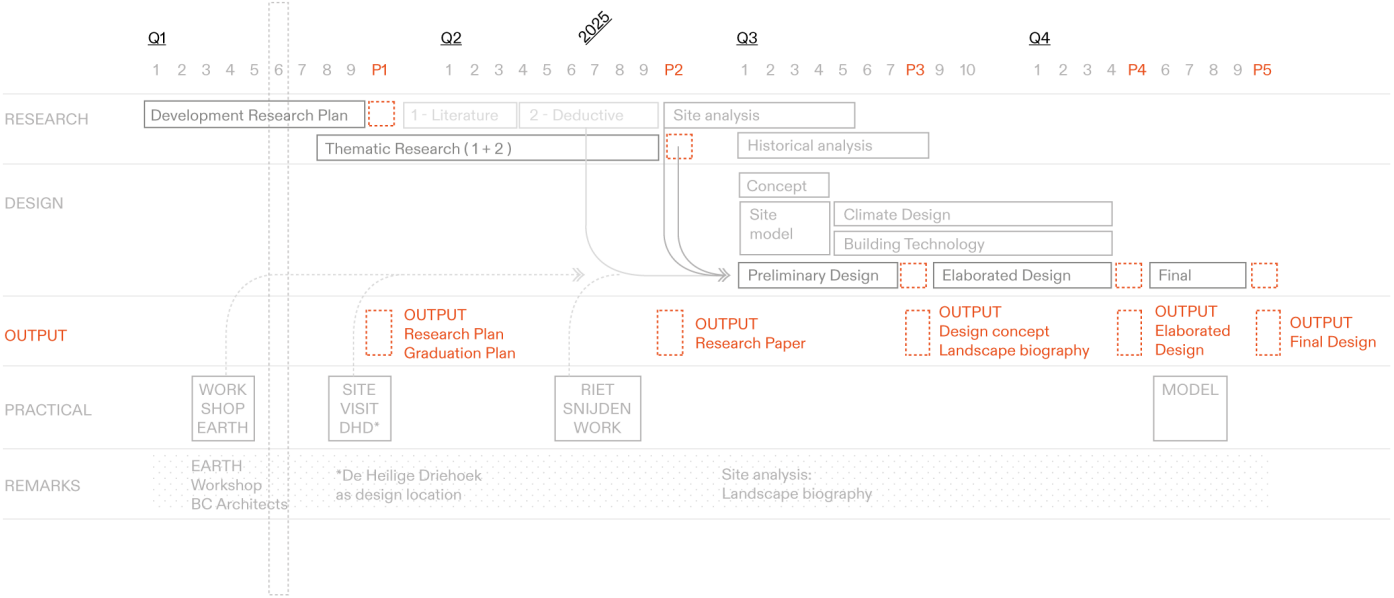
The Weston Visitor Centre and Gallery West
Bretton, United Kingdom – Feilden Fowles

Structure



Schematic overview of Structure Graduation, Author.

Planning



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Definitions
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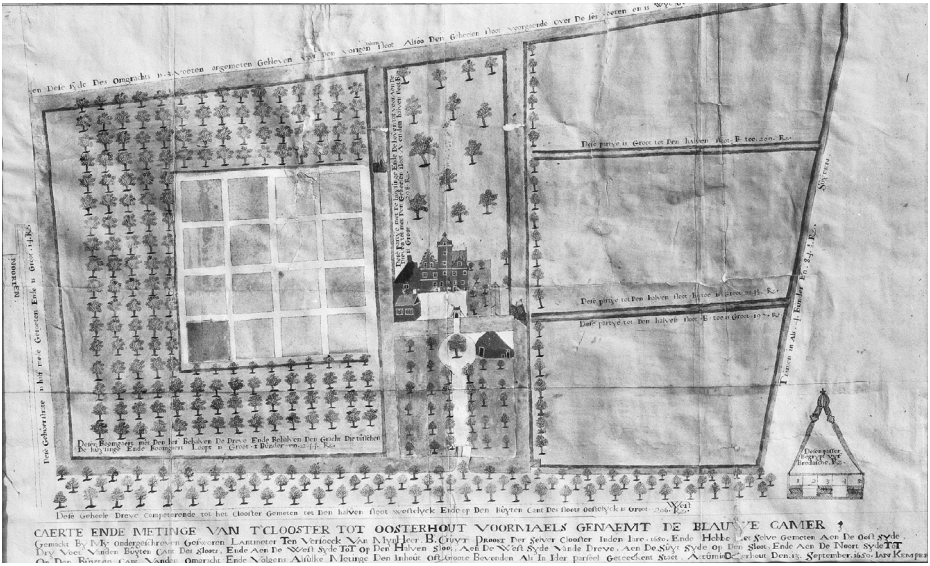

Charles-Édouard Jeanneret (later known as Le Corbusier) traced over Camillo Sitte's City Planning According to Artistic Principles [1889], 1910. Pencil and ink on paper. Fondation Le Corbusier, Paris.

Transurban
Jean-Louis Cohen

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The Berlage Center for
Advanced Studies in
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1. Guilds

→ BIO27 Super vernaculars

Permaculture looks for healthy dependencies between the elements in a region and creates self-supporting systems.

2. Permaculture

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3. Craftmanship

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4. Biobased Materials

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5. Value Chain

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6. Material Culture

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7. Technification

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8. Regenerative

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Glossary