Flora, Funga, Fauna: Reclaiming

Residents of the Fallow Land

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Society, Justice, Space

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ABSTRACT

The building sector and its highly invasive practices pose a general threat to ecosystems and biodiversity all over our planet, the earth. Therefore, the architectural field has to find alternative approaches next to the current harmful status quo. With the goal to design and build equitable for all species, a shift from human-centered decision making towards adopting a more-than-human perspective in design processes might offer a solution.

To test this approach, a former industrial site in rural, central Germany acts as an experimental field. Central to this work is to understand the reclaim of this site by flora, funga and fauna as a form of reconciliation between humans and more-than-humans. Exploring the existing relationships between the species found on site was essential to this work's research approach.
The following goals were explored by adopting a more-than-human perspective: Understanding and challenging human and more-than-human appropriation of former industrial sites in rural areas, and finding strategies to integrate more-than-humans into human design processes, while making their entanglement and relationships visible. Also, communicating and discussing the value of more-than-human species at former industrial sites. And finally, to contribute to change the understanding of 'revitalizing', of 'ruined' buildings, of 'lost places' and 'wilderness'.

The key theories this project is based on are connected to the more-than-human approach, post anthropocentrism, agency, entanglement, citizenship and representation of more-than-human species and interspecies relationships. Donna Haraway, Sue Donaldson, Will Kymlicka, Bruno Latour and Friedensreich Hundertwasser provided the theoretical base here.

The work is divided in three main parts: firstly, field research to observe, document and collect data, secondly short design exercises to understand the relationships of the species in their ecosystem and propose an equitable design, and lastly, creating a design strategy to communicate the found results and strategies. Mainly qualitative methods such as consultations, mapping, photography, drawing, species facts sheets, relationscapes, collaging and reflecting were the tools.
By using an abductive approach, meaning to simultaneously look at literature and the specific site, the strategy on how to respond to this thesis' question was produced.

keywords: *post anthropocentric, design strategies, more-than-human rights, interspecies relationships, post-industrialism, rural*

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Das Alte stürzt, es ändert sich die Zeit,
Und neues Leben blüht aus den Ruinen.

The old is falling, the time is changing,
And new life is blossoming from the ruins.

in Wilhelm Tell by Schiller (1981, p. 482*)*

Tanzt unsere Welt
mit sich selbst schon im Fieber?
Liegt unser Glück
nur im Spiel der Neutronen?   *Dances our world*
Wird dieser Kuss   *already with itself in fever?*
und das Wort,   *Lies our luck*
das ich dir gestern gab   *only in the play of the neutrons?*
schon das letzte sein?   *Will this kiss*
Wird nur noch Staub   *and the word,*
und Gestein   *which I gave you yesterday*
ausgebrannt alle Zeit   *already be the last?*
auf der Erde sein?   *Will only dust*
                                      and stone
Uns hilft kein Gott,   *scorched all the time*
unsere Welt zu erhalten   *remain on this earth?*

Fliegt morgen früh um halb drei   *No god helps us,*
nur ein Fluch und ein Schrei   *to preserve our world*
durch die Finsternis?
Muss dieser Kuss   *Flies tomorrow morning at half past two*
und das Wort,   *only a curse and a scream*
was ich dir gestern gab   *through the darkness?*
schon das letzte sein?   *Must this kiss*
Soll unser Kind,   *and the word*
das die Welt noch nicht kennt   *which I gave you yesterday*
alle Zeit ungeboren sein?   *already be the last?*
                                  Should our child,
Uns hilft kein Gott   *which yet does not know the world*
unsere Welt zu erhalten   *remain unborn for all time?*

No god helps us,
to preserve our world

The Blue Planet

Der Blaue Planet by Karat (1982)

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INTRO

EXPLORATION

The joy created through a playful interaction with one's cat, the warmth of a sweater knitted from the wool of a sheep, the relief of pain after taking an antibiotic derived from fungi, the calming presence in a forest of high grown spruces - the entanglement between, and the humans dependence on more-than-human species cannot be denied.

Yet, speaking from a point of view rooted in the Western Cultures, the relationships between human and more-than-human species are often based on a state of imbalance, unilateral, exploitative, taken for granted.

In contrast to how humans relate to fellow humans, aiming for treating everyone equally, stands the treatment of other species. Regarding fauna, for example, the 'usefulness' of an animal for humans is crucial. A categorization into domestic, liminal or wild animal describes here the type of relationship towards the animal (Deb, 2017). Along with that 'category' come different values ascribed to the animals. Especially domesticated animal bodies and workforce have been and are exploited in many different contexts. Animals are used to produce food, such as meat or eggs, they provide resources such as wool or leather, can 'protect' against other animals, and are being experimented on or related to as entertainment (Anthropocity-Vertiefung, 2022.)

Simultaneously, humans make use of flora in various settings. Next to food production for animals and humans, plants are the base for fabrics, colorants and medicine, building materials, cultivation and decoration, a part of recreational areas, shading or CO_2 compensation.

The desire to optimize and control spaces and beings - and the humans eagerness to research and use every little bit of the planet earth, results in a ridiculously small area on our planet which remains untouched. Not even 3% of the terrestrial area of planet earth, are still considered as intact ecosystems, undisturbed by humans (Plumptre et al., 2021).

The fatality of human decision-making is also seen in the production of architecture. The building sectors' interventions in ecosystems in order to build are often extreme: cutting down whole forests, drying out swamps or digging deep into earth's outer shell to extract building materials. Hereby, the wellbeing of other species is considered only seldom - their death, expulsion and extinction does not concern humans. As we know, this inconsideration causes various different problems for many different actants.

How did we reach this point? One answer could be that from a human point of view, more-than-human species are considered as not equal to the human species. Another answer may be that interspecies communication is limited or works differently to intraspecies communication. However, more-than-human voices are categorically left out in political as well as design processes.

Instead of continuing down the road of ignorance, we, the humans, could try something else: Recognizing that we all, flora, funga, fauna, humans and other entities, share this planet. From an architectural perspective this should lead us to being interested in how the built environment can become an environment that is accessible for and home to multiple species. To facilitate that, we have to question our processes and decision-taking in most of the design processes (Fig. 2, 3).

A former grain silo in rural Germany offers the perfect location to test out an approach where more-than-human species are involved in the design processes. Having been abandoned by humans for around 30 years, more-than-human actors reclaimed the site, inhabiting and overgrowing the buildings as well as the cobblestone yard. Now, the site has a new human owner, with new plans for it. So, this might be a chance to learn from the processes of reclaim through flora, funga and fauna, understanding their forms of resilience (Fig. 1). While proposing designs that take more-than-human rights and needs seriously.

controlled by human
again, but also:
possibility to interact in
design outcome and
cooperate with more-
than-human actants

past   now   desired future

inhabited by flora,   controlled by humans   years of laying fallow,   inhabited by flora,
funga, fauna   abandoned by humans,   funga, fauna, humans
                                                           reclaimed by flora, funga,
                                                           fauna

intact ecosystem   disturbed ecosystem   recovering ecosystem   intact ecosystem

Figure 1
Process of reclaim

THESIS QUESTIONS AND OBJECTIVES

Research Question

How can we integrate more-than-human voices into design processes through exploring human-more-than-human relationships, on a former industrial site?

Sub Questions

01. Why is it important/just to include more-than-human voices in design processes?

02. Which more-than-human species can be found on site and in which ways do they reclaim former industrial sites?

03. What is the criteria to select a more-than-human species to co-design with?

04. How do we listen to more-than-human voices?

05. How do we make relationships with more-than-human species visible?

06. How can we educate humans to appreciate more-than-human presence and through that change the perception of 'abandoned', 'lost' or 'wild' spaces?

Aims

01. Understanding and challenging human and more-than-human appropriation of former industrial sites in rural areas

02. Finding strategies to design in a more equitable way for the human and more-than-human species involved in a design process

03. Making the entanglement and relationships between human and more-than-humans visible

04. Communicating the value of more-than-human species (at former industrial sites)

05. To contribute to change the understanding of 'revitalizing', of 'ruined' buildings, of 'lost' places, to change the perception of 'wilderness', as a part of the human-non-human reconciliation

Figure 2
Common decision hierarchy in design processes
Humans deciding for all other species

Figure 3
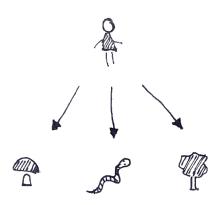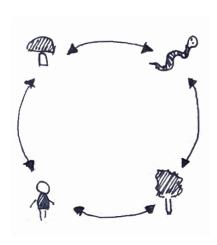*Desired decision-taking structure in this thesis*
All involved species have an equal say

DISCOURSE

This project is centered in the field of post-humanism and more-than-human participatory research.

A specific focus within the realm of more-than-human participatory research lies on 'socio-technical relations' as well as on 'more-than-human communication'. The former relates to moving past the separation of nature and culture, and human and non-human. Meaning this work is acknowledging the ample forms of entanglement between human and human, human and more-than-human and more-than-human and more-than-human. Those ideas were mainly brought forward by Bruno Latour, Michel Callon and John Law in the Actor Network Theory, which acknowledges the agency of different entities. Simultaneously, feminist philosopher Donna Haraway explores a relational view, where she argues for a kinship between beings, forming hybrids no matter if technical or social entity (Noorani & Brigstocke, 2018).

The latter connects to the attempt to listen to non-human actors' voices. With their species fact sheets Studio Animal Aided Design (Hauck & Weisser, 2015) explores one form of listening and representing non-human actors in design processes.

Both of those explorations connect to the question of (political) representation. Here, Latour's (1993) chapter ‚Parliament of Things' as well as Donaldson and Kimlycka's (2011) ‚Zoopolis' offer interesting digressions into why we should listen to more-than-human voices and how this can be facilitated.

Evidently, the entanglement of human and more-than-human can be traced back to our very first moments of existence. Nevertheless, according to Noorani and Brigstocke (2018) a shift in research practice can be observed, from an understanding in which non-humans are recognized as passive objects, to researching with and for non-humans, as active participants. This notion is also taken up in the field of architecture and seems to become an increasing interest.

More recent projects and research, focussing on multispecies interventions are presented by architectural practices as Studio Animal Aided Design or BUREAU.

The more-than-human approach in the field of design has also recently attracted particular attention. Under the title 'Making Kin', various universities, in collaboration with the Milan cultural center BASE Milano, presented their designs at the Milan design week in the spring of 2025.

POSITIONS

As previously stated, the building sector is to be held accountable for the eradication of a multitude of ecosystems and therefore massive species extinction. Not only does eradication itself pose a threat, also the built environment that follows the destruction is often little, if at all, considering the integration and well-being of more-than-humans. Since human-centered decision-taking can evidently be disastrous, including other species, or also 'non-voice parties', from planet earth in the decision-taking processes might offer more fair, equitable solutions - in politics just as much as in design processes. With the following positions I want to argue for more-than-humans having just as much the right to be involved in political and design decisions. For, in the end, we are all sharing planet earth.

Fallow (Land)
Beforehand, I want to take the opportunity to reframe our understanding of 'wasteland'. Hence, I chose to extend the meaning of 'fallow' and will be using it as a synonym to 'wasteland' in this work. Through that I want to reach a more positive framing of wasteland. Land, which had been abandoned by humans, but is still occupied by and home to numerous other species. Land that does hold value and potential.
The idea to extend on the meaning of the term 'fallow land' can be traced back to the German word 'die Brache'. For, the German word, 'die Brache' translates to either 'fallow land' or the rather negatively connotated term 'wasteland'. Whereas fallow land and lying fallow entails the agricultural practice of not cultivating land for a certain period, so that the soil can recover from the agricultural stress endured, (Cambridge Dictionary, n.d.-a) the definition of wasteland describes plots that do not serve any purpose for humans, often conceived of an unappealing character (Cambridge Dictionary, n.d.-b).

Reclaim(ing)
Refers here to the practice of reoccupation and reappropriation by more-than-human species of spaces that have been shaped by humans, such as a former industrial site.

Entanglement
This thesis is working with a post-anthropocentric view, where the human is considered as a part of nature opposed to being seen as separated from it. Consequently the human species is no further considered at the center of all processes happening on planet earth.
Overcoming the perception of a division between human and non-human, of culture and nature is a central aspect in the work of Bruno Latour, Donna Haraway and Friedensreich Hundertwasser. By recognizing that firstly humans are not solely made up of human matter, but come to life with the help of other critters, Haraway (2007) describes the foundation for the understanding of the m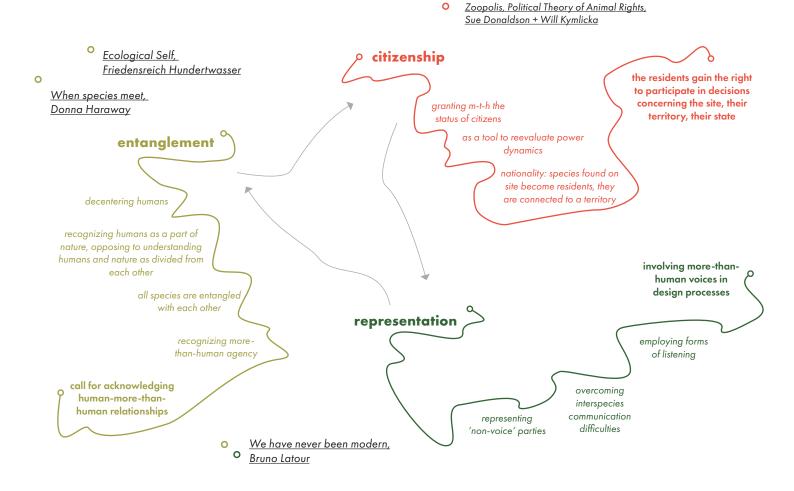ore-than-human. Following this train of thought, all human relations and interactions are not seen as solely human, but as always connected to other entities. More-than-human „Describes how human societies are always composed of varied relations between humans and non-human forces and agencies such as objects, animals, microbes, and technologies." (Noorani & Brigstocke, 2018, p. 38).
As soon as humans are no longer at the center of design processes, a room opens up to ask who else is interested in, or affected by, architectural interventions. Consequently, the awareness of more-than-human presence is followed by design processes requiring a new negotiation strategy. An abandoned silo can therefore no longer just be conceived as a space for human transformation visions. Especially, when working with a built environment that is already inhabited by more-than-human actors, their dynamics must be considered and incorporated into the design process.
This is where the concept of the 'actor network theory' comes in, which states that not only human actors have agency, but that agency is always an interplay of different actors. Agency is thus understood „as an outcome of 'actor networks', not subjects or objects" (Noorani & Brigstocke, 2018, p. 38). Consequently, more-than-human actor networks can also exhibit agency. Hence, this is of importance when it comes to understanding more-than-human actors as co-creators in design processes and not merely as passive objects.

In a multitude of projects, the artist and architect Friedensreich Hundertwasser deals with precisely this field of tension between human and nature. In the drawing 'Men's Five Skins' (Hundertwasser, 1997), Hundertwasser describes the human as immanent in nature. Texts such as 'The Gifts of Nature' (Hundertwasser, 1990) attribute agency to nature as a creative force. But also in physical projects such as performed during the Triennale in Milan, 1973, where he planted 15 tree tenants in different apartments, Hundertwasser equates humans with trees, emphasizing their importance for humans, and simultaneously questioning the often strict separation of humans and nature in cities (Hundertwasser Archiv, n.d.). Since Hundertwasser's work is not only theoretically manifested but also physically, his works served as inspiration for the design exercises.

The negotiation and visualization of different forms of relationships between humans and more-than-humans is of particular interest in this thesis. What do these relationships look like and to what extent does the existence of one entity imply another? This focus is later on explored through architectural tools. In the chapter **Deciding together** relationscapes are used to portray the type of relationships between the involved actants, the built environment and the newly inserted design interventions. The design interventions also aim to explore these entanglements spatially.

○ *Zoopolis, Political Theory of Animal Rights,*
Sue Donaldson + Will Kymlicka

○ **citizenship**

○ *Ecological Self,*
Friedensreich Hundertwasser

When species meet,
Donna Haraway

entanglement

granting m-t-h the
status of citizens

as a tool to reevaluate power
dynamics

the residents gain the right
to participate in decisions
concerning the site, their
territory, their state

nationality: species found on
site become residents, they
are connected to a territory

decentering humans

recognizing humans as a part of
nature, opposing to understanding
humans and nature as divided from
each other

all species are entangled
with each other

recognizing more-
than-human agency

call for acknowledging
human-more-than-
human relationships

involving more-than-
human voices in
design processes

representation

employing forms
of listening

overcoming
interspecies
communication
difficulties

representing
'non-voice' parties

○ *We have never been modern,*
○ *Bruno Latour*

Legend

theoretical position

main take-away
from position

○ *Literature*

Figure 4
Theoretical positions

Citizenship

Granting more-than-human entities the status of a citizen connects to the belief that not only the human species is able to have agency. At the same time it is a tool to reevaluate the current power structures. It helps to deconstruct the hierarchy where humans perceive themselves as the species in charge over all other beings. And enables species, who have been regarded as passive objects to gain agency. The idea to grant more-than-human entities citizenship connects to Donaldson's and Kymlicka's (2011) book 'Zoopolis'. In the chapter 'Extending Animal Rights via Citizenship Theory', they explain the different functions of citizenship: nationality, popular sovereignty and democratic political agency. Here, they describe the function of nationality as „to allocate individuals to territorial states" (p.55), entailing the right of residency. The second function ensures that the state citizens belong to, governs in their name, whereas the third function of citizenship contains the right to participate or at least be represented in political processes.

In this work, in the chapter **Register of Residents**, the logic of nationality is translated to the species found on site. Through that, the species found on site become citizens, citizens of their state, the site in Oßmannstedt. As residents of the site they register in the register of residents and gain the right to participate in political processes on site. Or, to be more specific in the scenario of this thesis, the right to be involved in decisions that are concerning changes to be made on site.

Representation
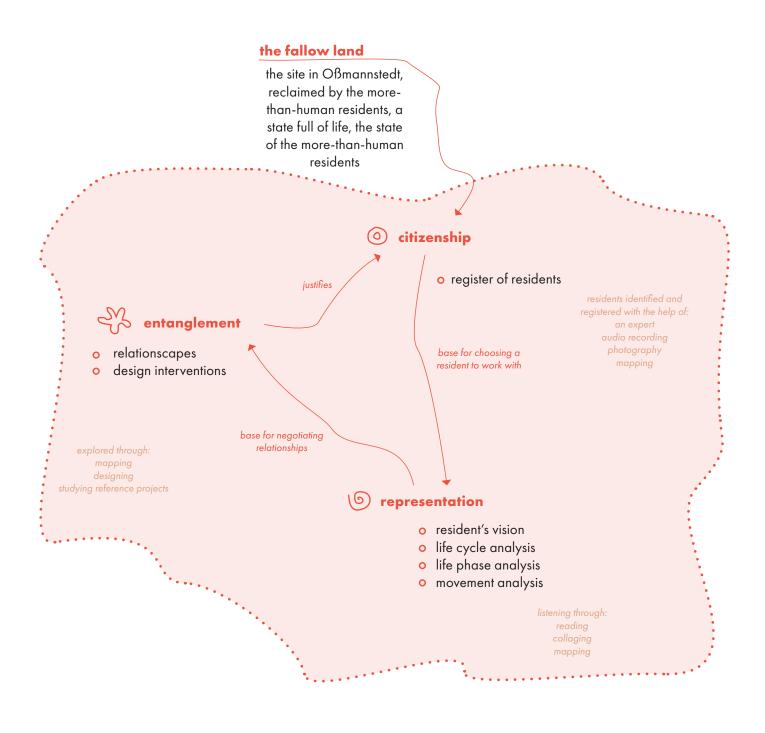
The question of representation in this design process has two components and is rooted in the difficulty of interspecies communication. Evidently, humans and other species encounter certain difficulties when it comes to communication. A solution presents the representation of more-than-human species by humans.

As a theoretical background serves Latour's (1993) 'Parliament of Things'. In his book 'We have never been modern' he elaborates on a Parliament, where 'non-voice parties', meaning parties that do not speak the same language as humans, can still be included in decision-taking processes. Through the tool of representation, a human ambassador can represent a certain species or entity.

Representation, especially if not sharing a language can be tricky. Of great importance is therefore the ability to listen to others. In this thesis, the human is listening to other entities, in order to capture their voices, or their opinions, needs, arguments regarding a specific topic raised. In that sense both, listening and voices, extend from a definition that correlates with producing sounds to a design tool. Listening is not only understood as listening to sounds, but also as observing and researching the behaviour, allocations, processes and needs of more-than-human residents. Through listening, their voices can be captured and translated. A method developed by the Studio Animal Aided Design (Hauck & Weisser, 2015) explores this tactic. By making use of architectural tools, such as mapping, drawings and collages, the non-human point of view can be communicated.

In the chapter **Deciding together** this is portrayed with the help of each resident's vision, as well as the life cycle, life phase analysis and movement analysis.

the fallow land

the site in Oßmannstedt, reclaimed by the more-than-human residents, a state full of life, the state of the more-than-human residents

citizenship

justifies

o register of residents

*residents identified and registered with the help of:
an expert
audio recording
photography
mapping*

entanglement

o relationscapes
o design interventions

base for choosing a resident to work with

base for negotiating relationships

*explored through:
mapping
designing
studying reference projects*

representation

o resident's vision
o life cycle analysis
o life phase analysis
o movement analysis

*listening through:
reading
collaging
mapping*

Legend

theoretical position   o outcome   *method*

*Figure 5
Theoretical positions, outcomes, methods*

11

METHOD

The methods and tools I have been using throughout the process of my thesis were mainly qualitative. By using an abductive approach, both the theoretical positions as well as the happenings on site, informed my design and the design strategy.

Throughout the entire process of my thesis I also used hand-drawings to document various aspects, to test out or communicate a design idea and to critically reflect upon it. By repeatedly reflecting my work and the current results, I was able to adjust certain parts of my work and the steps that followed. Otherwise, my project is divided in four main parts, but the execution of those partly overlapped.

Understanding the Workings of the Site

The first step of my thesis focussed on getting to know the project site and its residents in Oßmannstedt. In order to understand the general setting and its inhabitants, I wanted to gain a deeper insight into the history and surroundings of, as well as the materials found on the site. But most importantly, I wanted to find out who actually is inhabiting the site.

Before traveling to Oßmannstedt, I contacted the Studio Animal Aided Design and interviewed one of the founders, Prof. Dr. -Ing. Thomas E. Hauck. He answered questions regarding their method, the species fact sheets and gave me valuable tips on how to identify fauna and flora.

Prior to traveling to the site, I also created a field research diary, where I documented my findings from the site.

To gain an understanding of the human impact on site, I mapped the buildings measurements and location, which materials the existing buildings are made of and the buildings uses.

I also used mapping to allocate the found species on a site plan. Next to the diary, I used photography to capture the found species in the form of an image. Later on, I used those to create the 'Register of Residents'.

To identify the plants, I received help from an expert, a gardener. Additionally, I used audio recording to identify some species. Through that, I could identify birds by comparing the audios recorded at the site, with songs of birds found at an online database.

Through reading and interviewing my friend, who had bought the silo, I was able to compose a short chapter about the history of the site and the village.

Back in Gothenburg, I digitalized the results of the field research. The results of the field research served as the base for further in-depth research on chosen species, as well as a knowledge base for the design in the third step.

Design Principles

Condensed from the results of my chosen theory and the conducted field research I put together the design principles. They are essential for the next step, the design exercises. For the theory part I read written sources and looked at documentations of built projects.

Design Exercises

In order to be able to gain an insight into the needs and opinions of more-than-human species, I read about the chosen species and created a species fact sheet. The species fact sheet is a method developed by Studio Animal Aided Design. The results of the species fact sheets, as well as the life cycle assessment is based on their method. Through mapping, I also connected the species movements and spaces or other species that are important for them on the site.

Using a relationscape, I took a look at the power dynamics, relations and dependencies of the focus species towards other spaces and species found on site.

Studying reference projects served as inspiration for the design outcome.
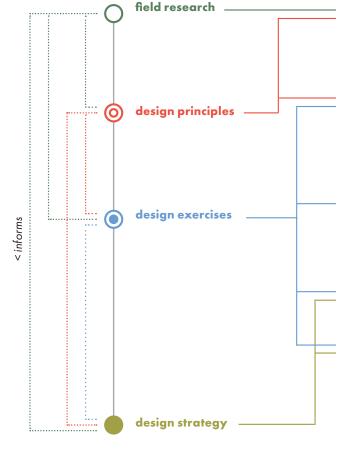
To highlight the presence of the chosen species in a certain space, I used collaging.

Through designing I translated the previously acquired knowledge into a spatial intervention. Those are expressed by using different types of drawings, such as axonometries or sections, I am showing the broader situation of the implemented design and a more detailed, zoomed in view.

Design Strategy

The design strategy describes the approach researched in this thesis on how to design together with more-than-humans. Here, I reviewed all the steps I had taken throughout the process of my thesis and condensed it to an easy to read guideline.

Steps

field research

design principles

design exercises

< informs

design strategy

Aims

01. Understanding and challenging human and more-than-human appropriation of former industrial sites in rural areas

02. Finding strategies to design in a more equitable way for the human and more-than-human species involved in a design process

03. Making the entanglement and relationships between human and more-than-humans visible

04. Communicating the value of more-than-human species (at former industrial sites)

05. To contribute to change the understanding of ‚revitalizing', of ‚ruined' buildings, of ‚lost' places, to change the perception of ‚wilderness', as a part of the human-non-human reconciliation

Figure 6
Steps-Aims Diagram

Methods

photography

audio recording

interviews

field work diary

consulting an expert

mapping

drawing

studying reference projects

collaging

species fact sheet

relationscapes

designing

reading

Figure 7
Methods

DELIMITATIONS

This thesis researches how to include the voices of more-than-humans into design processes. A key element is to make existing relationships between humans and more-than-humans visible.

The selection of an industrial fallow land as the setting for this thesis can mainly be attributed to the fact that here - 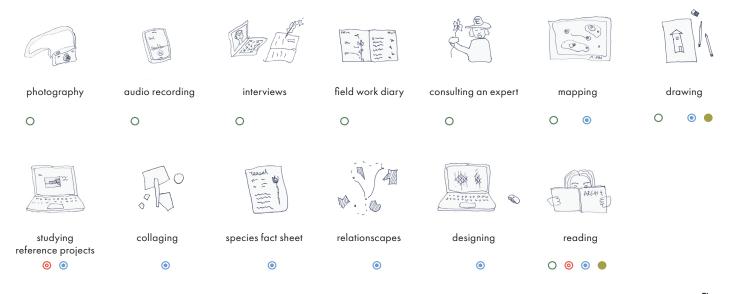especially after 30 years of lying fallow - both human and more-than-human actors have appropriated the site in their ways, specific to each species. The questions of conservation and transformation (that usually arise in the context of an architectural discourse) are therefore only of secondary interest to me. Rather, I understand the human and more-than-human appropriations or visions of transformation and conservation as the values they attribute to the site and buildings. Recognizing these attributions then helps me to negotiate a use of the site that does justice to several perspectives, not just the human one.

The field research's purpose in this work does not aim to present every single species that can be found on site. Collecting and locating species in this work should serve A, to gain a better understanding of local species and their relationships towards each other and the built environment, and B, to have a number of species to work with in the design exercise.
To narrow down the ample scope of the over 80 more-than-humans I found on site, I decided to test the approach in two different design exercises. Each exercise focuses on the relationship between one human actor and one more-than-human actor found on site.

Here, I would like to point out two aspects: Firstly, the locations of the species are approximate. Documenting the exact location would have required different equipment and is not relevant to the aims stated above. Secondly, I want to disclaim the accuracy of the identified species. Since this thesis is conducted in the field of architecture, I do not have the required knowledge in the fields of botany, biology or zoology. Nevertheless, I did my best to identify the residents with their corresponding binomial names, but it is possible that I did not identify a resident correctly. Of course, in case a project similar to the one presented in this work is translated to a reality, the identity of the residents should be certain.

Although fungi are included in the title of this thesis, I chose not to work with them specifically in my designs. This has mainly one reason: Fungi, especially to an amateur's eye like mine, are quite hard to detect, if they do not currently produce fruiting bodies. But they do play an important role regarding the communication between species of flora and can also be part of other organisms. So, even though this thesis is not directly working with fungi, they are most probably involved in the design to some degree.

Due to time limitations, the design results will not be explored on site.

The results of the design experiments, as well as my method to listen to and represent more-than-human voices is just one approach of many possible. I am aware of the difficulties of interspecies communication. I am also aware that by only focussing on one species, other species voices, not in focus, are overlooked. Most importantly, this work aims to highlight the entanglement between species and encourages humans to take a closer look. This work is supposed to inspire, to try out and find those relationships yourself, rather than proposing 'one correct way'. The proposed design solutions should also not encourage to perceive more-than-humans as humans, which they are not. They rather focus on the variety of relations one can have with another.

RESIDENTS OF THE FALLOW LAND

INTERWOVEN MATTER

Challenging Heritage

A few years ago, a friend of mine bought this former grain silo (Fig 11), close to Weimar in Germany, where I used to study during my Bachelors degree.
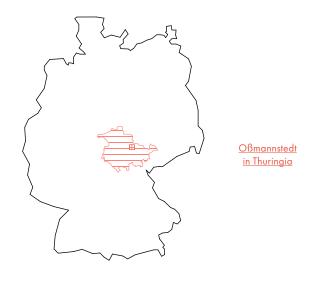
The silo resides in Oßmannstedt (Fig. 8). This village of approximately 1252 inhabitants (Gemeinde Ilmtal-Weinstrasse, 2020) can be found in the heart of Germany, in a rural area of the state Thuringia. Close to the river Ilm and surrounded by the soft hills of agricultural land, Oßmannstedt is a village of a calmer character. Still, it is well connected: the local train runs to the bigger neighboring towns, Weimar and then Erfurt towards the west, Apolda and later Leipzig towards the east. A historical highlight is the Wieland Estate, where Christoph Martin Wieland, an important German writer of the Enlightenment used to reside from 1797 till 1803 (Klassik Stiftung Weimar, n.d.). Another point of attraction is the public summer pool, especially beloved by the inhabitants of Thuringia, an area without many natural lakes nor access to the sea (Fig 10).

Although the village is not suffering from empty standing buildings in general and attracts some visitors for previously stated reasons, the silo has been standing empty for around 30 years before my friend bought it (Institut für Graue Energie, n.d.). The silo's vacancy is nothing unusual: The change in industrial production in general, as well as the location specific mechanisms in a former Eastern German state have led to numerous, now by humans abandoned industrial sites in the central eastern region of Germany. Some factors are for example the migration of qualified workers from east to west (Martens, 2020, May 7), as well as a lower financial capital in the eastern parts, the move of production from eastern to western locations after Germany's reunification (Martens, 2020, May 28), and of course the general challenges of rural areas. Such as more and more people leaving the countryside to move to the bigger cities (Demografie Portal, 2024).

Especially when built in rural areas, these production-specific architectures leave a difficult heritage. And questions arise: How will their futures look like? Who will take care of them? Is it possible to transform, revitalize them? Or are decay and demolishing the answer?
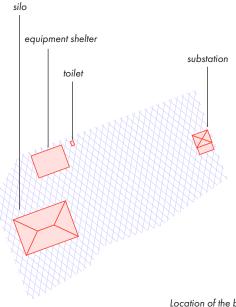
The silo my friend bought was completed in the year of 1941. As part of preparations for the war, the silo carries a difficult Nazi heritage. During GDR times it was used as a cooperative silo, up until the 1970s. In 1990 it was sold and since then, the site lay fallow (Institut für Graue Energie, n.d.). Next to the silo a small substation and the remains of a warehouse can be found on the site as well (Fig 9).

With those questions in mind and at the same time being aware of the mechanics of the climate change as well as the ever closer

Oßmannstedt in Thuringia

Germany

Figure 8
Location of Oßmannstedt in Germany
Scale 1:13.333.333

↑
N

silo

equipment shelter

toilet

substation

↑
N

Figure 9
Location of the buildings on site
Scale 1:1000
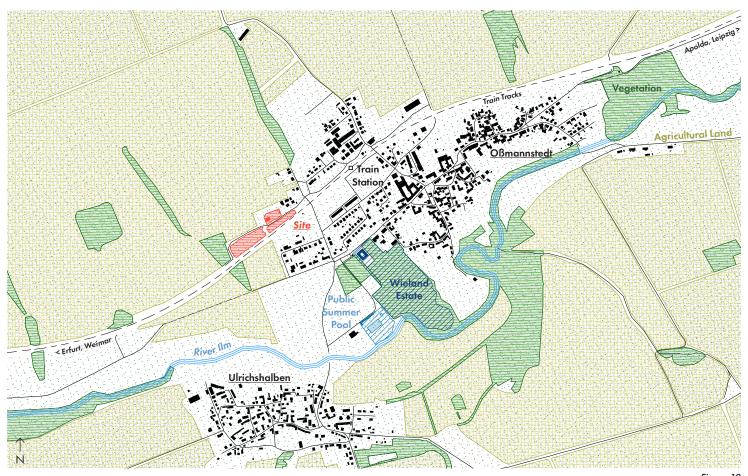
Figure 10
Oßmannstedt and surroundings
Scale 1:13.333

Figure 11
The silo
February 2025

coming shortage of resources, demolishing a building such as the silo, where huge amounts of resources have already been put into, does not seem smart. Consequently, strategies to deal with this industrial heritage are tested on the site of the silo.

Place of Inspiration
What impressed me most, one of the first times I visited the site, next to the heavy concrete structure of the silo, was the degree to which the whole site was overgrown by different kinds of plants.
During the years of it lying fallow, human and more-than-human actors continued to engage with the buildings and their surroundings. Whereas human actors referred to the site as more of a landfill and stuffed the basement with old car tires and such, fauna, funga and flora started to reclaim the site. Over the 30 years it had turned into a dense forest of grass, shrubs and trees.

Now, my friend has specific ideas of what he wants to do with the place. Turn the silo into a planning office and workshop, the substation into a small apartment, the yard into a material storage (compare to chapter **Human Vision**).

But I could not help but wonder, who actually has the right to make the decisions here? Just because some human beings built that silo there does not mean that this space eternally belongs to humans. It has not from begin with.

When I was taking a closer look at the more-than-human reclaim of the site, all sorts of interactions between them and the human built environment appeared: The cobblestone yard was overgrown by a thick layer of grass and soil, as well as the train tracks which used to connect the silo to the train network. Blackberry bushes had taken control over most of the site. Roots seemed not to be stopped: either interwoven with the cobblestone or pushed through walls, even climbing up on the silos roof, sprouting small trees. (Fig. 12-16)
The fauna had taken a liking to the place just as much: A pair of kestrels had moved into the roof of the silo and cats found a playground in the basement.

All those interactions with the site lead me to question how we, as humans, prioritize and decide which species are allowed to reside on those sites. Therefore, I want to explore from a more-than-human point of view the possibilities of the future of the silo. In which forms and to which extent can humans and more-than-humans design together? How can humans consider more-than-human needs in planning processes? And, are more-than-humans able to take design decisions themselves?

Figure 12
Grass growing on the roof of the silo
May 2022

Figure 13
A hazel growing through a stone wall
May 2022

Figure 14
Blackberry overgrowing the site and cut back by humans
May2022

Figure 15
Garlic mustard growing on a concrete wall
May 2022

Figure 16
Flora in front of the substation
May 2022

TAKING A CLOSE LOOK

Cataloging species and mapping the site was a central part of the field research. Studying and immersing myself into the actual site, mapping it, taking pictures and later categorizing and organizing the found data served several purposes. It can be seen as an integral first step towards interspecies communication. Therefore, in this chapter, I have collected the findings from my field research.

Human Inheritance (Pages 36-39)
With 'Human Inheritance', I am referring to the environment that was built by human actors. On site, several different buildings can be found of different character and materiality, more permanent or more temporary, built almost a hundred or just a few years ago. Mapping the four buildings and their materials gave me an understanding of possible locations for the design, but of course, by taking a close look at a built structure, its story and its relationship to its surroundings is revealed.

Register of Residents (Pages 24-35)
Next to mapping the buildings, I created a 'Register of Residents', containing the residents I found and was able to identify on site. The 'Register of Residents' is rooted in the fields of biology/zoology/botany. It was later used to select residents to work with in the design part, but also to identify connections between the residents on site. I was able to collect 74 residents of flora and 10 residents of fauna.
The second purpose of creating such a catalogue was to merely immerse myself into the existing ecosystem, getting to know and appreciating its diversity. By getting to know the residents and understanding their dependencies, the humans sensibility towards their role in the local ecosystem is sharpened.

Ecological Processes on Site
One of the first realizations I had when returning to the site in Oßmannstedt this February 2025 was, that together with two other adjacent sites, the 'ecological succession' of an industrial fallow was perfectly visible here. That means, if humans stop to interfere with a space that had been disturbed - just as in the case of the site of the silo - more-than-human actors will reclaim it.
As a former industrial site, the site of the silo can clearly be identified as an industrial fallow land. An ecosystem that had been drastically disturbed or eradicated, which then slowly starts to rebuild itself. Here, a process called 'ecological succession' is happening, which describes how various biological communities, flora, fungi and fauna, go through stable and less stable phases (Fig. 18). One community often prepares the arrival of the next one, until a well-balanced system establishes itself, the so-called 'climax community'. Since biological communities have existed at this site before, we are looking at a secondary succession (Witynski, n.d.).

State of Reclaim (Fig 17)
Specific to the site in Oßmannstedt, I have categorized the stages of the three fallow lands into the following:

THE GRASSLAND
The process of ecological succession is started by pioneer plants. Plants which are likely to establish themselves at those disturbed sites, because "they tend to germinate, grow, mature, and reproduce quickly; and they produce large numbers of offspring, either asexually or through wind-dispersed pollen, spores, and seeds." (Sottosanti, 2023). As seen in Oßmannstedt, this vegetation is not particularly dense. In the first years it appears as a grassland, around 1m high.

For example, the species found on site are:
Wild Teasel

THE SHRUBS
The grassland is followed by the shrubs. The first pioneer plants have prepared the soil for other species. As the ecosystem becomes more stable, a higher variety in flora establishes itself. Different types of fauna can find a home there as well. The shrubs are denser and growing higher than the grassland.

For example, the species found on site are:
Blackberry, Canadian Goldenrod, Tansy

THE DISTURBED FOREST
If not disrupted by humans, eventually the ecosystem will become stable and balanced. Some species have had the time to grow up high, the trees. But in the case of Oßmannstedt, due to recent human involvement, many species have been removed again. Humans can take on different roles in the ecological succession, preventing or helping the ecosystem to stabilize itself.

For example, the species found on site are:
Birch, Hazel, Elderflower, Cherry

All of the residents' locations can be found on the pages 34-35. Species appearing at sites that have experienced disturbance through human impact are also called ruderal species (Hetzel & Moos, 2002).

the disturbed forest

the grassland

the shrubs

train tracks

N

Figure 17
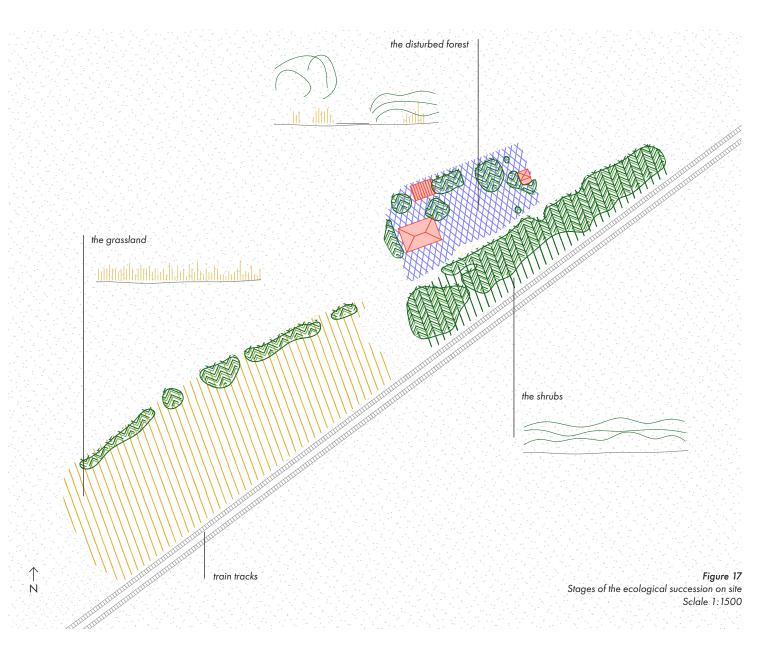*Stages of the ecological succession on site*
Sclale 1:1500

Figure 18
Ecological succession
Sequence of various biological communities becoming more stable
and diverse over time, in cyclic periods

REGISTER OF RESIDENTS

photo of resident, if available

*** Index Number_Binomial name**
Family
Common name

The 'register of residents' became a register of residents thanks to the theoretical background of this thesis. Especially Donaldson's and Kymlicka's book 'Zoopolis' inspired me to move away from seeing the species found on site as mere species, but to understanding them as residents of the site, equal to the humans.

Identification of the Residents

The compilation of the residents was possible due to older records of mine and the help of an expert, a gardener. Since we traveled to the site in February, many of the plants either did not have any leaves or were dried out. This makes the identification to an amateur's eye, as well as to helpful phone applications, almost impossible. As I learned from the gardener, indices other than leaves or flowers are, for example, dried up fruit, thorns, patterns of the bark or how many stems of a flower meet each other.

I also want to note here, that the locations I noted down on the map on pages 34-35 are an approximate location (Fig. 20). Some residents lack a picture. Those lacking a picture are mainly the residents from my old records.

As visible in the register, compared to the floral residents, only little faunal residents were recorded. This is, again, due to the time the field research was conducted, winter, where many residents were still asleep. Two bird residents, the *Carrion crow* and the *Eurasian eagle-owl* were identified through audio recording. I then compared their recorded voices to voices of birds found on https://www.deutsche-vogelstimmen.de.

Pioneers and Invaders

While composing the register of residents, I came across two categories for species, which are interesting to this work.

When interacting with an ecosystem as a human and in this case an industrial fallow, it is helpful to understand the categories 'invasive species' and 'pioneer species'. Initially, I wanted to annotate which residents were invasive and which could be considered pioneer species. Ultimately, I decided not to annotate those categories and I will shortly explain why.

While researching what 'invasive species' meant, I came to two conclusions. Since species have been migrating to a certain extent ever since their existence, many species can be declared as 'introduced species' or also 'neobiota'. Neobiota are then divided into 'neozoa', referring to animals and 'neophyta', referring to plants. This migration of species was accelerated through human's trade and travels. Yet, an 'introduced species' is not necessarily harmful to its new ecosystem. Only if a species is considered to be harmful, it is called 'invasive species' (Bundesamt für Naturschutz, n.d.). To keep track and remove those, the European Commission issued a list of species that are considered invasive and harmful to the local European ecosystems (Nehring & Skowronek, 2023). I compared the list with my register of residents and found that none of the residents were clarified as 'invasive'.

Regarding the labeling of the pioneer plants I found it rather difficult to find an exact definition or extensive list of pioneer species. As I was trying to understand which species are pioneers and which ones are not, I concluded that many species found on site can appear within the first stages of the secondary ecological succession. Which is only logical, since those ecosystems at the site are rather young. Nevertheless, researching if every single resident found on site could be classified as a pioneer species, would have defeated the purpose of this thesis.

The Stories of the Residents

Researching only one resident in depth, as I will do later on in this work, reveals already many factors about the site. A certain resident's presence can, for example, provide insights about the conditions of the soil or one might understand how the presence of one resident invites another resident.
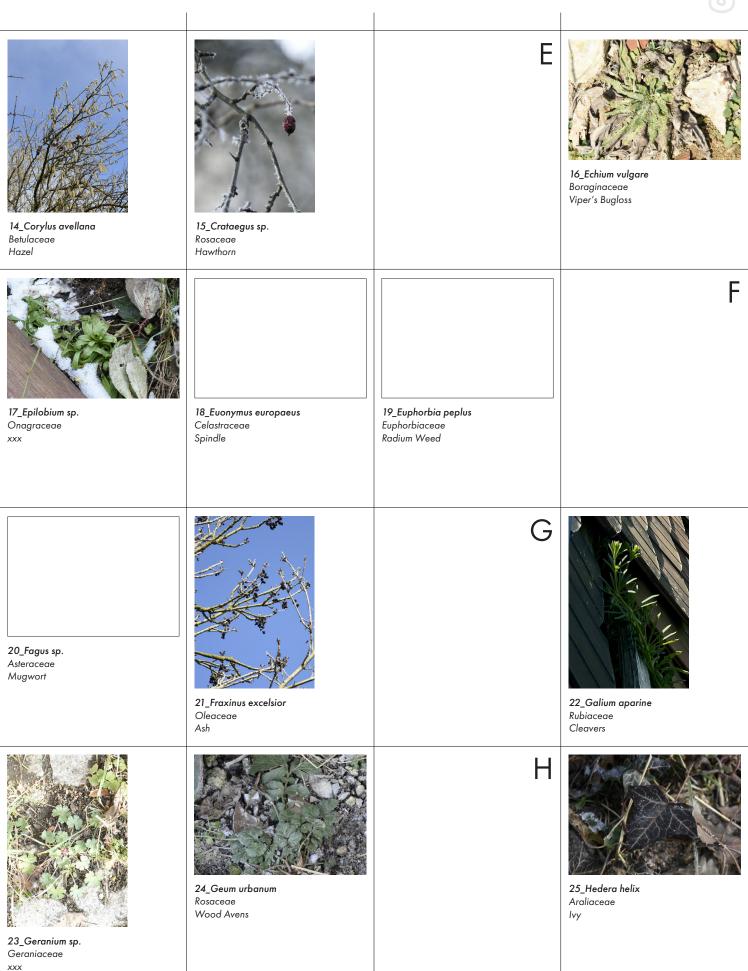
An aspect that can be challenged here, is the perception of some residents as 'weeds'. Why are certain, especially cultivated plants perceived as beautiful, while other plants, often local and therefore very well adapted to the local conditions, are perceived as not so beautiful? Do humans need the feeling to be in control in order to assign the attribute 'beauty' to them?

A
FOUND FLORA, SILO

01_Acer campestre / Sapindaceae / Field Maple
02_Alcea sp. / Malvaceae / Hollyhocks
03_Alliaria petiolata / Brassicaceae / Garlic Mustard
14_Corylus avellana / Betulaceae / Hazel
15_Crataegus sp. / Rosaceae / Hawthorn

E
16_Echium vulgare / Boraginaceae / Viper's Bugloss

J
26_Juglans regia / Juglandaceae / Common Walnut

L
27_Lepidium draba / Brassicaceae / Whitetop

B
04_Artemisia vulgaris / Asteraceae / Mugwort
05_Ballota nigra / Lamiaceae / Black Horehound / origin: Mediterranean region
06_Bellis perennis / Asteraceae / Daisy
17_Epilobium sp. / Onagraceae / xxx
18_Euonymus europaeus / Celastraceae / Spindle
19_Euphorbia peplus / Euphorbiaceae / Radium Weed

F
28_Ligustrum sp. / Oleaceae / Privet
29_Lolium perenne / Poaceae / Perennial Ryegrass
30_Lonicera sp. / Caprifoliaceae / Honeysuckle

M

C
07_Betula pendula / Betulaceae / Silver Birch
08_Calystegia sepium / Convolvulaceae / Hedge Bindweed
09_Capsella bursa-pastoris / Brassicaceae / Shepherd's Purse
20_Fagus sp. / Asteraceae / Mugwort
21_Fraxinus excelsior / Oleaceae / Ash

G
22_Galium aparine / Rubiaceae / Cleavers
31_Mahonia sp. / Berberidaceae / xxx
32_Malus sp. / Rosaceae / Wild Apple
33_Medicago lupulina / Fabaceae / Hop Clover

O

10_Centaurea benedicta / Asteraceae / St. Benedict's thistle / origin: Mediterranean region
11_Chaerophyllum sp. / Apiaceae / xxx
12_Chelidonium majus / Papaveraceae / Greater Celandine
13_Cornus sp. / Cornaceae / Dogwood
23_Geranium sp. / Geraniaceae / xxx
24_Geum urbanum / Rosaceae / Wood Avens

H
25_Hedera helix / Araliaceae / Ivy
34_Oenothera biennis / Onagraceae / Common Evening-Primrose

P
35_Papaver orientale / Papaveraceae / Oriental Poppy
36_Plantago lanceolata / Plantaginaceae / Ribwort Plantain

37_Prunus cerasus / Rosaceae / Sour Cherry
38_Prunus padus / Rosaceae / Bird Cherry
39_Prunus spinosa / Rosaceae / Blackthorn

Q
50_Syringa sp. / Oleaceae / Lilac

T
51_Tanacetum vulgare / Asteraceae / Rainfarn

U

L
56_Lathyrus sp. / Fabaceae / xxx

P
57_Potentilla thuringiaca / Rosaceae / Thüringisches Fingerkraut

40_Quercus sp. / Fagaceae / Oak

R
41_Ribes rubrum / Grossulariaceae / Red Currant
42_Rosa agrestis / Rosaceae / Field Briar
52_Urtica sp. / Urticaceae / Stinging Nettle

V
53_Verbascum thapsus / Scrophulariaceae / Great Mullein
54_Veronica / Plantaginaceae / Speedwell
39_Prunus spinosa / Rosaceae / Blackthorn

R
43_Rubus sp. / Rosaceae / Blackberry

S

43_Rubus sp. / Rosaceae / Blackberry
44_Rumex thyrsiflorus / Polygonaceae / Compact Dock

S
45_Sambucus sp. / Adoxaceae / Elderflower
58_Salix caprea / Salicaceae / Goat Willow
59_Silene chalcedonica / Caryophyllaceae / Scarlet Lychnis
60_Solidago canadensis / Asteraceae / Canadian goldenrod

T

46_Silene vulgaris / Caryophyllaceae / Bladder Campion
47_Spiraea sp. / Rosaceae / Meadowsweets
48_Stellaria media / Caryophyllaceae / Chickweed
49_Sumaria officinalis / Papaveraceae / Common Fumitory

D
FOUND FLORA, FALLOW
55_Dipsacus fullonum / Caprifoliaceae / Wild Teasel

J
26_Juglans regia / Juglandaceae / Common Walnut
51_Tanacetum vulgare / Asteraceae / Rainfarn

V
53_Verbascum thapsus / Scrophulariaceae / Great Mullein

xx
FLORA, UNIDENTIFIED

61_xxx / Apiaceae / xxx
62_xxx / xxx / Moss
63_xxx / xxx / Thistle

A
FOUND FAUNA
a_Aglais io / Nymphalidae / European peacock

B
b_Bubo bubo / Strigidae / Eurasian eagle-owl

64_xxx
65_xxx
66_xxx
67_xxx

C
c_Corvus corone / Corvidae / Carrion crow

F
d_Falco tinnunculus / Falconidae / Kestrel

68_xxx
69_xxx
70_xxx
71_xxx
e_Felis catus / Felidae / House Cat

P
f_Parus major / Paridae / Great tit
g_Pica pica / Corvidae / Eurasian magpie

72_xxx
73_xxx
74_xxx

xx
h_xxx / Brachycera / Fly
i_xxx / Mustelidae / Marten
j_xxx / Picidae / Woodpecker

A

FOUND FLORA, SILO

01_Acer campestre
Sapindaceae
Field Maple

02_Alcea sp.
Malvaceae
Hollyhocks

03_Alliaria petiolata
Brassicaceae
Garlic Mustard

B

04_Artemisia vulgaris
Asteraceae
Mugwort

05_Ballota nigra
Lamiaceae
Black Horehound
origin: Mediterranean region

06_Bellis perennis
Asteraceae
Daisy

C

07_Betula pendula
Betulaceae
Silver Birch

08_Calystegia sepium
Convolvulaceae
Hedge Bindweed

09_Capsella bursa-pastoris
Brassicaceae
Shepherd's Purse

10_Centaurea benedicta
Asteraceae
St. Benedict's thistle
origin: Mediterranean region

11_Chaerophyllum sp.
Apiaceae
xxx

12_Chelidonium majus
Papaveraceae
Greater Celandine

13_Cornus sp.
Cornaceae
Dogwood

E

14_Corylus avellana
Betulaceae
Hazel

15_Crataegus sp.
Rosaceae
Hawthorn

16_Echium vulgare
Boraginaceae
Viper's Bugloss

F

17_Epilobium sp.
Onagraceae
xxx

18_Euonymus europaeus
Celastraceae
Spindle

19_Euphorbia peplus
Euphorbiaceae
Radium Weed

G

20_Fagus sp.
Asteraceae
Mugwort

21_Fraxinus excelsior
Oleaceae
Ash

22_Galium aparine
Rubiaceae
Cleavers

H

23_Geranium sp.
Geraniaceae
xxx

24_Geum urbanum
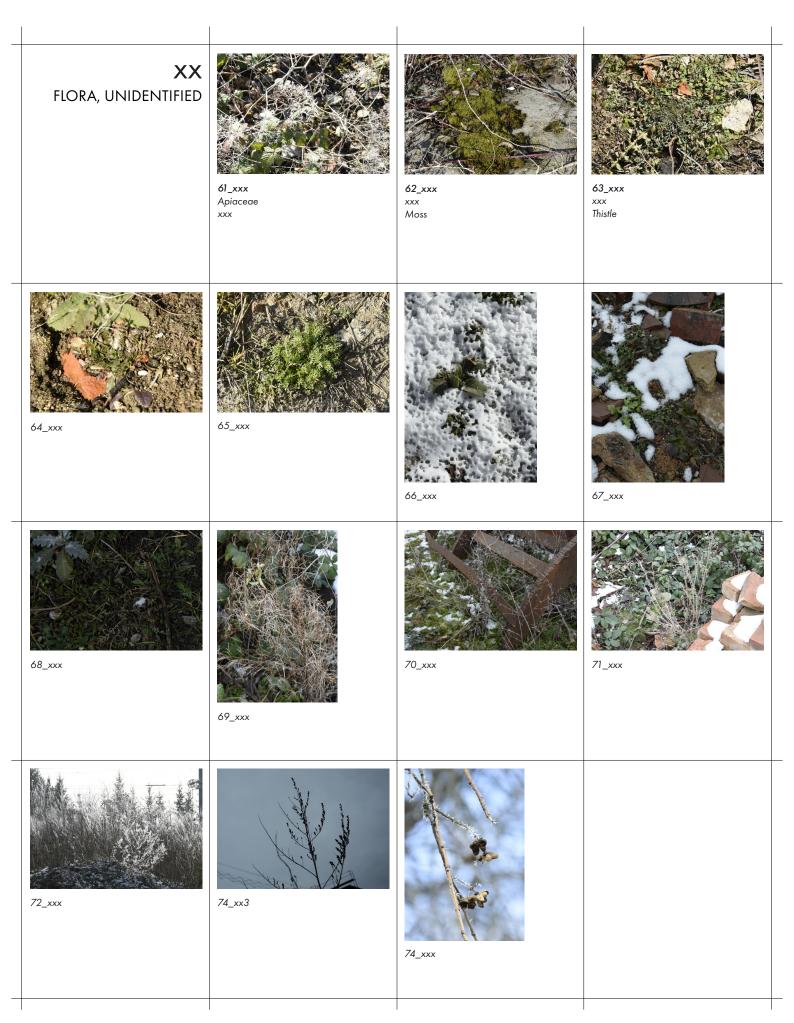*Rosaceae*
Wood Avens

25_Hedera helix
Araliaceae
Ivy

J

26_Juglans regia
Juglandaceae
Common Walnut

L

27_Lepidium draba
Brassicaceae
Whitetop

M

28_Ligustrum sp.
Oleaceae
Privet

29_Lolium perenne
Poaceae
Perennial Ryegrass

30_Lonicera sp.
Caprifoliaceae
Honeysuckle

O

31_Mahonia sp.
Berberidaceae
xxx

32_Malus sp.
Rosaceae
Wild Apple

33_Medicago lupulina
Fabaceae
Hop Clover

34_Oenothera biennis
Onagraceae
Common Evening-Primrose

P

35_Papaver orientale
Papaveraceae
Oriental Poppy

36_Plantago lanceolata
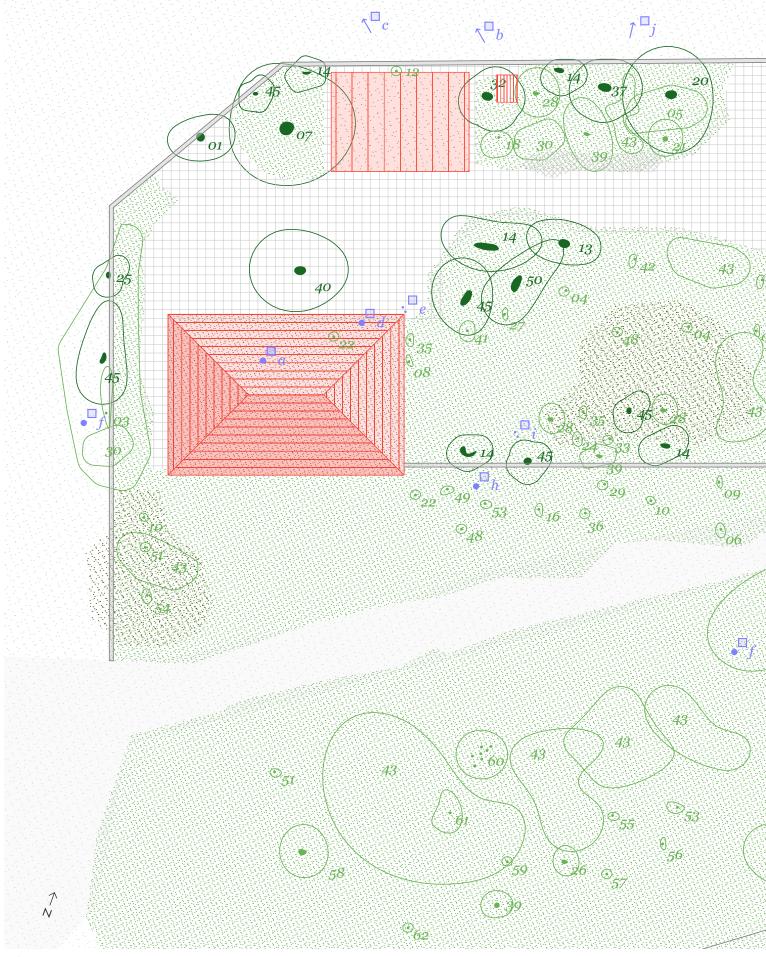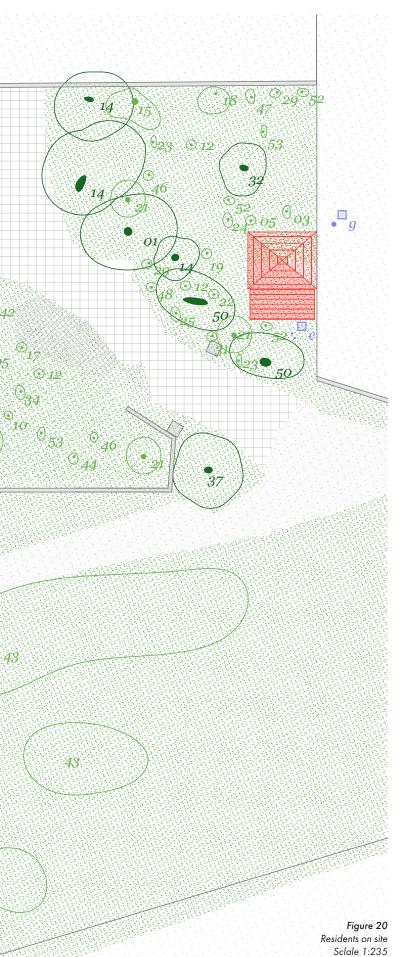*Plantaginaceae*
Ribwort Plantain

Q

37_Prunus cerasus
Rosaceae
Sour Cherry

38_Prunus padus
Rosaceae
Bird Cherry

39_Prunus spinosa
Rosaceae
Blackthorn

R

40_Quercus sp.
Fagaceae
Oak

41_Ribes rubrum
Grossulariaceae
Red Currant

42_Rosa agrestis
Rosaceae
Field Briar

S

43_Rubus sp.
Rosaceae
Blackberry

44_Rumex thyrsiflorus
Polygonaceae
Compact Dock

45_Sambucus sp.
Adoxaceae
Elderflower

46_Silene vulgaris
Caryophyllaceae
Bladder Campion

47_Spiraea sp.
Rosaceae
Meadowsweets

48_Stellaria media
Caryophyllaceae
Chickweed

49_Sumaria officinalis
Papaveraceae
Common Fumitory

50_Syringa sp.
Oleaceae
Lilac

T

51_Tanacetum vulgare
Asteraceae
Rainfarn

U

V

52_Urtica sp.
Urticaceae
Stinging Nettle

53_Verbascum thapsus
Scrophulariaceae
Great Mullein

54_Veronica
Plantaginaceae
Speedwell

D

FOUND FLORA, FALLOW

55_Dipsacus fullonum
Caprifoliaceae
Wild Teasel

J

26_Juglans regia
Juglandaceae
Common Walnut

L

56_Lathyrus sp.
Fabaceae
xxx

P

57_Potentilla thuringiaca
Rosaceae
Thüringisches Fingerkraut

39_Prunus spinosa
Rosaceae
Blackthorn

R

43_Rubus sp.
Rosaceae
Blackberry

S

58_Salix caprea
Salicaceae
Goat Willow

59_Silene chalcedonica
Caryophyllaceae
Scarlet Lychnis

60_Solidago canadensis
Asteraceae
Canadian goldenrod

T

51_Tanacetum vulgare
Asteraceae
Rainfarn

V

53_Verbascum thapsus
Scrophulariaceae
Great Mullein

XX
FLORA, UNIDENTIFIED

61_xxx
Apiaceae
xxx

62_xxx
xxx
Moss

63_xxx
xxx
Thistle

64_xxx

65_xxx

66_xxx

67_xxx

68_xxx

69_xxx

70_xxx

71_xxx

72_xxx

74_xx3

74_xxx

A
FOUND FAUNA

a_Aglais io
Nymphalidae
European peacock

B

b_Bubo bubo
Strigidae
Eurasian eagle-owl

C

c_Corvus corone
Corvidae
Carrion crow

F

d_Falco tinnunculus
Falconidae
Kestrel

e_Felis catus
Felidae
House Cat

P

f_Parus major
Paridae
Great tit

g_Pica pica
Corvidae
Eurasian magpie

XX

h_xxx
Brachycera
Fly

i_xxx
Mustelidae
Marten

j_xxx
Picidae
Woodpecker

Residents on Site

FLORA

01_Acer campestre
02_Alcea sp.
03_Alliaria petiolata
04_Artemisia vulgaris
05_Ballota nigra
06_Bellis perennis
07_Betula pendula
08_Calystegia sepium
09_Capsella bursa-pastoris
10_Centaurea benedicta
11_Chaerophyllum sp.
12_Chelidonium majus
13_Cornus sp.
14_Corylus avellana
15_Crataegus sp.
16_Echium vulgare
17_Epilobium sp.
18_Euonymus europaeus
19_Euphorbia peplus
20_Fagus sp.
21_Fraxinus excelsior
22_Galium aparine
23_Geranium sp.
24_Geum urbanum
25_Hedera helix
26_Juglans regia
27_Lepidium draba
28_Ligustrum sp.
29_Lolium perenne
30_Lonicera sp.
31_Mahonia sp.
32_Malus sp.
33_Medicago lupulina
34_Oenothera biennis
35_Papaver orientale
36_Plantago lanceolata
37_Prunus cerasus
38_Prunus padus
39_Prunus spinosa
40_Quercus sp.
41_Ribes rubrum
42_Rosa agrestis
43_Rubus sp.
44_Rumex thyrsiflorus
45_Sambucus sp.
46_Silene vulgaris
47_Spiraea sp.
48_Stellaria media
49_Sumaria officinalis
50_Syringa sp.
51_Tanacetum vulgare
52_Urtica sp.
53_Verbascum thapsus
54_Veronica
55_Dipsacus fullonum
56_Lathhyrus sp.
57_Potentilla thuringiaca
58_Salix caprea
59_Silene chalcedonica
60_Solidago canadensis
61_xxx
62_xxx

FAUNA

a_Aglais io
b_Bubo bubo
c_Corvus corone
d_Falco tinnunculus
e_Felis catus
f_Parus major
g_Pica pica
h_xxx
i_xxx
j_xxx

Legend

higher rising vegetation

lower rising vegetation

fauna, heard from indicated direction

fauna, seen at indicated location

fauna, identified through found footprints

cobblestone

grass

muddy hill

pile of stones

Figure 20
Residents on site
Sclale 1:235

HUMAN INHERITANCE

Silo

Completed in 1941, the former granary was built during the time of Nazi Germany as a form of preparation for the Second World War (Institut für Graue Energie, n.d.). The whole granary is cast out of concrete, even the roof framework. Its architecture and connected machinery is entierly designed for the storage of grain: The whole grains would be transported to the silo by train. After unloading, they were weighed in the ground floor and then transported via a conveyor belt to the attic. Here, the grains were cleaned and filled into one of the 13 storage chambers (F. Dossin, personal communication, May 15, 2025). To prevent fire there is a ventilation system in the chambers.
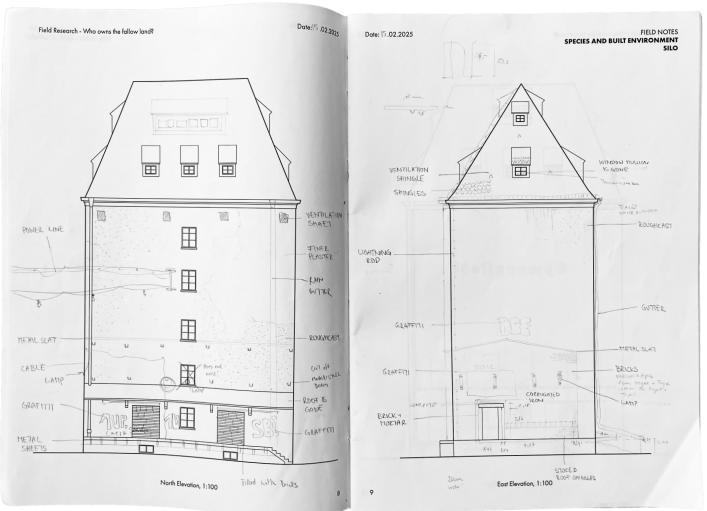
Substation
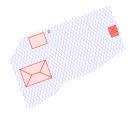
Figure 24
Location of the substation
Scale 1:2000

Completed in 1940, the substation is made out of bricks, except for the concrete ceilings and the concrete roof framework (F. Dossin, personal communication, May 15, 2025). Substations transform the high voltage from the regional energy supply to low voltage, needed for the operation of the silo.

Figure 25
The substation
February 2025

Figure 26
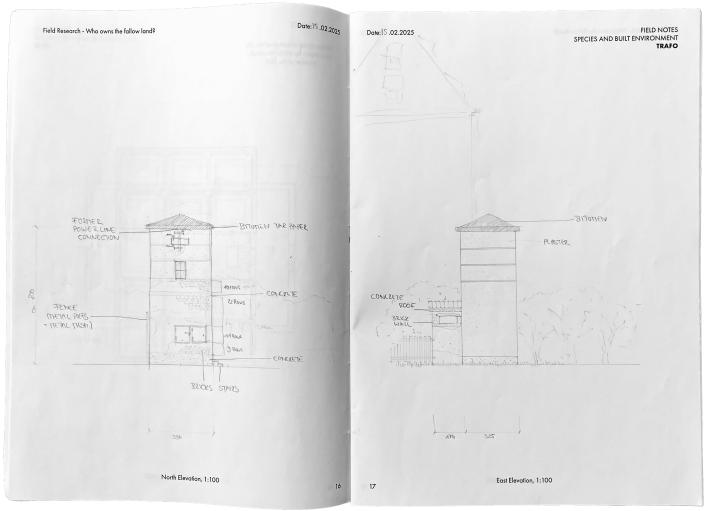*Excerpt from the field research diary*
Materials of the substation
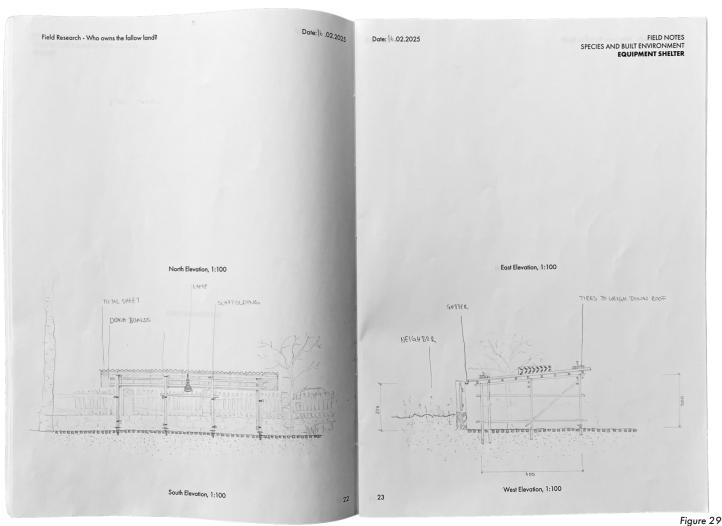
Equipment shelter

The equipment shelter was built by the current human owner of the site, in 2023 (F. Dossin, personal communication, May 15, 2025). It is an open structure made from scaffolding as the load bearing elements. Reused formwork sheets and corrugated iron sheets were used for the roof. It is used to store all kinds of equipment or materials.

Figure 28
The eqipment shelter
February 2025

Field Research - Who owns the fallow land?   Date: 16.02.2025

Date: 16.02.2025   FIELD NOTES
SPECIES AND BUILT ENVIRONMENT
EQUIPMENT SHELTER

North Elevation, 1:100

LAMP
METAL SHEET
SCAFFOLDING
DOKA BOARDS

South Elevation, 1:100   22

East Elevation, 1:100

GUTTER   TIRES TO WEIGH DOWN ROOF
NEIGHBOR

23   West Elevation, 1:100

Figure 29
Excerpt from the field research diary
Materials of the eqipment shelter

Compost Toilet
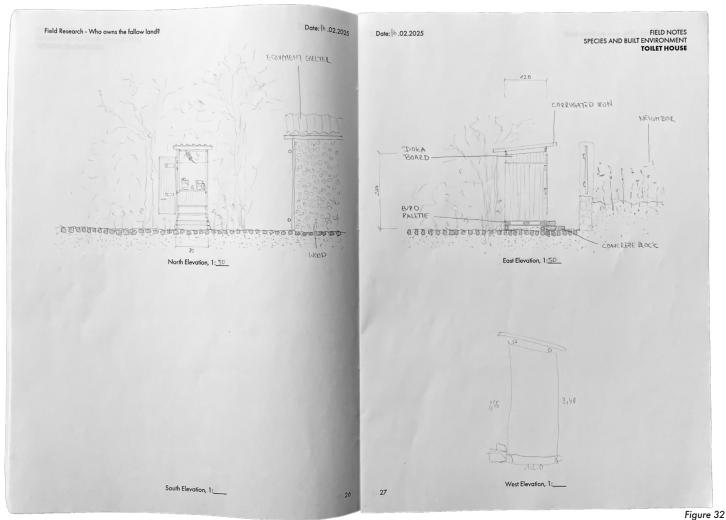
Figure 30
Location of the compost toilet
Scale 1:2000

Since the connection of the buildings to the local water and sewerage system is not only costly but can also be a slower process, the interim solution is a com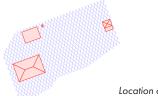post toilet. Also built by the current owner of the site in 2023 (F. Dossin, personal communication, May 15, 2025), the toilet is made from reused formwork sheets, smaller pieces of wooden battens and a trapezoidal metal sheet as the roof.
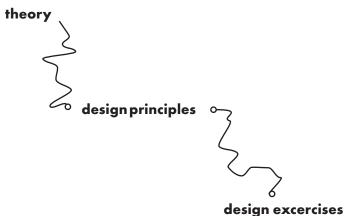
Figure 31
The compost toilet
February 2025

Field Research - Who owns the fallow land?   Date: 16.02.2025

EQUIPMENT SHELTER

North Elevation, 1: 50

WOOD

South Elevation, 1:____   26

Date: 16.02.2025   FIELD NOTES
SPECIES AND BUILT ENVIRONMENT
TOILET HOUSE

120

CORRUGATED IRON

NEIGHBOR

DOKA BOARD

EURO/ PALETTE

CONCRETE BLOCK

East Elevation, 1:50

27

West Elevation, 1:____

Figure 32
Excerpt from the field research diary
Materials of the compost toilet
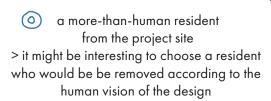
LISTENING TO ALL THE VOICES

DESIGN PRINCIPLES

theory

design principles

design excercises

The design principles were mainly derived from the theoretical positions, whereas the results of the design excercises were used to test them.

A_choosing the residents

a more-than-human resident
from the project site
> it might be interesting to choose a resident
who would be be removed according to the
human vision of the design

a human who is involved with the site

*A central question in this process was,
how to choose a resident to work with.
Another, if the homo sapiens always has
to be part of the design process, or if it
could also be a design, focussing solely
on two more-than-human residents.
The register of residents, as well as the
resident's location on the map is the
basis for this step.*

After having decided on criteria for choosing a resident, the next step in the design is to listen to all of the residents' voices involved in the design. Through researching the residents, various interdependencies will become clear, ve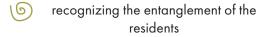ry much in the thinking of Donna Haraway. Listening to all the voices also ties back to Bruno Latour's 'Parliament of Things'.

Finally, in the design part, the ideas of Friedensreich Hundertwasser are helpful in order to translate the collected data into a design proposal.

C_multispecies design

the outcome must be considerate of all voices of the residents involved

involves an element that builds/shows/ strengthens the relationship between human and more-than-human

B_listening to all the voices

the needs of a resident involved in the design process have to be fulfilled to an extent that their livelihood is not threatened and that they can exercise their agency

recognizing the entanglement of the residents

every resident involved in the process will be able to have their voice heard
> this will be assessed through life cycle analysis, relationscapes and the representation of each resident's vision

establish the scale of separation/symbiosis between human and more-than-human species (spatially, visually, time wise...)
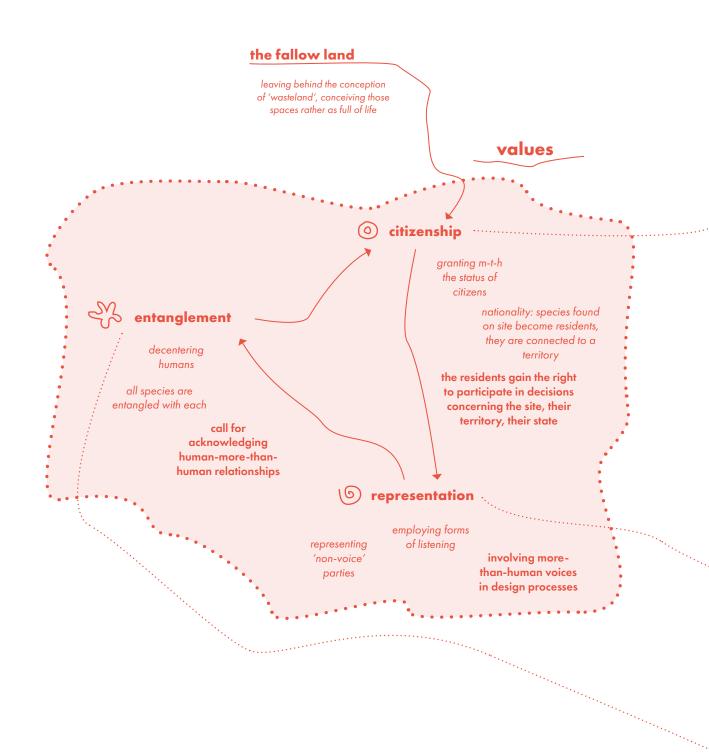
experimental and open-ended

offers an educational element, that could be observational, considered a process over time, makes humans reflect on the humans impact on ecosystems/ planet earth
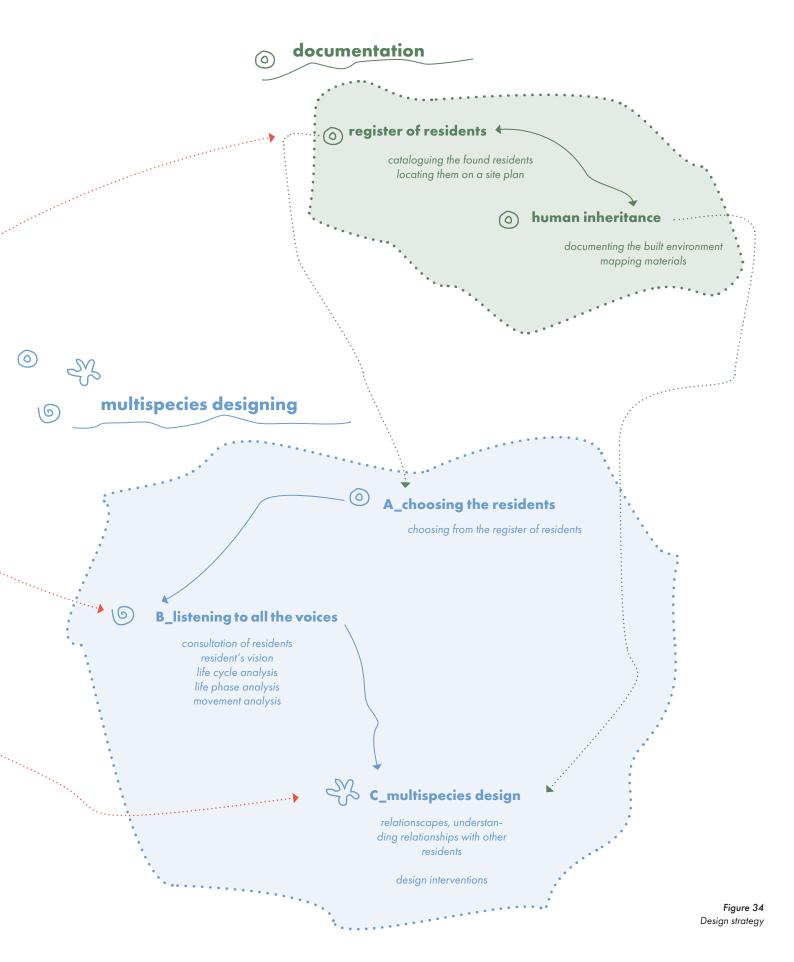
Figure 33
Design principles

DESIGN STRATEGY

the fallow land

leaving behind the conception of 'wasteland', conceiving those spaces rather as full of life

values

citizenship

granting m-t-h the status of citizens

nationality: species found on site become residents, they are connected to a territory

the residents gain the right to participate in decisions concerning the site, their territory, their state

entanglement

decentering humans

all species are entangled with each

call for acknowledging human-more-than-human relationships

representation

employing forms of listening

representing 'non-voice' parties

involving more-than-human voices in design processes

The design strategy shows how the multispecies design is approached in this work. Documentation is the first step of the design process and connects to the chapter **Residents of the Fallow Land**. The multispecies design is composed of the chapters **Listening to all the Voices** and **Deciding together**, linking the design principles with the actual design interventions. The values are derived from the theoretical positions and are intertwined with all steps taken.

documentation

register of residents

*cataloguing the found residents
locating them on a site plan*

human inheritance

*documenting the built environment
mapping materials*

multispecies designing

A_choosing the residents

choosing from the register of residents

B_listening to all the voices

*consultation of residents
resident's vision
life cycle analysis
life phase analysis
movement analysis*

C_multispecies design

*relationscapes, understan-
ding relationships with other
residents*

design interventions

*Figure 34
Design strategy*

45

DECIDING TOGETHER

HUMAN VISION

Ⓐ A_chosing the residents

Homo Sapiens

Figure 35
Homo Sapiens
Scale 1:50

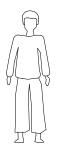### Life Phases

Chosen because

Homo sapiens was chosen, because he bought the site. He has a specific vision of the site, towards which he is working little by little. In his vision, the fate of the other residents is currently not a priority. His goals can be seen on the right page.

Current Situation

Homo sapiens has started to remove various residents from the site, but many also still remain.

Local Ecosystem

As a human, with most power over the other residents, homo sapiens can influence the wellbeing of the local ecosystem significantly. Will he be open to make changes to his vision, transforming the site where other residents feel home as well?
The homo sapiens is not dependent on the seasons, therefore his whole life is represented schematically.
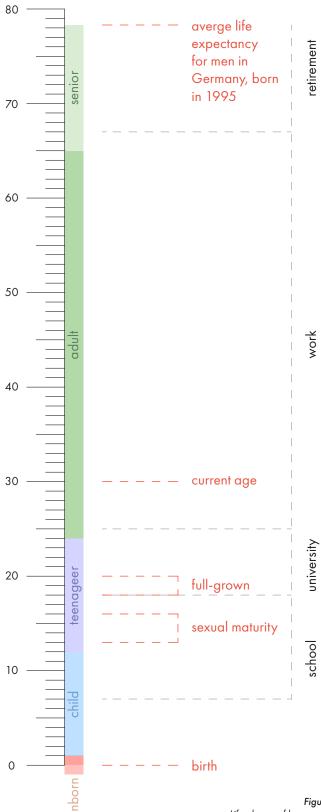
Figure 36
Life phases of homo sapiens
(Statistisches Bundesamt (Destatis), 2025; Deutsche Gesellschaft für Urologie e.V. & Berufsverband der Deutschen Urologen e.V., 2019)

B_listening to all the voices

Vision of Homo Sapiens

leaving the storage
chambers untouched

open for public tours

conservation of machinery,
open for public tours

equipment shelter

visitor toilet

garden

excavation of
cobblestone

apartment with kitchen
and bathroom

garden

garden

workshop in
the basement

excavation of
train tracks

reconstruction of
former warehouse
on old foundation
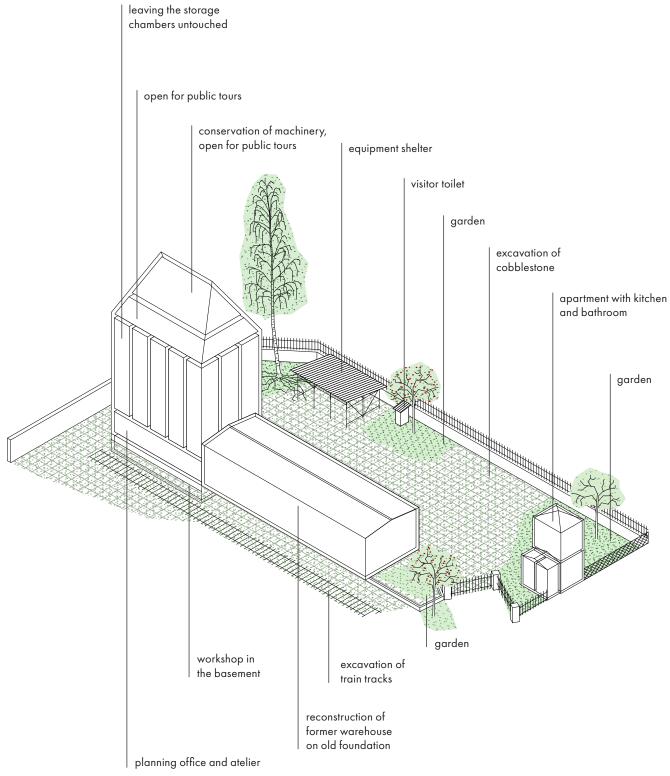
planning office and atelier

Figure 37
Vision of homo sapiens for the site of the silo
Scale 1:500
(F. Dossin, personal communication, May 8, 2025)

HIBERNATION HIDE-OUT

⊙ A_chosing the residents

Chosen Resident
Aglais Io
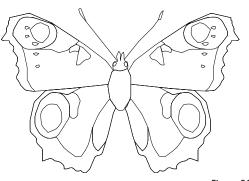
Figure 38
Aglais Io
Scale 1:1

Chosen because

Aglais Io was found in the basement of the silo, hibernating. This resident's appropriation of the built environment is especially interesting, because it leads to the question how human and more-than-human resident can find a solution in sharing the space.

ᘓ B_listening to all the voices

Life Cycle

* based on the method of Studio Animal Aided Design (Hauck & Weisser, 2015)

Figure 39
Life cycle of aglais io
(Nabu, n.d.; Nabu OG Neuenhagen, n.d.; Düring, W, 2018)

Current Situation

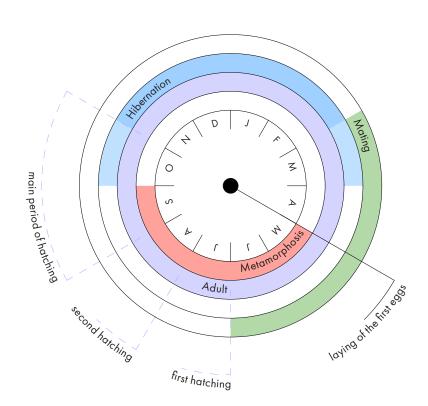Aglais io likes to hibernate during the winter in the basement of the silo.
Homo sapiens on the other hand, would like to transform the basement into a workshop. If the basement turns into a workshop the hibernation spot becomes obsolete.

Local Ecosystem

Aglais io helps to pollinate various plants and attaches its eggs in spring only to nettles. Once grown up, it collects nectar preferably from plants such as salix caprea or prunus spinosa, but is not dependent on them. In general, it prefers purple flowers.

B_listening to all the voices

Movement Analysis

Resident 52_Urtica sp. is essential to aglais io. During spring, aglais io attaches its larvae exclusively to species of Urtica.

The basement of the silo is the perfect hibernation spot for aglais io - cold, dark and offering a humid climate

Once an adult butterfly, aglais io feeds nectar from many flowers. In spite of its appreciation for most plants, aglais io especially likes purple flowers and also some residents here: 39_Prunus spinosa, 55_Dipsacus fullonum, 58_Salix caprea.

Figure 40
Movement analysis of aglais io
Scale 1:400
(Nabu, n.d.; Nabu OG Neuenhagen, n.d.; Düring, W, 2018)

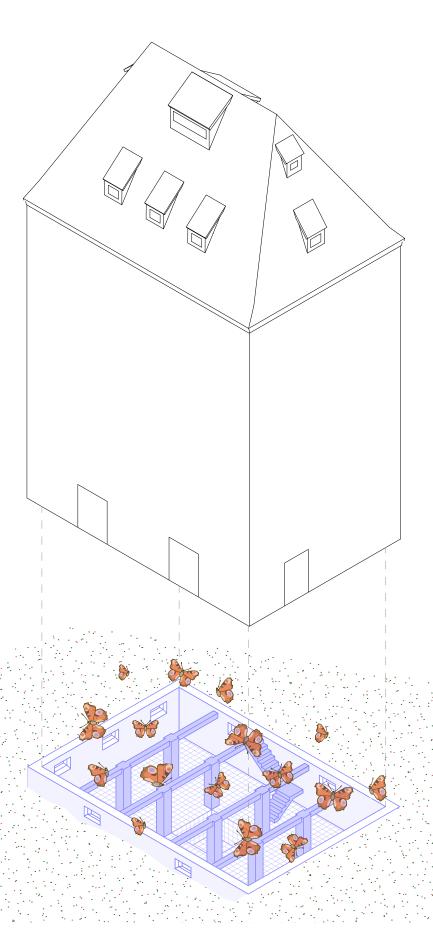## B_listening to all the voices
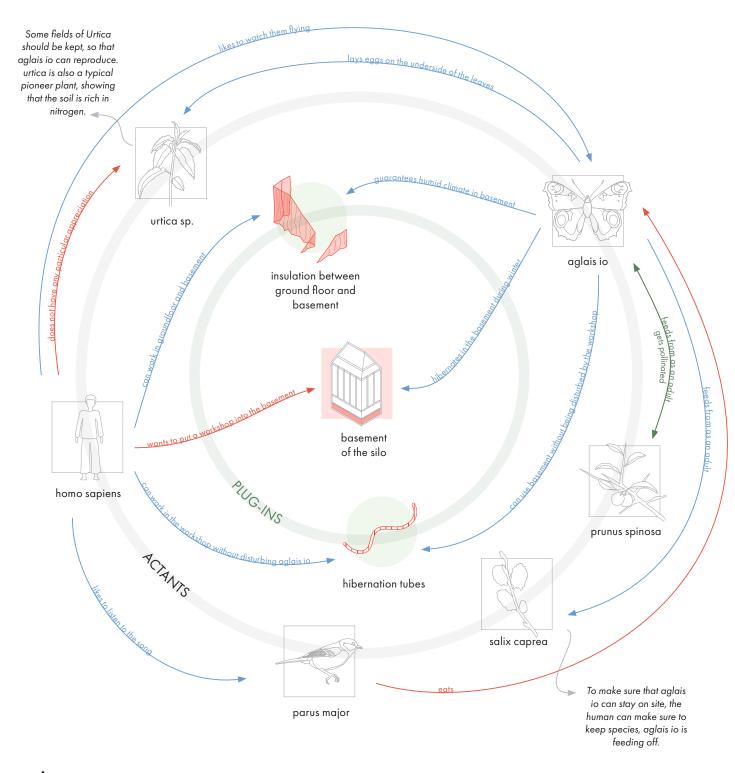
Vision of Aglais Io

If aglais io were the only one taking decisions, they would make the whole basement into a hibernation destination during winter!
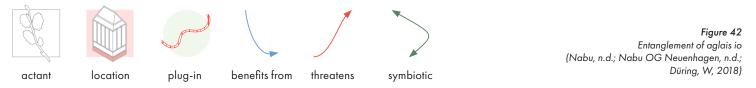
Figure 41
Vision of aglais io
Scale 1:200

C_multispecies design

Entanglement

Some fields of Urtica should be kept, so that aglais io can reproduce. urtica is also a typical pioneer plant, showing that the soil is rich in nitrogen.

likes to watch them flying

lays eggs on the underside of the leaves

does not have any particular appreciation

urtica sp.

guarantees humid climate in basement

insulation between ground floor and basement

aglais io

can work in ground floor and basement

hibernates in the basement during winter

feeds from as an adult / gets pollinated

feeds from as an adult

wants to put a workshop into the basement

basement of the silo

PLUG-INS

homo sapiens

can work in the workshop without disturbing aglais io

can use basement without being disturbed by the workshop

ACTANTS

prunus spinosa

hibernation tubes

salix caprea

likes to listen to the song

eats

To make sure that aglais io can stay on site, the human can make sure to keep species, aglais io is feeding off.

parus major

Legend

actant   location   plug-in   benefits from   threatens   symbiotic

Figure 42
Entanglement of aglais io
(Nabu, n.d.; Nabu OG Neuenhagen, n.d.;
Düring, W, 2018)

53

🦋 C_multispecies design

A solution for aglais io and homo sapiens could be a small tube and the thermal separation between the ground floor and the basement.
In that way, condensation between the ground floor and the basement still happens, providing the desired humid climate for the hibernation of aglais io in the basement.
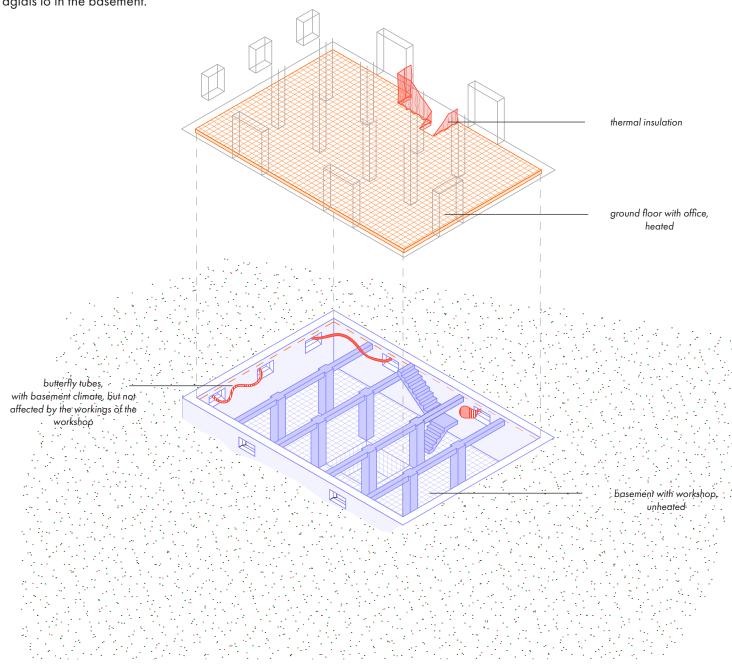
thermal insulation

ground floor with office, heated

butterfly tubes, with basement climate, but not affected by the workings of the workshop

basement with workshop, unheated

Figure 43
Isometry of hibernation hide-out
Scale 1:200

C_multispecies design

To enable workshop activities, the butterflies can access only the tubes for their hibernation. In that way, both residents get to use the basement, each according to their needs. The presence of the tubes will remind homo sapiens, of the presence of aglais io. Of course this design intervention should also start a discussion about who gets to use which and how much space - how would a solution look like, where aglais io is not confined to the small tubes?

freely accessible from outside, aglais io can come and go independently

through listening to the voice of aglais io and implementing this hibernation tube, the relationship between butterfly, human and silo is made visible

Figure 44
Section of hibernation hide-out
Scale 1:20

SHOWER-TOWER

⊙ A_chosing the residents

Chosen Resident
Betula Pendula
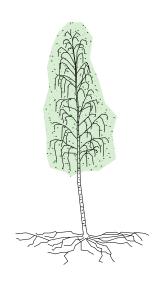
Figure 45
Betula Pendula
Scale 1:500

Chosen because

Betula Pendula was found growing next to the silo, as well as on its roof. The ability to grow almost anywhere makes this resident intriguing to work with. What happens, if we offer this resident a space, where humans do not interfere in its succession process?

⟲ B_listening to all the voices

Life cycle analysis

* based on the method of Studio Animal Aided Design (Hauck & Weisser, 2015)
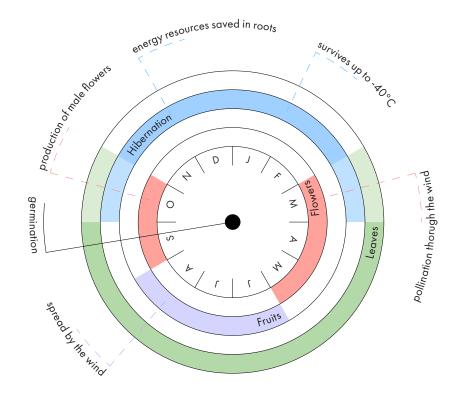
Figure 46
Life cycle of betula pendula
(Bayerische Landesanstalt für Landwirtschaft, n.d.; Stiftung Unternehmen Wald, n.d.)
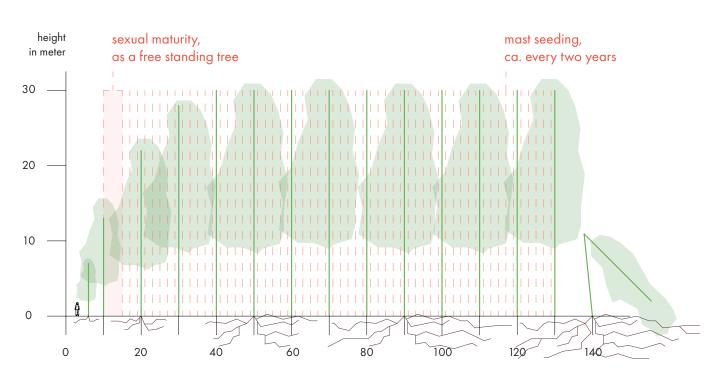
Current Situation

Due to reparations on the roof the tree tenant alongside grass had been removed from the roof. In this testfield the possibilities of tree tenants, just like formulated by Hundertwasser (n.d.), returning to the roof is tested.

Local Ecosystem

Home to a myriad of insects, but also birds, makes betula pendula one of the most popular trees for fauna to live in (Schmidt, n.d.). As a pioneer plant the species prepares the soil of industrial fallows for other species to follow. While producing humus, betula pendula even riddens the soil of industrial pollutants and heavy metals, and according to newest research even microplastics (Neumann, 2022).

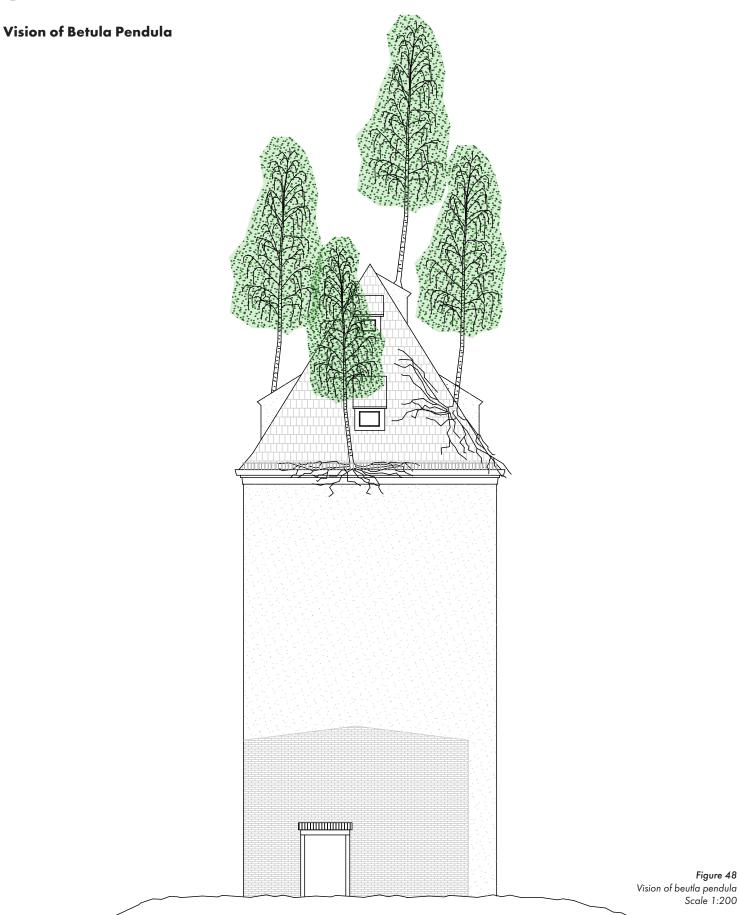## B_listening to all the voices

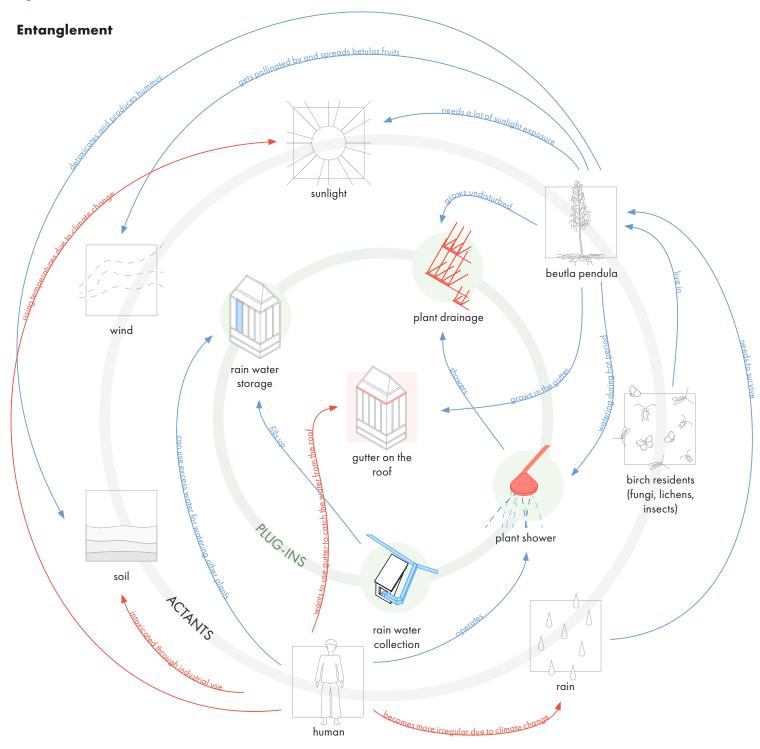## Life phase analysis

Figure 47
Movement analysis of aglais io
(aha! Allergiezentrum Schweiz, 2025; Baye-
rische Landesanstalt für Landwirtschaft, n.d.;
Stiftung Unternehmen Wald, n.d.)

B_listening to all the voices

Vision of Betula Pendula

Figure 48
Vision of beutla pendula
Scale 1:200

C_multispecies design

Entanglement

sunlight

needs a lot of sunlight exposure

gets pollinated by and spreads betulas fruits

detoxicates and produces hummus

rising temperatures due to climate change

grows undisturbed

beutla pendula

live in

plant drainage

wind

rain water storage

showers

grows in the gutter

watering during hot period

birch residents (fungi, lichens, insects)

needs to survive

can use excess water for watering other plants

PLUG-INS

gutter on the roof

wants to use gutter to catch the water from the roof

fills up

plant shower

soil

ACTANTS

intoxicated through industrial use

rain water collection

operates

rain

human

becomes more irregular due to climate change

Legend

actant	location	plug-in	benefits from	threatens	symbiotic

Figure 49
Entanglement of betula pendula

C_multispecies design

Instead of growing on the roof - destroying it and blocking the rain gutter from working, betula pendula is offered an alternative space: the plant gutter at the fassade. Undisturbed by humans, betula pendula can develop freely.

collection of rainwater

plant shower

plant gutters, plants will only reach a certain size, since the gutters do not offer infinite amount of space

area needs to be kept free, in case vegetation falls from the plant gutters

birch has to be kept to provide the seeds for the plant gutters

excess water can be used to water cultivated plants

Figure 50
Isometry of the shower tower
Scale 1:200

✺ C_multispecies design

collection of rainwater,
existing openings in building
are used to minimize
changes done to the
building

rainwater is filled through drainage
into the storage cell

plant shower,
operated by
humans in case
of dry periods

plant gutter, seeds are
brought to the gutter by
the wind, installation
cannot be reached by
humans

exposed to sun
and wind

flora

storage of rainwater

Figure 51
Section of the shoer tower
Scale 1:50

OUTRO

DISCUSSION

We, the more-than-humans
The strategies to transform industrial fallows are versatile. However, in contrast to human actors, who gladly welcome the 'revitalization of an abandoned site', it often signifies the exact opposite for non-human actors: either the displacement from the site or their death. Thus, it can already be stated here that the perception of 'revitalized' and 'abandoned' can be diametrically opposed, depending on if seen from a human or a more-than-human perspective.

In spite of those opposing positions, the coexistence and the countless existing dependencies and connections between humans and more-than-humans are omnipresent. Nevertheless, human interference, creeping into every corner of this planet, often culminates in fatality for more-than-human species. This work aims to criticize this power imbalance and thus calls for the dissolution of the currently existing power structures. For, a first insight that is gained through the theoretical background of this work is, we humans are not superior to other species on this planet, but are their equals. That we are not human and non-human, but are all entangled with one another in more-than-human interactions.

Therefore, this work asks what happens when the voices of more-than-human actors are taken seriously and invited to participate in design processes. What do the results of these negotiations between humans and more-than-humans reveal about the use of the built environment and the relationships between humans and more-than-humans?

A tool towards more equitable designs
The inclusion of more-than-human voices in architectural design processes thus forms the basis for this work. To capture the voices of the more-than-human actants, I worked with an actual site, complemented by theoretical positions. Those positions - citizenship, representation and entanglement - work as a general framework to develop the chosen design tools and design interventions. The first position, citizenship, has its roots in the book 'Zoopolis' by Sue Donaldson and Will Kymlicka. By translating nationality, one of the functions of citizenship, to the site I am working with, the species found on site gain the status of a citizen. Consequently, all the more-than-human citizens that 'were born on that site', become the site's residents. At the same time, they acquire the right to be involved in decisions that concern the site, or rather, their state.
The site of this experiment is a former grain silo located in Oßmannstedt, Germany, a small village surrounded by agricultural fields. After having visited the former granary and the surrounding site, the voices of 84 more-than-human residents identified on site, can now be heard. This abundance of residents in such a small area was quite astonishing to me.

And it should challenge our perception of how humans would often describe a site where an abandoned former industrial ruin can be found: the 'wasteland'. Therefore I am proposing to rename those sites of more-than-human reclaim to 'fallow land'. A land that is not unappealing but rather resting for a certain time, so that it can recover from stress endured. Which implies that the fallow land is not 'abandoned' or 'lost' but rather recovering, full of life.

Now that we have established where and with whom we are working, the following question awaits: How can we interview or include someone in a discussion with whom we do not share the same language?
One possibility is the representation of a resident who does not share the language of negotiation by another resident who does. So in this specific case, the representation of more-than-human voices by a human representative. This connects to the second theoretical position, representation. One advocate for including more-than-human actants into human decision processes is Bruno Latour. In his concept 'The parliament of things' he describes a parliament, where non-human entities are represented by a human ambassador and through that can make their voices heard.
Representing a counterpart is not necessarily a simple undertaking and requires careful observation and listening. In order to bridge these interspecies communication difficulties, various forms of 'listening' are used in this work, such as observing and mapping movement processes and abodes, as well as reading about preferences, behaviors and dependencies.

It should be noted here that although the strategy of representation involves parties who were previously unable to participate in design processes, this strategy is ultimately carried out according to human logic. The extent to which a decision-making process could work differently, involving more-than-human parties, would need to be researched further. Could, for example, this concept work the other way around, meaning people are represented by more-than-humans?
Whether this could succeed, whether the impetus would need to come from the more-than-human side, or whether other forms of interspecies communication achieve more productive results in which all participants can communicate better with each other, is open to discussion.

Revealing relationships through listening
Through listening, a wide variety of relationships are revealed - to the silo, to built elements, to human behavior, to other species, to favorite meals, to sun, wind, water, and the soil.
It quickly becomes clear that human activity, or lack of activity, influences the use of spaces and presence of non-human actors. The birch is only here because the bare fallow offers an

open view of the sun. And perhaps because it is one of the few plants that can cope with the possible industrial contaminations in the soil. It also likes to perch in the gutter that has not been cleaned for years, brought there by the fruit-bearing wind. Or the peacock butterfly, whose eggs prosper in the shade of the nettles and for which the damp cellar of the granary provides the perfect hibernation spot.

The industrial fallow, a space for everyone

Listening to more-than-humans, clearly reveals that just because structures are built by and for humans does not mean that they are only used by humans. The results of listening to more-than-human voices are then explored in three short design exercises.

The criteria for the short design exercises are informed by the theoretical background and the results of the design interventions. Next to the strategy of representation, it entails considerations on how to choose a resident for the design. Here, a fourth result was established. Namely, to realize that it is logical to choose a local resident to work with, whereas it is almost irrelevant which one. For, each resident tells a story not only about themself but also about their relationship to other residents of the site. Of course, from an architectural point of view, working with a resident that has reclaimed the built environment might be especially interesting.

In addition to spatially visualizing more-than-human relationships, the goal was to negotiate the respective visions and uses of the granary and the site. Here, the last theoretical position, entanglement, sets a focus. The belief that all entities on planet earth are either physically or socially intertwined. For example, if the basement of the silo is to be converted into a workshop, the peacock butterfly will likely no longer be able to hibernate there. Collages and relationscapes were used to visualize these conflicts. At the same time, those tools spatially locate the conflict and provide inspiration for solution strategies in form of the design interventions.

This work also shows that minimal interventions can be sufficient to meet the needs of all parties involved. However, it also addresses the question of which actors are permitted to utilize built structures and to which extent. Can we, as humans, move beyond understanding built structures as spaces that are configured solely for human use and instead embrace a shared appropriation with more-than-human actors? Especially when these structures have already experienced reappropriation by more-than-humans?
And if we choose to share spaces with more-than-human residents, in which ways can we co-exist? After all, their appropriations often work according to their very own logics, which might not be compatible with human wants.

A more sensitive topic that could be discussed further, in the case of this particular granary, is the aspect of its difficult heritage. Built in preparation for the Second World War, the granary itself is a built expression of hierarchy and the superiority of one species or entity over another. Ranging from demolition to memorial, a wide variety of approaches on how to deal with the built Nazi legacy is practiced. Perhaps, inviting more-than-human parties to reappropriate the building could be another answer. From a dictatorial construction, to at least a democratic use.

What remains open in this work, however, is the extent to which the design proposals actually work. For, that requires a next step: translating the ideas and visuals into something built. Only then, we can find out how well we listened. Do the more-than-humans selected in the design also find their way into the built design? Or are entirely different actors making use of it? However the result, we should remain critical, because any intervention can just as well have destructive consequences - even if this was not the original intention. Therefore, we should try to understand these designs as never finished, but rather as constantly changing processes in which all participants are allowed to continually reposition themselves.

What if...

Lastly, we will take a brief look at what happens, if more-than-human actors were generally included into architectural design processes.

I think this would result in several desirable changes:
First of all, it would increase the interest in, knowledge about, and sensitivity towards more-than-human actors. As already described, engaging with more-than-human actors leads to a better understanding of the things that connect us. This would then hopefully result in us humans, recognizing our entanglement, doing a better job at protecting our ecosystems and slowly dissolving our sense of superiority. It is therefore important to be open to non-human processes in order to learn from them. It should be noted here as well that the interdisciplinarity of fields of architecture, biology, zoology and botany could be especially promising when it comes to multispecies design.

The next point is certainly that if we, the humans, must build, we should also take a step back and allow other actors a scope for action. Or, we should at least aim for a balance in control and decision-making between humans and more-than-humans.

Another aspect is to question whether humans should always be the central actors and recipients in and of architectural designs. Based on the results of this thesis, this question can fundamentally be answered with a no. Nevertheless, in the human realm, construction projects are closely linked to their financing. Therefore, the question of how the economics of construction projects and the planetary health can be considered equally, remains to be answered.

To conclude this discussion, I would like to note that the inclusion of more-than-humans into design processes certainly offers potential for architectural design. By engaging with local species, architects can, on the one hand, take more time to better understand the construction site. On the other hand, the inclusion of more-than-human species can lead to design solutions that can be very specific. They therefore have the potential to preserve the genius loci.

With that said, I hope this work inspires to take a closer look at the things and beings that surround us, embracing the entanglement and maybe then, new voices can guide us to curious encounters.
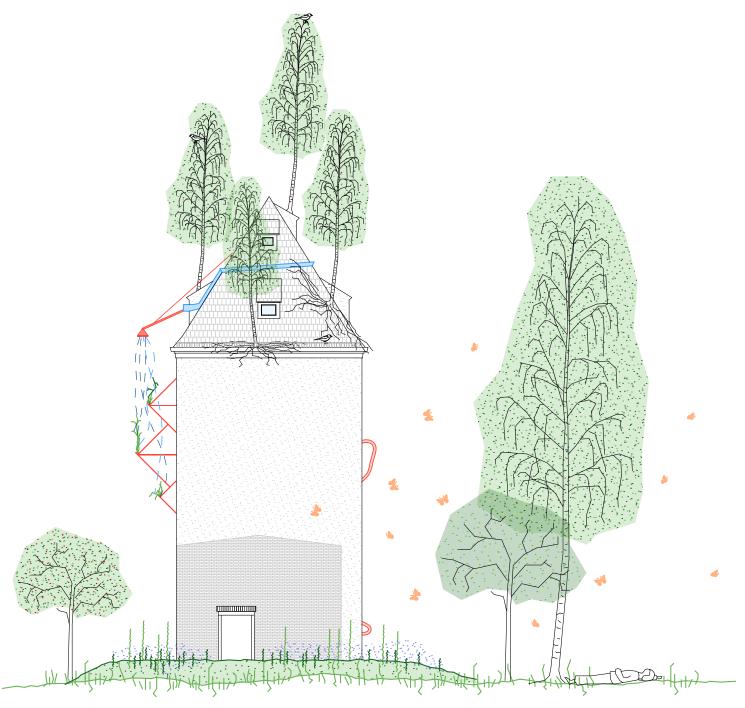
Figure 52

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Images

All images and graphic material, *figures 1-52* as well as the photographs in the 'register of residents' *01_Acer campestre-74_xxx* and *a_Aglais io-j_xxx* have been created by the author.