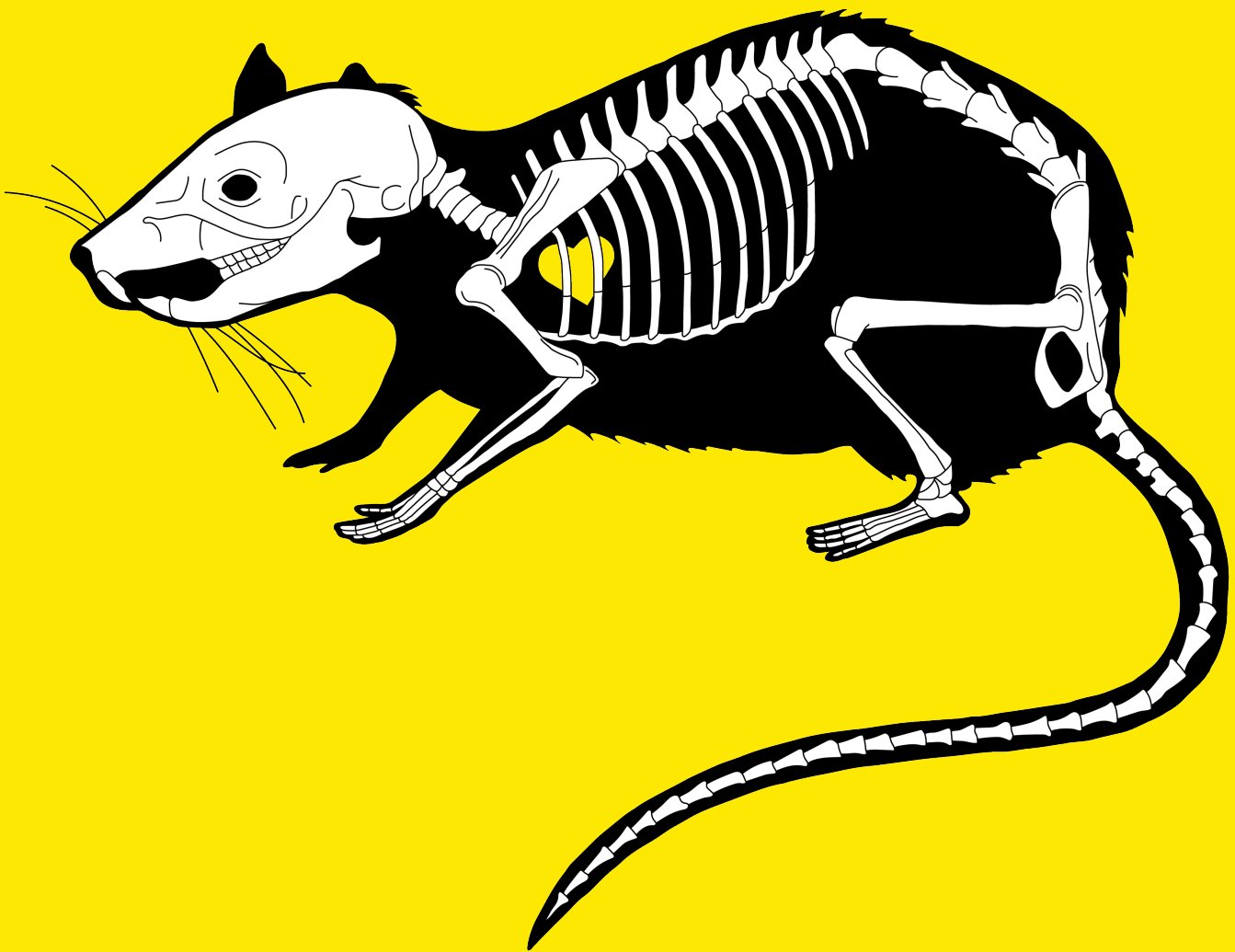


# RAT-ICAL JUSTICE

---

Care at the Interface of the Human and the Nonhuman



---

**Delaney Davis & Lisa Säfdal**

**Master's Thesis 2024**

Chalmers School of Architecture  
Department of Architecture & Civil Engineering

Examiner: Isabelle Doucet  
Supervisor: Marco Adelfio

# Rat-ical Justice

*Care at the Interface of the Human and the Nonhuman*



**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

Delaney Davis & Lisa Säfdal  
Master's Thesis Spring 2024

Critical Spatial Perspectives  
Chalmers School of Architecture  
Department of Architecture & Civil Engineering  
Master's Program: Architecture and Planning Beyond Sustainability

Examiner: Isabelle Doucet  
Supervisor: Marco Adelfio



## Abstract

Coincident with the development of human civilization was the emergence of a new type of critter: one not domesticated, not beloved, but similar to us in so many aspects that they abound in our environments—the urban rat. This urban critter burgeons in numbers that we humans find threatening if not overtly problematic. Ironically, this “problem” is one of our own creation; our actions are what have allowed these critters to thrive. But instead of assuming responsibility for inviting them to the table, we blame them for arriving at our doorstep and then poison their dinner.

**Ironically, this “problem” is one of our own creation... But instead of assuming responsibility for inviting them to the table, we blame them for arriving at our doorstep and then poison their dinner.**

Using the widespread mistreatment of rats as an example, this thesis critiques the anthropocentric worldview that enables the abuse of marginalized individuals and absolves us of accountability for our actions. It argues that a fundamental shift away from this worldview is necessary in relearning how to exist in a world of others. It also aims to propose ways to initiate this shift toward respectful cohabitation through the exploration of various social and spatial facilitators. By utilizing four tactics—strategic anthropomorphism, public engagement, the mapping of heterotopias, and negotiation—this work explores how practices of care can showcase the perspectives of neglected nonhumans and facilitate respectful cohabitation between rats and humans in an urban environment.

The outcome of this thesis is a series of experiments that address various aspects of our relationship with urban rats. Key findings include a collection of strategies for learning how to foster empathy for rats,

efforts aimed at advocating for their rights as urban inhabitants, and the showcasing of the homes they make in our cities’ in-between spaces. Furthermore, this thesis results in experimental negotiations that imagine spaces that compromise rather than utilize traditional means of control to enable respectful cohabitation in the urban landscape. *Rat-ical Justice* shows that empathy and care can, and indeed should, be extended to every individual, human or nonhuman.

### Acknowledgments

*This thesis would not have been possible without help from a variety of individuals, each of whom has given us their time, support, and/or expertise.*

*We want to first thank our supervisor, Marco Adelfio, whose “I’m always here when you need me” policy was liberally used if not abused. Through countless emergency supervisions, late night email exchanges, and spontaneous conversations in passing, Marco went above and beyond in supporting us—both academically and emotionally—throughout the writing of this thesis. His generosity toward, advocacy for, and belief in us will be forever appreciated.*

*Next, we want to thank the Common Alder, who most humans refer to as Thomas Laurien. Our lunchtime discussions in which he has so generously given us his time have not just helped our project progress, but have inspired us to continue with this work after graduation. He has shown us the possibilities that exist within the field of critical posthumanism and invited us to partake in advocacy councils, expanding our horizons far outside of the realm of the classroom. We are so grateful to have been taken under his wing—or should we say branch?*

*Finally, we want to thank the army of rat ambassadors that we have amassed, namely Amalia, Carina, Clara, Leo, Manfred, Mika, and Tanja. They’ve been instrumental not only in the distribution of propaganda but also in providing us with their boundless friendship and support. It really does take an army, and we couldn’t have found a better one!*

Keywords: rats, critical posthumanism, care, cohabitation, nonhuman rights

# Contents

	Student Background	vi	
	It Should be Noted	viii	
<b>Chapter One</b>	<b>Introduction</b>	1	
	Problem Setting	4	
	Purpose	4	
	Why Rats?	6	
	Relevance for Architecture	6	
	Aim	7	
	Research Question	7	
	Delimitations	7	
	Methodology	8	
	Context	10	
	Theoretical Landscape	11	33
			36
<b>Chapter Two</b>	<b>Embodying the Rat</b>	13	36
	Interview with a Rat	17	38
	Rat Vision	20	40
	The Council of All Beings	22	58
	Reflections	24	
			59
<b>Chapter Three</b>	<b>Becoming an Ambassador</b>	25	62
	Engaging the Public	27	63
	Our PR Campaign	28	70
	Code of Conduct	29	
	Becoming an Ambassador	30	71
	Reflections	32	77



Figure 3. The authors role-playing as rats.

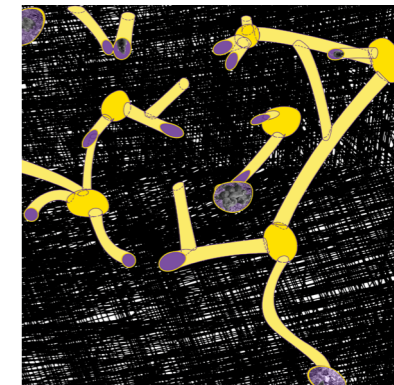


Figure 15. Abstract illustration of a rat burrow.

<b>Investigating Interstices</b>
Why Study Rat-chitecture?
Mapping of Heterotopias
Typologies of Interstices
Heterotopic Representations
Reflections
<b>Envisioning Respectful Interfaces</b>
What Do We Do About the Rats?
Negotiations
Reflections
<b>Discussion</b>
<b>Bibliography</b>

## Chapter Four

## Chapter Five

## Chapter Six

## Student Background

*Del Davis // Rat Ambassador*



## Student Background

*Lisa Säfdal // Rat Ambassador*



**2022 – 2024**

**Master's program – Architecture and Planning Beyond Sustainability**

Chalmers University of Technology  
Gothenburg, Sweden

Coursework

- *Sustainable Transformation of a Derelict Industrial Building*
- *Transformation Projects and Environmental Care*
- *Hybrid Practice: Uniting Art, Craft, Design and Technology*
- *Crash Course: Beyond Sustainability*
- *Design and Planning for Social Inclusion*

**2016 – 2021**

**Bachelor of Science in Architecture**

University of Michigan  
Ann Arbor, USA

**2017**

**Semester Abroad**

Université de Technologie de Troyes  
Troyes, France

**Master's program – Architecture and Planning Beyond Sustainability**

Chalmers University of Technology  
Gothenburg, Sweden

Coursework

- *Key Projects for Sustainable Development in a Local Context*
- *Dare to build*
- *Resistant Architecture: 1968 and Beyond*
- *Crash Course: Beyond Sustainability*
- *Design and Planning for Social Inclusion*

**2022 – 2024**

**2019 – 2022**

**Bachelor's program – Architecture**

Chalmers University of Technology  
Gothenburg, Sweden

## It should be noted

... that rats are merely a chosen representative of all marginalized individuals, and despite the work being about them, it is also about humans neglected by societal systems, endangered animals not “cute” enough to warrant care, inanimate objects that are voicelessly exploited, and so on and so forth.

## *Chapter One*

# Introduction

This introductory chapter outlines the structure of the thesis and describes its purpose and aspirations. It also presents the research question and methodology as well as provides an overview of the theoretical context that underpins the thesis as a whole.



**“Thus the issue returns with insistence: how do we change mentalities, how do we reinvent social practices that would give back to humanity - if it ever had it - a sense of responsibility, not only for its own survival, but equally for the future of all life on the planet, for animal and vegetable species, likewise for incorporeal species such as music, the arts, cinema, the relation with time, love and compassion for others, the feeling of fusion at the heart of cosmos?”**

(Guattari, 1992, pp. 119-120)

## Introduction

Our tumultuous relationship with rats is a tale as old as time—and for the hundreds of years we’ve lived together, rats have been our **culture followers**, living where we’ve lived and eating what we’ve eaten. The sizes of their population also scale proportionally to ours: as more humans mean more resources—namely, more trash—our increasingly densifying cities become similarly populated by these critters. A consequence of large populations of humans and rats sharing a relatively small urban area is the increased likelihood of one encountering the other. The mere sight of a rat triggers intense feelings of aversion and disgust for many humans, which are seemingly disproportionate compared to our feelings about any other urban critter.

Rats are comparably smart to humans, have complicated social and familial structures, and can express emotions through laughter. Their impressive athletic prowess allows them to climb up or into nearly any surface or space, and their compressible ribcages allow them to infiltrate any space with an opening that exceeds two centimeters in diameter. These capabilities make them extremely threatening to us: they want our warmth and our food and are more than capable of accessing it. Their resilient and uncontrollable nature, paired with highly exaggerated negative portrayals that frame rats as aggressive, filthy spreaders of disease, have made most people detest these critters—which in many cities has led to their widespread extermination.

Historically, poison has been used to “control” rat populations in urban areas, but this method of extermination can unintentionally harm the larger mammals and predatory birds that feast on rats. Now, some cities use electric traps, which electrocute them, or carbon dioxide gas, which is pumped into their burrows and induces a sleep from which they never wake up. Instead of recognizing that rats, like us, want to fulfill the needs of themselves and their families, we spend enormous sums of money to eradicate the rats who have simply accepted our invitation to the table. The cycle of inviting and killing continues ad nauseum, resulting in the extermination

*Translation of the Swedish word Kulturföljare, meaning animals and plants that benefit from human-induced changes in landscapes. They therefore follow humans in their habitat*

**Their resilient and uncontrollable nature, paired with highly exaggerated negative portrayals that frame rats as aggressive, filthy spreaders of disease, have made most people detest these critters ...**

of nearly one million rats a year in just Sweden alone (Anticimex, 2024). This is how we take responsibility for creating environments in which they thrive—but why is the imposition of our will, laced with poison and littered with deadly traps, accepted as the status quo?

The work in this thesis questions what would happen if we showed care toward urban rats rather than making the same mistakes and having rats pay for it with their lives. If we changed our belief that rats have no right to exist in “our” environments, what could learning to share our spaces and coexist entail? What frictions would arise as a result, and how could we learn to negotiate control to ameliorate them? The following texts, experiments, and reflections explore the possibilities for learning to understand and feel for urban rats and begin to imagine how care can be spatialized in the post-anthropocentric cities of the future.



## Problem Setting

Rats are just one such example of individuals that face mistreatment at the hands of humans. Though this work specifically addresses our relationship with rats, our unwillingness to peacefully coexist with them indicates the presence of a greater force at play: the anthropocentric mindset that permeates every aspect of Western culture. Characterized by the belief in human superiority and dominance, anthropocentrism encourages the perception of nonhumans as mere commodities for human exploitation (Goralnik, L. & Nelson, M.P., 2012); in the case of rats, it perpetuates the belief that nonhuman lives are insignificant.

The objectification of and lack of care for nonhuman beings engenders a climate of apathy and detachment which absolves humans of moral and ethical accountability for their actions (Le Guin, 2017). Seemingly ingrained in the worldview of Western society, these values have led us into the epoch of the Anthropocene—an era marked by

accumulating planetary emergencies, largely caused by human violence inflicted on the nonhuman world. (Plumwood, 2001). These emergencies involve multiple interlocking systems in crisis, threatening the stability and wellbeing of ecosystems worldwide.

## Purpose

Considering where this worldview has gotten us, it becomes evident that a fundamental shift is necessary. The mistreatment of nonhumans has led humanity into a downward spiral that is resulting in irreversible damage to our planet, but we've turned a blind eye to those who do not have voices to cry out for help. The only way to escape this crisis is to shift our mindset and start caring about, rather than ignoring, our fellow earthly inhabitants. Val Plumwood argues

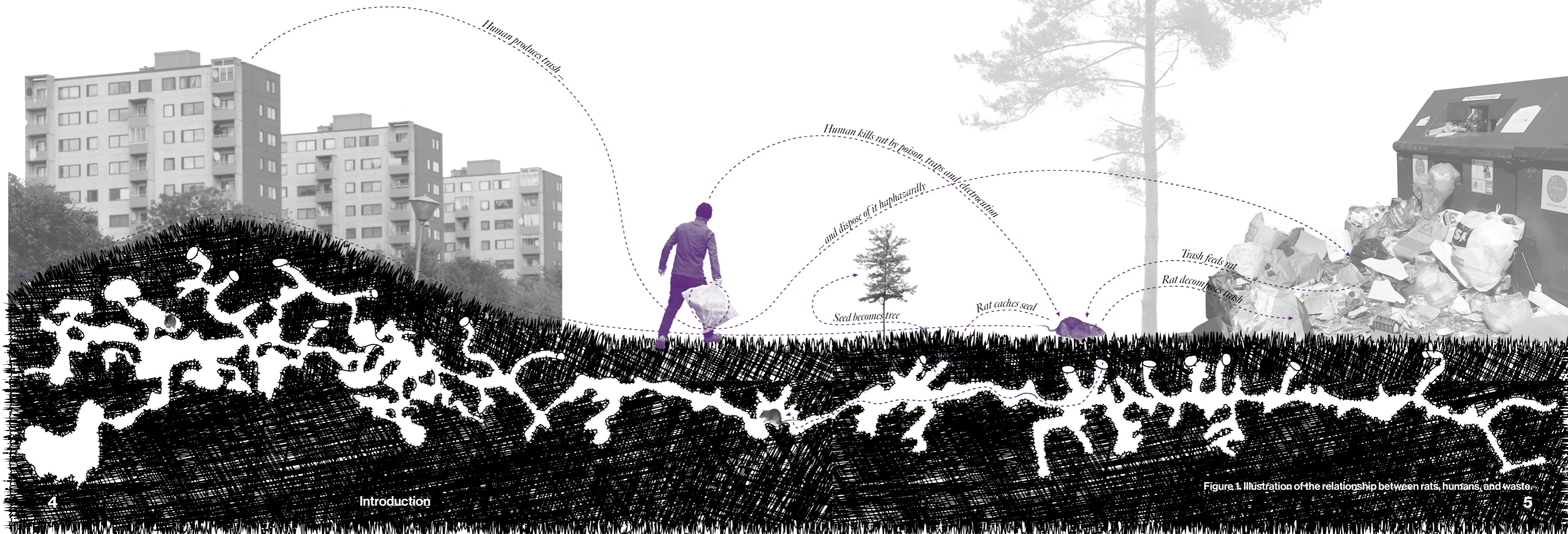
that we need to develop “an environmental culture that values and fully acknowledges the non-human sphere and our dependency on it, and is able to make good decisions about how we live and impact on the non-human world” (2001, p.3). This new culture, embracing a post-anthropocentric mindset, would be one in which we relearn how to exist with nonhumans and care for their needs as well as ours. Caring for all lives includes caring even for those we don't like—the snakes, the bugs, and of course, the rats.

## Why Rats?

Examining the relationships between humans and other beings uncovers anthropocentric biases in our perception of worth and value. The decision of which species we care to protect is deeply influenced by

cultural and political factors, reflecting societal values and the narratives we construct about them (Heise, 2016). We readily extend care and compassion to domesticated pets, animals we find cute, and a select few of those facing extinction due to human activities. However, those deemed to be pests, vermin, or in other ways are not considered to be adding to the human condition by providing some kind of service, often fall outside the scope of our empathy (Dobraszczyk, 2023).

While numerous species within the latter category could have been chosen for the purpose of this thesis, the human-rat relationship stands out for its complexity, characterized by conflict and tension. Rats thrive in human environments yet face blame for their presence, despite humans being responsible for sustaining them. Associated with filth, decay and urban decay, they are viewed as inconsequential or even detrimental to human well-being, and the killing





of them is ethically disregarded. Simultaneously, rats serve as ideal subjects in medical research, paradoxically, due to their physiological similarities to humans. Seemingly occupying the lowest rung of marginalized beings, the term *rat* is used as a derogatory insult. Even the pigeon, another urban critter that has fallen outside of human favor, is sometimes referred to as *the rat of the sky*, revealing a hierarchical order in which the rat is inferior. This is precisely why they are the perfect representatives of the neglected and unloved.

Centering this thesis around one of the most detested and dreaded creatures prompts the question, eloquently articulated by Deborah Bird Rose and Thom van Dooren, of “how we may love that which causes us to suffer” (2011, p. 2). Setting aside our hatred, a post-anthropocentric lens reveals that rats, too, are worthy of respect. Using rats as subjects in this thesis aims to show that if we can find it in our hearts to care for the most loathed, abhorred, revulsive creatures, we can undoubtedly learn to extend care to any individual.

... if we can find it in our hearts to care for the most loathed, abhorred, revulsive creatures, we can undoubtedly learn to extend care to any individual.

## Relevance for Architecture

Perhaps it goes without saying, but our relationship with rats exists within physical space. Our physical environment reflects the predominant ideals of a society, and the ways in which we construct it therefore actively participate in maintaining systems of mistreatment and the feeling of disconnect from other beings (Weisman, 2000). It stands to reason, then, that spatial justice and nonhuman rights cannot rely solely on social changes but are dependent on spatial manifestations of these social changes as well. As we become more cognizant of this relation, we recognize that the fields of architecture and urban planning can be extremely impactful in facilitating a more caring mindset.

Though the topic of multispecies architecture is being increasingly discussed and addressed, its most common manifestations are biophilic design and biomimicry, which architecture professor Paul

Dobraszczyk (2023) claims “is almost always predicated on a utilitarian understanding of nature” and “does not alter, at a fundamental level, the long-standing assertion that nature lies outside of the human and is primarily there for us as an instrument to use” (p. 21). Many of these projects seem to fall short because, despite their novel intentions, they are not motivated by genuine concern for nature but rather for the survival of humanity. This is not to say that more inclusive multispecies work isn’t being done; Studio Animal-Aided Design (n.d.) designs buildings with particular species in mind and provides them with spaces in which they can fulfill their entire life-cycles, and are likely not the only studio in existence to work in such a way. Though we view this kind of work to be a massive step in the right direction, it does little to address the psychological aspect of our relationships with nonhumans, giving them their

own separate living quarters in the building that goes mostly unnoticed, spare the odd chance encounter.

In her essay on interspecies encounters, professor and architectural writer Isabelle Doucet (2022) discusses how designing multispecies environments demands more than just a vessel. Through the examination of various multispecies projects, she describes that designers must focus on “becoming attentive to the different mediators that are required for interspecies encounters” (p. 14) such as public outreach campaigns or specific tools like wetsuits that would allow humans to better swim with dolphins. Dobraszczyk (2023) agrees, stating that “architecture is not just buildings (let alone those that are actually designed by architects), but rather a whole series of connections—coexistences between makers and users; between spaces and forms; between materials and mind; and between flows of all kinds—people, non-human things, facilities, information, time and so on” (p. 21). Multispecies architecture, then, must transcend physical buildings and highlight these connections and coexistences that so often go unnoticed. Recognizing the nonarchitect builders with whom we co-create our cities and learning to understand their ways of being therefore are not just architectural methods, but important ones at that.

## Aim

Relearning how to coexist in the world requires us to actively challenge the anthropocentric ideals that govern our actions, and this thesis aims to do precisely that. By critically examining the dynamics at play

## Research Question

» How can practices of care showcase the perspectives of neglected nonhumans and facilitate respectful cohabitation between rats and humans in an urban environment?

where we interact with nonhumans, we explore the challenges at hand in relearning to coexist. Our exploration of rat-human relationships draws attention to various aspects of learning to coexist together in dense urban environments and shows that a change of mindset is just as important as physical, spatial interventions are in facilitating respectful cohabitation in our cities.

## Delimitations

This thesis does not advocate for boundary-free cohabitation with rats. They are still wild animals and should be treated accordingly—though we want to change the negative perception of them, it is essential to recognize their wild nature and the associated risks of interacting closely with them. Rats, like any other wild animal, are capable of aggression, biting and the transmission of diseases. Care should not be confused with cuddles—for both of our sakes.

Additionally, the experiments in this thesis are just that—experiments. Though we believe they provide a good starting point for beginning to think about respectful multispecies cohabitation, we are by no means arguing that they are the best or only way to achieve this goal, nor are they concrete recommendations.

# Methodology

In the following chapters of this thesis, four different tactics are employed to explore practices of care at the interfaces between humans and rats: strategic anthropomorphism, public engagement, mapping of heterotopias, and negotiation.

## Embodying the Rat

In chapter two, the tactic of strategic anthropomorphism is utilized, involving the deliberate attribution of human qualities to nonhuman beings to elicit a certain desired emotional effect (Bennet, 2010). As rats are among the most universally detested creatures, strategic anthropomorphism is a vital first step in overcoming the initial feeling of revulsion that impedes our curiosity (Dobraszczyk, 2023). The first method used within this tactic is an interview, and our first experiment consists of an interview between a rat and a human. This experiment aims to not only disseminate useful background information and dispel rumors about rats, but also demonstrate how rats exhibit many traits and habits that are similar to ours. The second experiment, Rat Vision, utilizes the method of photograph manipulation to allow the reader to perceive the world through the eyes of a rat. By imagining what they sense, we become more sympathetic to their hardships and experiences. The final methods of role-playing and active listening are used in the third experiment, the Council of All Beings, which allows humans to embody a nonhuman and speak on its behalf. By allowing the emotions of the nonhuman to be articulated, participants gain an understanding of what it is like to be other than human.

## Becoming an Ambassador

Chapter three is centered around public engagement, which has been vital in multispecies projects such as Ant Farm's Dolphin Embassy or Cedric Price's CP Aviary where it has been used to promote new ways of thinking as well as generate funds (Doucet, 2022). Drawing inspiration from such projects, a public relations campaign is launched to change the negative mindset surrounding urban rats. Using stickers with attention-grabbing graphics and emotional appeals, this tactic aims to reach an army of future rat ambas-

sadors who pledge to change how they treat urban critters. In addition to the stickers, informational flyers describe the duties of an ambassador and encourage passersby to join the movement. If they choose to do so, they can solidify their commitment to urban rat justice by signing a code of conduct, which also serves as a manifesto for how urban rats should be treated. Together, chapter two and three explore the social facilitators for respectful cohabitation.

## Investigating Interstices

Chapter four shifts the focus to spatial facilitators, utilizing the tactic of mapping heterotopias. Heterotopia, a term coined by Michel Foucault, refers to spaces that have multiple layers of meaning or function, often challenging the traditional notions of space, place and identity (Dehaene & De Cauter, 2008). By mapping heterotopias, we identify and analyze different typologies of urban interstices, using a combination of photographs and drawings to render explicit the nested realities of these spaces. In doing so, we highlight the value of urban interstices for the nonhumans that inhabit them. These spaces already, to some degree, facilitate cohabitation, although not in an ideal manner for either us or the rats in their current state.

## Envisioning Respectful Interfaces

The final tactic, negotiation, is employed in chapter five: Envisioning Respectful Interfaces. Arguing that "the sometimes uncomfortable negotiation with other actors is part of existential reality," (Andersson, 2021, p. 58) this chapter explores how we can negotiate more equal terms for cohabitation between rats and humans. Spatialized within the urban interstices identified in the previous chapter, the negotiations are depicted in the form of speculative collages, which allows them to toe the line between the real and the surreal, the possible and the impossible. These explorations are meant to provoke as much as to propose solutions; though feasible, concrete solutions are theoretically possible, the element of provocation allows the negotiations to retain a focus on the extent to which we are willing to negotiate our sense of well-being for the sake of cohabitation.

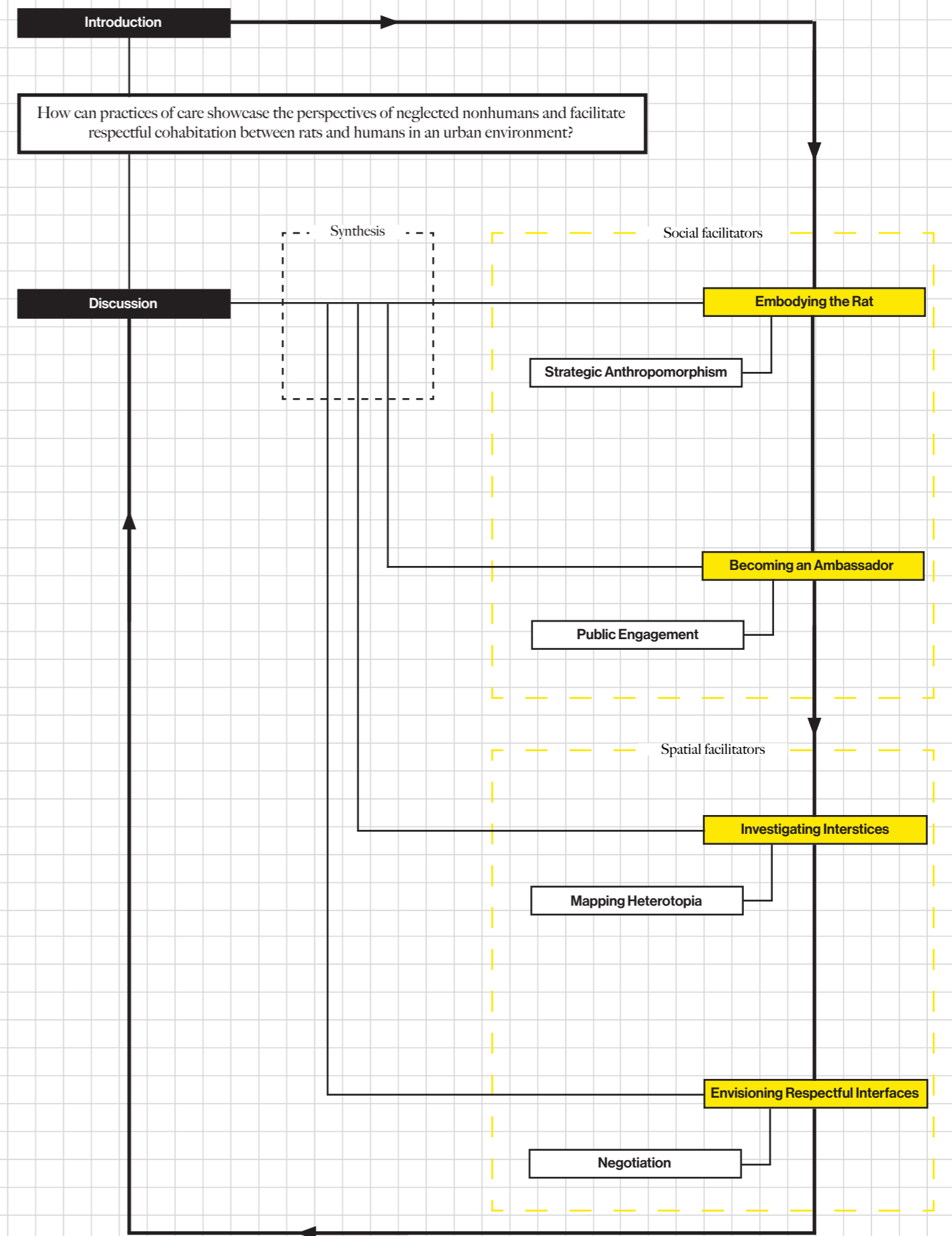


Figure 2. Chapter overview diagram.



## Context

This project exists on two different contextual levels, one ideologically-based and one geographically-based. The background and problem statement exist in a nonspecific urban context in which anthropocentrism is the predominant ideology, while the experiments themselves are grounded in physical locations around Gothenburg as well as in the non-physical space of the internet.

The nonphysical context of the project is the collective western mindset that is dominated by anthropocentrism. This ideological context normalizes actions and spatial manifestations of abuse toward marginalized humans and nonhumans. Many “-isms” prevail through this mindset, including racism, classism, speciesism, and many more, and these isms perpetuate a feeling of separation and a lack of responsibility for other beings. The anthropocentric western mindset allows us to manipulate nature and artificially control populations of nonhumans without questioning what right we have to do so.

The locations of the experiments, in chapters four and five, though specific locations around the city of Gothenburg, were chosen to demonstrate examples of subnatural typologies that can be found in most, if not all, western cities. This thesis focuses on the in-between spaces within the city that are too small, damp, and dark for humans, but where rats and other urban critters thrive (Gissen, 2009). Inspired by a drawing in Reyner Banham’s *A Home is not a House* (1965) in which the walls of a house are stripped away to reveal the “organs” that allow it to run, this work similarly strips away the humans from the urban fabric, allowing us to see into the interstices that house our cities’ infrastructure as well as the critters who call these interstitial spaces home.

**Many “-isms” prevail through this mindset, including racism, classism, speciesism, and many more, and these isms perpetuate a feeling of separation and a lack of responsibility for other beings.**

## Theoretical Landscape

The applied theory behind each of our tactics, which is presented at the beginning of their respective chapters, is underpinned by the overarching concepts listed in this section. These concepts constitute the ethical framework of the project.

### Anthropocentrism / Post-anthropocentrism

Anthropocentrism, as it is defined in the field of ethics, is the belief that humans are the only species that possess inherent value, and that the value of other species comes solely from their utility to humans (Goralnik, L. & Nelson, M.P., 2012). This belief influences how we treat every nonhuman we encounter and renders them as objects for exploitation and abuse rather than as individuals. Additionally, by separating ourselves from nonhuman “others”, we discredit and ignore their expertise and squander opportunities to learn from them.

The ideology that counters this anthropocentrism is known as post-anthropocentrism, which serves as an overarching concept in this project. Seeking to decentralize the role of humans in the world, this ideological framework prompts us to recognize the agency and intrinsic value of nonhuman entities, fostering a perspective that transcends human-centric biases and acknowledges the interconnectedness and importance of all beings.

### Posthumanism / Critical posthumanism

Posthumanism as an ideology shares many beliefs with post-anthropocentrism, but explores them in greater depth. Within this field of study, the discourse often investigates concepts of human/nonhuman hybridity (such as cyborgs), artificial intelligence, and technofixes as means of collaborative survival (Herbrechter, 2022). Though posthumanism addresses questions of ethics and politics, thus moving the conversation past post-anthropocentrism, this thesis focuses more on ethics rather than technology—thus positioning it more within the framework of critical posthumanism.

Critical posthumanism similarly dethrones the human as the central figure in the universe and instead focuses on ethical concerns and “entanglement between humans and a ‘more than human world’” (Herbrechter, 2022). Thomas Laurien (2024)

described the “critical” aspect of critical posthumanism as “criticizing and challenging human, Eurocentric domination, and patriarchy.” This concept also refers to the dissolution of dualisms such as humans versus nonhumans, humans versus nature, etc. Haraway (2016) refers to this ideological shift as “making kin”, a phrase she uses to describe the process of recognizing our interconnectedness and moving away from dualism. “Staying with the trouble” forces us to stay in the present and realize that we can’t undo what has been done. Plumwood (2002), in addition critiquing the harmful effects of dualisms, argues that viewing every species as being intrinsically valuable and recognizing our interdependence is a necessary shift in mindset we must foster to coexist on a planet in crisis.

### Care

Defining the concept of care is a difficult task due to its diverse interpretations across various fields of study. In this project, our understanding of care is informed by Maria Puig de la Bellacasa’s rephrasing of the definition originally proposed by Joan Tronto and Berenice Fischer:

Care is everything that *is* done (rather than everything that ‘we’ do) to maintain, continue, and repair ‘the world’ so that *all* (rather than ‘we’) can live in it as well as possible. That world includes . . . *all* that we seek to interweave in a complex, life-sustaining web (de la Bellacasa, 2017, p. 161, modified from Tronto 1993, p. 103)

Puig de la Bellacasa’s modifications expand the notion of care beyond human-centric perspectives. It emphasizes care as a relational practice and recognizes the agency and contributions of both human and nonhuman beings in caring processes. To further pin down the nature of care practices, Joan Tronto (2019) outlines five different aspects of care, which include: attentiveness – recognizing situations in which care is required; responsibility – taking action to respond to

the identified needs; competence – providing effective and appropriate care; responsiveness – adapting in response to changing circumstances, and commitment – staying engaged and involved over time.

### **Empathy**

As quoted in Fesmire's *Dewey and the Moral Imagination: Pragmatism in Ethics*, Dewey (2003) describes empathy as "entering by imagination into the situations of others" (p. 133). Empathy, viewed in this way, can have tangible effects and "expands the domain of the personal to encompass the felt experience of the other, enlarging, enriching and informing the basis of our possible actions" (Robinson, 2015, p. 47). Empathy and the imagination of otherness (Nonhuman nonsense, n.d. -a) therefore transcend the realm of the human psyche and can be physically manifested as the outcome of our actions. Thus, empathic interfaces and spaces can be viewed as the result of imagining otherness in our design processes.

### **Subnature**

In his book *Subnature: Architecture's other environments*, David Gissen (2012) introduces the concept of subnature, which encompasses the often overlooked and other aspects of nature considered to be undesirable in the built environment. Gissen categorizes these subnatures into "primitive (mud and dankness), filthy (smoke, dust, and exhaust), fearsome (gas or debris), or uncontrollable (weeds, insects, and pigeons)" (p. 22). Rats presumably fit into the latter category. These subnatures stand in contrast to the conventionally desirable forms of nature, such as trees, sun, and wind, often celebrated in architecture. While architecture has been traditionally considered a sanctuary from subnature, Gissen argues that we should instead revalue and reengage with these elements in architectural practices, given their impact on our built environment.

## *Chapter Two*

# **Embodying the Rat**

This chapter delves into the process of embodying the rat through imaginative experiments that employ the tactic of strategic anthropomorphism. By adopting the perspective of the rat and immersing ourselves in its world, a space for curiosity is opened, allowing for a deeper understanding of what it's like to be a rat. Through this exploration, new stories are created that defy conventional portrayals of rats, aiming to evoke empathy and pave the way for human-rat relationships characterized by mutual respect.

Rat is here,  
we speak for all brown rats, norwegian rats, street rats, sewer rats, or  
whatever it is you refer to us as. Whether it's because you can't see  
us, under the leaves in the dim light of dusk, or whether it's because  
you're accustomed to taking our presence for granted, we not been  
listed as an observed species here in Mossen; but rest assured, we  
are as much a part of the landscape as the magpie and the birch.

We're used to being known as pests, but we prefer the Swedish word  
kulturföljare—culture followers, as it more accurately describes  
the relationship we share. We live in parallel to you, eating what  
you eat and living where you live. You have created us through the  
ways you build and consume and dispose. But instead of assuming  
responsibility for inviting us to the table, you blame us for arriving at  
your doorstep and then poison our dinner.

We've been cast to the shadows for so long that we find it most  
productive to use our voice to speak for those who have also been  
pushed to the margins. We represent your inability to confront  
problems of your own creation. To quote a hero of ours, Banksy:

**"We exist without permission.  
We are hated, hunted, and persecuted.  
We live in quiet desperation amongst the filth.  
And yet we are capable of bringing entire human civilizations to their  
knees. If you are dirty, insignificant, and unloved then we are the  
ultimate role model."**

You're not very popular amongst those of us who aren't you, and we  
identify and empathize with you. We're in this together.

We believe in you. You're such an intelligent creature. We believe in  
your ability to solve the complex problems you create. But man, did  
you create complex problems. You're in deep shit and have dragged  
us right in there with you. You've created an emergency for us all.

We expect more from you; we're disappointed in the ways you waste  
your abilities. We're angry that you use your power so selfishly.  
We're angry that you impose your selfishness onto us all. The death  
you inflict onto us by the thousands seems light compared to the  
slow death many of our fellow earthlings are experiencing at your  
expense.

We gift you our ability to adapt to circumstances; to realize that  
change is necessary and to accept it.

(Made by the authors, speech for the council of all beings)

## Embodying the Rat

Making a case for the rat is a daunting task, mainly  
due to the enduring presence of defamatory narra-  
tives that have enveloped these creatures for decades,  
if not centuries, possibly since the inception of our  
relationship with them. While some of these narra-  
tives may have originated from valid concerns, their  
accumulation over time has resulted in an exagger-  
ated and unfairly negative portrayal. Given that this  
thesis explores ways to extend care to rats, finding  
new ways to relate to each other emerges as an  
essential first step—not only is it an act of care in  
itself, but it also serves as the founda-  
tion for the rest of our project. How  
can we expect anyone to care for rats  
when pervasive negative stereotypes  
render the idea absurd?

In this chapter, we will place ourselves in  
the non-existent shoes of a rat, employing the tactic  
of strategic anthropomorphism called for by philo-  
sopher Jane Bennet. Strategic anthropomorphism is  
a strategy that purposefully leverages the human incli-  
nation to project human characteristics, emotions,  
and behavior onto nonhuman beings, with the aim  
to gain insights into the ways in which they interact  
with and influence the world around them (Bennet,  
2010). While fully grasping what  
it is like to exist as another entity,  
whether human or non-human, may  
be impossible, the act of imagining  
might open a space in which curiosity  
and empathy can grow (Nonhuman  
Nonsense. n.d.-a). This perspective encourages a  
more relational and interconnected view of the world,  
where humans recognize their dependence on and  
responsibility towards nonhuman entities (Bennet,  
2010).

Although some concerns have been raised  
about the risks for strategic anthropomorphism  
to oversimplify or diminish the distinctiveness of  
nonhuman entities (Dobraszczyk, 2023; van Dooren  
et al., 2016), these risks pale in comparison to the  
urgent threat of anthropocentrism on the natural  
world (Bennet, 2010). While it is important to  
beware the dangers of imposing human norms and  
perspectives onto nonhuman beings, scholars in

multispecies studies have highlighted the potential  
of strategic anthropomorphism to explore and depict  
the complexities of interspecies relationships as it  
employs imaginative and creative approaches that  
transcend simplistic anthropocentric perspectives  
(van Dooren et al., 2016). These approaches, which  
include methods such as storytelling “rich with  
anecdote, metaphor, and figuration” (van Dooren et  
al., 2016, p. 8), work to challenge narrow conceptions  
of species-typical behaviors and allow us to immense  
ourselves in the potential lives of nonhumans.

**How can we expect anyone to care for rats when pervasive  
negative stereotypes render the idea absurd?**

This chapter includes three experiments—  
*Interview with a rat*, *Rat Vision*, and *the Council of All  
Beings*—in which the tactic of strategic anthroporp-  
hism is employed. Together, these experiments aim to  
create new stories—stories that challenge the defama-  
tory narratives associated with this widely despised  
critter, cultivating the emergence of new connections  
driven by curiosity and empathy.

**While fully grasping what it is like to exist as another entity,  
whether human or non-human, may be impossible, the act  
of imagining might open a space in which curiosity and  
empathy can grow.**





Figure 3. The authors role-playing as rats.

**“The imaginative faculty need not be dismissed as a ‘decorative’ embellishment of the rational mind, but rather cherished and nurtured as the very foundation of what it means to be human in a world of others”**

(Dobraszczyk, 2023, p.233)

## Interview with a Rat

Our first experiment with strategic anthropomorphism includes a fictitious interview with a rat. Though the predominant understanding of an interview is that it is a structured conversation in which a one asks questions and the other answers them, Adams and Thompson (2011) examine the word’s etymological roots to help us gain a better understanding of what it means and how this method could be applied to nonhumans. They explain that the word *interview* “... is derived from the old French verbal noun *sentrevoir*, composed of two parts: *entre-*, meaning mutual or between, and *voir*, to see, which together mean ‘to see each other, visit each other briefly, have a glimpse of’” (Adams & Thompson, 2011, p. 7).

By understanding how we and our respective worlds interact, we can gain insights into the ways in which we’re entangled.

**By understanding how we and our respective worlds interact, we can gain insights into the ways in which we’re entangled.**

The same authors, years later, wrote a book in which they outline steps we can take to interview nonhumans in order to gain a better understanding of our interconnectivity. In *Researching a Posthuman World*, Adams and Thompson (2016) describe eight possible approaches, which they call heuristics, that can be used to learn more about nonhuman actors. We chose three to employ in our rat interview, which included **gathering anecdotes**, **following the actors**, and **studying breakdowns**. Naturally, nonhuman interviews are always based somewhat on imagination, but our interpretation further queered Adams’s and Thompson’s proposal by implementing aspects of strategic anthropomorphism and speculation into the interview rather than solely relying on our human observations.

Writing from the perspective of the critter allowed us not only to learn about rats’ daily lives and disseminate our findings in an accessible, non-scientific manner, but also to better understand the interconnections between humans and rats. Additionally, the personification of our rat interviewee made it possible for us to imagine otherness as a way of fostering compassion. By including elements of humor, anthropomorphism, and storytelling, the interview aims to make “otherness” tangible or even “human” while promoting the belief that rats, too,

are individuals whose distinctiveness should not be diminished by talking about them as a collective (van Dooren et al., 2016).

The interview on the following spread blends facts about rats’ diets, burrowing habits, and familial structures—from Anne Hanson’s (2005) web article, *Rat Behavior*—with our own speculations about their emotions and experiences.

*gathering anecdotes: what is the current situation between us?  
following the actors: how do they live their lives?  
studying breakdowns: what happens when our worlds meet?*



# Tails from the Underground

Under the blooming cherry trees of Järntorget, we sat down with one of the city's locals for a quick discussion of family values, learning to drive, and what it's like to be a member of one of the most hated species by humans. All that and more—in this exclusive interview with a city rat.

Photography: Nikolett Emmert

**Hey! Thanks for agreeing to an interview this morning.**

**How are you today?**

Hey! Doing pretty well. Can't complain. And you?

**Thrilled to be here. I've been looking forward to this for a few weeks now! It's like meeting a celebrity after having spent weeks learning about rats! Let's start it off nice and light: do you know any good jokes?**

Of course. Why should you hire a rat to clean your house?

**Why?**

We'll make it SQUEAKY clean!!

**That's a good one! I've unfortunately heard quite the opposite from some of my friends whose houses you've visited.**

Yeah, I suppose that's true. That's part of the strategy though. You know breadcrumb trails? Droppings are our equivalent. It makes it easier for our friends and family to find the treasure! You should see our houses though. We're just like you—we don't poop where we eat. Everything's nice and clean down there.

**That's fascinating! Thanks for explaining that to me, and sorry to have put you on the spot like that right away. Where exactly do you live?**

My family and I live right by Järntorget. It's prime real estate! Our burrow is directly to the right of the Burger King. It's nice being able to watch all the other critters move around the city, especially because we can see when they've dropped something we may want for dinner. You'd be surprised how much yummy food you humans drop in that area.

**That makes a lot of sense. I'm sure I've dropped a fry or two after a long night of being out with friends. Could you tell me some more about your burrow?**

Well, my great-great-great-great-great-great-great grandfather found it a few years back. It was just a

crack in the sidewalk then, but over the years my family has expanded it into quite the extensive underground network. We've got emergency exits, nest burrows, food caches, and even some dead-ends where we couldn't get through the rock. It allows us to exist in parallel to you humans without you—or other predators for that matter—seeing us.

**Yeah, you're pretty untouchable down there. How many of you are living in your burrow?**

Around thirty, I'd say. We're four families of between six and eight sharing this network. That number spikes when one of us has a new litter, which is between six and fourteen pups every month or two, but our lifespans are pretty short so someone's always dying and evening out the population. Some families also move a few hundred meters away to have their own space. It's constantly fluctuating."

**It sounds like a crazy, dynamic environment down there. What does a normal day look like for you?**

When we've got babies to take care of, we make sure they're fed and don't leave the nest too early. When we don't, we sleep all day and spend the night out searching for food or nesting material. The kids play with each other and start exploring the outside world after a few weeks as well.

**That makes sense. What kind of foods do you tend to look for when you're down here? What does a healthy diet look like for you?**

Ideally, we'd all be eating seeds, nuts, veggies, grains, and maybe even the occasional bug or piece of lean meat. But the best food is the kind that's available, so we eat everything. We mark the good stuff with our excretions so the younger ones know it's safe.

**And it's still safe to eat? Excretions and all?**

Yeah, we actually eat our own droppings sometimes. They're a source of pre-digested nutrients.

**Uh, I'm not sure I know what to say about that. I guess it's like taking a multivitamin. Mine tastes terrible as well, maybe it's kind of the same. Do you have any favorite foods?**

Anything with a high fat content—cheese, ice cream, a big, juicy chunk of burger. But like I said, it's all good!

**Ah, those we can agree on! Let's get deep for a second. I want to know more about your emotional side. Is that okay?**

Yeah, of course.

**What would you say are your best qualities?**

That depends. According to whom? Humans have historically seen us as pests because we're just as smart as they are, but I think our intelligence is one of our best features. We can solve almost any problem, complete puzzles, even learn to drive cars. We're agile and deft and can adapt to our surroundings. We can smile and laugh when we play. We've really got it all going on—I don't understand how most humans can't see that.

**That's a great point you've made—we humans also let others determine our worth. It's something we can should all be conscious of, I think. I find it really admirable how you can just roll with the punches; humans taken out of their environments would really struggle to adapt like you all do. We have a lot to learn from you. Would you say you have any bad qualities?**

No, not really. We're all just doing the best we can, and I don't think anyone can say anything negative about that.

**Oh, you'd be surprised. We humans find plenty of things to be negative about; it's almost like we like being unhappy. Speaking of happiness or the lack thereof, when do you feel happy?**

Always? Never? That's a hard question—I think maybe it's more a feeling of contentness than abject happiness, and that feeling is constant. But I suppose I feel happy when I hear my kids squealing when they play.

**Do you feel sad?**

Of course. We take loss to heart, just like you, and often

exhibit feelings of depression when a loved one has died. It can be really hard.

**That's fascinating. Maybe we're more rat than we thought. Would you up for a speed round of questions before we wrap up for the day?**

Sure!

**Describe yourself in 3 words**

Resourceful, playful, and resilient.

**What do you like to do for fun?**

Walks around the square and trying new food, definitely.

**Where do you see yourself in the future?**

I hope I can live til the ripe old age of 2 and die somewhere peacefully, not too far from the nest.

**What do you think about humans?**

You're really interesting. You're so powerful, so smart, but you can't take care of anything well. Fortunately, the ways in which you destroy the world benefit us, but I wish you weren't so selfish. And that you wouldn't kill us en masse.

**Fair enough. Favorite color?**

Oh, for sure it's got to be aurorine.

“Humans have historically seen us as pests because we're just as smart as they are, but I think our intelligence is one of our best features. We can solve almost any problem, complete puzzles, even learn to drive cars”

**Wait, hold up. I've never heard of that. Do you mean aquamarine?**

No, not at all. But we can see that too. It's hard to describe to those who can't see ultraviolet radiation. I think it may just look like white to you, to put it in terms you'd understand, it's pretty much a really intense blue-violet.

**No way! I didn't know you could see colors we can't. That's so cool!**

And you can see colors that we can't. I've heard that red is really beautiful, but I'll never know. We've all got our strengths and weaknesses, huh?

**For sure. That was my last question. Thank you so much for your time today! I know it's been extremely enlightening for me and that the other humans will think so as well. It's incredible how much we have in common.**

Thanks for giving me the chance to share. Take care! ■





Figure 4-6. Unedited photographs as seen from the human perspective.

## Rat Vision

The second experiment consists of learning to understand the way rats sense the world by creating annotated images that reflect their visual, tactile, auditory, olfactory, and gustatory experiences. Despite many physiological similarities between us and rats, we live in drastically different environments; therefore, it stands to reason that their way of seeing and building their world is adapted for their way of life (Pallasmaa, 2005). The edited photos, inspired by those made by Anne Hanson (2007), allow us to imagine what life is like from the perspective of a rat, which expands and enriches the scope of actions we can take in a multispecies encounter (Robinson, 2015). This experiment in empathy, like the others in this chapter, can therefore have very real manifestations, contributing to its importance to this work.

The differences between the sensory needs of rats and humans become evident when we compare how their eyes work with ours. Because rats are prey animals, they can move their eyes independently from one another, allowing them to both navigate the world and watch for predators simultaneously, according to animal behaviorist Anne Hanson (2007). Her studies of rats have also shown that they can see ultraviolet light, which can help them find food in twilight, and are red-green colorblind, meaning they see the world in various shades of blues, greens, and browns. Her article on rat vision also discusses how having eyes

on the sides of their heads means they have a much wider cone of vision than humans do but have little to no depth perception. Additionally, she describes that their nearsightedness—which results in them only being able to see clearly a few meters ahead of them, results in eyesight so poor that it must be supplemented by their strong auditory and olfactory senses. The heightening of these other senses allows them to exist in the absence of sunlight, allowing them to deftly navigate both terranean and subterranean worlds when most other critters are asleep (Hanson, 2007).

The sensations experienced by the rat also change depending on the context in which it exists. The city, the context in which our project is focused, provides certain experiences that might be unpleasant compared to their more “natural” habitats such as the forest: the sounds of trams and people, the scent of air pollution, and the sun exposure that results from having little tree coverage can be seen as negative aspects for the rat. By looking through the critters’ eyes and becoming aware of the sensations that come with living in an urban environment, we become better equipped to accommodate them in our future negotiations.

The following images were created in Photoshop by altering the color balance, adding blur, and by using generative fill to broaden the cone of vision. Imagining scenes from their point of view allows us as humans to appreciate their abilities and feel, as viscerally as possible, what it is like to be a rat.

**Imagining scenes from their point of view allows us as humans to appreciate their abilities and feel, as viscerally as possible, what it is like to be a rat.**

*One eye up at the sky at all times!*

*Echo of distant cheering from human children*

*Fresh scent trail of another rat, marking its territory. It must have just passed by here!*



*Faint rustling of leaves, suggesting movement in the nearby thicket*

*Appetizing smell of peanut butter on discarded wrappers*

*Crunching of dried plant stalks, perfect for nest insulation!*

Mossen, Guldheden

*The ground is vibrating from the tram stop a few hundred meters away*

*The scraping sound of two-legged critters approaching on the gravel-coated asphalt*

*I think one of them is chewing peppermint gum – YUCK!*



*Feels like it's gonna rain tonight. Gotta go get some food while I can!*

*They're good hiders, but I'd be willing to bet there's some kind of bird of prey up here waiting to make a meal of us*

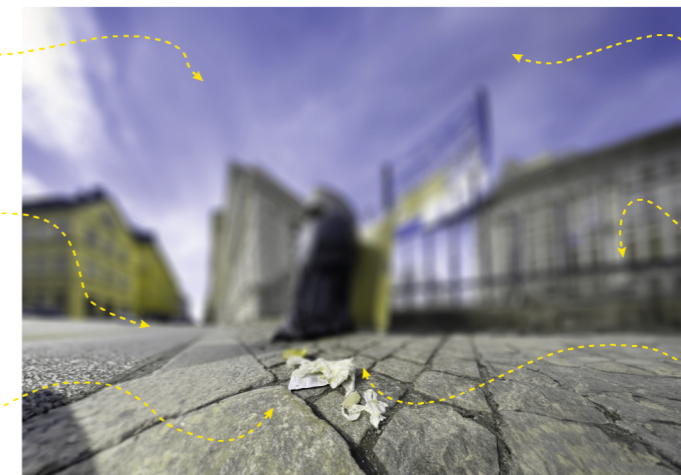
*Ah, finally home! I smell the buffet my family has been preparing all day*

Kosmosgatan, Bergsjön

*The sun is so bright, it's burning my eyes! There are no trees for shade, and the glare from the windows makes it even worse*

*A dog just barked!! Maybe it's close by... I should find a hiding place, stat*

*Oh, goody! Someone already gnawed through the trash bag. Less work for me!*



*The air is thick with smoke and exhaust*

*The bustle of city traffic and voices on the main street reverberates off the facades of the buildings*

*Ah, the smell of my friends' urine... that's how I know this food is poison-free*

Near Kungspportavenyen, Central Gothenburg

Figure 7-9. Edited and annotated photographs simulating the rat's perspective.



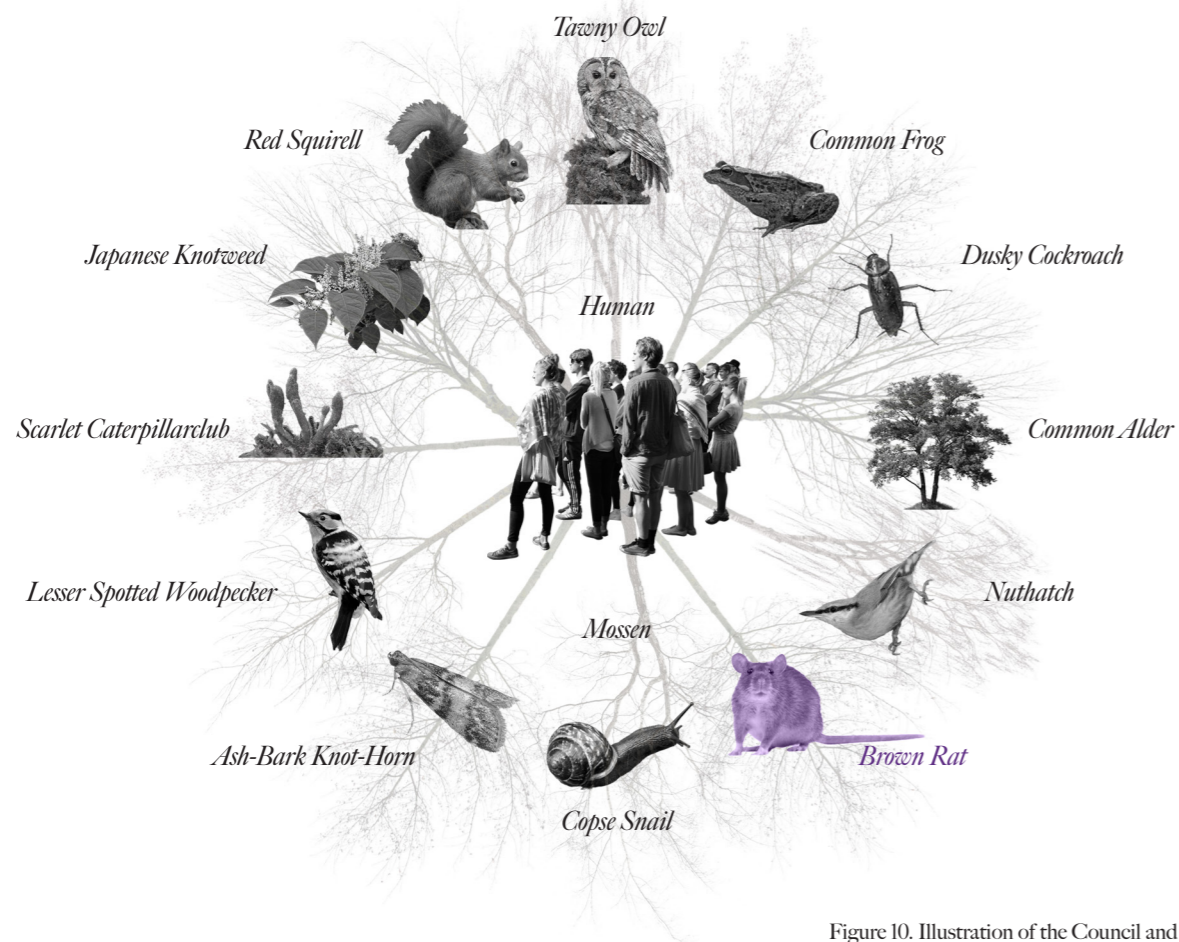


Figure 10. Illustration of the Council and its participants.

## The Council of All Beings

As the final step of the process of Becoming Rat, we attended The Council of All Beings. In a description of the event, Joanna Macy (n.d.), one of its inventors, writes:

The Council of All Beings is a communal ritual in which participants step aside from their human identity and speak on behalf of another life-form. A simple structure for spontaneous expression, it aims to heighten awareness of our interdependence in the living body of Earth, and to strengthen our commitment to defend it. The ritual serves to help us acknowledge and give voice to the suffering of our world. It also serves, in equal measure, to help us experience the beauty and power of our interconnectedness with all life.

The council took place in the wetlands near campus, an area known as Mossen. Humans normally expe-

rience this area on the walking paths that circumscribe the swamp, but on this day, our classroom was located at the most central point of the wetlands. Leaving the comfort of our self-made infrastructure and trudging through mud and dense vegetation was met with a surprising amount of joy—nearly twenty fully-grown humans looked like kids as they explored the depths of Mossen.

### Preparatory Work

Generally, before the Council begins, participants are chosen by a nonhuman being to be its representative and are encouraged to create masks or change their appearance in a way that further enables them to assume the identity of their entity (Macy, n.d.). In our case, the rest of the students were picked by their nonhuman, but we were assigned the rat in advance so that the Council could better tie into our thesis. The other students represented species that have been observed in Mossen, but the brown rat was not on the list; however, due to their global omnipresence as well as the plausibility of rats thriving in such an environment, we assumed that rats could also be found there.

We were told to come to the Council with a speech and some props to help us get into character, if we felt compelled to do so. The speech could be however long it needed to be to get the point across and was to end with the nonhumans giving some sort of intangible gift to the humans. We wrote our speech and returned to back to the swamp after lunch, where we were met by smiling snails, birds, and plants, all wearing human clothes.

**They talked about their endangerment, the way their homes have changed over the past decades. They talked about their inability to find food, to stretch out their wings or branches, to continue living as they have for the past thousand years.**

### The Mourning

But the smiles quickly faded when the Council leader requested we start by mourning. The Mourning is described by Macy (n.d.) as a moment to emotionally connect to the suffering of our world, much of which is inflicted by human actions. By allowing ourselves to fully acknowledge the pain, anger, sorrow, and fear we experience while contemplating the state of the natural world, we open up and become more perceptive to listening to and embodying other beings in The Council (Macy, n.d.). The discomfort was tangible as the mood shifted from playful to serious, as we collectively shifted from “us” to “we”. The class collectively struggled to find a specific thing to mourn—should this “thing” be the loss of a critter? The loss of local habitats? Of habitats all over the world? Of species we’ve never heard of? The fact that we as humans are

**By strategically anthropomorphizing the critters of Mossen and listening to these testimonies as a human, it becomes difficult to deny the impacts of our actions and to shy away from accountability.**

responsible for all of this? We clumsily landed on the subject of the silent loss of interstitial green spaces and took a minute of silence to mourn the loss of lands like the one we were all so excited to explore this day.

### The Council

Macy (n.d.) then says that, as the Council of All Beings itself commences, all participants should

gather in a circle and take turns to voice both the hardships experienced by the beings they embody and the particular qualities they wish to offer as a gift to the humans. A few participants at a time remove their masks and step into the center of the circle, now representing humans, to absorb the messages shared by the other beings (Macy, n.d.).

In our case, we split ourselves into two even groups: half of the students represented the humans and stood in the middle, ready to receive the messages of the others. The other half represented their nonhumans, which ranged from invasive plants to bug-eating fungi to trees and birds, and stayed on the circle’s periphery. The creatures then

began to speak through their humans, who were clad in branches, masks, and paper feathers. They talked about their endangerment, the way their homes have changed over the past decades. They talked about their inability to find food, to stretch out their wings or branches, to continue living as they have for the past thousand years. Some told the humans much about themselves, making them empathize and realize that we’re not so different after all; some expressed their anger and disappointment for having been put in their current situation by the humans. The humans stood there, visibly uncomfortable, being forced to confront the results of their actions directly. It was obvious that hearing the plight of these creatures translated into human words was deeply impactful.

By strategically anthropomorphizing the critters of Mossen and listening to these testimonies as a human, it becomes difficult to deny the impacts of our actions and to shy away from accountability. The experience in the Council allowed us to understand the power of embodiment in allowing us to both feel

other and to truly listen to others and showed us how impactful our imaginations can be. This experiment solidified our belief that imagining the perspective of nonhumans is a vital step in engaging people and changing their mindset from one of passivity to action.

## Reflections

This chapter consisted of three experiments that employ the tactic of strategic anthropomorphism to create empathy for rats: *Interview with a Rat*, *Rat Vision*, and *the Council of All Beings*. These experiments serve as a vital first step in creating multispecies architecture, as they encourage us to feel empathy and care for our urban cohabitants, making us more likely to treat them with respect when we encounter them. By diving into the world of the rat, we realize that rather than meaning malice, they're simply trying to live their lives just as we are. It's difficult to judge someone when you know more about their situation, and this applies to all beings, humans and non.

Additionally, this chapter shows how embodiment can be a powerful tool in fostering this understanding of otherness. It is one thing to read about how a rat sees the world, but it is another to be able to experience it for yourself. The embodiment used in the Council of All Beings provided us with similarly profound revelations: listening to others speaking on behalf of another critter and hearing the words aloud is a different experience from reading about the same species. Listening to the creatures, not just as an individual but on behalf of all of mankind, was also a deeply profound experience that invoked feelings of guilt and accountability for the ramifications of our collective actions. There is a feeling of powerlessness inherent to seeing oneself as an individual, but feeling as a part of a collective is empowering and inspirational.

... embodiment can be a powerful tool in fostering this understanding of otherness. It is one thing to read about how a rat sees the world, but it is another to be able to experience it for yourself.

## Chapter Three

# Becoming an Ambassador

This chapter explores ways to advocate for rats and their rights as urban inhabitants through ambassadorship and campaigning. The examination of projects by Ant Farm and Cedric Price underscores the significance of public engagement as a catalyst for multispecies initiatives. Finally, by crafting and launching a PR-campaign, efforts are made to educate the public about the mistreatment of rats and to teach people how to recognize and respect their presence in urban environments.





Figure 11. QR code linking to the Instagram account.

## Engaging the Public

In an essay examining the two multispecies projects Dolphin Embassy by Ant Farm and CP Aviary by Cedric Price, Isabelle Doucet (2022) acknowledges their “efforts to develop . . . encounters beyond merely *designing* a multispecies vessel, instead becoming attentive to the different *mediators* that are required for interspecies encounters” (p. 14). This suggests that there are non-built aspects to multispecies architecture that can prove essential for its success. As argued in the previous chapter, constructing new narratives and finding new ways to relate to each other is a vital first step, but in order to change the societal perceptions of rats, the public needs to get engaged. This chapter investigates what mediators could be leveraged to facilitate that process.

Doucet’s (2022) analysis of the Dolphin Embassy and CP Aviary projects highlights how both initiatives developed mediators to facilitate public engagement. In the Dolphin Embassy project, a script for a feature film titled *Brainwave* was created, exploring themes of communication and consciousness in interspecies relationships. The film project had a dual purpose: to promote public recognition for interspecies communication and serve as a means of generating funding for the Dolphin Embassy. In a similar vein, the CP Aviary project sought to engage the public by initiating the Cedric Price Aviary Appeal, a fundraising campaign aimed at securing the necessary funding for the project’s realization. Outreach efforts, events, and a variety of promotional materials, such as brochures and models, were used to raise awareness about the project. Coverage extended to the written press, television, and radio as well as within architectural circles. (Doucet, 2022)

While this thesis has no intention of raising funds, it draws inspiration from the Dolphin Embassy and CP Aviary project’s effective utilization of various forms or media to reach and engage the public around a matter of concern. In this context, the role of the ambassador plays a significant part as mediator, bridging the gap between the project’s goals and the public’s perception. To enlist these ambassadors and spread

the word about urban rat rights, we’ve launched a PR-campaign that employs a variety of methods that serve as mediators between urban rats and the public as well as aim to change people’s perception of the urban critter and inspire them to advocate for their rights.

**While this thesis has no intention of raising funds, it draws inspiration from the Dolphin Embassy and CP Aviary project’s effective utilization of various forms or media to reach and engage the public around a matter of concern.**

## Our PR Campaign

The PR campaign consisted of informational flyers, stickers, and an Instagram account that all served to inform people about the injustices faced by urban rats and to urge them to be more considerate of our furry urban counterparts. While the flyers were intended to engage and enlist new rat ambassadors, the stickers, touting slogans such as “rat-ify urban justice,” “stop the trap, save the rat,” and “paws off the poison” were meant to create a sense of intrigue around the topic. With their bright colors and catchy slogans, the stickers did not serve an informational purpose; rather, they aimed to create enough interest in the topic that people would search for the project on Instagram. The stickers were perhaps the most successful element of the campaign, as many of our peers claimed to have enjoyed placing them around town and in various cities during their travels. Finally, the Instagram page showcases the work we’ve done in this thesis, providing visitors with access to posts that describe the project’s ambitions as well as various ways in which we have experimented with learning to cohabitate with urban rats. The page also highlights some unique places in which the stickers have been found, incentivizing sticker spreaders to be creative with where they place their stickers and perpetuating a cycle of engagement.

**The PR campaign consisted of informational flyers, stickers, and an Instagram account that all served to inform people about the injustices faced by urban rats and to urge them to be more considerate of our furry urban counterparts.**



Figure 12. PR campaign flyer.



Figure 13. PR campaign sticker.

Additionally, we made a code of conduct that people can sign to show their commitment to the cause and become “official” rat ambassadors. The code of conduct lays out ideological guidelines such recognizing that visible existence is not a crime, being willing to negotiate the sharing of our spaces, and being open to learning from their resilience. This commitment to becoming a rat ambassador is purely symbolic but serves to encourage people to be cognizant of how their actions and mindsets can affect rats. A further investigation into ambassadorship shows how it can be used to benefit multi-species projects.



1. **The maintenance of physical distance** is recommended and preferred by both parties. Nonconsensual physical proximity is not a valid way to show care toward an urban critter. If we won't treat them like pets, we can't act like their owners.
2. Because we live in such close proximity to one another, **negotiation of territory is encouraged**, as compromise is the goal. Negotiations can take many forms and can be either reactionary or precautionary. These negotiations, however, may not endanger the health or well-being of the critters.
3. **Always ask for permission** before interacting with a rat or its property, and offer something tasty (but nutritious) as compensation for their time.
4. If you are approaching a rat's personal space bubble or property, ensure that they are aware of your presence and that you are not interrupting them while they are doing activities such as eating or grooming. Approach gently and provide them an escape route if they wish to leave. You wouldn't want to be cornered or startled your home. **Treat them with the same respect that you expect in return**, and be sure to bring a gift for the host(s).
5. If you take photos or videos where a rat's identity might be revealed, **ensor faces or other identifiable features** to ensure their anonymity unless consent has been expressly given.
6. If they're neither encroaching on your personal space bubble nor actively destroying your property (things owned by you personally or you collectively) then they should be ignored. **Visible existence is not a crime**.
7. If they are encroaching on your personal space bubble and/or actively destroying your property, nonviolent measures may be taken. Such measures can include noises, movements, or anything that will stop the action with as little fear as possible. **Remember: to urban critters, man is giant**.
8. Keep your mind open to the fact that **we have much to learn from them**. Their resilience, though a negative trait to those trying to eradicate them, is among the many things we can learn from them. Stay curious and listen carefully to what they are telling you. **Our future depends on their knowledge**.
9. We, who value nothing but ourselves, are in the wrong. Great strength comes from realizing our interdependence with one another; from realizing **collaborative survival is the only survival**.

I \_\_\_\_\_, **the undersigned, have read the Code of Conduct for becoming a Rat Ambassador, and I pledge to respect these guidelines.**

\_\_\_\_\_ **Date**

\_\_\_\_\_ **Signature**



## Becoming an Ambassador

One of the Cambridge Dictionary's definitions of the word *ambassador* is "a person who represents, speaks for, or advertises a particular organization, group of people, activity, or brand" (n.d.). As an ambassador, a person commits to amplifying the voice and interests of the entity they represent—which can take many different forms, depending on the purpose and goal of the ambassadorship. The rat ambassadors we enlisted for this thesis have helped us by placing stickers in various places where they travelled and by sharing the project's aspirations in casual conversations with others. A few rat ambassadors have also sent us photos of rat sightings so that we can broaden our understanding of where rats are currently being spotted in Gothenburg. By enlisting ambassadors, we expand both the scope of information we can collect and the audience of the project. Creating a team allows us to cast a wider net and brings the thesis closer to its goal of inciting a widespread change of mindset.

As it is capable of changing mindsets, nonhuman ambassadorship is broadly used in multispecies activism work, where various critters have expressed, through humans, their concerns about their urban habitats. Cities such as Berlin, Amsterdam, Copenhagen, and Oslo all house groups of nonhuman ambassadors who use embodiment as a tactic to influence politics. Ambassadorship exists on a spectrum of officiality, from casual to dedicated engagement. Officiality in ambassadorship is contingent upon a few factors, such as whether the ambassador was appointed or recognized by an official governing body, their level of commitment (both of time and of energy,) and the duration of their engagement, just to name a few factors that were discussed in a conversation about species ambassadorship with Thomas Laurien (2024). This project experiments with various levels of engagement, from the simple touting of a rat sticker to the signing of a contract to a formal baptism as an official ambassador, which the authors have undergone.

The baptism took occurred on International Day for Biological Diversity, May 22. The event was organized by the newly started Species

**As an ambassador, a person commits to amplifying the voice and interests of the entity they represent . . .**

Embassy Viskan-Borås to appoint Sweden's first official nonhuman ambassadors. There were eight species represented at the ceremony: pike, perch, common alder, badger, shiny duforea (a type of bee), oak, and mallard, and of course, the brown rat. The participants delivered speeches from the perspective of the human ambassador and were subsequently baptized by the ambassador for Ivy, from the preexisting group, City of Species, based in Aarhus, Denmark. The event took place in a public area in Borås, Sweden, allowing passersby to listen to the ambassadors' pleas, thus spreading the word about the importance of biodiversity to whoever stopped to listen. This event further concretized the importance of ambassadorship in spreading messages to a broader audience.



Figure 14. Photo of the newly appointed ambassadors.

## Reflections

In this chapter, we have argued that public engagement is an important aspect in ensuring the success of multispecies projects. Through an analysis of how projects such as the Dolphin Embassy and the Cedric Price Aviary have connected with the public through fundraising campaigns, movies, and graphics and therefore prepared the masses for multispecies architecture, we demonstrated the success of public engagement in projects that engage with nonhuman actors. Additionally, we've shown how we have been inspired by these projects to create our own campaign to protest the treatment of urban rats.

Though these public engagement tactics are comparably as non-architectural as the strategic anthropomorphism tactics from the previous chapter, we view them as being the social, non-built tactics essential to the success of multispecies architecture and the creation of respectful interfaces between us and nonhumans. Additionally, by changing the public's perception of rats, these tactics facilitate the implementation of the built interventions that come later. If the public doesn't agree with the ideology behind the newly negotiated interface, they'll be reluctant to accept them or participate when applicable.

Finally, the empowerment and sense of responsibility inherent to becoming an ambassador can be an impactful driver in driving change in our cities. Even outside of the realm of architecture, the embodiment and telling of nonhumans' stories can be a way to impact policy and have a tangible impact. Though it may come off as silly or naïve to dress like an animal, plant, or nonliving entity and advocate for it, any means by which we can give these beings a voice that can be listened to and understood by humans is one that should be utilized.

**Though it may come off as silly or naïve to dress like an animal, plant, or nonliving entity and advocate for it, any means by which we can give these beings a voice that can be listened to and understood by humans is one that should be utilized.**

## Chapter Four

# Investigating Interstices

This chapter explores the hidden life of urban interstices—spaces commonly overlooked and taken for granted as mere human infrastructure. Appropriated as habitats by rats however, these spaces offer functions beyond human-centric interpretations. By combining photographs with drawings depicting what is usually invisible to humans, the different layers of meaning are revealed, illustrating the value of these spaces for nonhuman inhabitants such as rats.



“If the supernatural is a world of miracles, a religious world above nature, and the natural is the world in which human society is located, then the subnatural is the realm in which we can barely exist in the state that we currently conceive ourselves, both socially or biologically. It is that zone that is most fearsome, because it describes the limits in which contemporary life might be staged. It is thus no coincidence that subnatures are generally marginalized in architecture. When they appear in architectural thought in a nonmarginal way, they are often used to describe the passage of societies . . . But the subnatural is not the apocalyptic edge of society. Rather, it reveals another possible form of nature in which we can be something more or less than is currently possible within our conceptions of nature.”

(Gissen, 2009, p. 23)

## Investigating Interstices

Interstices are an inevitable byproduct of our city building. They exist “in-between, underneath, beyond, enveloped, and outside our traditional concepts of habitat and urban space” (Ruolin, 2013, p. 19), and can result either as a product of decay or as an unintended consequence of fitting all the necessary infrastructure into a city. Interstices, like rats, can be considered a form of subnature, consisting of spaces that are dark, dank, dirty, and uncontrollable (Gissen, 2009). It’s fitting, then, that rats feel so at home here—the spaces they inhabit are similarly underappreciated, overlooked, and marginalized. Though these spaces appear useless to humans, a closer investigation of rats’ interstitial homes reveals their heterotopic nature.

**Though these spaces appear useless to humans, a closer investigation of rats’ interstitial homes reveals their heterotopic nature.**

A heterotopia, according to Michel Foucault (1984), is the turning of a mirror to society and the recognition of all the strange, contradictory stories playing out simultaneously. Interstices are one such example of a heterotopia, as they are considered a home by many yet empty by others. These spaces are “capable of juxtaposing in a single real place several spaces, several sites that are in themselves incompatible,” (Foucault, 1984) but these parallel lives that play out within them remain ignored and disregarded by humans. Overlooking these spaces is akin to overlooking urban critters as whole; it is yet another way of perpetuating the anthropocentric belief that only humans matter. Therefore, the recognition of the multiple, nested realities intrinsic to our cities’ in-between spaces is another way we propose beginning to move toward respectful cohabitation.

**A heterotopia, according to Michel Foucault (1984), is the turning of a mirror to society and the recognition of all the strange, contradictory stories playing out simultaneously.**

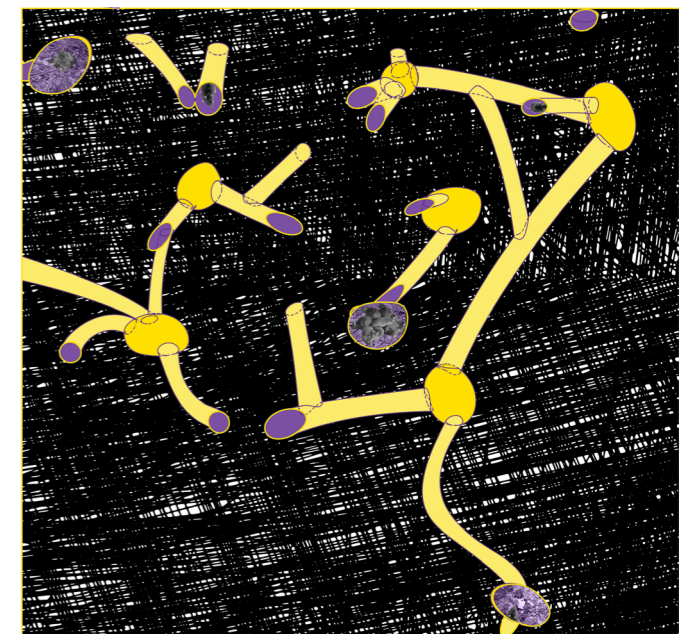


Figure 15. Abstract illustration of a rat burrow.

## Why Study Rat-architecture?

A result of overlooking the interstices in which rats live is the omission of their architecture from our architectural representations. We are not the only inhabitants of our buildings, as much as we like to believe we are—in addition to our pets and other welcomed guests, the unwelcome also reside alongside us (Gissen, 2009). The presence of bugs, rodents, and maybe even the occasional bat or bird indicates a flaw in the design or construction; therefore, we purposefully omit the squirrels in the walls and the spiders in the corners of the ceilings when we make architectural drawings, wishfully willing the cohabitants away. We even exclude the bugs in the soil that bolsters our buildings, the birds that live in the tree next to the break room, and generally all nonhuman beings that contribute to the local ecosystem. Though this is not the only way architecture is produced—again, we'll mention Studio Animal-Aided Design (n.d.)—most buildings are part of an exclusive, human-only club of which no other individuals are invited to be members.

The status quo of architecture not only fails to account for accidental cohabitants but also overlooks the nonhuman architecture that surrounds it: the ant hills, the pigeon nests, and of course, the interstices that rats call home. Inspired by a detail drawing of a rat in a wall cavity in *The Nonhuman Embassy* by Erik Lokrantz (2022), the following drawings represent *rat-architecture* and its juxtaposition with human spaces and infrastructure, exhibiting the heterotopic nature of these spaces and showing that it's not just human hands that contribute to our urban areas. These drawings aim to answer the question: "If scaffolding is a temporary structure for the support of building construction, can a drawing perform as a cognitive scaffold to support our rethinking of the existing environment?" (Frichot et al., 2022. p. 94). Recognizing the agency of nonhumans builders as co-creators of our city through drawings of their architecture is an act of care in and of itself, and the study of the homes of nonhumans can inform ways in which we can negotiate space in our cities.

## Mapping of Heterotopias

We've mapped various interstices that we found in the heart of Gothenburg and categorized them into different typologies to begin to understand where and how they make their homes (and how it differs by typology) in the hopes of both highlighting and learning from these spaces. These categories have been chosen to represent the different infrastructural systems that are often constituted of similar elements and have similar spatial conditions; for example, water infrastructure often consists of damp, dark pipes that can be used as a way for rats to move around a space.

The heterotopic representations involve line drawings of the rat-architecture superimposed onto photographs. Though humans have made the spaces generally, most of our infrastructure is hidden and therefore not easily seen, which is why the human perspective does not include much of the infrastructural system.

**The status quo of architecture not only fails to account for accidental cohabitants but also overlooks the nonhuman architecture that surrounds it: the ant hills, the pigeon nests, and of course, the interstices that rats call home.**

*Rat-architecture is a neologism coined by the authors through merging the words "rat" and "architecture". The term refers to architecture crafted by rats, for rats.*

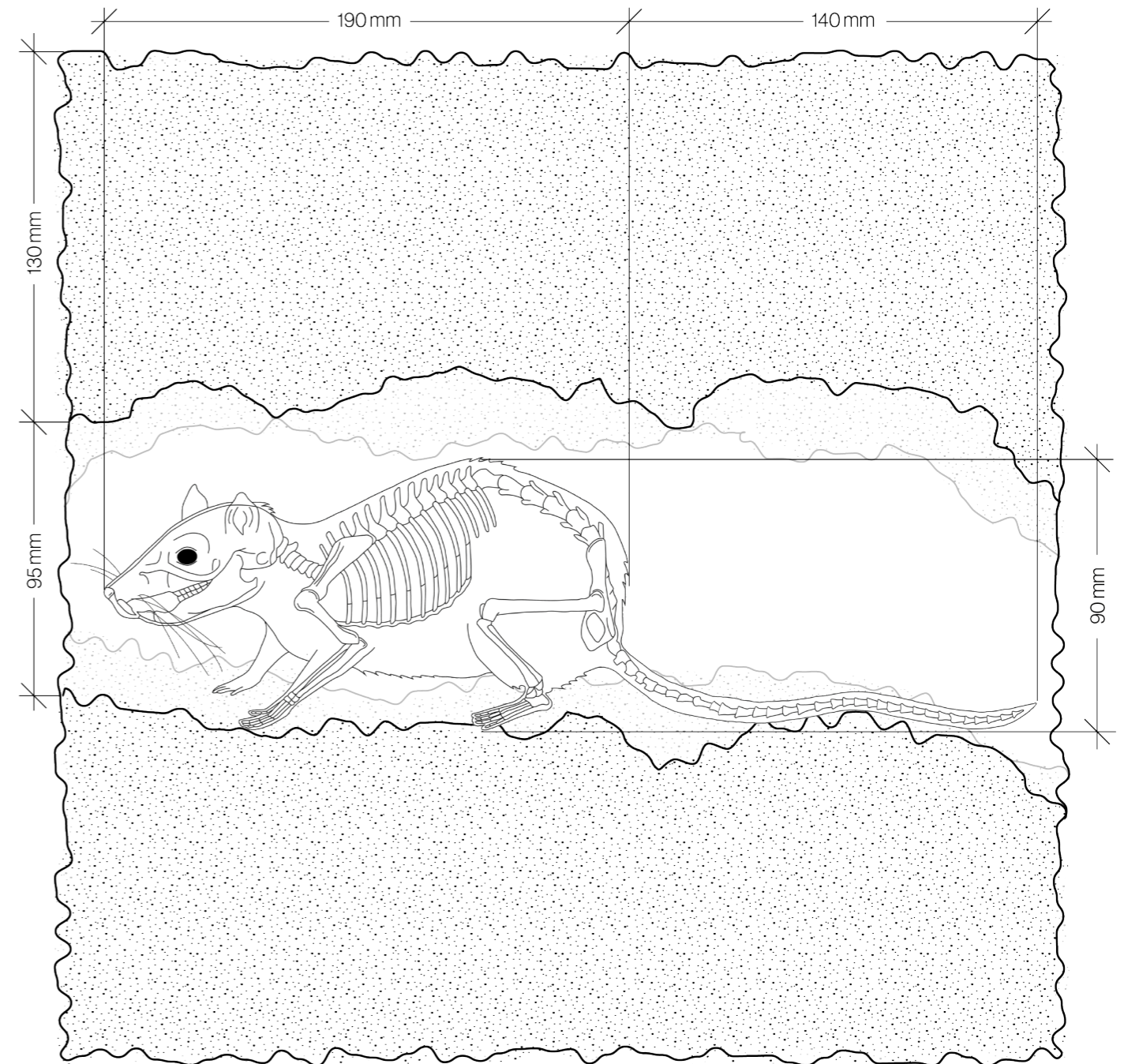


Figure 16. Drawing of a rat in a burrow



# Typologies of interstices



## Green infrastructure

For green infrastructure, interstices encompass the subterranean spaces of soil and the spaces hidden beneath or within vegetation found in parks, lawns and flowerbeds.



## Ventilation infrastructure

Interstices within ventilation infrastructure refer to the space within the network of ventilation ducts connected to plenum spaces, exhaust shafts, mechanical rooms, and vents.



## Water and sanitation infrastructure

For water and sanitation infrastructure, interstices include the space within pipes and sewers connected to storm drains, toilets, sinks, and showers.



## Waste management infrastructure

Interstices in waste management infrastructure encompass the spaces within and around trashcans, waste disposal rooms or areas, and landfill sites.



## Gap

The interstices referred to as gaps include the incidental spaces between or within various infrastructural elements, such as the crevices between electrical boxes and buildings, or gaps formed by processes of decay.



## Pest control infrastructure

For pest management infrastructure, interstices include the spaces within traps, bait stations, and pest control devices.



## Building structure

Interstices within the building structure refers to the space in-between walls, floors, roofs, beams, and slabs.

Figure 16-33. Photographs depicting various interstitial spaces



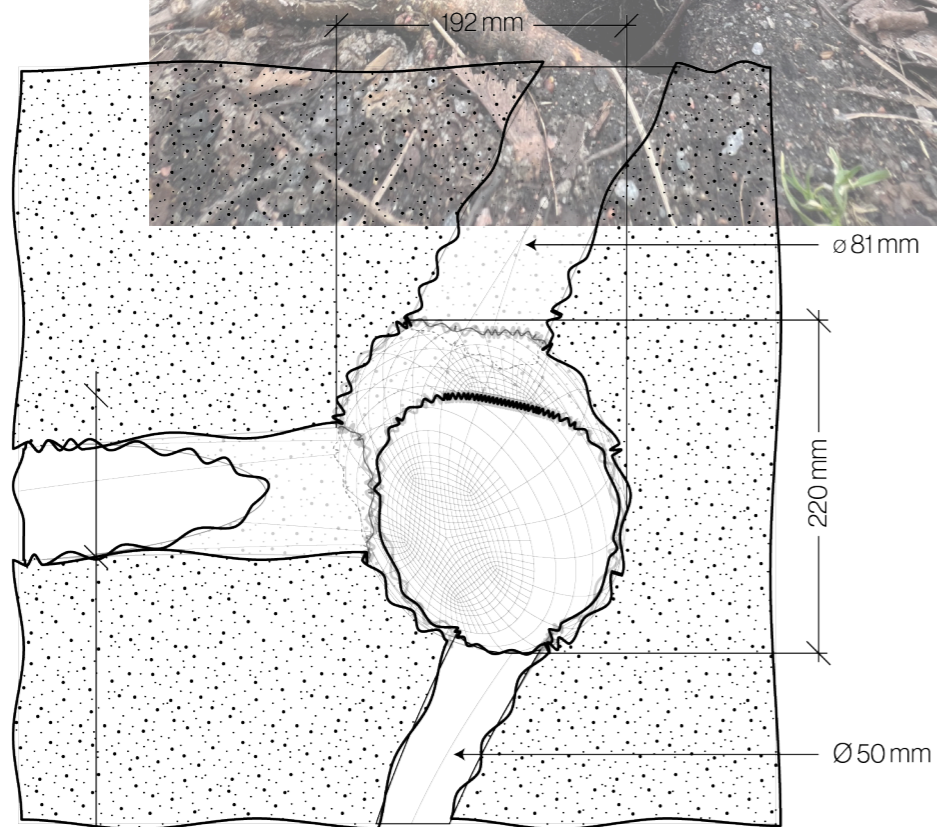


Preconceived infrastructure by humans  
Green space, flowerbed



Preconceived infrastructure by humans  
Green space, grasslands

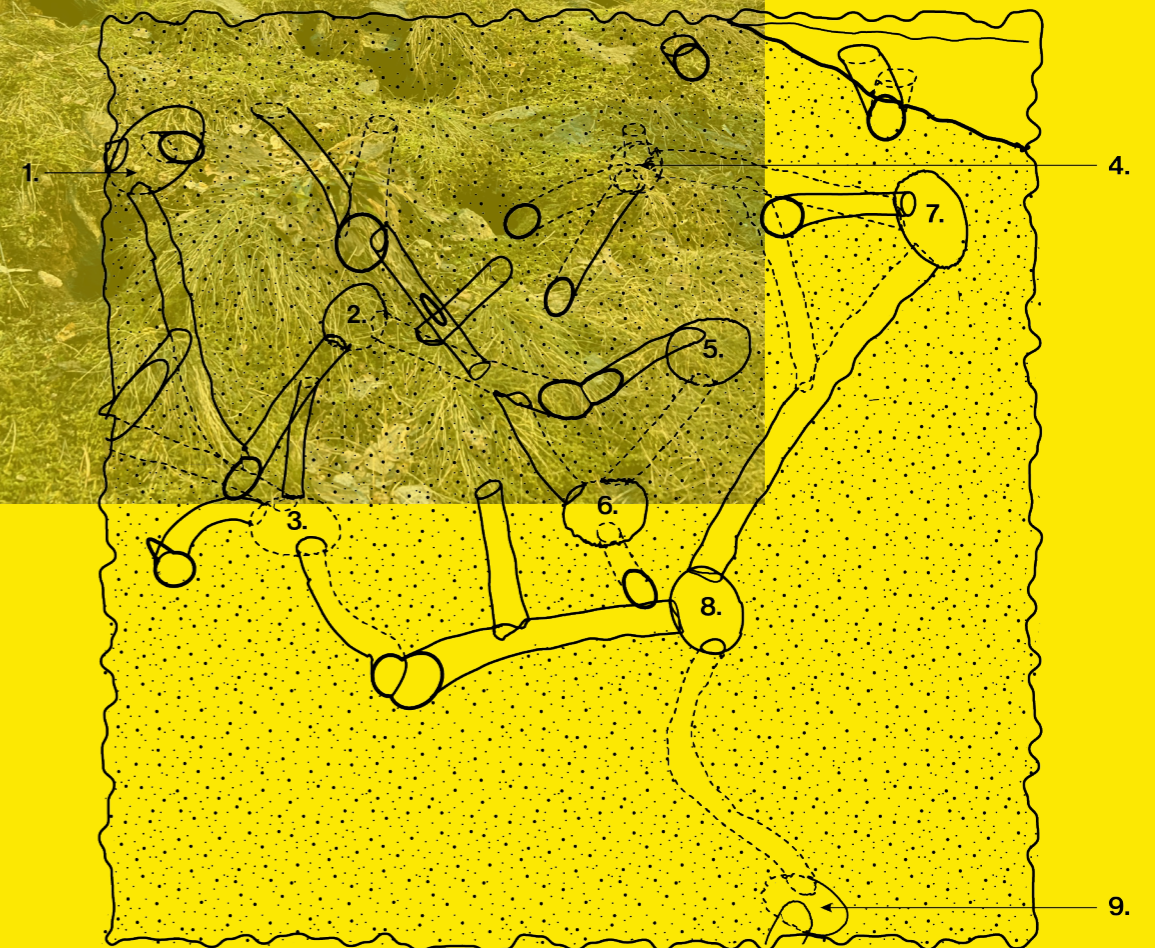
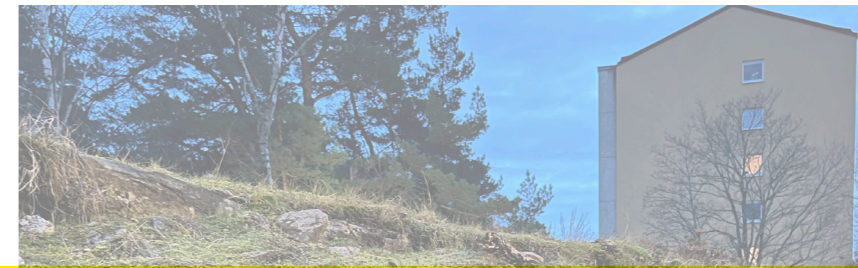




- LOOSE CLAY / SILT MIXTURE
- 5 COMPACTED CLAY / SILT MIXTURE
- Ø83 AIR

**Appropriated infrastructure by rats  
Housing infrastructure, nest cavity**

Figure 34. Drawing of a rat nest cavity.

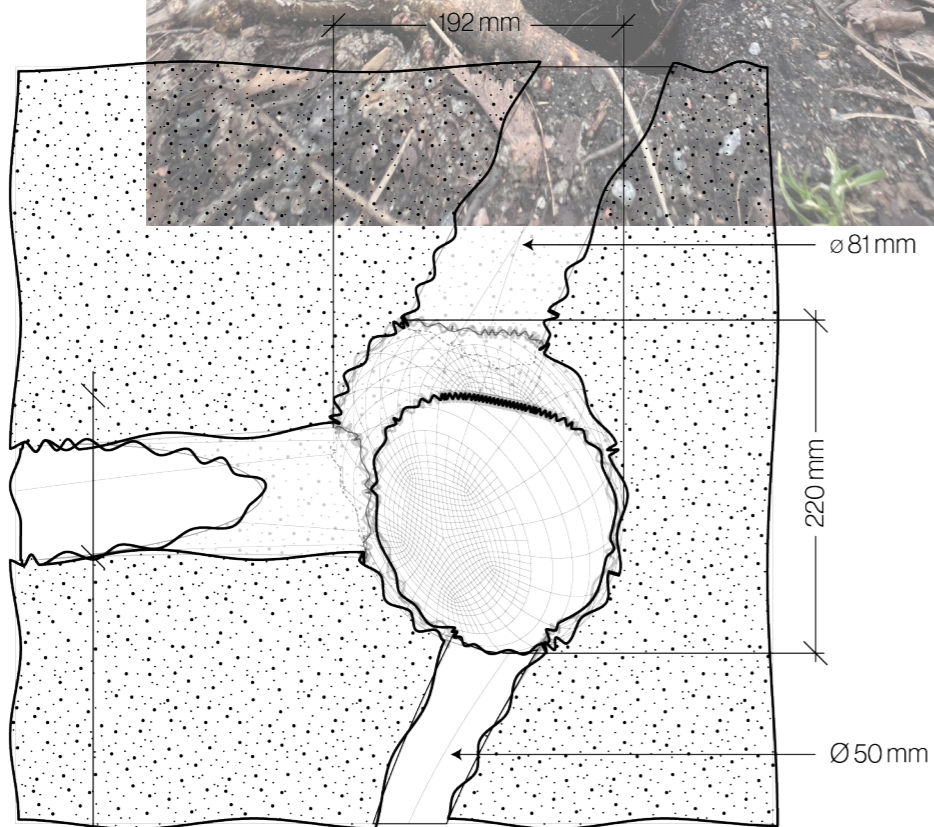


- 1. Nest Cavity, 4,5 dm<sup>3</sup>
- 2. Food Cache, 2 dm<sup>3</sup>
- 3. Nest Cavity, 3,5 dm<sup>3</sup>
- 4. Food Cache, 1,5 dm<sup>3</sup>
- 5. Food Cache 3 dm<sup>3</sup>
- 6. Nest Cavity, 3 dm<sup>3</sup>
- 7. Nest Cavity, 4,5 dm<sup>3</sup>
- 8. Nest Cavity, 4 dm<sup>3</sup>
- 9. Food Cache, 2,5 dm<sup>3</sup>

**Appropriated infrastructure by rats  
Housing infrastructure, burrows**

Figure 35. Drawing of a rat burrow.

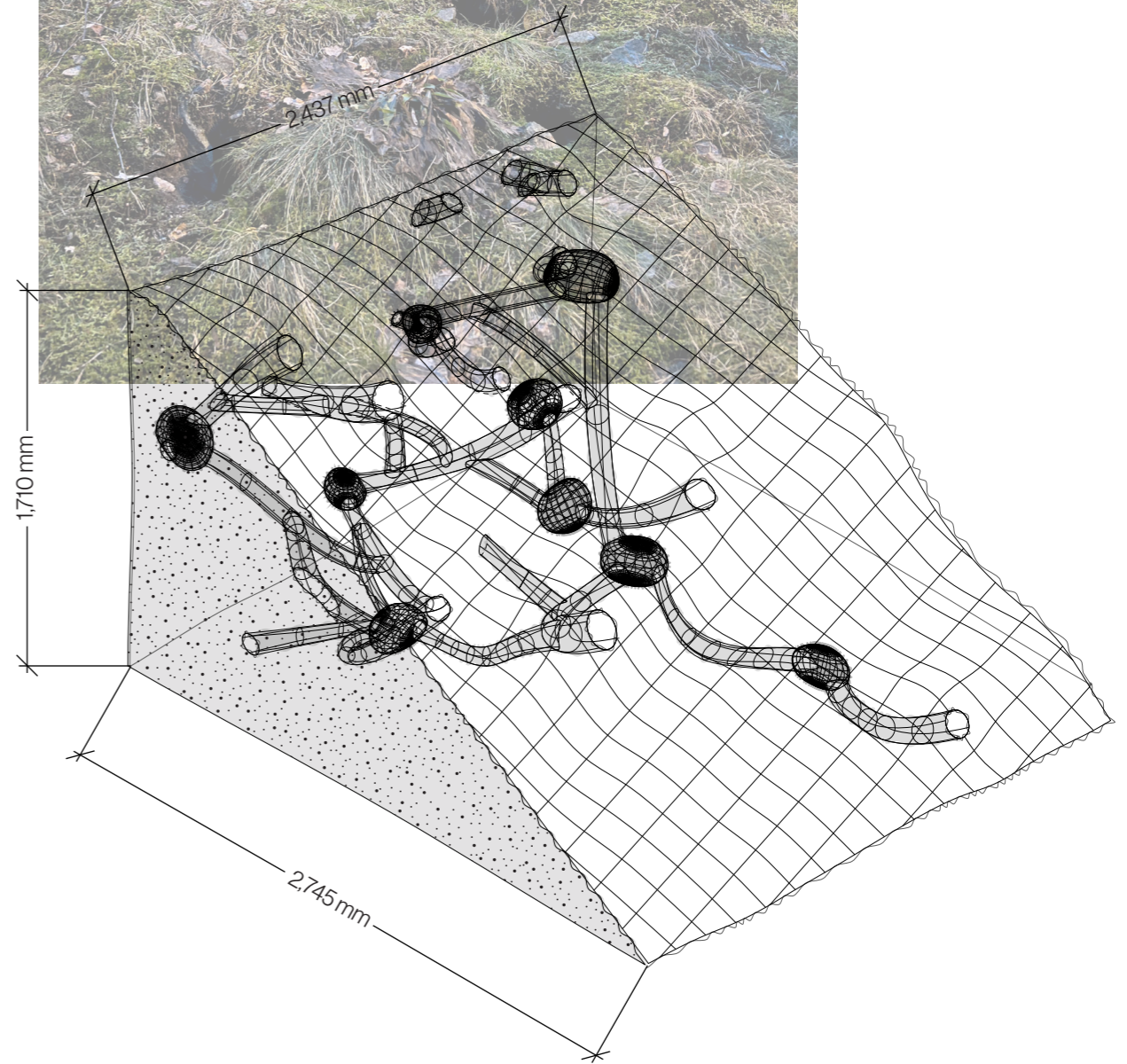
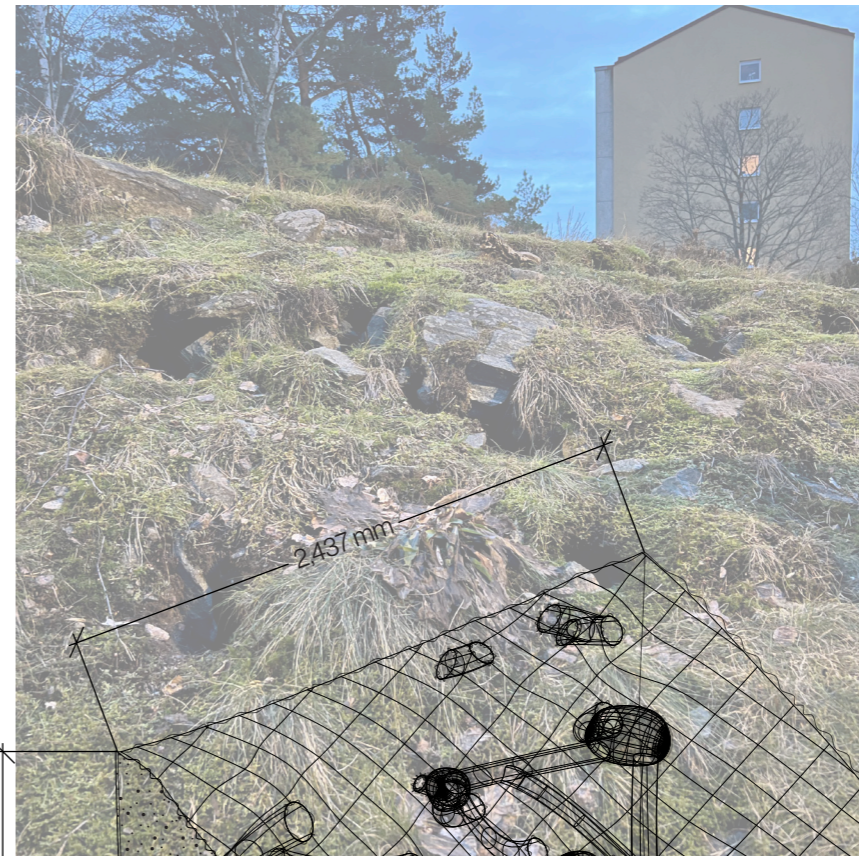




LOOSE CLAY / SILT MIXTURE  
 5 COMPACTED CLAY / SILT MIXTURE  
 Ø83 AIR

**Appropriated infrastructure by rats  
Housing infrastructure, nest cavity**

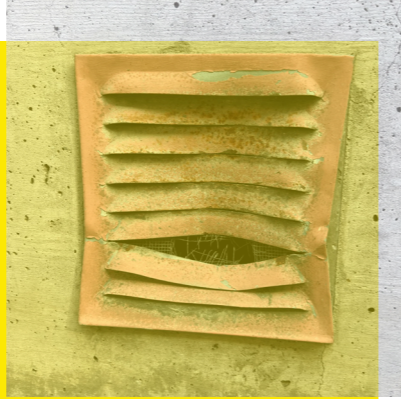
Figure 34. Drawing of a rat nest cavity.



**Appropriated infrastructure by rats  
Housing infrastructure, burrows**

Figure 36. Perspective drawing of a rat burrow.

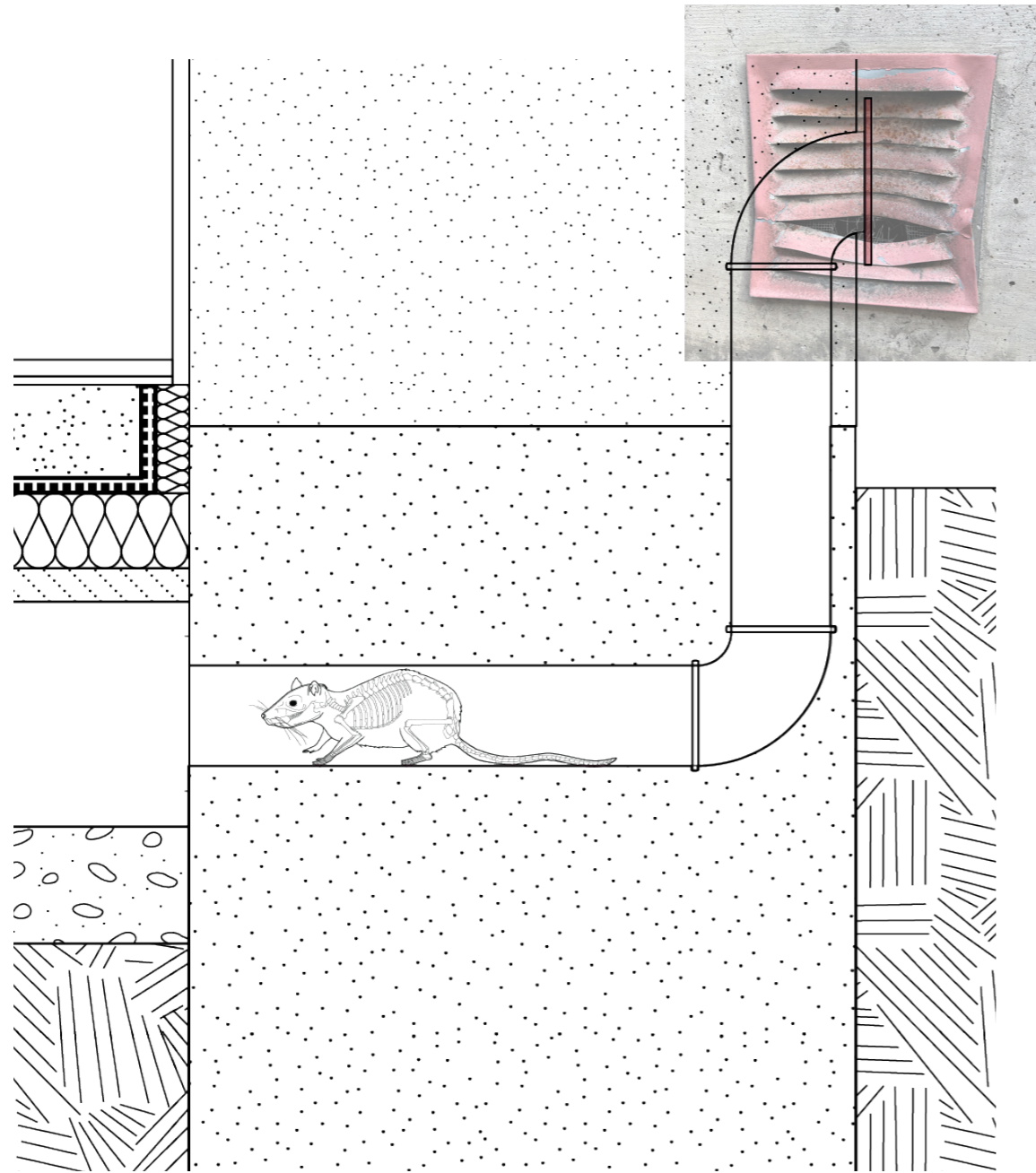




Preconceived infrastructure by humans  
Ventilation infrastructure, air vent

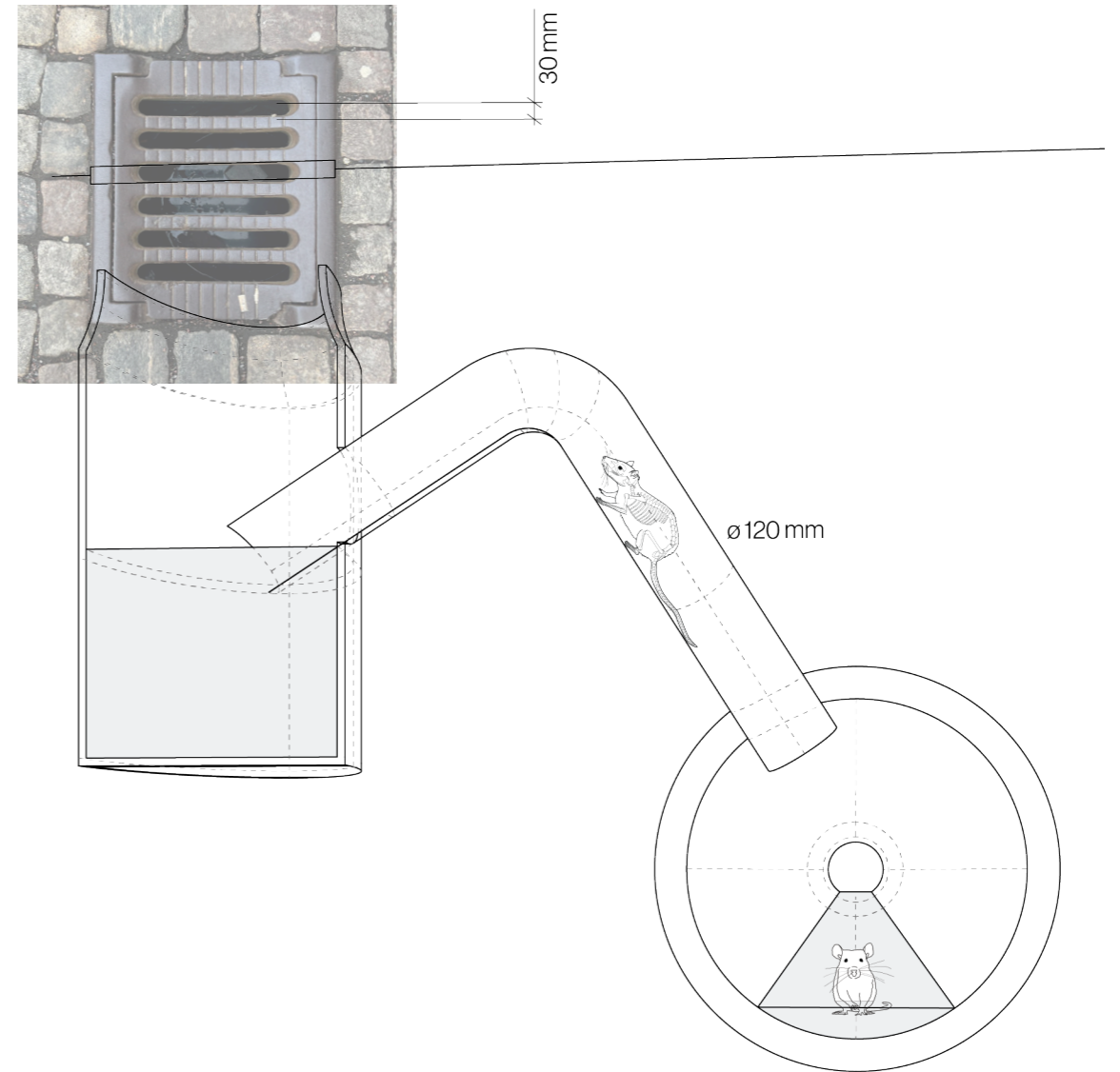


Preconceived infrastructure by humans  
Water and sanitation infrastructure, storm drain



**Appropriated infrastructure by rats**  
**Mobility infrastructure, gateway inside/outside**

Figure 37. Drawing of a rat entering a building through the ventilation system.



**Appropriated infrastructure by rats**  
**Mobility infrastructure, gateway above/under ground**

Figure 38. Drawing of a rat entering the sewer system from a storm drain.





Preconceived infrastructure by humans  
Waste infrastructure, litter



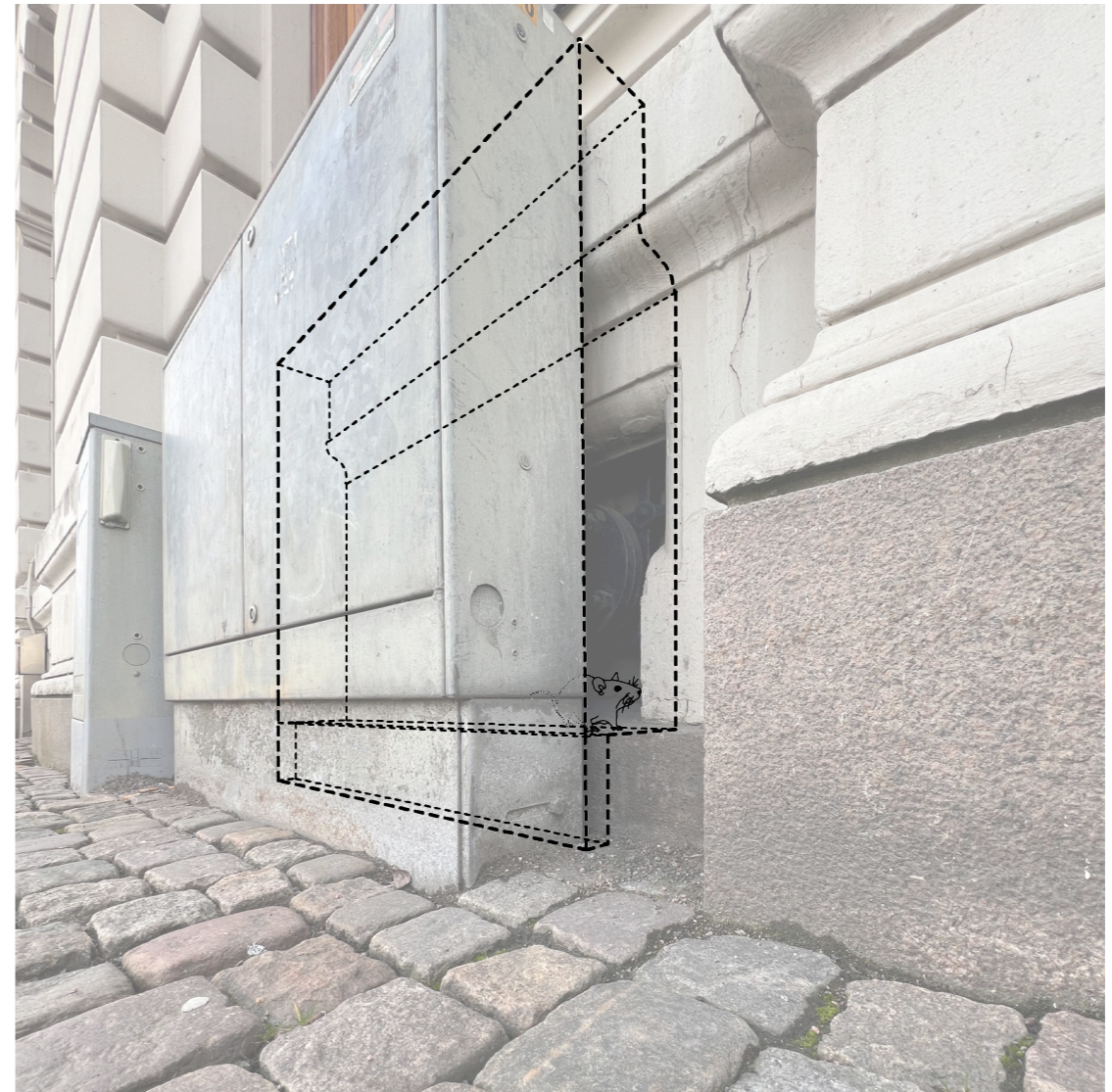
Preconceived infrastructure by humans  
Gap, space between electrical box/wall





**Appropriated infrastructure by rats**  
**Food infrastructure, dinner**

Figure 39. Drawing of rats feasting on trash.



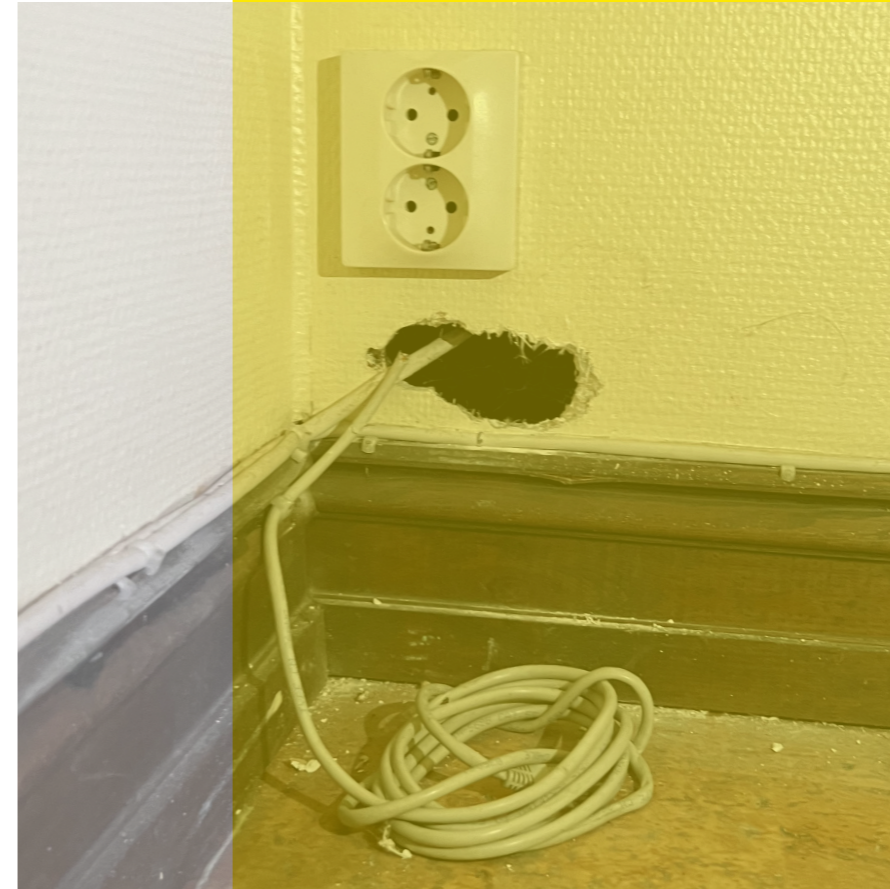
**Appropriated infrastructure by rats**  
**Mobility infrastructure, hiding space**

Figure 40. Drawing a rat occupying the space behind an electrical box.



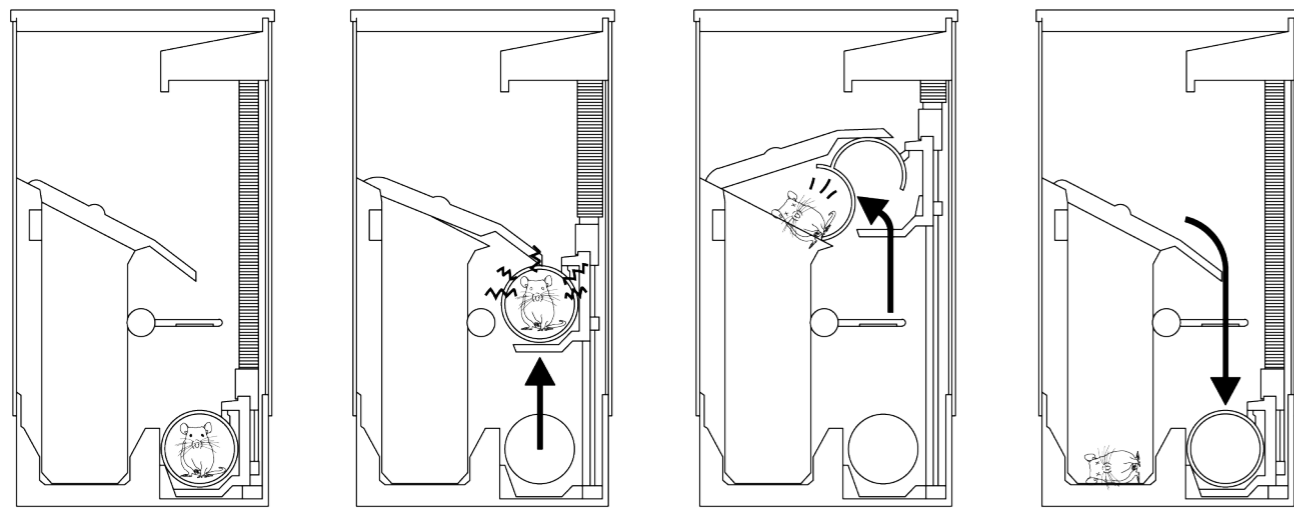


Preconceived infrastructure by humans  
Pest management infrastructure, rat trap



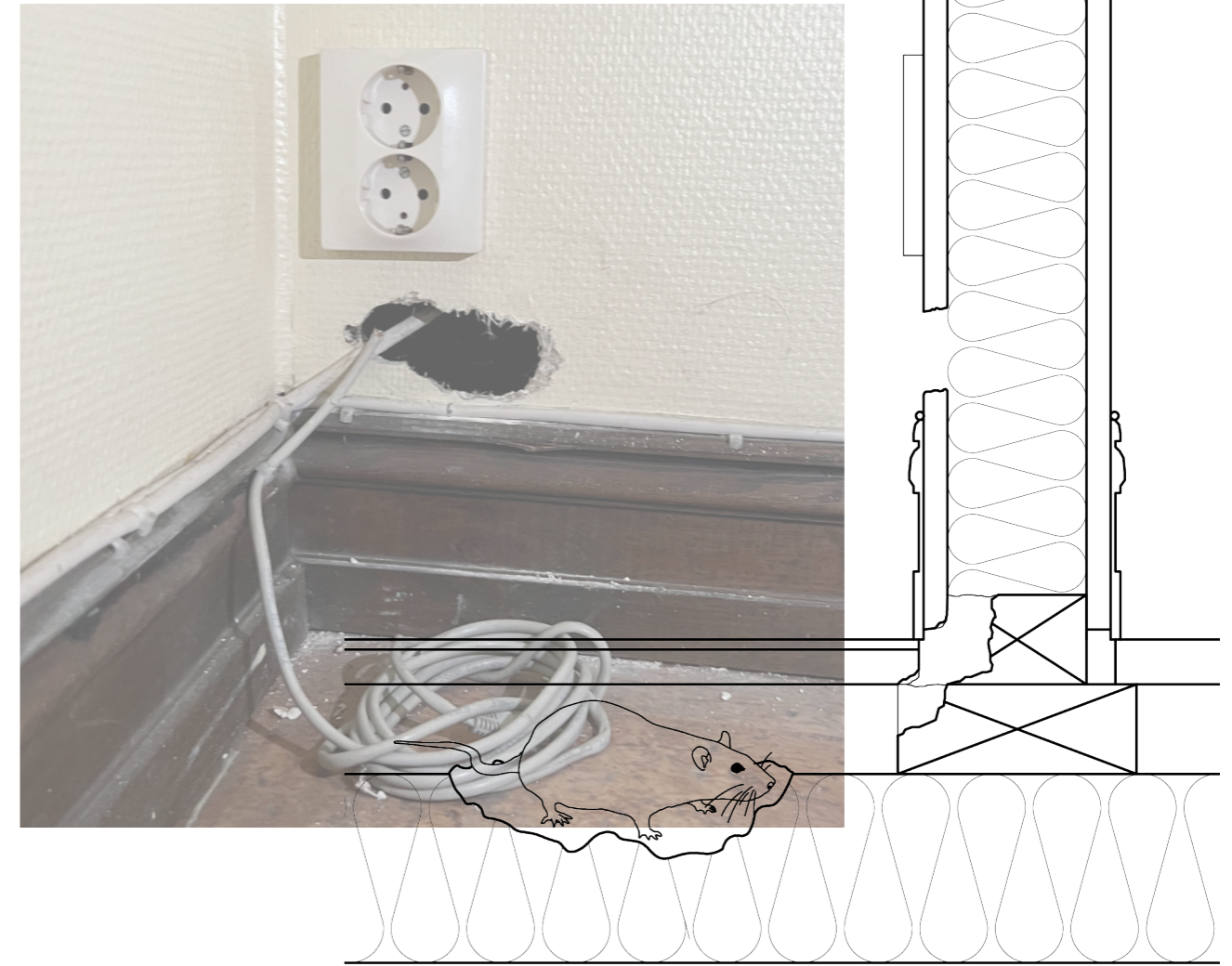
Preconceived infrastructure by humans  
Building structure, hole in wall





**Non-appropriated infrastructure by rats**  
**Deadly infrastructure, death trap**

Figure 41. Sequential drawing of electric rat trap mechanism



**Appropriated infrastructure by rats**  
**Housing infrastructure, nesting space**

Figure 42. Drawing of a rat nest accessible through human made access point.



## Reflections

Through the mapping of interstices and visual representations of the heterotopias that exist in the in-between parts of our cities, this chapter demonstrated the ways in which rats exist as co-builders of the urban fabric. The drawings found in this chapter depict rat-architecture using the same representational methods found in human architecture, validating their status as our fellow architects. We view the recognition of rats and their architecture as being

**Learning about rats' home environments, then, not only helps us to propose spatial interventions that mediate the sharing of our cities, but also allows us to recognize the importance of these neglected spaces as homes for similarly neglected species.**

vital not just as a step in the completion of this thesis, but also as a step toward seeing the value of the spaces in which they live. Learning about rats' home environments, then, not only helps us to propose spatial interventions that mediate the sharing of our cities, but also allows us to recognize the importance of these neglected spaces as homes for similarly neglected species.

As discussed above, interstices can be the physical infrastructural systems that facilitate life in urban spaces, a result of spatial interactions between these infrastructural elements, or a result of decay. They tend to be hidden and designed for function rather than according to aesthetic sensibilities, which results in them being perceived as unwanted or unworthy of being cared about by us humans—however, every “strange” gap between a window and an electrical box and every small cave created by a decaying building benefit some nonhuman in some way. The maintenance of, or lack thereof, a building always has a positive impact on one party more than the other. This inverse relationship between human and nonhuman comfort proves to make negotiation of space quite difficult, as is discussed in the following chapter.

## *Chapter Five*

# Envisioning Respectful Interfaces

This chapter investigates how to negotiate respectful boundaries and imagine spaces for caring interactions between rats and humans. Through a series of speculative collages, we examine the potential of redesigning the urban interstices identified in the previous chapter to enhance rat habitats and foster mutually respectful human-rat cohabitation in urban environments.

**“The question, then, is not ‘how can we care more?’ but instead to ask what happens to our work when we pay attention to moments where the question of ‘how to care?’ is insistent but not easily answerable. In this way, we use care as an analytic or provocation, more than a predetermined set of affective practices.”**

(Atkinson-Graham et al., 2015, p. 739)

## Envisioning Respectful Interfaces

Our investigation of rat-chitecture has shown that human-made environments often provide homes to nonhumans as well; however, we consider them to be intruders rather than cohabitants. This idea results from the belief that space is something that can be bought and owned, but if we discard the notions and biases of anthropocentrism, humans are not entitled to sole ownership of space—in fact, property ownership as a whole is a concept that exists solely among humans. As an alternative to this anthropocentric belief, we argue that if we claim such entitlement, then others can too. Space is neither owned by any single being nor exclusive to any one species; it belongs to all or none at all.

However, maintaining physical distance between species remains necessary to ensure the safety and wellbeing of all actors. This poses a few questions: how can we navigate the negotiation of space in an equitable manner, while also maintaining respectful boundaries between our realms? And how can we address the conflicts that will inevitably arise when we are forced to compromise on the levels of control that bring us comfort? To begin to explore these questions, we investigated the findings of others who have already tried to answer them.

An example that illustrates the act of negotiating space can be found in ecologist David Abram's book *The Spell of the Sensuous* (1997). During a visit to Bali, Abram observed his hostess placing platters of rice at the corners of the house every morning. When questioned about this practice, she explained that they were offerings for the household spirit. As Abram approached one of the platters, he noticed a procession of black ants marching towards it. The ants meticulously picked up the rice kernels, one by one, and proceeded to carry them back along the line of march—leaving the house untouched. Abram realized that the rice offerings established an implicit boundary between the human realm and the realm of the ants—the ants were kept occupied and well-fed, eliminating any reason for them to enter the human dwelling. The negotiation resulted in a mutually

**Space is neither owned by any single being nor exclusive to any one species; it belongs to all or none at all.**

**... how can we navigate the negotiation of space in an equitable manner, while also maintaining respectful boundaries between our realms?**

beneficial outcome, and no lethal measures were taken to prevent the ants from entering.

This story demonstrates an example of a respectful interaction between humans and nonhumans, showing that such harmony can be possible—but whether we're willing to be so humane to a larger, hairier, and smarter type creature begs other questions. As Dobraszczyk ponders in his book: “is this not precisely the kind of encounter where we are actually able to test how much we care about the well-being of other creatures?” (p.233) What will it take to become truly open to negotiating with such a detested animal? What could it look like if we put down our weapons—if we were to take away our anthropocentric conviction that humans have the right to kill nonhumans? What do we do about the rats?



## What Do We Do About the Rats?

In his ongoing Ph.D. research, Sebastian Gatz (2024) is implored by his supervisor to do “something with the wasps” (p. 277) that are taking over the self-built structure central to his investigation. Gatz, who is researching human-nonhuman relationships of control in architecture, explores various scenarios for dealing with the wasps, ranging from the traditional measure of extermination to alternative approaches such as befriending or bioengineering them. Arguing that both humans and nonhumans are control freaks with each party seeking to control their environments, Gatz realizes that each potential option inevitably leads to conflicts between human and nonhuman desires for control (2024).

One of the challenges he grapples with is what architecture and architects can do for the wasps. As they are perfectly capable of designing for themselves, why would they need our architectural expertise, especially when we’re in their natural habitat? Given our observations in the previous chapter regarding how rats adeptly appropriate urban interstices, we face a similar predicament—do the rats really need us to design for them? Assuming they don’t, whom we’re really designing for is ourselves and for our own comfort as we attempt to cohabitate.

The task then becomes creating the spatial and social conditions necessary for cohabitation that not just allows but encourages appropriation in a way that is agreeable for both parties. Conflicts and a struggle to relinquish control will inevitably arise as we navigate the uncharted terrain of creating caring spaces, but by trying to negotiate *more equal terms* rather than aspiring toward perfection we can begin to imagine what life looks like when we’re respectful of one another. Providing rats with the spatial and social conditions necessary for them to be in control their own realm in *a way that creates less friction* with the human realm could allow us both to cohabit the city more harmoniously while remaining control freaks in our own spheres. However, as negotiations rarely come without sacrifices, there is a difficulty in striking a balance—more often than not, one being’s comfort often comes at the expense of

another’s. How far are we willing to go to offer the spirits something for the sake of a nonhuman?

Perhaps the best place to begin to answer this question is in the interstices that rats already make home. In many ways, they are an ideal setting for this experiment: we know that rats feel comfortable here and that we humans tend to avoid these spaces—which further contributes to their appeal. In the collages that follow this text, we have tried to reenvision the urban interstices identified in the previous chapter in a way that both enhances rat habitats and lessens the friction between humans and rats. We present them as provocations rather than as concrete solutions, with each exploring a variety of social or spatial questions. The negotiations include elements of providing something for the rats, but differ in what, if anything, they “provide” for the humans. Some serve to merely provide food for thought, while others provide benefits that are either intangible (such as peace of mind) or tangible (such as increased plant biodiversity).

**Providing rats with the spatial and social conditions necessary for them to be in control their own realm in a way that creates less friction with the human realm could allow us both to cohabit the city more harmoniously while remaining control freaks in our own spheres.**

## Pipe Dream

In search of food, water, shelter or perhaps out of sheer curiosity, a rat may occasionally find its way into your humble abode—often gaining access through the network of plumbing systems, thanks to its impressive swimming abilities. From installing chew-proof covers on your plumbing to placing bricks on your toilet lid—there is no shortage of tips and tricks to keep these unwelcome guests out. Rather than employing conventional methods of pest management to keep the intruders out, this design intervention invites them in. It embraces the coexistence of rats and humans, blurring the boundaries of our respective domestic realms, while still maintaining a physical boundary that allows for both parties to satisfy their curiosity without direct physical interaction.

The transparent box, concealed within an under-sink cabinet, allows humans to take a peek at their new roommates. Though rats are shy and

not fond of interaction with humans, this downside can be seen as a tradeoff for being allowed to stay in the safety and warmth of a human home. This negotiation explores the benefits of humans being able to experience, up close and personal, the lives of nonhumans so that they can begin to understand and empathize with them. Seeing even just the remnant of a nest reminds us that every creature, just like us, only wants security for their offspring and will do whatever it takes to secure it—even if that’s climbing through pipes to live in a box where they’re put on display.

**It embraces the coexistence of rats and humans, blurring the boundaries of our respective domestic realms . . .**



Figure 43. Collage depicting the Pipe Dream negotiation.





Figure 44. Collage depicting the inner workings of this negotiation.

## All in All, It's Just Another Rat in the Wall

The physiological similarities between rats and humans are uncanny; therefore, it stands to reason that rats also like being sheltered from the hot summer days, the cold winter nights, and the pouring rain. For them, wall, floor, and roof cavities can provide the same comfort that they provide for us. Scurrying around in the hollow bones of our buildings, rats in the wall most often make their presence known audibly rather than visually—but these sounds often trigger a fear that the rat will make its way into our living spaces. If we offered them a space in our walls—in a place of our choosing—that we knew would contain them securely, would we

mind the sounds of scurries?

This negotiation explores the effect a peace of mind can have on our perception of nonhuman

**... rats also like being sheltered from the hot summer days, the cold winter nights, and the pouring rain.**

visitors by building an accessible, chew-proof, and escape-proof box into our wall cavities. If we allow them to share our climate-controlled spaces and are sure they will stay where we want them, would we mind cohabitating with them? If we ultimately feel in control of the situation, are we more willing to act respectfully toward others?

## Poseidon Rat Hill

What comes to mind when you first think of an urban tourist attraction? Chances are, it's something made by man, and if there is any semblance of nature around it, it has been tamed, transformed, and meticulously manicured. Statues, fountains, buildings, and everything else visitors will go out of their way to see—with the exception of botanical gardens or parks—are curated to the point of inhospitableness toward nonhumans, and even these “green” examples don't save any space for subnatural nonhumans like bugs, weeds, or of course, rats. By exclusively putting human-made works on a pedestal and considering natural features pedestrian, we perpetuate anthropocentric ideals about what makes our cities special and worth visiting. What if our cities' attractions were special because of their inclusion of subnature?

**What comes to mind when you first think of an urban tourist attraction? Chances are, it's something made by man, and if there is any semblance of nature around it, it has been tamed, transformed, and meticulously manicured.**

The Poseidon Rat Hill argues that subnature is also worthy of a spot on the pedestal and has been created by putting a mound of dirt around one of Gothenburg's most popular attractions. This unique ode to the dirty and disliked perverts the idea of an attraction, challenging aesthetic ideals and showcasing the architecture that is created without (human) architects. By drawing rats and other critters to one of the busiest places in the city, we argue that they deserve recognition and a place in the spotlight.



Figure 45. Collage of the Poseidon Rat Hill.



## Rat Feeder

This isn't the first redesign Gothenburg's trashcans have seen, and it's not even the first redesign with rats in mind. Gothenburg's iconic trashcans have seen many iterations throughout their existence in the city, with the most recent "rat-proof" one sporting a reduction in climbable perforations on the outer shell as well as a smaller opening (Karlsson, 2021). From the city administration's perspective, this seems like a logical and relatively humane step to reduce the number of rats, given the proportional relationship between trash management (or the lack thereof) and rat populations. We also recognize the benefits of this redesign, albeit for slightly different reasons. By preventing rats from accessing the food scraps in our trashcans, we prevent the rats from consuming unhealthy foods such as those that are highly processed, fatty, or sugary, as well as from ingesting the plastic or other harmful materials in

**This isn't the first redesign Gothenburg's trashcans have seen, and it's not even the first redesign with rats in mind.**

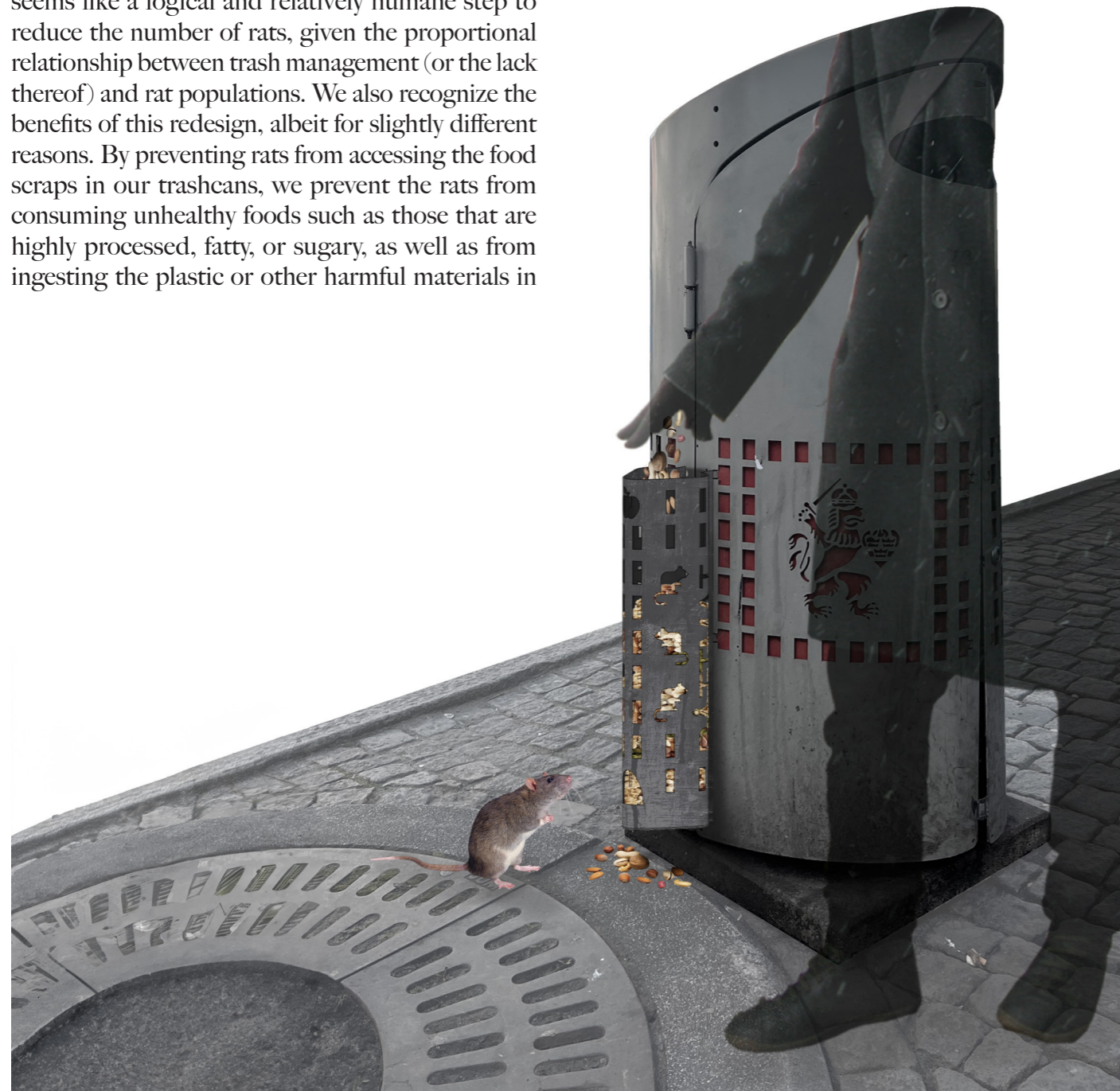


Figure 46. Collage of the Rat Feeder in use.

which our foods are often packaged.

Despite the merits of prohibiting rats from entering our waste management systems, we think the system can be improved further by capitalizing on the rats' natural ability to cache seeds and improve local biodiversity. Rather than suddenly removing all their food, we instead encourage people to place healthy food scraps—such as those from fruits, vegetables, nuts, and seeds—in a dedicated container attached to the side of the trashcan. This container, modeled after the can deposit container already found on many of the city's trashcans, similarly redistributes resources and ensures that those who need them are able to access them. It's a win-win situation: the rats

**It's a win-win situation: the rats have access to healthier foods and the rest of the city's inhabitants benefit from the seed dispersal ...**

have access to healthier foods and the rest of the city's inhabitants benefit from the seed dispersal that is vital for the "recruitment, range expansion and gene flow in plant populations" (Wang et al., 2019).

This negotiation is not without its downsides; however, these negative aspects pertain more to the behavioral patterns of those who use the rat feeders than to the design of the rat feeders themselves. The residents of the city must first be taught what foods can be placed within them, and this education could be manifested as signs or advertisements placed near the trashcans. No amount of education on usage can encourage people to feed an animal they detest, but paired with tactics meant to change our collec-

...tive mindset around these critters (such as those discussed in chapters two and three), it is possible that we could become more willing to perform these acts of care.

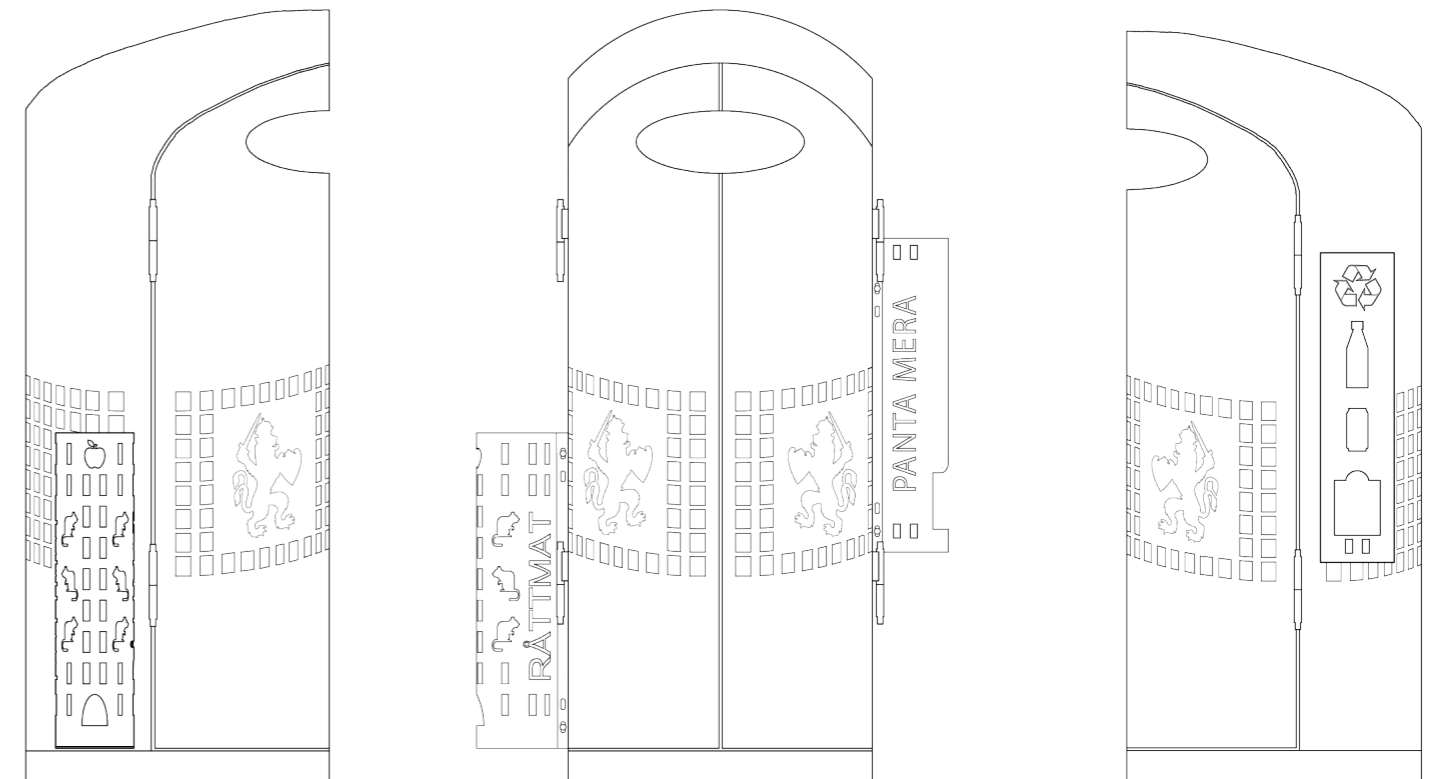


Figure 47. Drawings of the Gothenburg trash can and Rat Feeder.



## Anti-Anticimex

Move over, Mickey Mouse! This is a rat's amusement park now. We propose turning off the power in this electrified rat trap and allowing the rats to enjoy some well-deserved recreation. Not only does this intervention repurpose a device that will become obsolete in the post-anthropocene, but it also addresses rats' need for stimulation and enrichment. Inspired by a study conducted by Glory et al. (2019) that showed that enrichment—which in their study took the form of learning how to drive—increased markers of emotional resilience, this intervention provides urban rats with a similar opportunity to play and try something new.

The Anti-Anticimex negotiation consists of an

indoor labyrinth and various slides, giving rats opportunities to experience new sensations. Providing them with such a space expands our notion of care toward urban rats, as we normally consider enrichment as something of which only pets are worthy. Though we don't advocate for treating urban rats like pets,

**Not only does this intervention repurpose a device that will become obsolete in the post-anthropocene, but it also addresses rats' need for stimulation and enrichment.**

we believe the environment we co-create with them should consider all their needs rather than just their basic needs for food, water, and warmth.

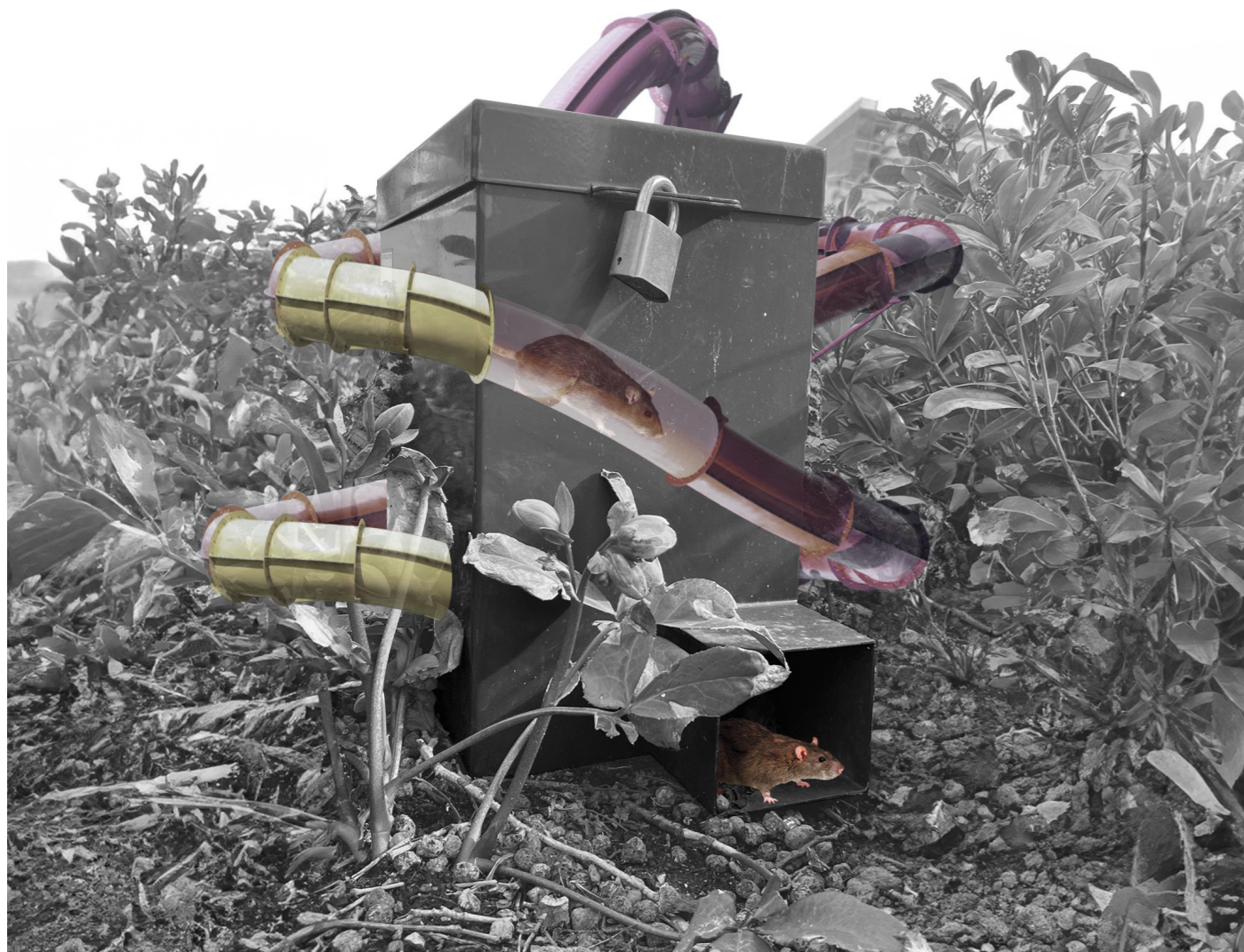


Figure 48. Collage of the redesigned rat trap.

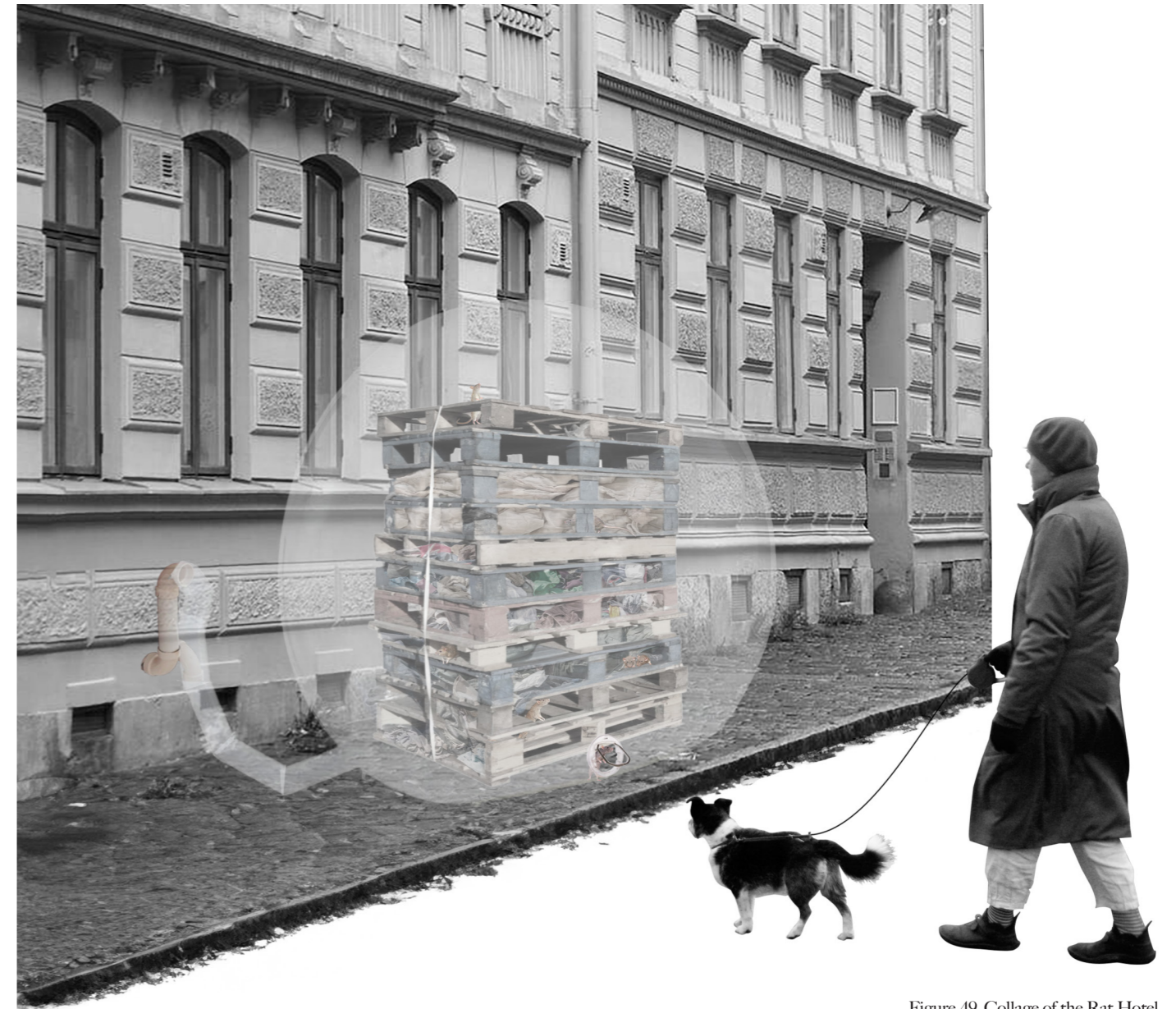


Figure 49. Collage of the Rat Hotel.

## A Stay at the Rat-isson

Why is it that we're willing to provide spaces for some critters but not others? Inspired by the insect hotels that are popping up everywhere around town as well as the paraSITE project by Michael Rakowitz (1998), this negotiation serves both as a critique of the speciesism and as a provocation in which the marginalized are made visible.

The rat hotel, created with the same stacked pallet structure as many larger insect hotels, provides a home for rats. Discarded textiles fill the gaps in the pallets rather than the sticks commonly found in insect hotels, providing the rats with warm nesting material. Additionally, the inflatable dome utilizes exhaust air from heaters

to fill its double-walled membrane to create a warm environment in all seasons. Neither the clothing nor heat is missed by its human donors, as both are often discarded with little care; however, passersby may be

**... this negotiation serves both as a critique of the speciesism and as a provocation in which the marginalized are made visible.**

put off by the size of rat hotel, as it takes up a majority of the sidewalk space. However unsightly they think it to be, the criticizing naysayer must be reminded that this negotiation comes with the added benefit of reducing the likelihood of a rat entering the sanctity of their personal sphere.



## Reflections

In this chapter, we've experimented with spatial negotiations that range from realistic to extremely improbable; from small, nearly imperceptible rat feeders to a rat habitat placed in one of Gothenburg's most visited areas. Each falls within a particular interstitial typology previously determined to be utilized by rats

and imagines how respectful cohabitation could be facilitated using the existing physical elements of each of these typologies. These negotiations aim to allow for some level of human influence, giving humans the feeling of control and the retention of some level of agency in such multispecies spaces.

The negotiations proposed in this chapter serve as both a demonstration of the possibilities of multispecies spaces and as a provocation to elicit an emotional response that we implore the viewers to reflect upon. The collaging of real, existing elements into imaginary configurations and combinations conjures a complicated range of feelings and questions. Those who haven't accepted a post-anthropocentric worldview may wonder why these interventions are allowed to be so visible, so large in scale, so resource- or time-intensive to create; even those who have accepted this worldview in theory may feel hesitant when seeing its manifestations come to fruition. The negotiations are meant to make us feel uncomfortable, but this work in general aims to make us question why we are feeling this way. Our anthropocentric mindset has been unquestioned in the western world for too long, and perhaps questioning it, no matter how uncomfortable, is the first step in moving toward multispecies cities.

**The negotiations proposed in this chapter serve as both a demonstration of the possibilities of multispecies spaces and as a provocation to elicit an emotional response that we implore the viewers to reflect upon.**

## Chapter Six

# Discussion

Concluding this thesis, this chapter provides a summary and discussion of its main findings, their alignment with the research question, and their significance within the broader context of the study. Additionally, it explores potential directions for future research and examines the practical implications of this study.

**“The whole intention can be neatly summarized in three words: solidarity, awareness, meaning. We are never alone, but are constantly overlapping and sharing our world with other porous beings, co-constituted in a flux of impermanence. With this perspective, the way forward is one of awareness of how our actions have consequences, how we are enmeshed in a network of becoming with others. We therefore establish solidarity with the non-human and consider what other beings are saying. Meaning is constantly created through attuning to an affective exchange in relations, and death becomes the final transcendence of which we know nothing, but are softened in a reverence of its mystery.”**

(Nonhuman Nonsense, n.d.-b)

## Discussion

The aims of this thesis were to demonstrate the different aspects of learning to cohabitate with rats and to show that multispecies architecture relies on both social and spatial aspects. By carrying out experiments pertaining to both categories and reflecting critically on the results, we attempted to both challenge the status quo of architecture and bring the topic of nonhuman rights into a field of study in which it can be spatially realized. What has resulted are discussions, critiques, provocations, and of course, far more questions than answers.

We began this project by figuring out what knowledge gaps exist within the critical post-humanist discourse, especially as it pertains to architecture. We found many examples of multispecies projects that incorporate nonhuman habitats into the building itself but realized that these projects tended to deal with species that are threatened, desirable to have around, or both. None of the projects we found considered animals that thrived despite our best efforts to eradicate them nor those we find repulsive. Bird boxes and insect hotels are considered acceptable, but the thought of inviting rats into our spaces is unthinkable. Why is the rat less deserving of care than the sparrow? And why do we not blink an eye when we kill rats, but no one would even think to kill a sparrow that nested in their garage? The abject speciesism inherent to not just multispecies architecture but to society in general is what we wanted to critique and address in this work in order to contribute to this knowledge gap.

Though we would argue that this thesis effectively lays the groundwork for dealing with a noncharismatic species in an urban environment, we are aware that it lacks a concrete proposal for a built intervention. To us, a fully flushed out project leaves less room for imagination than simple, provocative visualizations do. Working with collage rather than models allowed us to imagine different alternative futures without spending too much time making technical details work for one. Of course, this is a double-edged sword: by keeping the designs relatively unpolished, the project becomes destined to

**Why is the rat less deserving of care than the sparrow? And why do we not blink an eye when we kill rats, but no one would even think to kill a sparrow that nested in their garage?**

remain unrealized, potentially condemning it to the world of academia rather than allowing it to come to a physical fruition. Future work, then, could involve the realization of some of these negotiations. Working with biologists, psychologists, and other experts, the project could leave the imaginary realm and take on a new life as a prototype or even product.

### Takeaways

A few aspects have become very clear to us throughout the writing of this thesis. The first is that showing care to a hated species such as rats is not without its difficulties. As with the homeless, the outcasts, and the weird, people tend to prefer to pretend they don't exist in our normative and conformist cities. Staying hidden is a spatial survival tactic for the urban marginalized, as their visibility can jeopardize the little security they have and result in their removal. The sight of them forces us to confront the ugly parts of a society that favors a select few, and rather than



being moved to lend a helping hand, it's easier for us to simply get rid of them. Therefore, proposing to make the marginalized visible conjures negative feelings in most people, especially when the being is not a human. We would rather kill the rats than help them find a new home that all find agreeable, thus complicating the process of learning to cohabitate.

Additionally, we've learned that comfort is subjective to all parties and therefore every being will be treated differently in a way that reflects our relationship with them. Our comfort is contingent upon our familiarity with another being and is heavily influenced by how this being is treated by society as a whole. Species we've learned to fear, such as rats and spiders, are held to different standards than our pets, for example. One is invited into bed with us at night while the other is vacuumed up—and this is a division that, though completely arbitrary, results in wildly different treatment between the species.

So how *can* practices of care showcase the perspectives of neglected nonhumans and facilitate respectful cohabitation between urban rats and humans? Changing our mindsets is the best place to start. To begin to accept rats as an equal part of the urban fabric, we must get to know them, feel for them, and understand that they are just as alive and full of emotions as we are. We must stop and think, before reaching for the traps, about the fact that they are in our spaces not only because of our societal habits, but because they need the same basic things that we do. We must start with small acts of care, of compassion, driven by empathy and understanding. Only when we accept their right to live are we ready to consider what we can do going forward to ensure the contentedness of all actors.

### The Future of Architecture

Finally, we'd like to address one of the questions we were asked after our final presentation: do we still need architects? And if yes, what should they do, and for whom? Our opinion is a resounding yes, we absolutely still need architects, as they are among those most poised to make significant changes—the way we build both reflects and rein-

**Species we've learned to fear, such as rats and spiders, are held to different standards than our pets, for example. One is invited into bed with us at night while the other is vacuumed up...**

**... do we still need architects? And if yes, what should they do, and for whom?**

**Perhaps we need to rethink the architect's role and question the profession: who are the stakeholders of a project, and how can we incorporate marginalized, silent voices? What would it look like if architecture were freed from the confines of capitalism and colonialism?**

forces our societal norms. Perhaps we need to rethink the architect's role and question the profession: who are the stakeholders of a project, and how can we incorporate marginalized, silent voices? What would it look like if architecture were freed from the confines of capitalism and colonialism?

We believe that, to move toward just cities, architects need to consider both spatial and social facilitators that encourage caring interactions that extend beyond the human realm. Architectural discourse increasingly discusses the marginalized, but the consideration of them typically pertains solely to marginalized nonhumans such as the homeless. While this is an important start, we believe that we cannot begin to heal the earth without first learning to value all of its inhabitants equally. As stated above, changing our mindset is the best place to start, and seeing post-anthropocentric ideals physically spatialized can facilitate the change of these norms. Without the consideration of social factors, the prospect of architects considering rats is absurd or unacceptable.

Another aspect to consider regarding nonhuman architecture is learning how to care for those who don't seem to need us. Rats certainly don't need an architect to help them build their homes – they build well without us, however, they do so in ways that interfere with human comfort—either in a way we can't accept or in a way that is often considered destructive by humans. While our negotiations might appear to cater to the needs of rats, it turns out that caring interfaces actually cater more to human comfort by providing the spatial conditions that allow all parties to coexist and retain as much control as possible in our respective realms. We think this is a very important skill that architects can contribute in order for humans to harmoniously coexist with all our earthly others.

Beginning to spatialize post-anthropocentric ideals has highlighted some difficulties we will encounter as the we architects delve into multi-species work. However much we have tried to avoid anthropocentric ways of thinking, we see that there are still aspects of it inherent to the imposition of our ideas. In our rat feeder example, we understand

that it's anthropocentric to choose what food they can eat and justify it by saying that "we're choosing what's best for them," but who are we to do this? We've given ourselves the agency to control populations, rendering the act of "playing god" a necessary means to maintaining our boundaries and normalizing it in the process. Throughout the work we have also been questioned many times, by both others and by each other, whether the interventions we propose would make the rat population skyrocket. When would we argue that it is justifiable to kill a rat? It is an interesting question because in the end, it boils down to whose life we prioritize over another.

We didn't intend to provide an answer to this question but rather wanted to encourage more transparent discussions around this topic. Where do divisions appear in believing that all nonhumans have the right to live? While working on this thesis, one of the authors spent much of their time squishing bugs on the houseplant that sits on their workstation. Is the extermination of bugs justifiable if their lives come at the expense of a favorite plant? And who are we, as a third party, to interfere with the will of nature and make a conscious decision one way or another? Should we instead propose a laissez-faire attitude, trusting that mother nature will "reclaim control"? Or are there truly some systems out there that have been exploited by us to the extent that they will completely collapse without our intervention? How do we best take accountability for the environments we've created?

There is no objective answer that tells us where or when we should step in and solve things, but perhaps metrics such as "maintaining or promoting biodiversity" or the classical ethics answer of "doing the best for as many beings as possible" can help guide our decisions. Perhaps it is a start to become conscious of the fact that lives are at stake when we make these decisions. So long as we question our sovereignty over our spaces rather than blindly accept it, we are moving in the right direction. We hope that this work can be a small contribution to the broader discussion of the consideration of nonhumans in our cities and look forward to progressing the field of architecture, one rat project at a time.

**Perhaps it is a start to become conscious of the fact that lives are at stake when we make these decisions. So long as we question our sovereignty over our spaces rather than blindly accept it, we are moving in the right direction.**

## References



## References

- Abram, D. (1997). *The spell of the sensuous: Perception and language in a more-than-human world*. Vintage Books.
- Adams, C., & Thompson, T. L. (2011). Interviewing objects: Including educational technologies as qualitative research participants. *International Journal of Qualitative Studies in Education*, 24(6), 733-50.
- Adams, C., & Thompson, T. L. (2016). *Researching a posthuman world: Interviews with Digital Objects*. Palgrave Macmillan.
- Andersson, M. (2021). *Interfaces: A multispecies urban habitat*. [Master's thesis, Chalmers University of Technology]. Chalmers ODR.
- Anticimex. (2024, March 12). *Anticimex: Över en miljon fångade råttor under 2023* [*Anticimex: Over a million rats caught during 2023*]. <https://www.anticimex.se/nyhetsrum/over-en-miljon-fangade-rattor-under-2023/>
- Atkinson-Graham, M., Kenney, M., Ladd, K., Murray, C. M., & Simmonds, E. A.-J. (2015). Care in context: Becoming an SIS researcher. *Social Studies of Science*, 45(5), 738-748. <http://www.jstor.org/stable/43829054>
- Banham, R. (1965). *A Home is not a house*. *Art in America*, 2, 70-79.
- Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Duke University.
- Cambridge University Press. (n.d.). *Ambassador*. In Cambridge dictionary. Retrieved April 1, 2024, from <https://dictionary.cambridge.org/us/dictionary/english/ambassador>.
- Crawford, L. E., Knouse, L. E., Kent, M., Vavra, D., Harding, O., LeServe, D., Fox, N., Hu, X., Li, P., Glory, C., & Lambert, K. G. (2020). Enriched environment exposure accelerates rodent driving skills. *Behavioural Brain Research*, 378(112309). <https://doi.org/10.1016/j.bbr.2019.112309>
- Dehaene, M., & De Caeter, L. (Eds.). (2008). *Heterotopia and the city: Public space in a postcivil society*. Routledge.
- Dobraszczyk, P. (2023). *Animal architecture: Beasts, buildings and us*. Reaktion Books.
- Doucet, I. (2022). Interspecies encounters: design (hi)stories, practices of care, and challenges. In K. Förster (Ed.), *Environmental histories of architecture* (pp. 1-16). Canadian Centre for Architecture.
- Fesmire, S. (2003). *John Dewey and moral imagination: Pragmatism in ethics*. Indiana University Press.
- Frichot, H., Carbonell, A., Frykholm, H., Karami, S. (Eds.). (2022). *Infrastructural love: Caring for our architectural support systems*. Birkhäuser.
- Foucault, M., & Miskowicz, J. (1986). Of Other Spaces. *Diacritics*, 16(1), 22-27. <https://doi.org/10.2307/464648>

- Gatz, S. (in press). *Transmundane architecture: Architectural control relationships through the lens of more-than-human onto-epistemologies, degrowth practices and occulture*. Konstfack.
- Gissen, D. (2009). *Subnature: Architecture's other environments*. Princeton Architectural Press.
- Goralnik, L. & Nelson, M.P. (2012). *Anthropocentrism*. In Chadwick, R., Encyclopedia of applied ethics (2nd ed.) (pp. 145-155). Academic Press. <https://doi.org/10.1016/B978-0-12-373932-2.00349-5>.
- Guattari, F. (1995). *Chaosmosis: An Ethico-Aesthetic Paradigm* (P. Bains & J. Pefanis, Trans.). Power Publications.
- Hanson, A. (2005, August 5). *Rat behavior*. Rat behavior and biology. <http://www.ratbehavior.org/rats.html>
- Hanson, A. (2007, March 14). *What do rats see?*. Rat behavior and biology. <http://www.ratbehavior.org/rats.html>
- Haraway, D. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.
- Heise, U. K. (2016). *Imagining extinction: The cultural meanings of Endangered Species*. The University of Chicago Press.
- Herbrechter, S. (2022). Critical posthumanism: An overview. In S. Herbrechter, M. Rossini, M. Grech, M. de Bruin-Molé, C. J. Müller, & I. Callus (Eds.), *Palgrave Handbook of Critical Posthumanism* (pp. 3–26). essay, Palgrave Macmillan.
- Karlsson, U. (2021, February 18). *Nya papperskorgar i stan – nu mer rattsäkra* [New trashcans in town – now more rat-proof]. Göteborgs-Posten. <https://www.gp.se/nyheter/goteborg/nya-papperskorgar-i-stan-nu-mer-rattsakra.34fla4a8-21b2-428f-b97c-11ecbb1735c7>
- Laurien, T. (2024). Email to Delaney Davis and Lisa Säfdal, 7 March.
- le Guin, U. H. (2017). Deep in Admiration. In A. L. Tsing, H. A. Swanson, E. Gan, & N. Bubandt (Eds.), *Arts of living on a damaged planet: Ghosts and monsters of the Anthropocene* (pp. 15–21). essay, University of Minnesota Press.
- Lokrantz, E. (2022). The nonhuman embassy: Representational critters and calamitous diplomacy. In H. Frichot, A. Carbonell, H. Frykholm, S. Karami (Eds.), *Infrastructural love: caring for our architectural support systems* (pp. 90, 211–215). Birkhäuser.
- Macy, J. (n.d.). *Council of all beings*. Rainforest Info. <https://www.rainforestinfo.org.au/deep-eco/Joanna%20Macy.htm>
- Nonhuman Nonsense (n.d.- a). *Planetary personhood*. <https://planetarypersonhood.com/>
- Nonhuman Nonsense (n.d. -b). *Turn to stone*. <https://nonhuman-nonsense.com/turn-to-stone>
- Pallasmaa, J. (2005). *Animal architecture* (2nd ed.). Museum of Finnish Architecture.
- Plumwood, V. (2001). *Environmental culture: The ecological crisis of reason*. Routledge.
- Puig de la Bellacasa, M. (2017). *Matters of care: Speculative ethics in more than human worlds*. University of Minnesota Press.
- Rakowitz, M. (1998). *paraSITE*.
- Robinson, S. (2015). Boundaries of skin: John Dewey, Didier Anzieu and architectural possibility. In *Architecture and empathy* (pp. 42–63). essay, Tapio Wirkkala-Rut Bryk Foundation.
- Rose, D., & van Dooren, T. (Eds.). (2011). Unloved Others: Death of the Disregarded in the Time of Extinctions. *Australian Humanities Review*, Issue 50.
- Ruolin, L. (2013). *Inhabiting the interstitial: design experiments in aviary architecture and habitat creation*. [Master's thesis, University of Illinois]. University of Illinois Library.
- Studio Animal-Aided Design. AAD. (2024, April 4). <https://animal-aided-design.de/en/>
- Tronto, J. C. (2019). Caring Architecture. In A. Fitz & E. Krasny (Eds.), *Critical care: Architecture and urbanism for a broken planet* (pp. 26–32). essay, Architekturzentrum Wien.
- van Dooren, T., Kirksey, E., & Münster, U. (2016). Multispecies Studies. *Environmental Humanities*, 8(1), 1–23. <https://doi.org/10.1215/22011919-3527695>
- Wang, Z., Wang, B., Yi, X., Yan, C., Zhang, Z., & Cao, L. (2019). Re-caching behaviour of rodents improves seed dispersal effectiveness: Evidence from Seedling Establishment. *Forest Ecology and Management*, 444, 207–213. <https://doi.org/10.1016/j.foreco.2019.04.044>
- Weisman, L. K. (2000). *Architecture*. In Routledge international encyclopedia of women (Vol. 1, pp. 86–90). Routledge.

Unless otherwise specified, all images and graphic material have been created by the authors.





