

# Master of Architecture Studio in Critical Practice

## Pale Blue Dot

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**This paper explores the pedagogical approach and outcomes of the *Pale Blue Dot* Studio in Critical Practice in the Department of Architectural Science at Toronto Metropolitan University. The studio aims to develop a critical approach to architecture by engaging with sustainability, the impacts of new technologies, and responses to local and global conditions. The paper discusses how the studio addressed the social and political disruptions of the last few years, coupled with the realities of climate change, to reevaluate the role of architects and architectural practice in society. It emphasizes the importance of critical thinking, interdisciplinary collaboration, and the exploration of architecture as a potential agent of change. The paper presents design-led research through the three phases of the studio, highlighting the research and analysis conducted by students, the material investigation through maquette exercises, and the design interventions that address architecture's pressing challenges. Examples of final proposals include "Adaptation in the Flux of Chaos," which explores strategies for adapting to climate change in Morocco, and "Post-Anthropolis: Detroit Edition," which reimagines how post-industrial cities can incorporate non-human entities in a harmonious relationship with humans and built forms. The projects demonstrate innovative approaches that exceed normative practice and propose adaptive and resilient solutions. The paper concludes by reflecting on the studio's outcomes and the transformative potential of architecture in shaping a sustainable future—Overall, the studio fosters a critical and innovative approach to design, encouraging students to see architecture as an evolving and discursive inquiry rather than a finite solution to predetermined parameters.**

### INTRODUCTION

*Pale Blue Dot* is a first-year graduate Studio in Critical Practice in the Department of Architectural Science at Toronto Metropolitan University, where students develop a critical approach to architecture. Examined through three areas of engagement: sustainability, the impacts of new technologies, and responses to local and global conditions, students consider the role of the architect and architectural practice in society from a variety of perspectives, including those of observer, critic, and designer, and explore the role of architecture as a potential agent of change.

For the 2021 fall semester, the focus of the studio was on how the social and political disruptions of the past two years coupled with the realities and immediacies of climate change have caused us to reevaluate our world, the built environment, and the systems that drive our social, cultural, and political apparatus. As we respond to these systems, our role as designers of the built world may not always be obvious, but we will inevitably be asked to take part in devising solutions to our most pressing challenges. To do so, architects cannot be mere technicians but must be capable of critical thinking, synthesizing complicated ideas, and collaborating with a wide range of people. We must do more and lead the way forward. With this context in mind, this studio asked students to engage in rigorous research and analysis and rethink the role of architects, architecture, urban design, and design in general. Students were encouraged to look beyond architecture's conventional methods and practices and solve challenging problems in ways that exceed normative practice. In addition to conditions caused by the climate crisis, students were asked to draw upon the issues that the global pandemic has created or exposed. David Wallace-Wells' book *The Uninhabitable Earth, Life After Warming*, was used as a primer. Wallace-Wells summarizes the environmental challenges through four themes: Cascades, Elements of Chaos, The Climate Kaleidoscope, and The Anthropoc Principle.

This studio is seen as a first step in developing an approach to design as a discursive and iterative inquiry rather than as a finite solution addressing a specific set of predetermined parameters. Projects were conceived as iterative and open-ended; students initially defined their projects and sites through rigorous

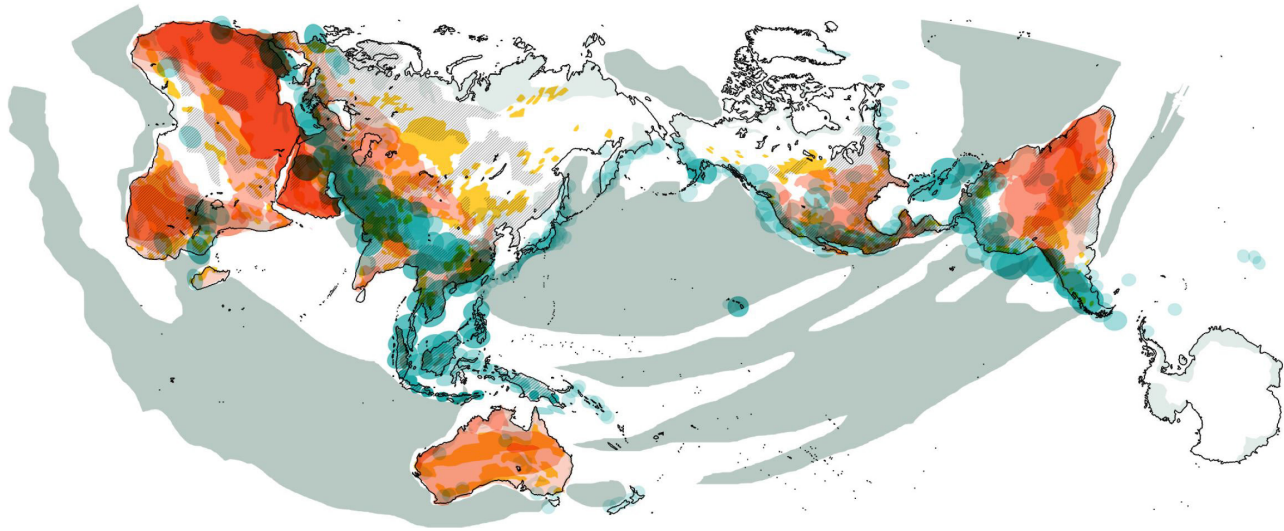


Figure 1. Adapting to Chaos. Jeannette Wehbeh, Jasmin Minji Kim, Taylor Marshall.

inquiry- identifying, researching, defining, and articulating their projects in response to a set of criteria relating to a theoretical position. Students were discouraged from approaching the work in a conventional linear sequence (i.e., research – analysis– synthesis – design proposition – conclusion) but rather encouraged to engage the process iteratively.

Drawing and model building as strategies to engage critical thinking were underscored - creating thought frameworks that supplemented traditional research to arrive at a critical position and design intervention. Sites were chosen worldwide with varying projects that engaged: resiliency, the impacts of change, and responses to local and global cultural issues.

This paper outlines the three phases of the studio; Phase 1 illustrates the varied research undertaken through ethnographic drawing and diagramming, each project capturing a resonating prompt from *The Uninhabitable Earth*, *Life After Warming*. Phase two continues Phase 1 research through a material investigation culminating in an evocative maquette that becomes the basis for a proposal. The final Phase 3 proposal revisits the previous phases incorporating viewpoints and delving deeper into the positions formed to arrive at a final project response.

### RESEARCH AND ANALYSIS-PROJECT PHASE 1

*“The truth is actually much scarier. That is, the end of normal; never normal again. We have already exited the state of environmental conditions that allowed the human animal to evolve in the first place, in an unsure and unplanned bet on just what that animal can endure. The climate system that raised us, and raised everything we now know as human culture and civilization, is now, like a parent, dead.”<sup>1</sup>*

The beginning of the studio involved rigorous research and analysis of the student’s chosen context. *The Uninhabitable Earth* was used as a primer driving this phase in which students were to identify and explain problems and opportunities, select an area of focus and, based on their chosen site’s general context, physical and cultural data, case studies relevant to the context. Students were also asked to propose appropriate responses respecting the themes of the 2021 Venice Biennale and the 2021 Chicago Biennial that were taking place concurrently.

This preliminary phase engaged in research through design using drawing as the initial instigator, drawing as thinking. Students embraced ethnographic drawing and depicted data through various drawing techniques to challenge normative positions and uncover relationships that wouldn’t normally be exposed through more traditional forms of research. The explorations revealed initial stances on topics later explored through maquettes and design interventions.

Research topics and drawings were varied, delving into various themes. They ranged from; prompts that investigated chaos resulting from the climate emergency explored through a projective mapping of the world resulting from David Wallace Wells’ elements of chaos, drawings that questioned the concept of home as it relates to climate migrants, to drawings that composed and overlapped social and economic conditions and data.

An example drawing was *The Adapting to Chaos* mapping by Jeannette Wehbeh, Jasmin Minji Kim, Taylor Marshall. The drawing depicts a new projected future map of the world which looks at adaptability and zooms in to what they referred to as “Goldilocks Zones”. In the context of climate change and their mapping study, the term “Goldilocks Zone” describes the ideal

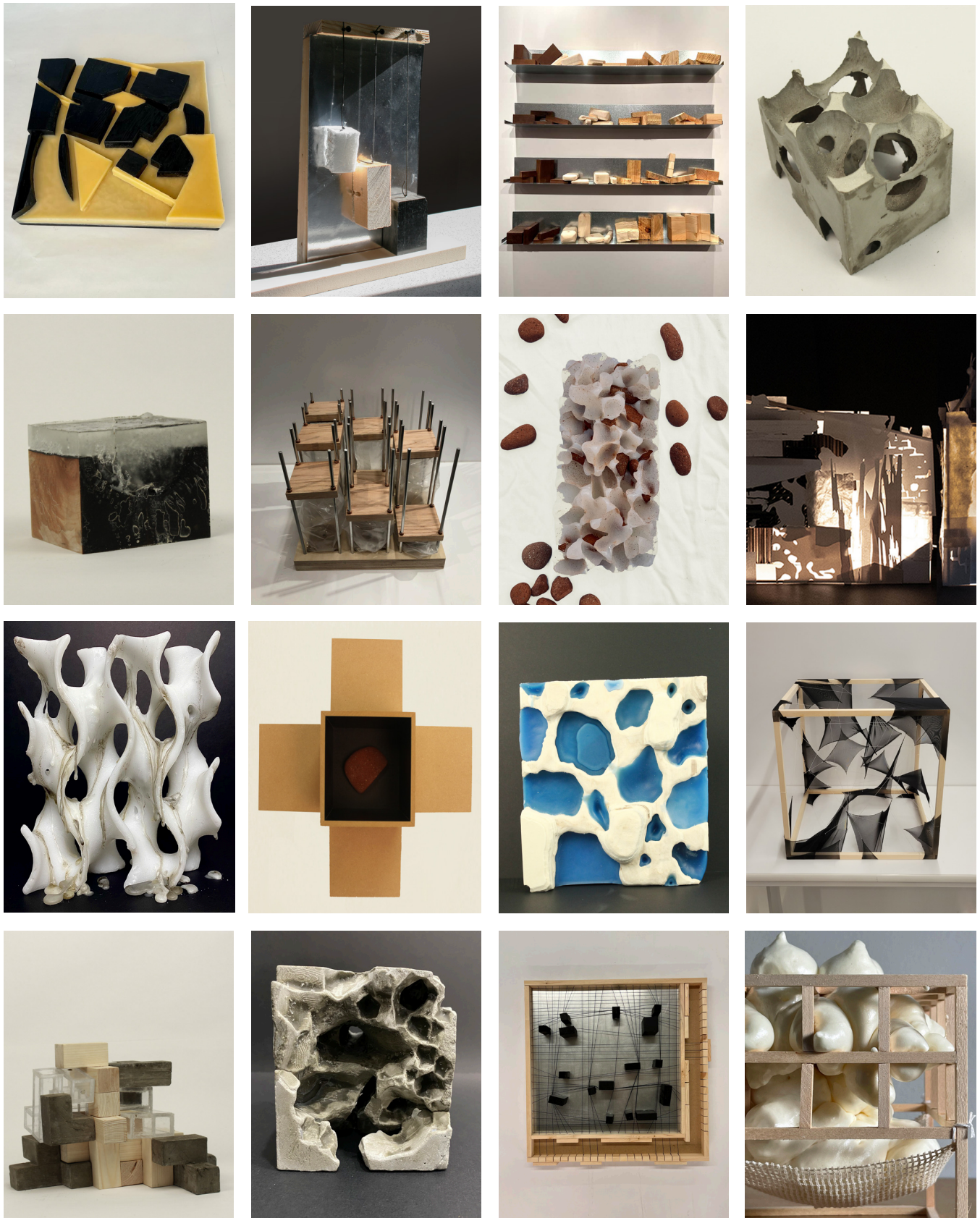


Figure 2. Phase 2 Maquette Models. TMU.

range of global temperature conducive to supporting life on Earth as we know it. The range of temperatures is not too hot or cold, but just right for maintaining the planet's ecosystems, biodiversity, and overall stability. Existing regions that currently fall within this zone and are the most vulnerable to the elements of chaos and the most significant regions affected by climate change by the year 2100 were projected on this map. Their drawing created a new 22nd-century map of the habitable Earth.

### MAQUETTE EXERCISE-PROJECT PHASE 2

*"Architecture requires control, deep control, not merely of the idea, but also of the stuff we use to give form to the idea."*<sup>2</sup>

Technology and materiality are integral to the design process, not just how we make buildings work. Materials are the ultimate outward expression of an architectural idea or concept, and materiality can be a driver of design solutions where subconscious knowledge and hunches can be elevated and translated through conscious manifestation. In this exercise, students were required to investigate material(s) and forms that would become part of the design process and inform their final proposal. The investigation is not usually associated with construction to learn from its physical properties but rather relates to the themes investigated in the students' research and analysis.

Research through design in Phase 2 embraced the act of making. The making of a maquette model that was operational in nature challenged students to think beyond being symbolic or purely representational with their models. Each student independently explored materials and material reactions—embracing ideas and actions that spoke to larger ideas and concepts. Once again, a myriad of research investigations, materials, and techniques were explored that paralleled the student's initial phase 1 research questions. Actions and tropes such as (re)order, convergence, adaptation, and bound were translated into material constructs. Prompts and actions such as under pressure, excess and density of negative space, and ambiguous artifacts, were also explored to create operational models that moved or created instruments to view or transform a material or artifact.

An example of a material investigation through interrogating a term is Taylor Marshall's exploration of "adaptation". She explored three steps towards achieving pure adaptation, using an actual brick as a familiar model. She operated on the brick using three steps: repair, substitute, and adaptation.

1. Repair: This step involves fixing and recognizing what is known and familiar, even if the materials have changed. The function remains the same, but additional materials may be needed for support.

2. Substitute: In this step, broken or missing parts are replaced with unique materials to retain the overall function of the object. This approach required a change in thinking, as the new material may alter the perception of the object.

3. Adaptation: The final step looked to adapt to the new material, leaving behind the familiar function of the original. The new materials guide the adaptation process within the spaces left by the old materials.

The key lesson learned through this material investigation was that adaptation requires available space to adjust. Simply repairing or substituting materials may not lead to true adaptation. True adaptation involves integrating new materials alongside the old, resulting in a completely new form with little reference to the original function and condition. Combining new forms may remove or naturally discard some elements, but true adaptation is impossible without sufficient space for this process. The lessons learned in this adaptation were further explored and applied in the final stage.

Through an iterative and operational process, students were able to explore ideas through the physical act of making. Making is an integral part of the design and creative process. It offers unique benefits that digital tools cannot replicate fully. From tangibility and iterative exploration to hands-on learning and collaborative communication, it is a valuable tool for students to refine their ideas, question concepts, and advance abstract ideas, enabling a more holistic and well-rounded design approach.

### DESIGN INTERVENTION-PROJECT PHASE 3

In the final phase, building on the student's research and maquette exercise, students were tasked to develop a preliminary design addressing one or more of the issues identified in their research. Having generated ideas for a design proposal, students were then asked to develop an intervention functionally and conceptually related to the proposal explored in earlier stages of the work. As students composed their interventions, they were encouraged to consider three primary areas of engagement: sustainability in all its facets; the impact of technologies; and response to local and global contexts.

Students revisited drawings and models and explored an architectural design that looked to not only translate key concepts but also acknowledge possibilities of their interventions in a projective manner that realized the potential that time affords. Proposals varied in scope and scale and geography. From Toronto to Detroit, to Lampedusa, Italy, to Fez, Morocco—Students explored their positions utilizing a variety of mediums. Students used drawings, models, videos, and interactive websites to explain their ideas and illustrate the framework, positions, and potential agency their interventions would have over time.

*Adaptation in the Flux of Chaos* was the final design proposal by Jeannette Wehbeh, Jasmin Minji Kim, and Taylor Marshall. The intervention explores the far-reaching impact of climate change on Earth and the urgent need for adaptation to address the resulting environmental chaos. The research emphasizes climate change's complex and interconnected nature and how a holistic approach is needed to counteract its effects by 2100. Adaptation

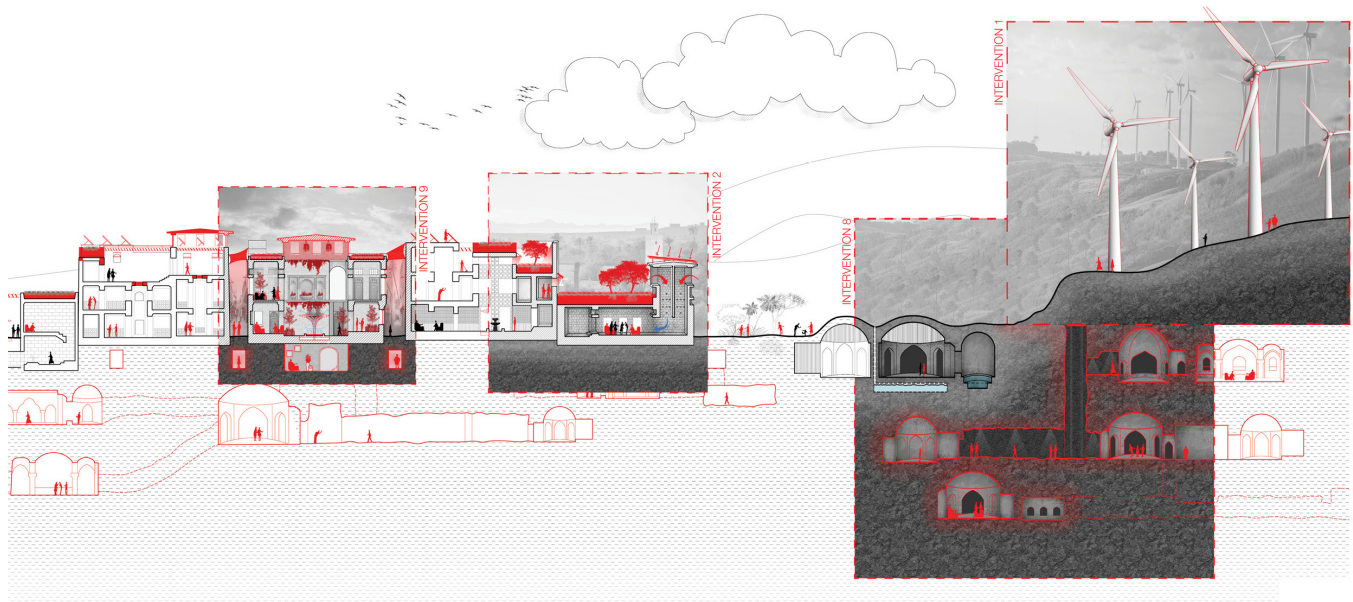


Figure 3. Part Site Section: Nine Adaptable Interventions. Jeannette Wehbeh, Jasmin Minji Kim, Taylor Marshall.

emerges as the sole viable option in the face of global challenges. The proposal recognizes that each region's adaptation strategy must be tailored to its unique characteristics, encompassing location, culture, and societal attitudes toward relocation.

The study reintroduces their phase 1 research on Goldilocks Zones, areas deemed habitable yet highly vulnerable to chaos, as pivotal regions for future development. They focused on Morocco which stands out as a country susceptible to multiple elements of chaos, concentrating on Fez, which became the area of study due to its various environmental challenges, including natural disasters, rising temperatures, and migration influxes.

With a focus on architecture, nine intervention strategies were proposed to address the environmental chaos we have created. These include leveraging existing infrastructure, harnessing climate-related opportunities, advocating for reusing structures rather than abandoning them, embracing adaptive measures for floods, incorporating the unique landscape, rethinking current infrastructure, preparing for population growth, using earth-based shelters, and evolving building typologies.

Their proposal emphasized the absence of a one-size-fits-all solution for adaptability, calling for flexible and diverse initiatives to address evolving environmental challenges. These strategies, illustrated through their application to Fez, Morocco, are presented as a versatile framework applicable to other cities within the Goldilocks Zone. This framework is designed to

guide the evolution of architecture while preserving tradition, meaning, and comfort amidst the chaotic environmental shifts that lie ahead.

In looking at the challenges brought about by the climate emergency, Rita Wang's and Nicole Li's proposal *Post-Anthropolis: Detroit Edition*, challenged our deep-rooted mindset of human supremacy and anthropocentric thinking. Their intervention looked at the impact of modernity on industrial cities, highlighting the benefits of technological innovations but also the emergence of a human-centric mindset that has caused a mass extinction of non-human life, threatening ecological stability. In response, their concept of Post-AnthroPolis, a post-anthropocentric city, is introduced, aiming to re-incorporate non-human actors into a harmonious relationship with humans and built forms.

They produced an open-source interactive web-based manual that proposes a strategy for reimagining post-industrial cities, focusing on Detroit as a case study. The city's decline is attributed to economic recession, social issues, and population decline, leading to widespread abandonment. The investigation delves into various abandoned building typologies based on the factors that caused their abandonment, and specific sites are identified as potential biodiversity hotspots for restructuring the city.

The manual introduces an evaluation and intervention process, allowing tailored approaches for each site, fostering a more

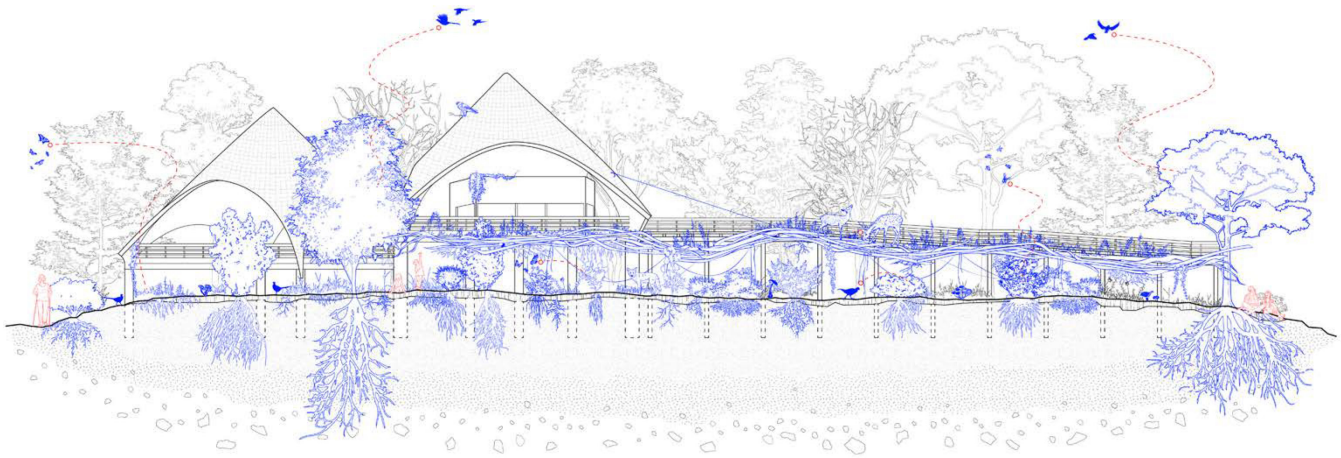


Figure 4. Post-Anthropolis: Belle Isle Nature Zoo Section. Nicole Li, Rita Ruotao Wang.

symbiotic relationship between humans, non-humans, and built forms. The ultimate vision is to create a biodiverse network of microcosms in Detroit, with interventions transforming abandoned structures into thriving ecosystems. Over time, this approach aims to establish Post-Anthropolis, a new city typology that maintains an interconnected and harmonious coexistence between all parties involved. The strategies presented in the manual are intended to be applicable worldwide, providing opportunities for cities to embrace a more sustainable and inclusive future.

One of the outcomes of the studio was that several students were able to use their research and interventions to gestate a proto thesis—a starting point to develop their thesis proposals in the following year. Nicole Li's 2022/23 thesis titled *Blurred Boundaries* built upon her ideas and research from the Post Anthropolis proposal previously described. Building on her research in the studio, her thesis questioned the boundaries between the human and non-human realm, by dissecting their components and attempting to negotiate new relationships in architecture. She posited that exploitation and marginalization contribute to anthropocentric thinking and pose a threat to ecological stability. Her thesis also challenged the boundaries between the human and non-human realms, uncovering hidden aspects of nature by examining their components and establishing new relationships. The thesis operated across various scales, perceptions, times, and contexts, aiming to reveal the concealed nature impacted by architecture. By seeking alternative perspectives, the thesis aimed to envision a new architecture that breaks down the binary distinctions between humans and non-humans. It envisioned a speculative future where architecture supports a symbiotic relationship between both realms, offering a critical redefinition of the current reality and worldview.

The work of her thesis not only built on the theoretical underpinnings of *Post-Anthropolis: Detroit Edition*, completed with Rita Wang, but also advanced the idea of design-led research through her use of drawings, maquettes, and constructs. The engagement of architecture through drawing and making proved to be a powerful tool for seeing and understanding the intricacies of cohabitation between humans and non-human entities. Instead of providing rigid, linear solutions, her speculations embraced open scenarios, allowing alternative narratives to emerge.



Figure 5. Blurred Boundaries Drawing Construct. Nicole Li.

## REFLECTIONS: PALE BLUE DOT AR8101 STUDIO IN CRITICAL PRACTICE

The challenges of facilitating a studio that delved into the disruptions of our time during the COVID-19 Pandemic proved oddly valuable. Operating in a hybrid fashion, with 24 students and two professors convening both remotely and in person, our students directly experienced the agility required to operate within the moment and question the status quo. Students were not only observers, critics, and designers but also participants embedded in the throes of change. Students focused on 10 research initiatives leading to 10 project proposals punctuated by 24 individual maquettes in a phase to unfold and visualize unseen aspects and recalibrate chosen themes and positions. Embracing design as research, students oscillated between traditional forms of research and the haptics of drawing and making as a way of thinking and exploring. Ethnographic drawings and other techniques allowed analysis to be measured as well as visualized and experienced in new ways. The investigation of material and form through maquettes helped focus and clarify positions. Though abstract, the models were operational and architecturally driven. Drawings and models allowed for new critical and meaningful perspectives, not only informing but strengthening students' positions which led to final proposals. Projects focused on a wide range of issues: mass migration, food insecurity, urban systems, affordable housing and the rethinking of the suburbs, the reimagining of post-industrial cities through the lens of the Anthropocene, and adaptation—the holistic re-engagement of place and circumstance. Common themes emerged through this diverse collection of projects. All engaged in innovative approaches that challenged the role of architects, architecture, urban design, and design in general. The need for architecture to be more adaptive and resilient was a theme shared by all proposals. Projects posited that diversity – in terms of who we are and how we live – needs to translate into new modes of living and that our environments must be more flexible and malleable to accept change over time.

Students' sensitivity to conditions and processes strikingly enlightened the debate in the studio of how we will live together. The discourse led to an enriched learning and teaching environment for everyone, including instructors and guests participating in the final review of the student's work. The theme woven throughout the 2021 Studio in Critical Practice – the project as well as the studio course experience itself – is adaptability. Adaptability means thinking and acting holistically, recognizing the symbiotic relationship between people and nature. Poignantly today; this may be seen as the new radical. Ultimately, the proposals presented were reflective and projective, challenging conventional ways of conceiving and making architecture and inhabiting our pale blue dot.

## ENDNOTES

1. David Wallace-Wells, *The Uninhabitable Earth: Life after Warming* (New York: Tim Duggan Books, 2019), 24.
2. Stephen Kieran and James Timberlake, *Refabricating Architecture* (New York: McGraw-Hill, 2004), 28.