

*Project Frida: Models of Resilience*

*Regyna Palacios Dorantes*

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*First Reader: Ophelia Mantz*

*Second Reader: Ross Wienert*

*Honors Reader: Laura Bland*

*University of Houston*

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*Acknowledgments*

*I want to dedicate this research to communities that are victims of disasters. These communities have undeniable resiliency, and this research would not be possible without it. Most importantly, I want to dedicate this to first responders, rescuers, and rescue dogs. This research proudly carries the name of a very important rescue dog, Frida. Frida was a search and rescue dog that helped in the aftermath of the 2017 Mexico City earthquake and many other natural disasters.*


*Words cannot express my gratitude to Professor Mantz for her valuable feedback and guidance for this project. Professor Mantz understood and connected so deeply with the vision of the project. Her expertise and passion led this topic to be innovative and contribute in a very meaningful way. I also want to thank my defense committee, Professor Wienert and Professor Bland, as this journey became so fruitful because of their support.*

*Lastly, a very special thanks to my dad, my mom, and my loved ones. Your belief and support kept me going through this journey.*

Abstract

Disasters heavily affect low-to-middle-income countries as the lack of proper infrastructure fails to respond to the frequency with which disasters occur and the devastation they bring. A longstanding socio-economic system is what keeps communities functioning despite the evident disconnection from the post-disaster aid that is provided by humanitarian organizations. This research will focus on analyzing three post-disaster scenarios located in third-world countries where temporary shelters were provided and thought of as the solution. Within the inconsistencies of the aid provided three elements emerged from survival needs and day-to-day activities in the community. The proposed solution focuses on designing a system identified as the Workshop. The Workshop provides a longstanding solution to post-disaster scenarios as it grows from the existing. Communities possess the opportunity to rebuild their autonomy with this system and become models of resiliency.

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# the beginning

## Introduction

*“A refugee city is also a city. A temporary city, in theory. An ephemeral city whose inhabitants have been placed there like pieces in a puzzle. A stand-by city that architecture has not embraced.” – Ana Asensio*



Haiti Earthquake (Associated Press 2010)



Al Za'atari Camp, Jordan (United States Government Work, 2013)

The geographic location of certain third-world countries plays a significant role in the frequency and severity of disasters that occur in these areas. Low-to-middle-income countries are heavily affected by disasters as the lack of proper infrastructure fails to respond to the frequency with which disasters occur and the devastation they bring. Communities are left vulnerable and in need of protection from the unpredictable environment they live in. A longstanding socio-economic system is what keeps communities functioning despite the factors mentioned.

The UN Refugee Agency is the main provider of post-disaster relief shelters. They define their shelter provisions as the “difference between life and death.”<sup>1</sup> The main form of shelter they distribute is tents, plastic sheeting, and matting which erect simple structures. Resources tend to be scarce in third-world countries, hence providing them with an immediate solution might seem logical. But why has it been determined that low-to-middle-income countries only need to be provided with an immediate solution?

The contingency that exists during a disaster controls the pace and urgency to provide a solution that merely settles the devastation. The current models of post-disaster relief provide an impermanent solution to a problem that requires long-term solutions. In imagining post-disaster relief as impermanent, humanitarian agencies fail to account for effects that might linger for years, or even decades. The most optimistic scenario is that shelters established for these communities will be impermanent. But how can we determine when the impact of the disaster ends? Most importantly, how is this product-based solution going to engage in the process of returning to the system communities had before the disaster? When it comes to disaster, the only known factor is when the contingency begins, not when it ends. Communities affected by disasters need a system that anticipates and accommodates long-term needs. Giving communities temporary shelters hinders their resiliency

and autonomy to reconstruct their socio-economic system. This research will focus on analyzing three post-disaster scenarios where temporary shelters were provided and thought of as the solution. As previously mentioned, the implementation of temporary shelters was disconnected from the contingency, but this process allowed for the extraction of information that led to positive conclusions. Within the inconsistencies of this solution, three elements emerged from survival needs and day-to-day activities in the community. This unintentionally started forming a system where more opportunities could be extracted, and then implemented to design a much stronger foundation that guarantees autonomous and resilient post-disaster models.

The proposed solution to post-disaster models focuses on designing a system identified as the Workshop. The Workshop emerged from three existing and repeating elements in post-disaster scenarios, and combined them into a space where day-to-day activities are hosted. These everyday activities are what begin to shape autonomy in communities and accommodate their long-term needs. The Workshop lives within the existence of these three elements, it takes advantage of the existing and uses it. Rather than over designing or starting from scratch the Workshop offers a solution that can develop and grow over time, as communities are encouraged to engage in reactivating their resiliency.

The structure of the Workshop is based on a grid that imagines the possibility of growth and changes over time as communities navigate through devastation. The Workshop’s program expands the possibilities that exist to develop community participation in the reconstruction process and nurture an attachment to the space. The program is built by an atlas of elements that can be adapted and transformed into a specific activity in the program; the elements facilitate activities. In contrast to shelters, Workshops address the entirety of the contingency regardless of the scenario to which they are applied.



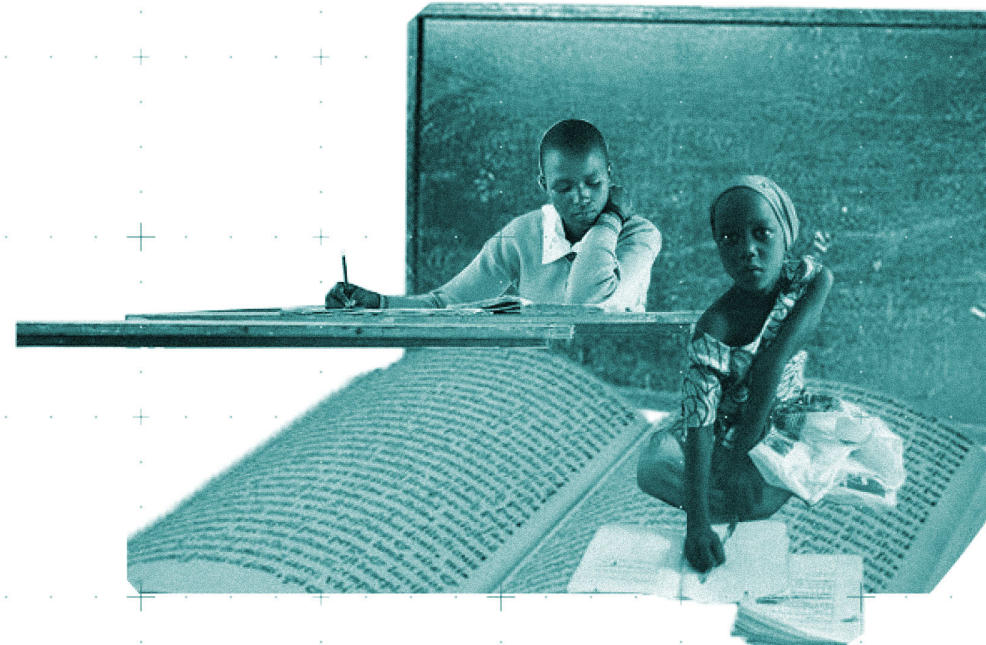
Hagadera Camp, Kenya Aerial (MSF 2021)

## contingency



# water school density





School



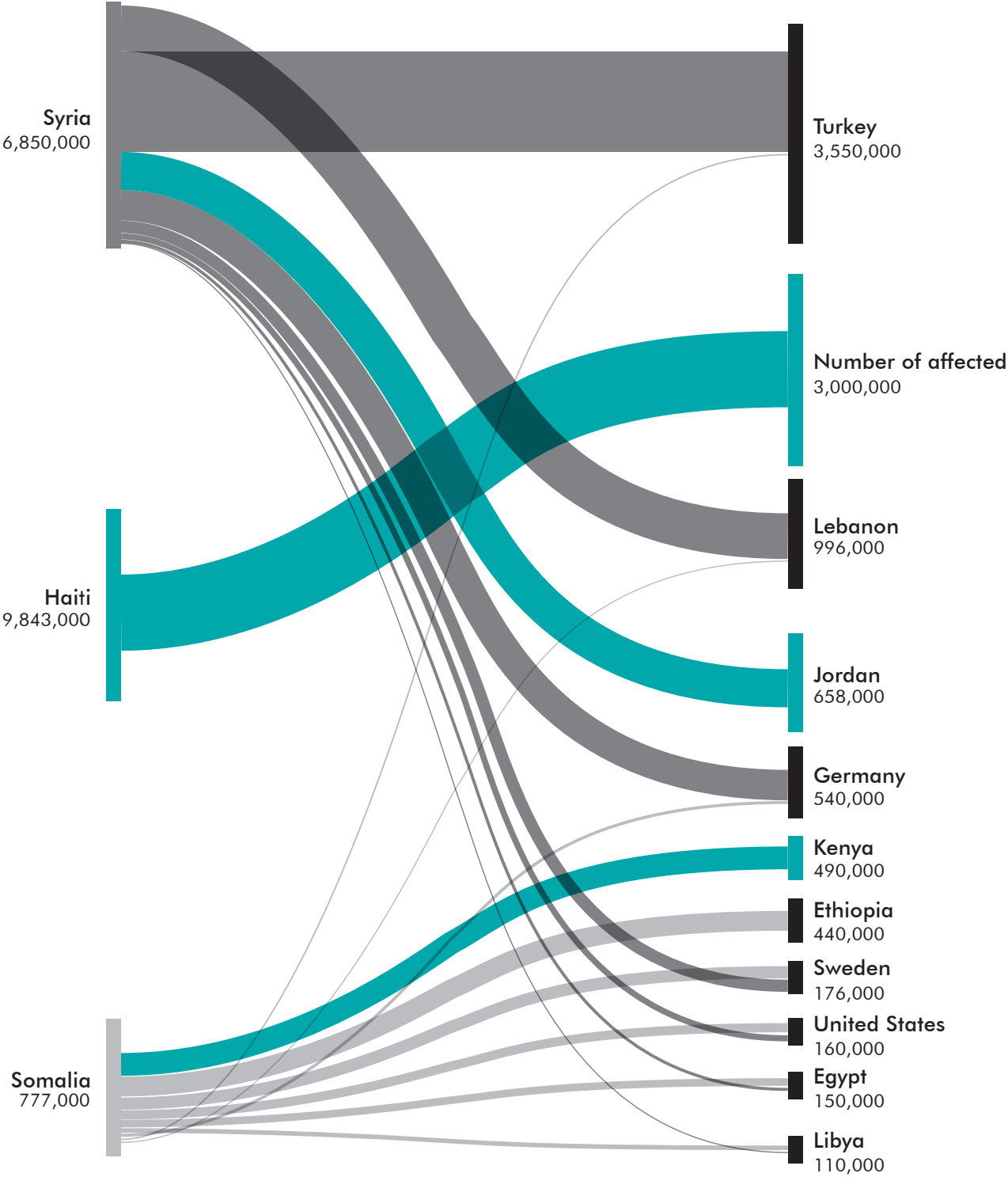
Population Density





community

flows



## Natural Catastrophe: Haiti 2010 Earthquake

The first scenario discussed is Natural Catastrophe, and its location is Haiti post-earthquake in 2010. The city analyzed is Port Au Prince, the capital of Haiti. In 2010, a 7.0 magnitude earthquake struck Haiti leaving its capital devastated.<sup>2</sup> Seismologists predict that after a zone is impacted by an earthquake, aftershocks will strike within the next 10 days.<sup>3</sup> The following days, at least 52 aftershocks were recorded each one measuring 4.5 or greater, causing fear and uncertainty in the community.<sup>4</sup> At least 3 million Haitians were affected and 1.5 million were left homeless. Families were forced to evacuate and seek shelter established around the city.



Natural Catastrophe Collage (Palacios 2023)

# unforeseeable

## loss

## reconstruction

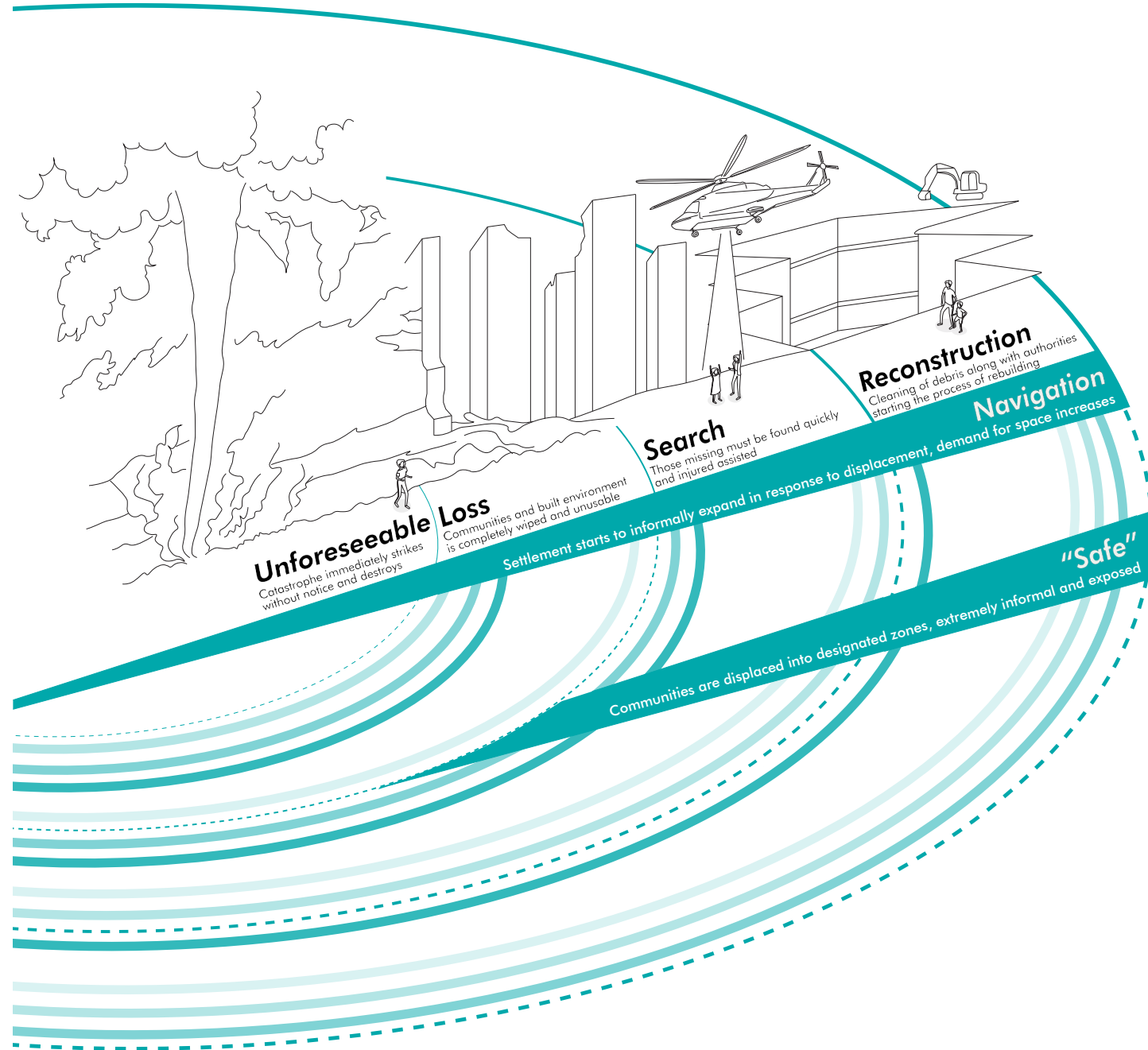
## search

### Continuum

The goal of identifying timelines for each scenario was to disprove the idea that disasters are quantifiable. Hence, the so-called temporary shelters must be disassociated from impermanence, and different approaches should be taken when providing post-disaster relief. Based on this interpretation, it was concluded that disasters should rather be thought of as a continuum. This interpretation also helps rank the speed at which the scenarios strike, and provides a perception of how they develop over time. It serves to understand how these sequences are not occurring consecutively, and one sequence does not have to end for the other one to begin. These sequences are analyzed through the lens of communities and focus on narrating their journey. For this reason, four sequences were identified for Natural Catastrophe scenarios besides two adjacent elements that live within this continuum. 'Unforeseeable' is where the sequence begins as the catastrophe strikes without notice, resulting in instantaneous destruction of the environment.. The following sequence is 'Loss' as the communities encounter a complete destruction of their built environment and what is left is sadly irreparable. Along with the environment, 'Loss' also accounts for the death tolls that the catastrophe left. The third sequence is 'Search', during the

devastation of catastrophes authorities have the vital task of tracking down people that got caught in debris. The search must be deliberate as there is a small-time frame to take care of any major injuries. The last sequence is 'Reconstruction'; the goal is to clean up the remains quickly so authorities can begin reconstructing the built environment.

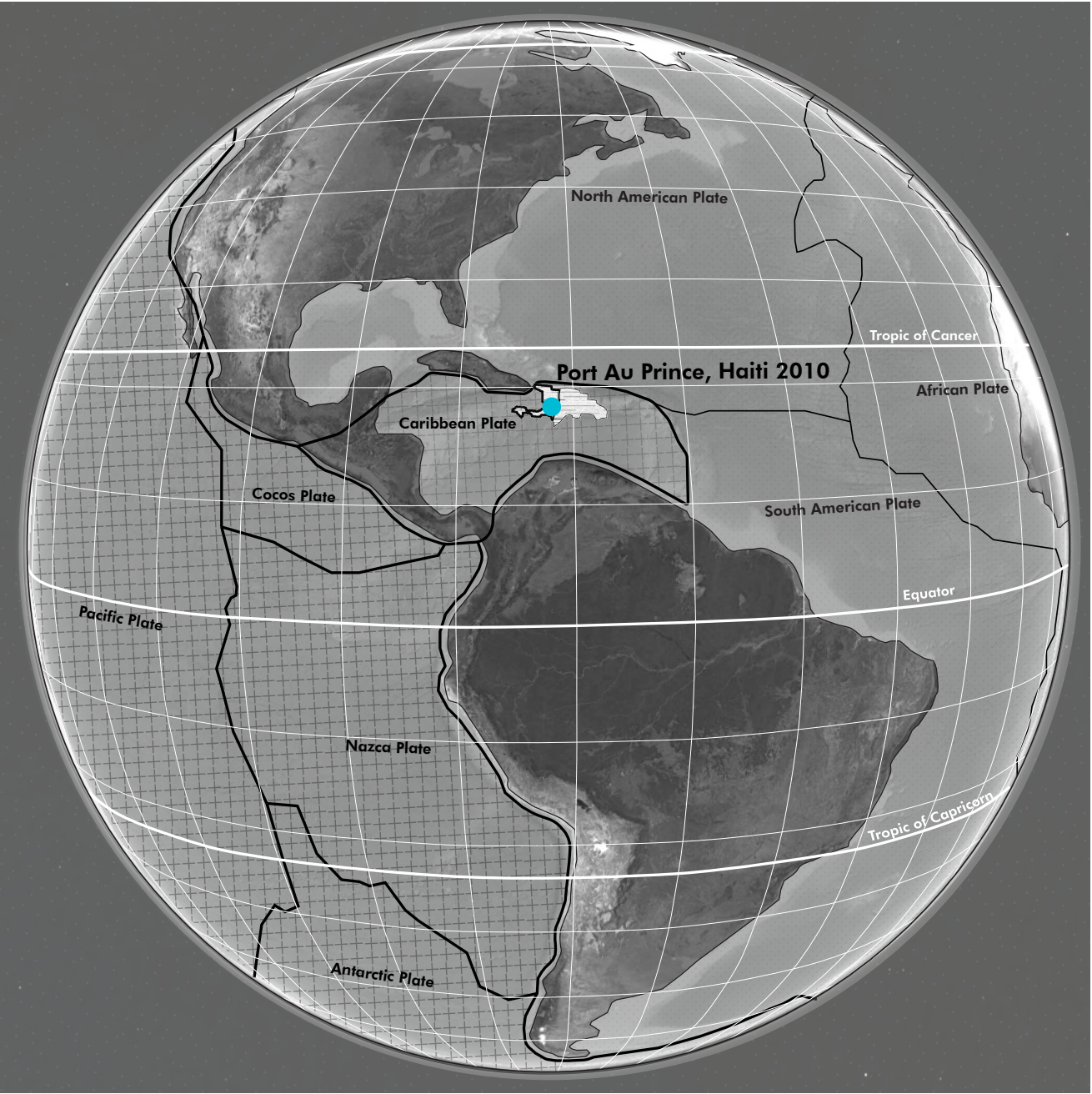
'Navigation' and 'Safe' are two adjacent elements that begin at different parts of the sequence. These elements communicate how communities perceive the events happening around them. The element of 'Navigation' settles since the start of this continuum as communities are left alone and unguided during this journey. 'Safe' is the element used to describe how communities are displaced into informal shelters that cannot provide them with the security they seek after all the loss.





Geographic Location

Haiti is a Caribbean Island country that sits between the fault lines of two major tectonic plates, the North American and Caribbean plates. The constant motion of these active plates builds up friction over time, therefore causing these catastrophic earthquakes. This is an external factor that is out of human control, yet it should be the key factor to consider. As it is important to understand how to deal with its consequences. Moreover, Haiti has a very high population density. Combining these factors with the lack of proper infrastructure leads to the immense devastation the country suffers disaster after disaster. The post-disaster relief they receive is what marks the difference between life and death, but this disease is being misdiagnosed by simply providing shelter.<sup>5</sup>



Information

Most Active

Less Active

Scenario

Port Au Prince, Haiti

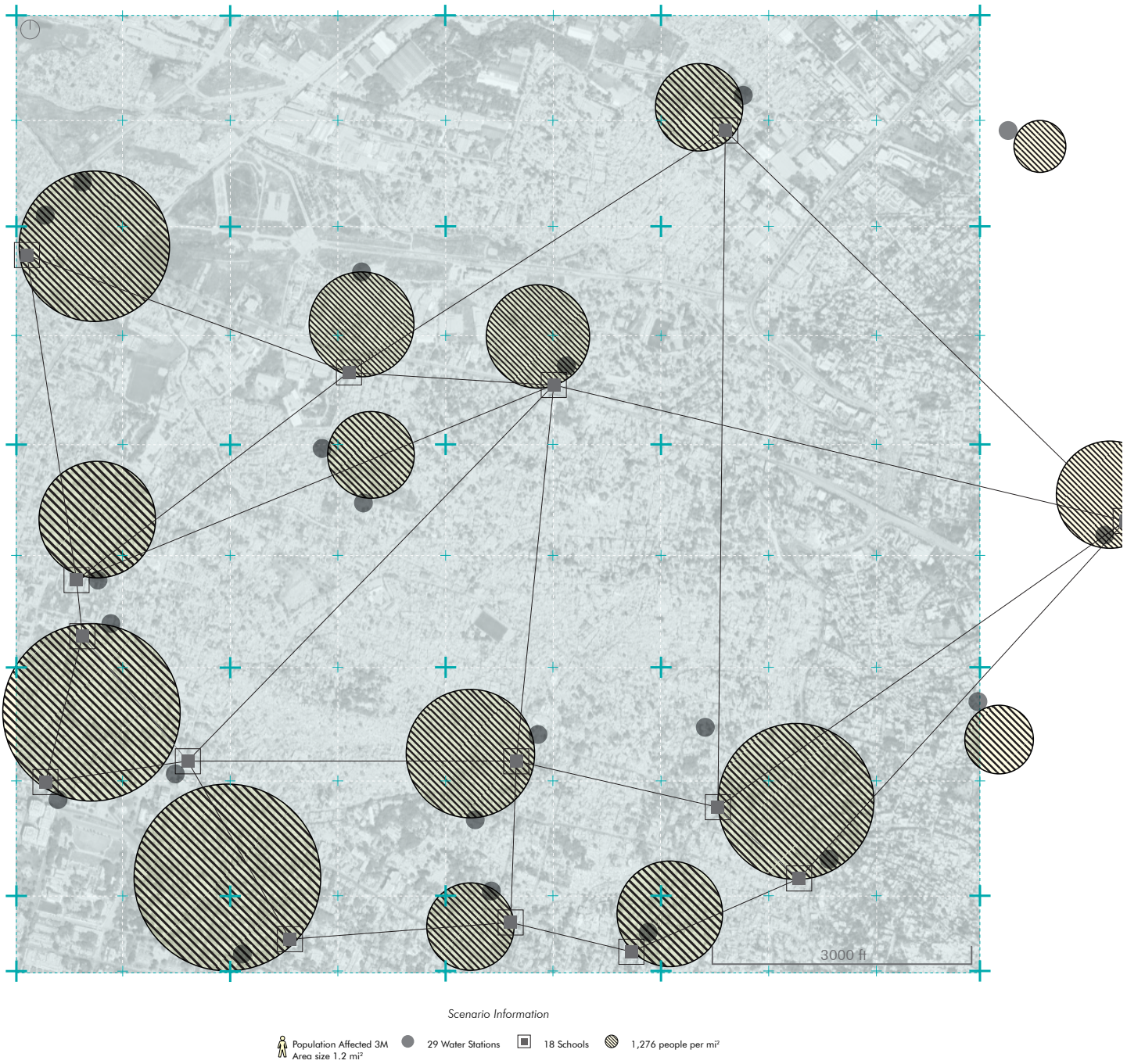
Globe Map: Tectonic Plates (Palacios 2023)



Scenario Analysis

After the strike, shelters started to settle around two repeating elements: access to water and existing schools. The focus immediately after the strike is to reduce exposure and provide protection. Hence, the idea of establishing shelters in existing schools is effective during the devastation as communities have a close proximity to this element. Communities maintained continuous access to water and a roof that protected them; thus, the third element, density, started to form around these informal settlements. Each less than half a mile away from the other. However, what happens once the devastation starts to settle? For instance, could these three elements begin to establish a system that aids with what comes after the devastation?

Communities in Port Au Prince felt extremely disconnected from their reconstruction and recovery process. No one made them feel included, and authorities failed to identify how the Haitian community could help restore their own system. Several models indicate that people affected by a disaster have the right to a life of dignity.<sup>6</sup> All the assistance received must alleviate their suffering. Even so, the given spaces did not engage them in a process where they could appease the uncertainty and loss they were going through. In other words, the shelters stripped away their resilience.



Port Au Prince Map: 2010 Earthquake (Palacios 2023)

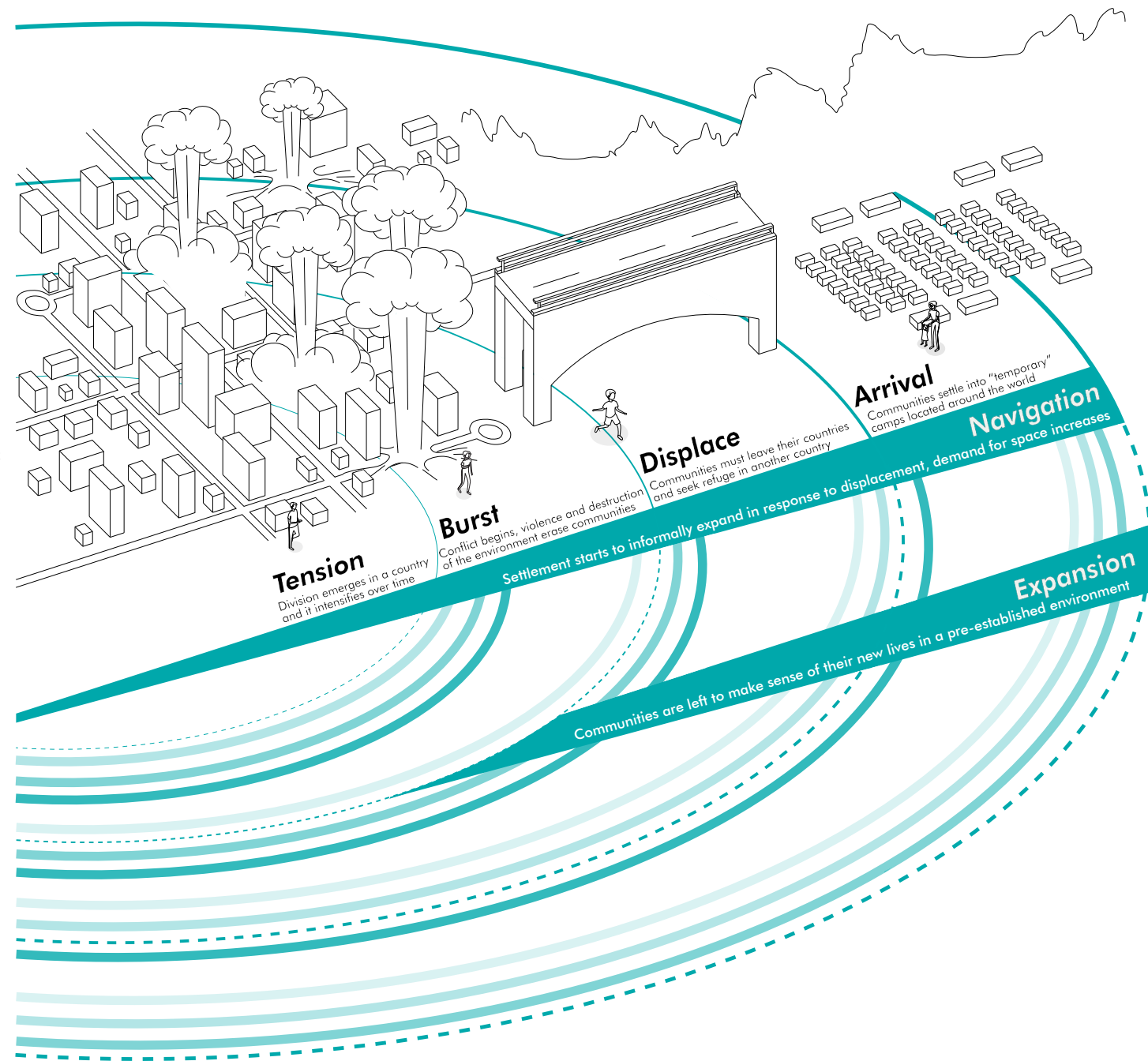


**Conflict: Al Za’atari Camp Jordan**

The second scenario is Conflict. Al Za’atari is a refugee camp located in the Middle East specifically in a bordering town between Jordan and Syria. According to UNHCR data, Jordan is currently the third neighboring country where most Syrians are registered as refugees.<sup>7</sup> Al Za’atari Camp was established in 2012 after the Syrian War erupted, and almost 7 million people fled to neighboring or welcoming countries around the world. Approximately 650,000 Syrians ended up in Jordan. The Conflict scenario can be split into two main categories: ideological conflicts and interest conflicts. Ideological conflicts pertain to any ethnic or religious differences. Whereas interest conflicts stem from territorial, governmental, or economic motivators. These categories overlap in most cases as it is often complex to categorize a conflict. Nevertheless, the categorization helps outsiders understand the possible roots of the conflict. Regardless of the category, conflicts undoubtedly cause the displacement of communities that lost their homes which once again leads to the necessity of shelters.



Conflict Collage (Palacios 2023)



burst

arrival

displace

### Continuum

In terms of interpreting the speed at which this scenario strikes, the conflict scenario's continuum comes in second place for the following reasons.

Four sequences and two adjacent elements were identified for this scenario. 'Tension' is where this sequence begins, tension intensifies over time as there are irreconcilable interests between groups of people. Besides the 'Tension', 'Navigation' begins as residents from a country at war become refugees in other countries. There is a constant migration flow and countries must informally arrange camps where the demand for space rapidly increases.

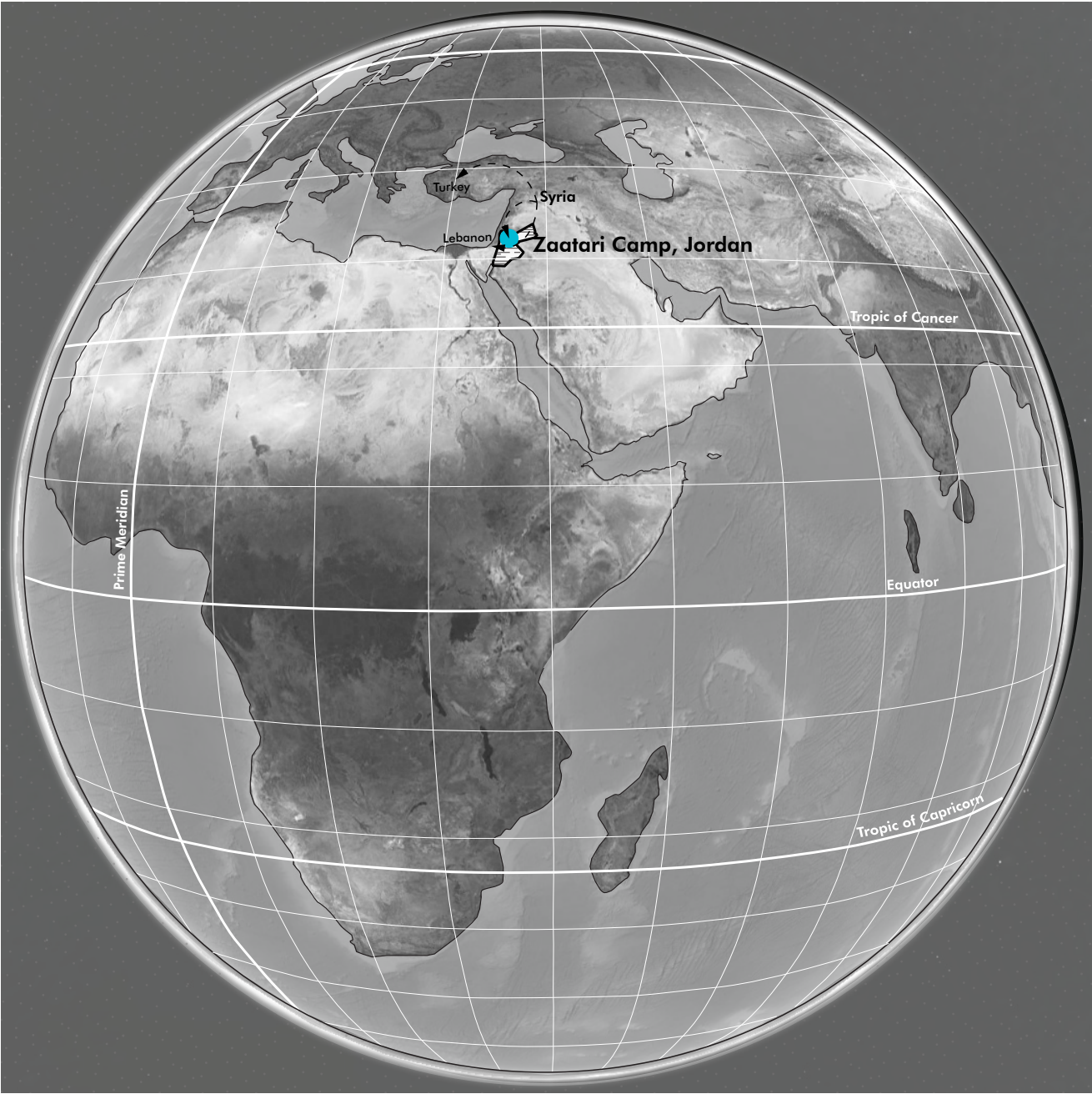
The 'Burst' sequence is where war erupts. The interest and conflicts can no longer be contained which leads to extreme violence, the destruction of the environment, and most importantly, communities being erased. The next sequence is 'Displace'; communities have no choice but to leave their home countries and look for asylum in neighboring or welcoming countries. The adjacent element that begins is 'Expansion'. 'Expansion' is used to describe how communities are abandoned to grow into their new lives in a pre-established environment that holds a bunch of limitations.

The last sequence is 'Arrival'. As mentioned before, communities settle in temporary shelters, where the impermanence is unmeasurable.



Geographic Location

Jordan is a Middle Eastern territory south of Syria. Jordan is a hot and dry desert country. Access to water is not completely scarce, but it is limited which clashes with their weather conditions. There is an incorrect perception that war is “normal” in the Middle East. The reality of the Middle East is that its location is unfortunate as major global powers, like the United States and Russia, compete for power. Further, there is basically impunity for any neighboring powers that decide to interfere by trafficking weapons or sending their armies to support groups as they see fit.<sup>8</sup> Despite this, throughout history, the Middle East has developed a complex social system where many ethnicities and faith groups can coexist. A social system where they live together and prevent war. It is also important to understand why most refugees end up in neighboring countries. Most refugees need an immediate escape from all the destruction, and the easiest way for them to leave their countries is by foot. Unfortunately, in most instances, these neighboring countries are also developing countries. These countries do not have the proper infrastructure to respond to the demands of this abundant migration flow.



Information

Scenario

Za'atari Camp, Jordan

Refugee Migration

Globe Map: Refugee Flow, Syria (Palacios 2023)

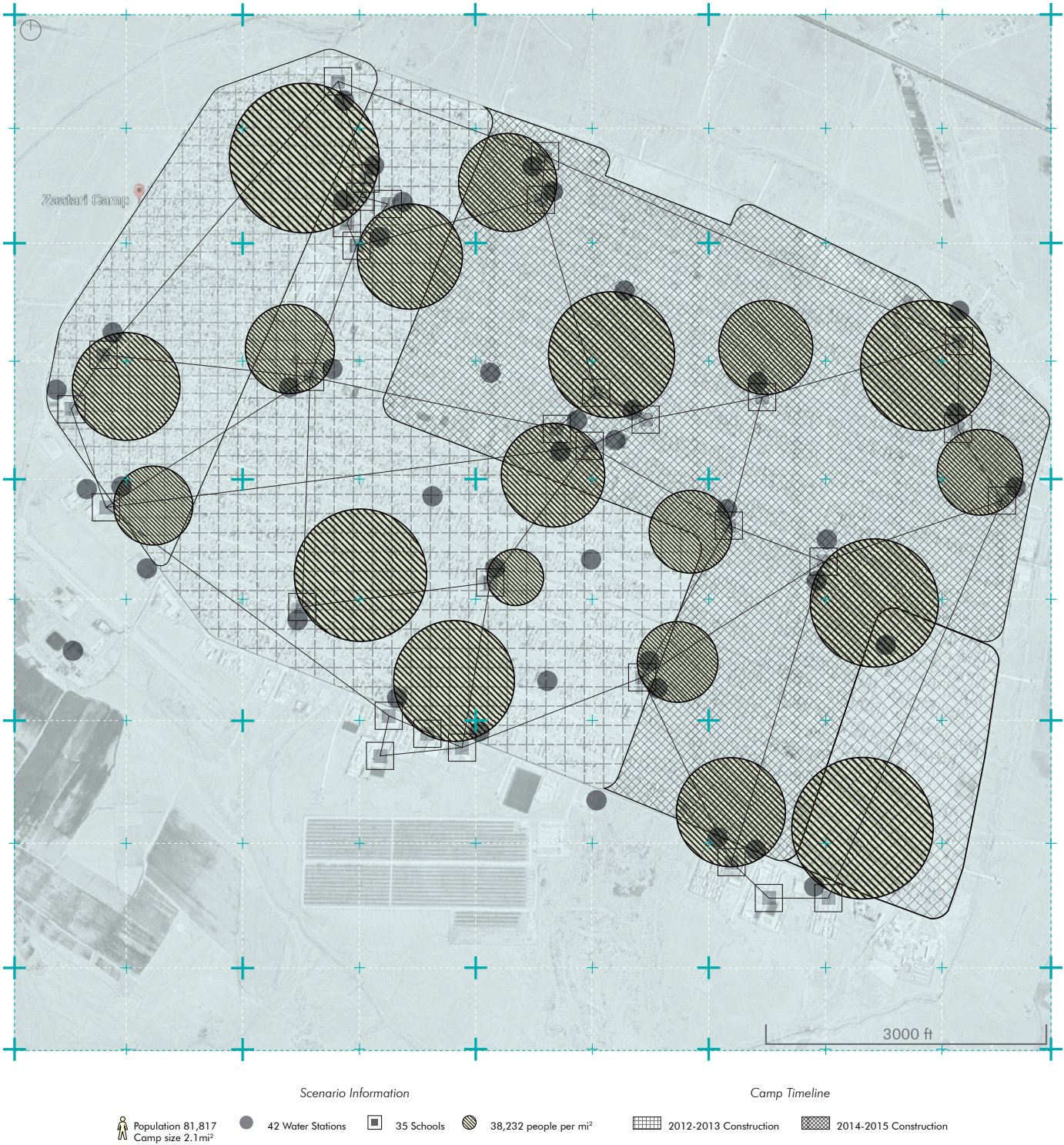


Scenario Analysis

After the Burst in 2011, the Al’Zaatari camp started as an impermanent solution; its intended condition was to provide temporary shelters to Syrians. Since then, the camp underwent several expansions, the last one in 2015, due to the constant migration flow. The majority of Syrians that fled to this camp walked across the desert. This camp has now informally become a refugee city, a categorization that views residents through the same lens. “All of us carry water from the same water tank, all of us go to the same toilet... all of us go to the same mall... and all of us have the same visa... we are all the same... we are all refugees.”<sup>9</sup> A lens that hinders who they are and obscures their community’s resilience.

Its growth originated from a collection of tents since this was a mere transitional space. A space for a few weeks while Syrians waited for the opportunity to go back home. The demand for a system increased as the refugee flow increased, and as a response, two elements emerged. Access to water was vital, especially in a desert zone. The number of children that were brought and were being born here demanded schools. Hence, population density began to form around these elements.

As of now, the camp accommodates a population of 81,817 people in a 2.1mi<sup>2</sup> area. There are approximately 38,000 people per mi<sup>2</sup>, it is an extremely concentrated area where spaces are being used ineffectively. Around the camp, there are 42 water stations and 35 schools, meaning that at almost every water station a school has been established. The everyday life of residents revolves around these elements. The elements have now been embraced into their day-to-day activities. Once again, these three elements repeat less than half a mile away from each other, emphasizing an opportunity for Workshops to be introduced.



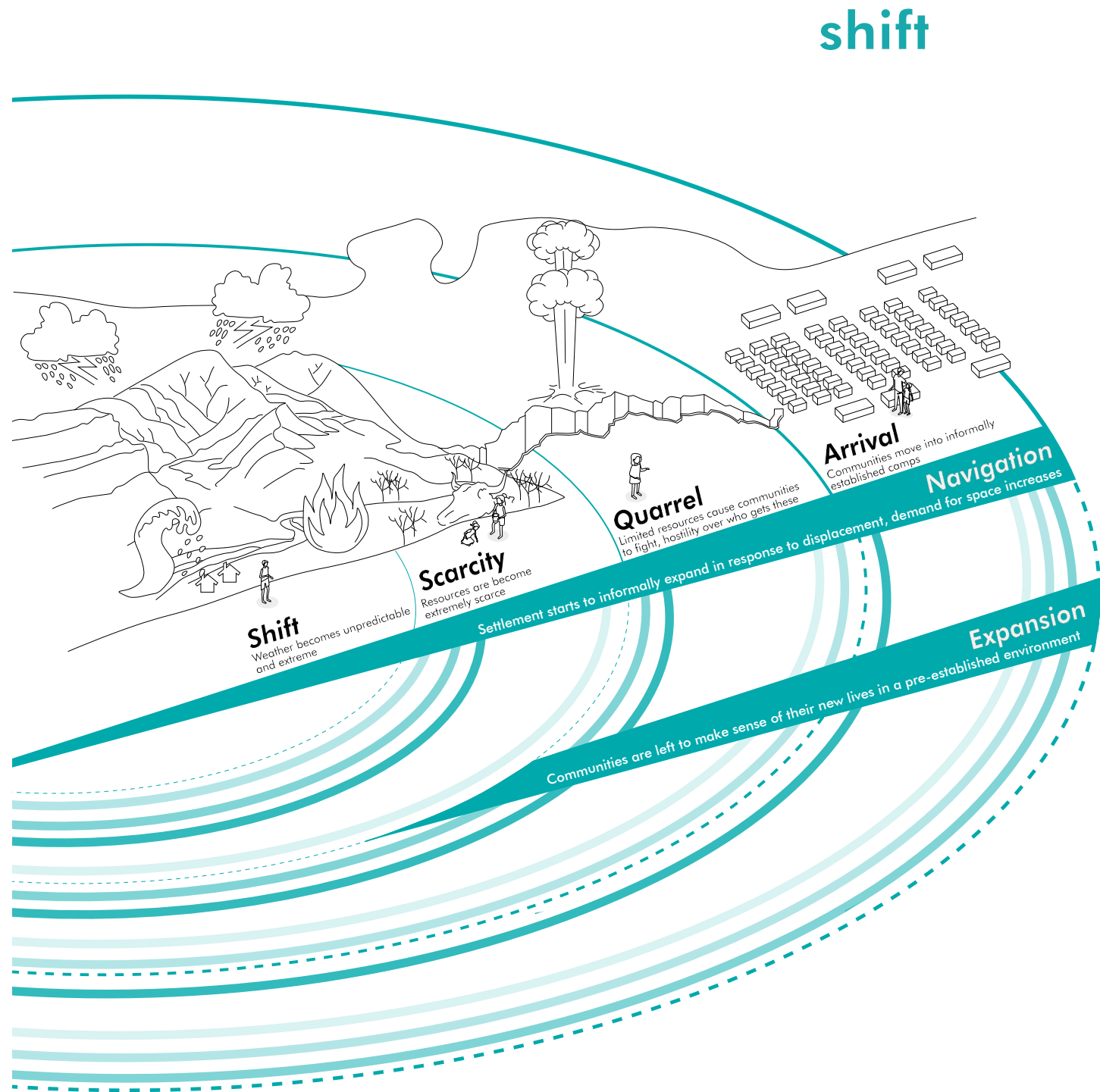


Climatic Displacement: Hagadera Camp Kenya

The third and final scenario analyzed is Climatic Disruption. There was an evident difference between the Natural Catastrophe scenario and the Climatic Disruption scenario because the disruption happens over a prolonged period of time. The displacement of these communities comes after ongoing climate change in their region. These communities reach a point where their environment is no longer habitable as it is uncondusive to their survival. Poverty and climatic-related resource scarcity exacerbate social, cultural, and religious differences, sparking violence. The fight over resources, mainly water and food are unavoidable and climate change becomes a security threat for these communities.<sup>10</sup> Thousands of people unable to return to homes devastated by climate disruption and war, have had no choice but to seek these so-called temporary shelters for decades.



Climatic Displacement Collage (Palacios 2023)



scarcity

arrival

quarrel

#### Continuum

This scenario comes in last as the speed at which the disaster strikes could go on for years. Four sequences were identified along with the same adjacent elements in the Conflict scenario.

The sequence begins at the 'Shift' where extreme weather is impossible to predict, similar to the 'Unforeseeable' sequence in the Natural Catastrophe scenario. Along with this sequence, the adjacent element 'Navigation' begins. This is where the settlement of camps begins to aid the flow of refugees and the demand for space increases. Next, 'Scarcity' emerges as resources become extremely scarce. The 'Quarrel' begins once the resources become so limited that communities start to fight over them. There is frequent tension and hostility since communities have to ration and decide who gets what. Once more, the 'Expansion' begins as communities are forced to grow in a limited established space.

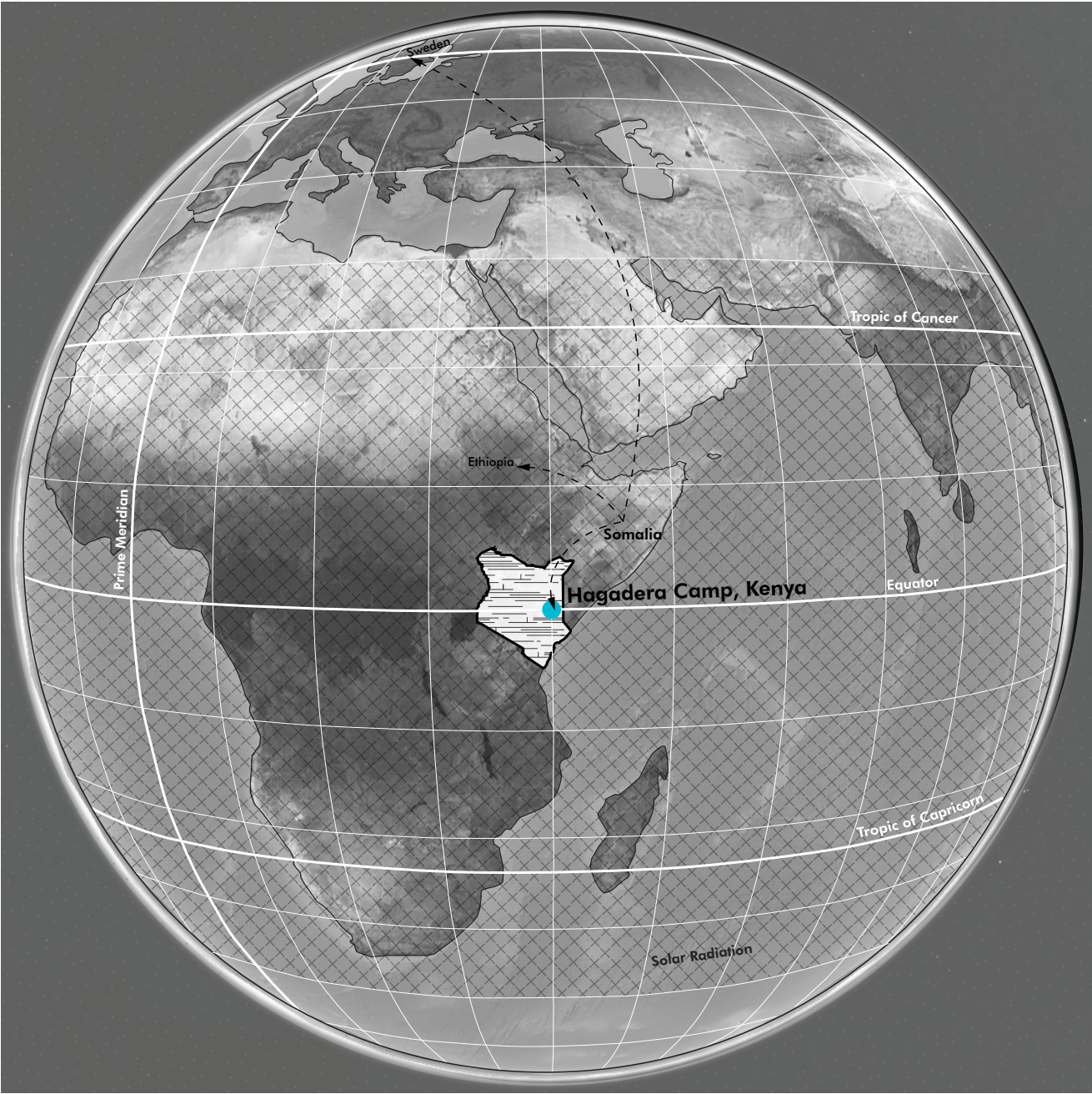
Lastly, the 'Arrival' is where communities move into temporary shelters impermanently.



Geographic Location

The main communities that currently face Climatic Disruption are located near the Horn of Africa. Countries like Somalia and Ethiopia face intense drought and desertification due to their proximity to the Equator and the solar radiation they receive. This disruption directly affects their survival as most residents of these countries rely on substantial farming. Farmers only grow enough to support their families and communities. Not only people are sustained by these crops but also their livestock.

The Hagadera Camp in Kenya has a lot of scarcity, especially water, as it is located in an area where solar radiation hits the most. The camp is uncomfortable as it is sandy and hot. Refugees are now safe from the violence they were confronting but encountered the same scarcity. Fortunately, at this location, they received constant resources from humanitarian agencies while trying to adjust to an impermanent solution.



Information

Solar Radiation

Scenario

Hagadera Camp, Kenya

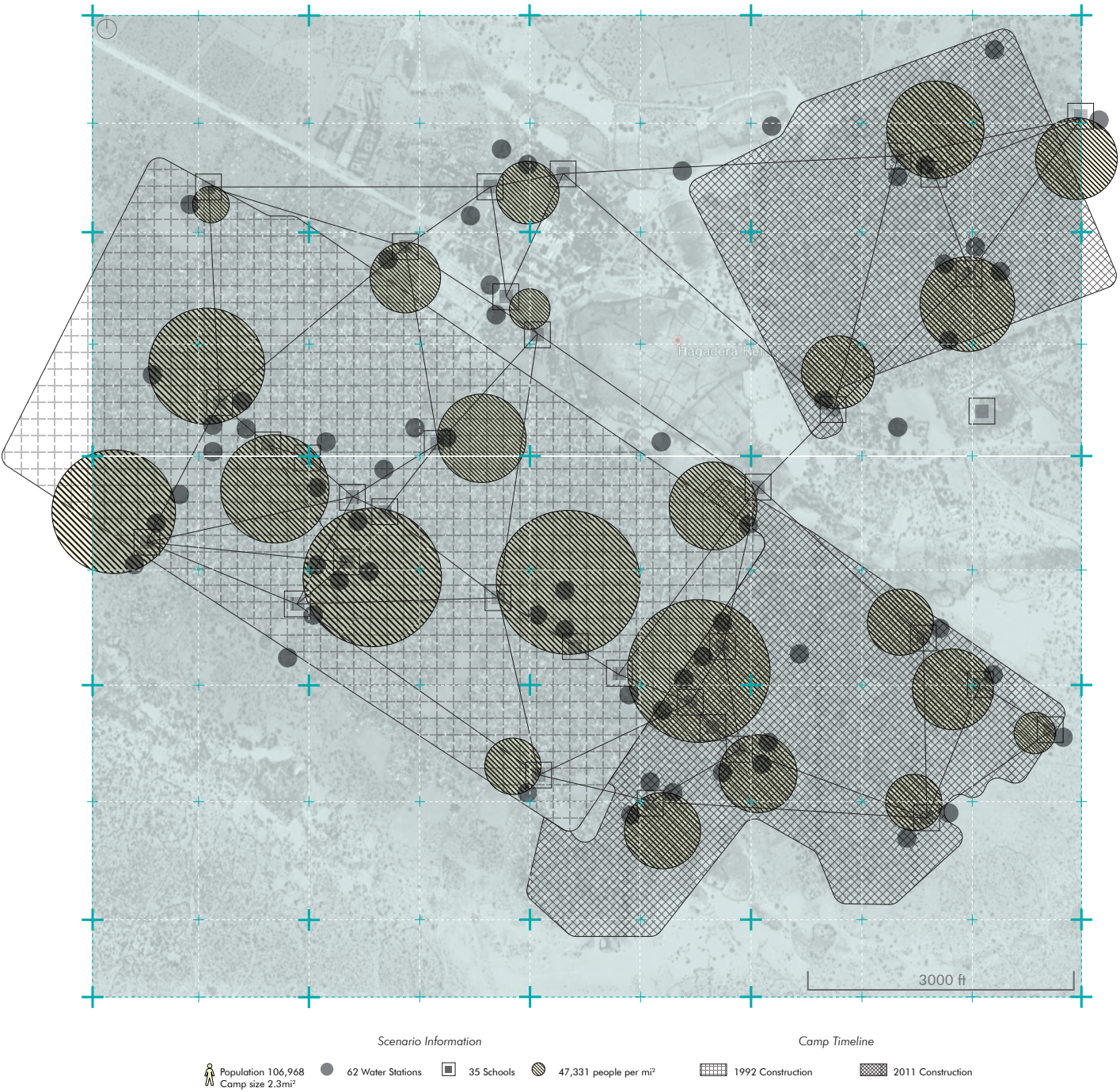
Refugee Migration

Globe Map: Solar Radiation and Refugee Flow (Palacios 2023)



Scenario Analysis

The Hagadera Camp is located near the town of Daab along with two other refugee camps. It was initially established in 1991 after civil war emerged in Somalia and refugees crossed the border to Kenya. However, a second large flow occurred in 2011, when 130,000 refugees arrived after fleeing the consequences of climatic disruption.<sup>11</sup> As of now, there are approximately 100,000 refugees and the size of the camp ranges from about 2mi<sup>2</sup>. This means the population density is around 50,000 people per mi<sup>2</sup>. In 2016, there were three generations of refugees that were born and raised in the camp. The new generations see this temporary shelter as their home; they know nothing else. Their given system was established early on, the camp currently has 62 water stations and 35 schools. The dryness and scorching weather of the location called for more water points, requiring at least three per school. The density began forming around these two elements and unintentionally created a system that revolved around their daily activities. The locations and proximities of these elements are lending themselves to the establishment of a workshop.

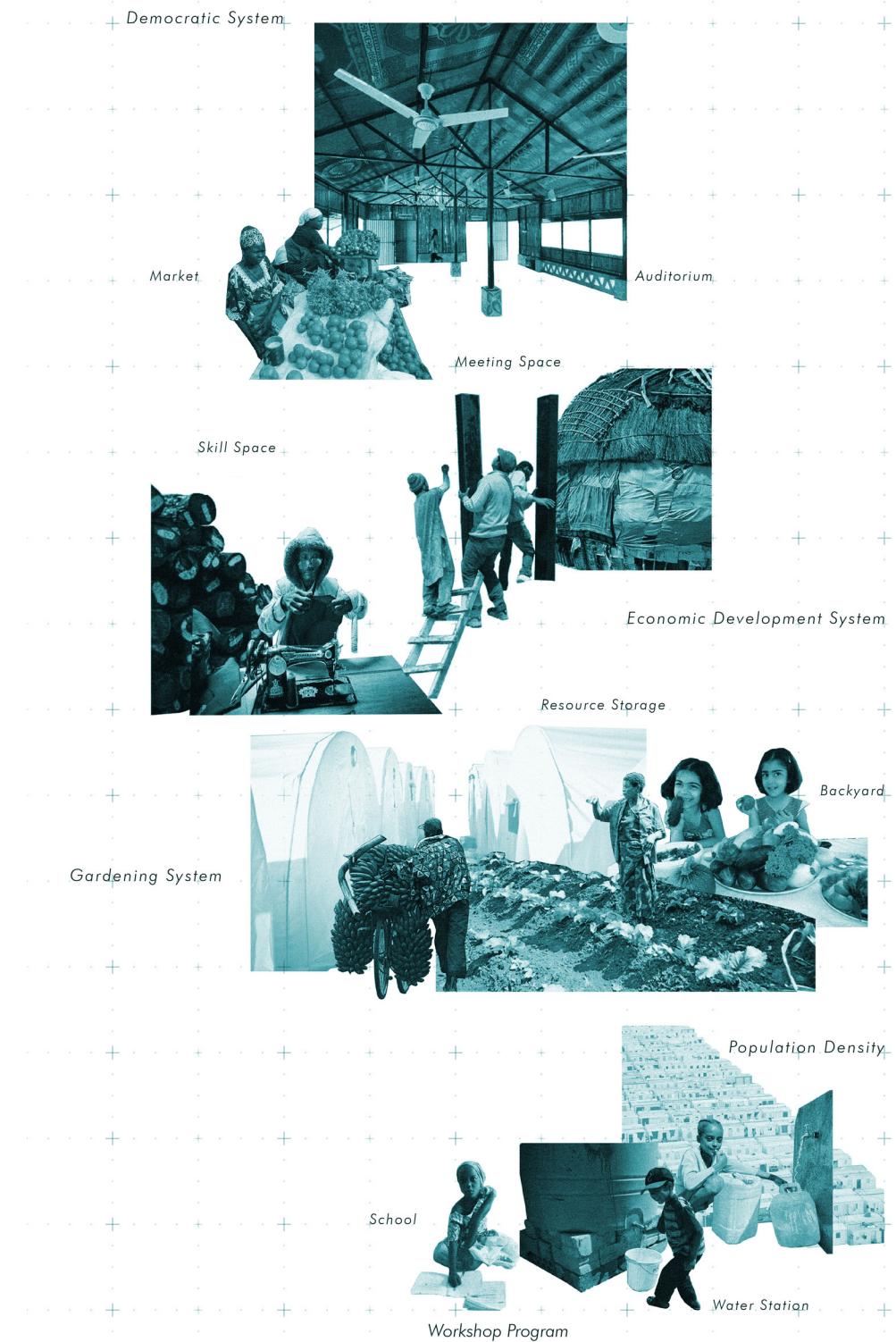


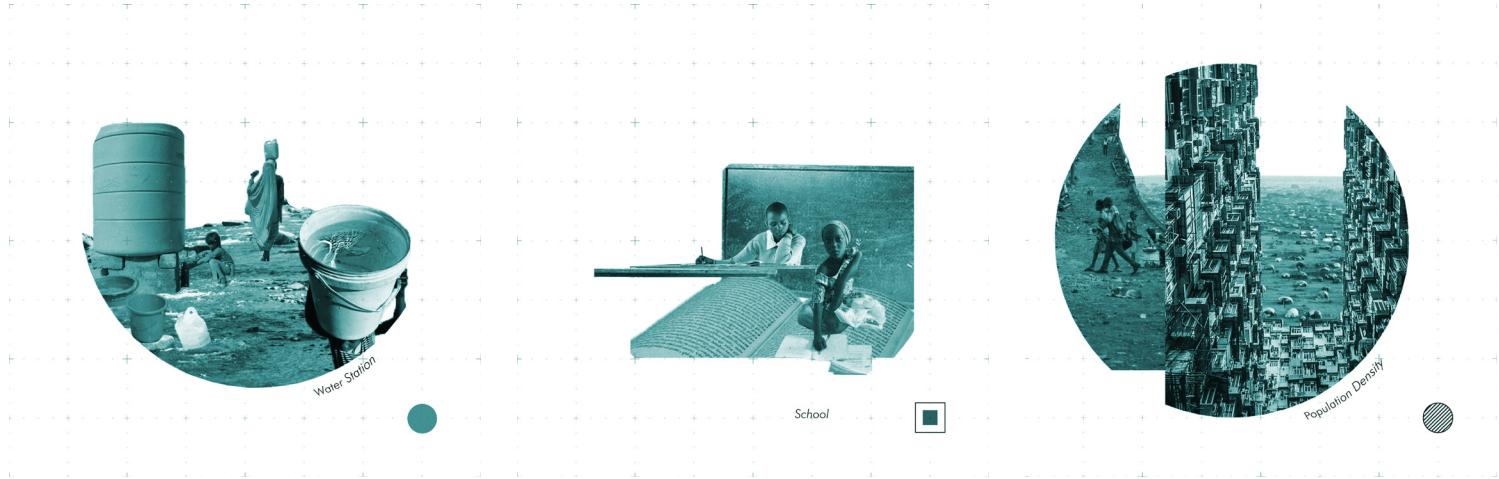


**water  
school  
density**

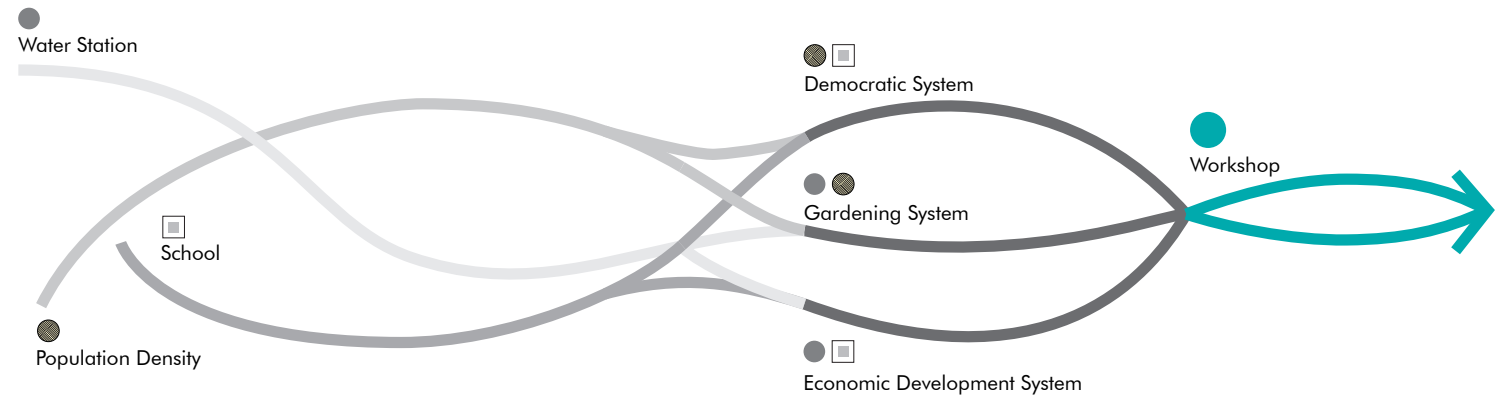
## Program

After analyzing each scenario, it was evident that regardless of the type of disaster, three repeating elements emerge: water, schools, and density. Consequently, a daily system begins to form. The goal is to establish a socio-economic system by expanding on the existing elements and combining them to formulate the program of the Workshop. The program relies on the fact that communities have already embraced these elements in their daily activities. Hence, the program configures daily activities that can re-empower the community's autonomy and create a resilient post-disaster model. A model based on patterns that provide long standing solutions, instead of impermanent ones.





Elements Collages (Palacios 2023)

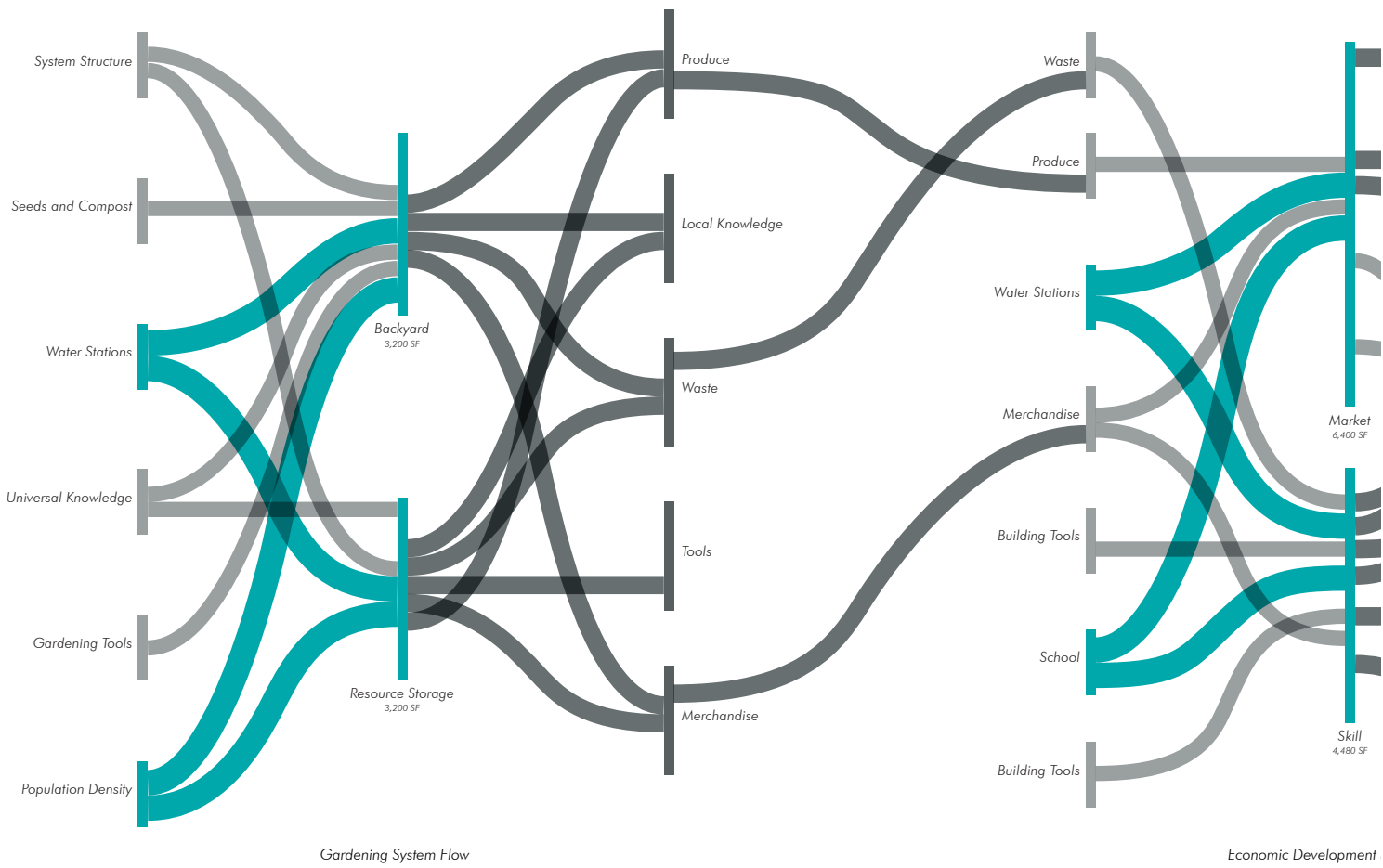


Program Diagram Combinations and Flow (Palacios 2023)

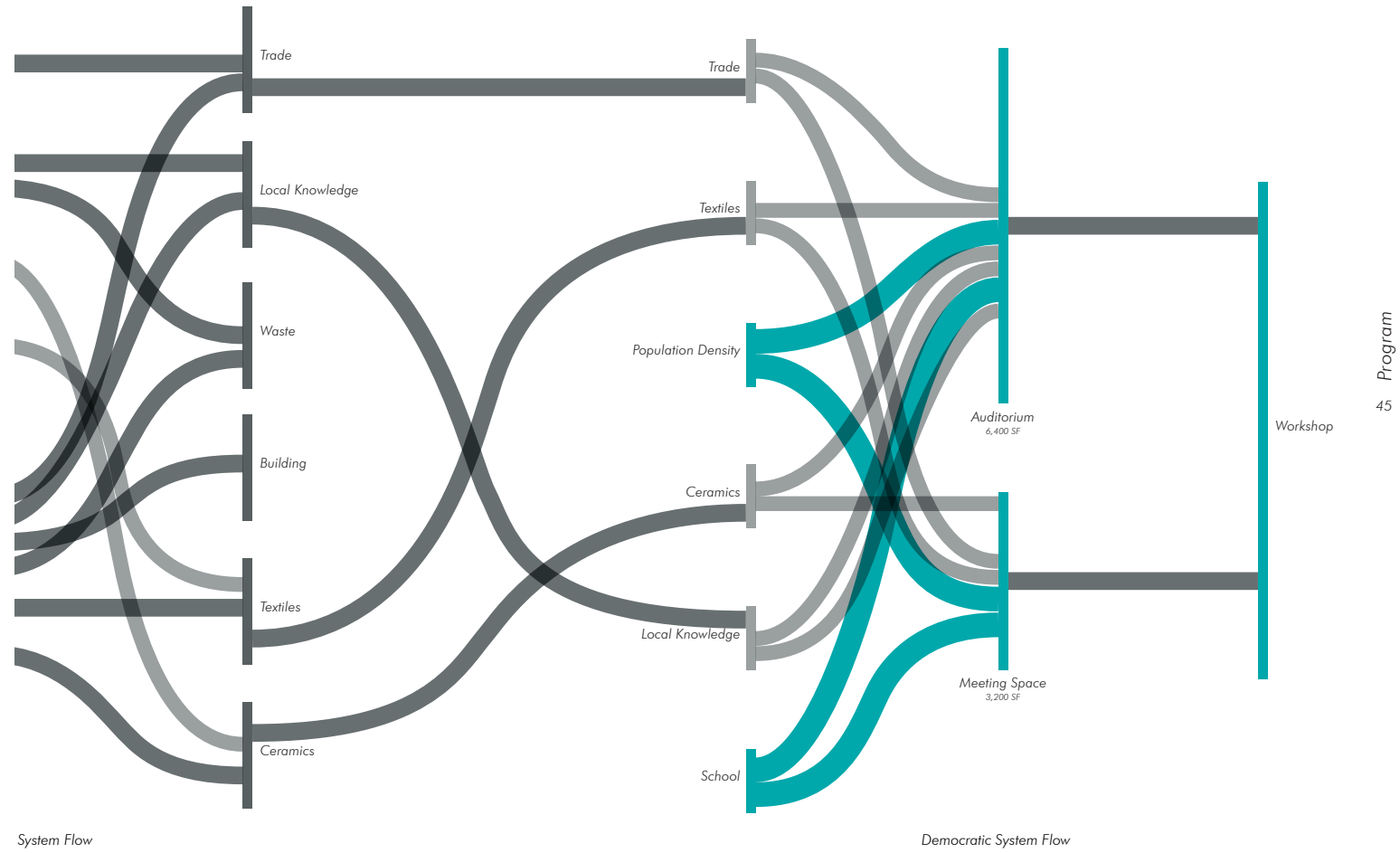
### Systems

The different configurations of the elements are what create the program. For instance, by combining the water stations and density, the possibility to establish a ‘Gardening System’ emerges. This ‘Gardening System’ requires constant access to water and man-work in order to function. Offering communities a system to grow and produce their own food offers them autonomy. The configuration of water stations and schools introduces the possibility of an ‘Economic Development System’. Activating an economy in these communities is essential to the reconstruction process. Therefore, the knowledge that schools store and the access to water can help generate products for this system. These communities need to trade and provide services amongst themselves to stop being so dependent on the aid agencies provide. Clearly, the aid they provide is essential, but the goal is to eventually move away from it and become autonomous. Lastly, the configuration between schools and density creates a ‘Democratic System’. These communities are in need of spaces where they can come together to discuss strategies and any

next steps to help rebuild their future. They need a system that incites debate on how they can work collaboratively with agencies to satisfy their long-term needs. Communities need a space where they can share their knowledge to move towards their autonomy. These three systems shape the entire concept of the Workshop. The Workshop develops apprentices that know how to endure post-disaster scenarios.<sup>12</sup>



System Flow



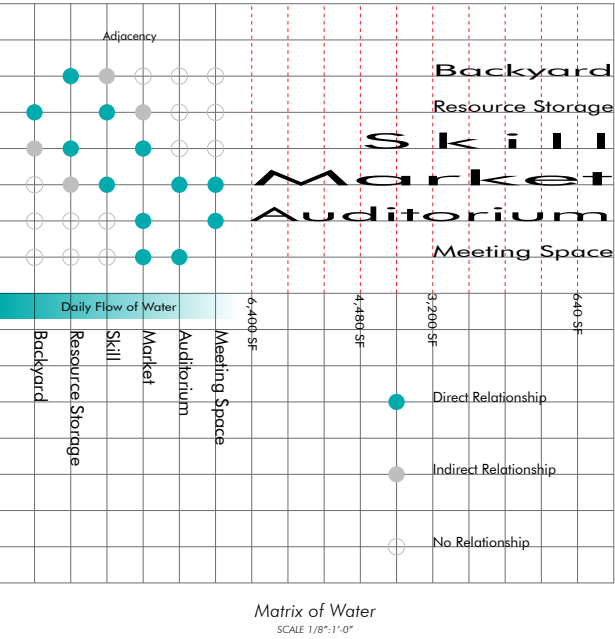
### Flows

These three elements produce constant flows that merge and establish a bigger larger system. The program takes advantage of this existing flow, and promotes new tangible flows that give back the community's autonomy. For example, the water stations give a water flow to the 'Gardening System'. Consequently, the 'Gardening System' generates new flows such as food and waste. Both of these tangible flows have the ability to become part of the flow system again. They can merge into the 'Economic Development System' and get reused to make compost, tools, or trade. All of this is alluding to the idea that this is a recyclable flow that is self-sufficient.

Along with tangible flows, there is an intangible flow: knowledge. Every community has a valuable flow of local knowledge.<sup>13</sup> This flow of local knowledge can be applied to the program to nurture an attachment to the space. This incites communities to make their Workshops unique. Even though the program of the Workshop is created from universal knowledge as it re-imagines the system communities lost through the disaster. Having local knowledge as a part of this flow creates resiliency reminding us of the important connection between design and culture.<sup>14</sup>

universal knowledge  
local knowledge



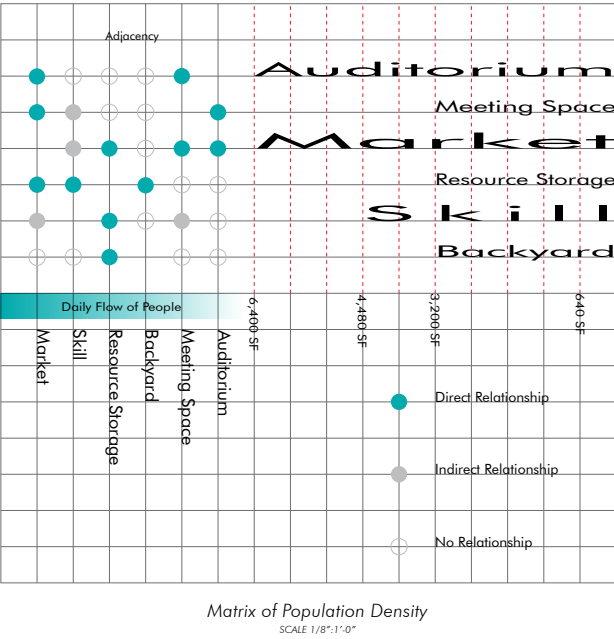
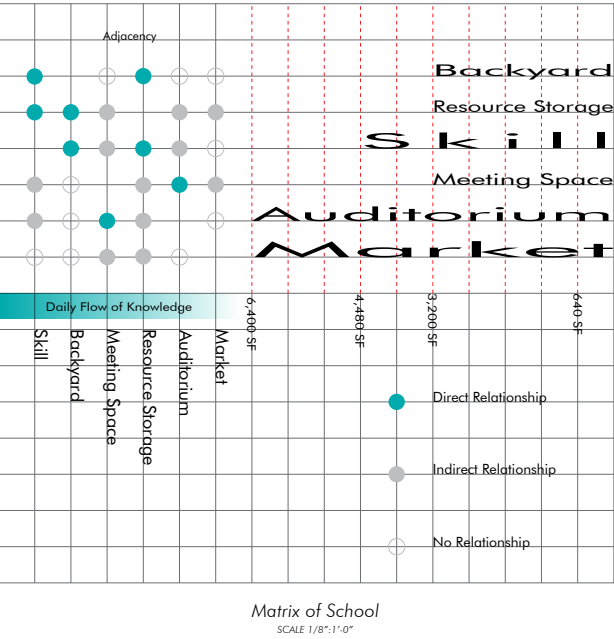


Matrix of Spaces and Relationship to Flow

After extracting the three systems, each system needed specific spaces to begin its function. For instance, the ‘backyard’ and the ‘resource storage’ help the ‘Gardening System’ function. The ‘Economic Development System’ operation comes from the ‘skill’ and ‘market’ spaces. Finally, the ‘Democratic System’ maintains its function around two meeting spaces.

A matrix was created to represent how much flow, of the pre-existing elements, would be necessary for the operation of each space. In addition to that, three relationship levels analyze the possible adjacencies between spaces to maximize the efficiency of flow. Each space was also given the minimum square footage it needs to accommodate 100-200 people.

For the flow water matrix, the most efficient adjacency of spaces would be: ‘backyard’, ‘resource storage’, ‘skill space’, ‘market’, ‘auditorium’, and ‘meeting space small’. This adjacency order would ensure the daily flow of water is utilized in the best way possible. By placing the ‘backyard’ and the ‘resource storage’ adjacent, the water flows uninterrupted and is used efficiently and so on.

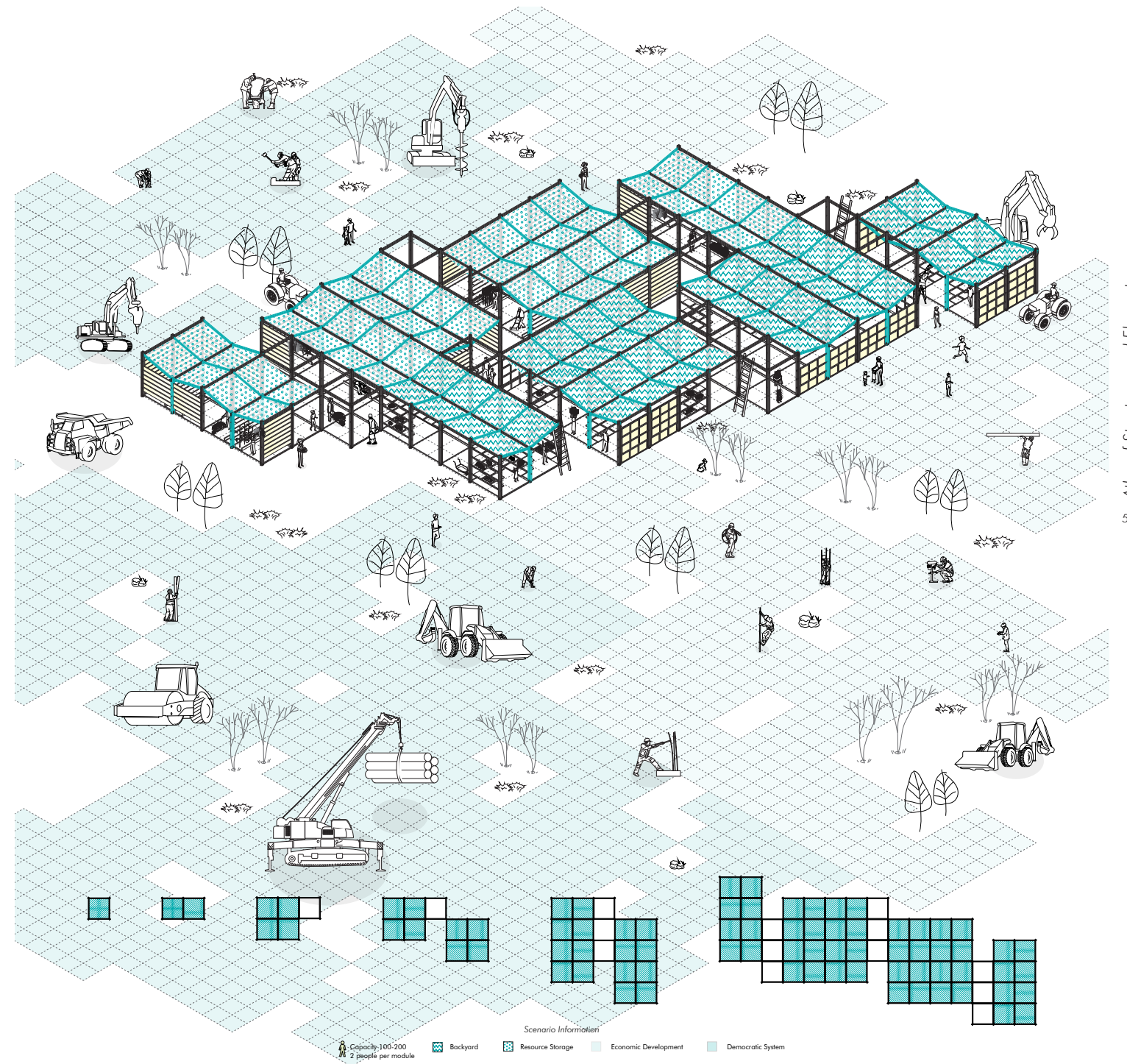


Matrix of Spaces an Relationship to Flow (Palacios 2023)

## Atlas of Structures and Elements

### Grid

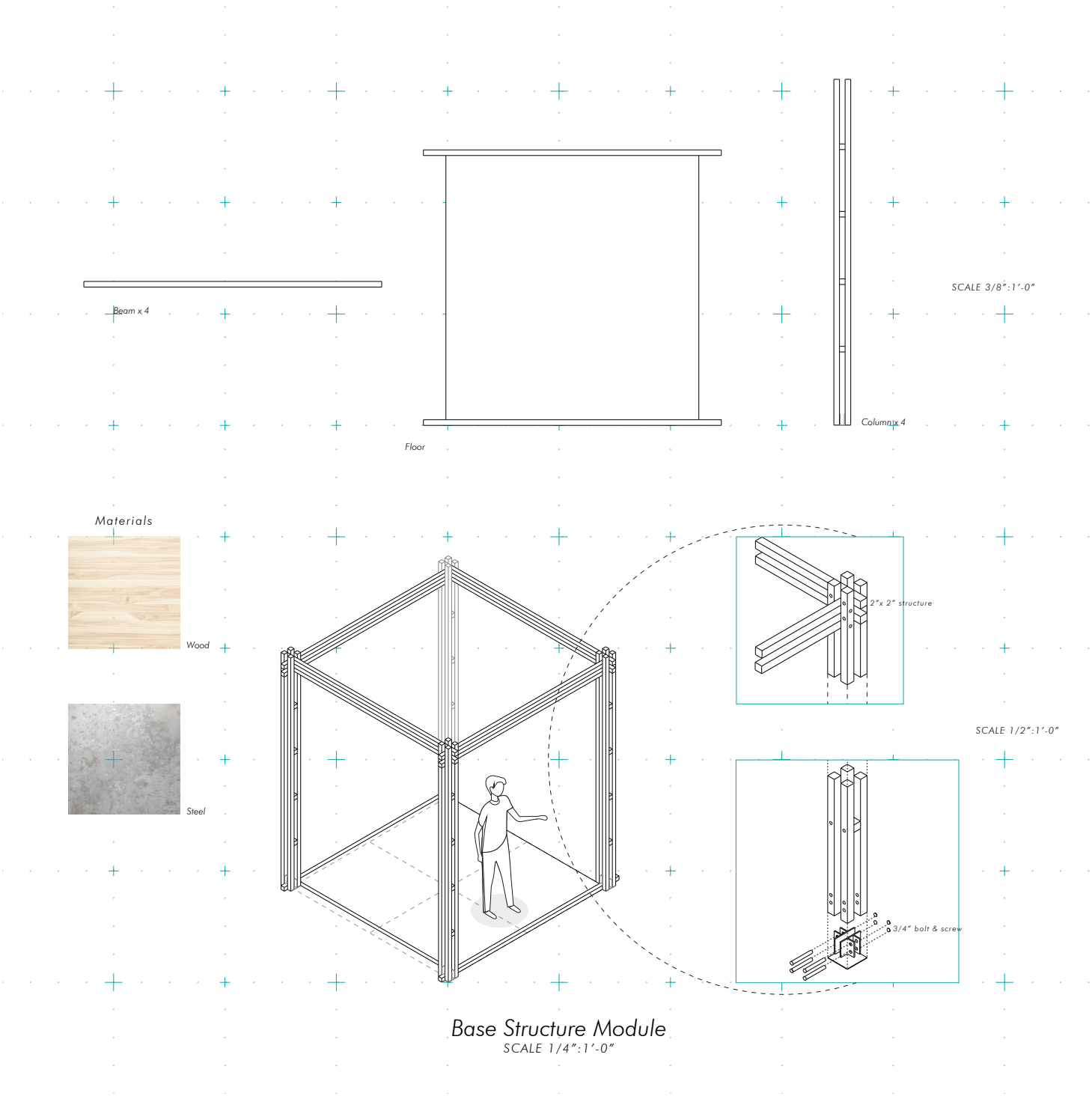
The design of the Workshop was initiated from a grid system to imagine the possibility of expansion and growth since the community's necessities change over time. The grid established increments of eight by eight feet structures that can comfortably host two people at a time along with elements that facilitate the activity of the module. A 16' by 16' structure could comfortably host four-to-five people and activities. It is important that not one specific material can build this structure, hence, establishing a short span of 8' by 8' opens up this possibility. Whereas if there are materials available that can support longer spans, the grid can allow this growth. Four elements build one 8' by 8' module.

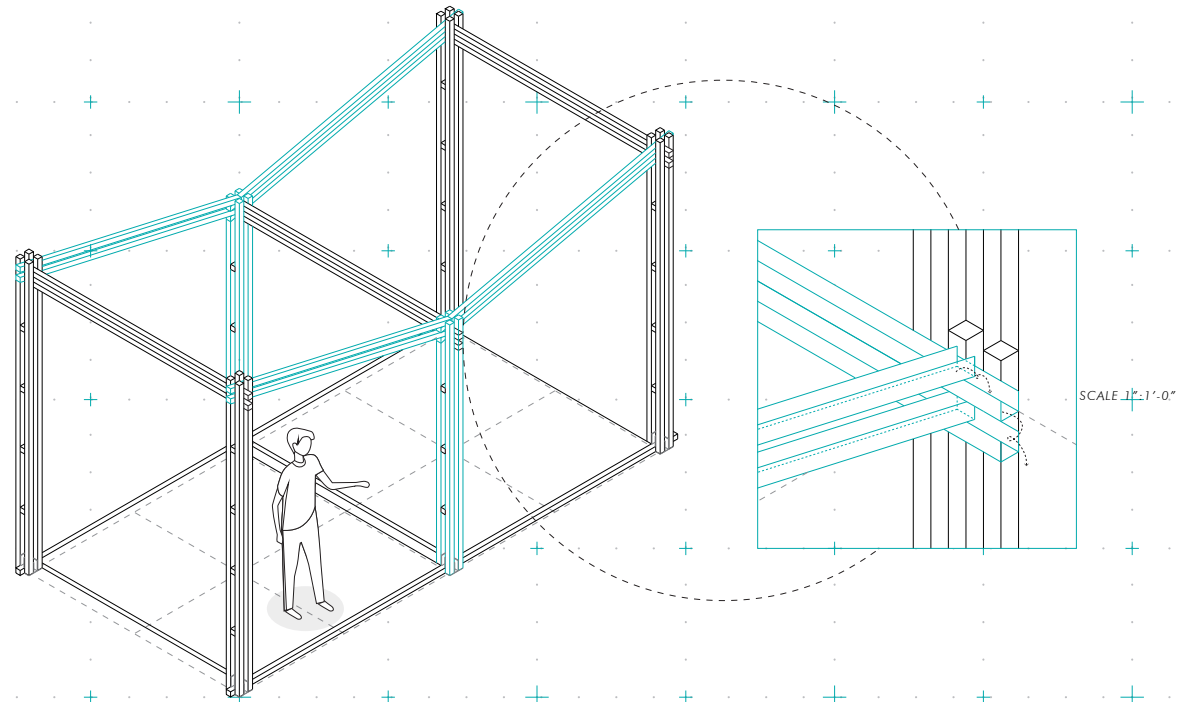
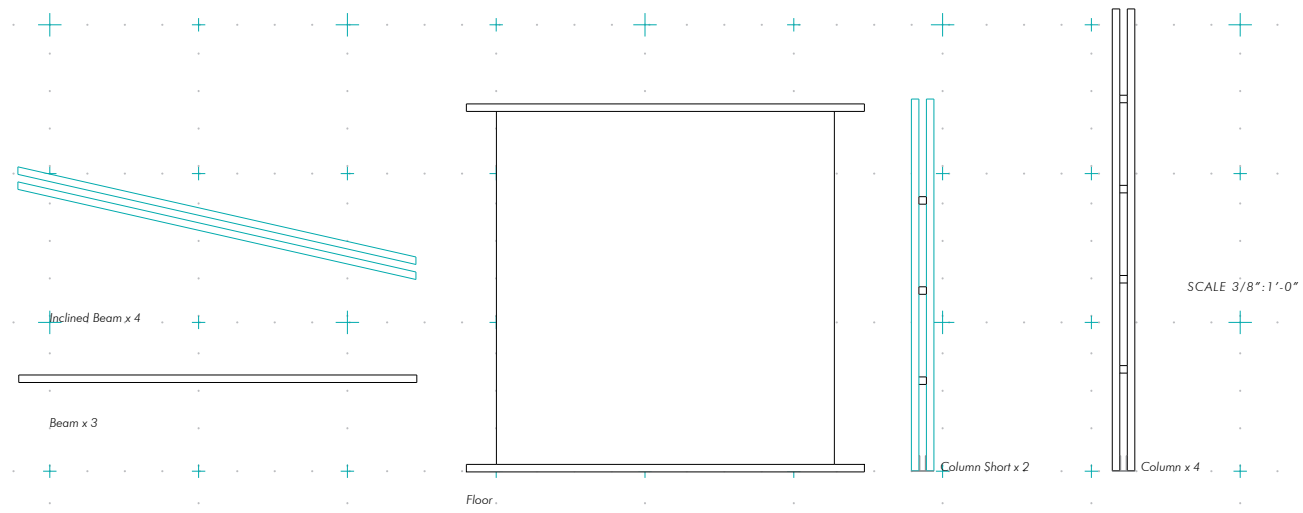




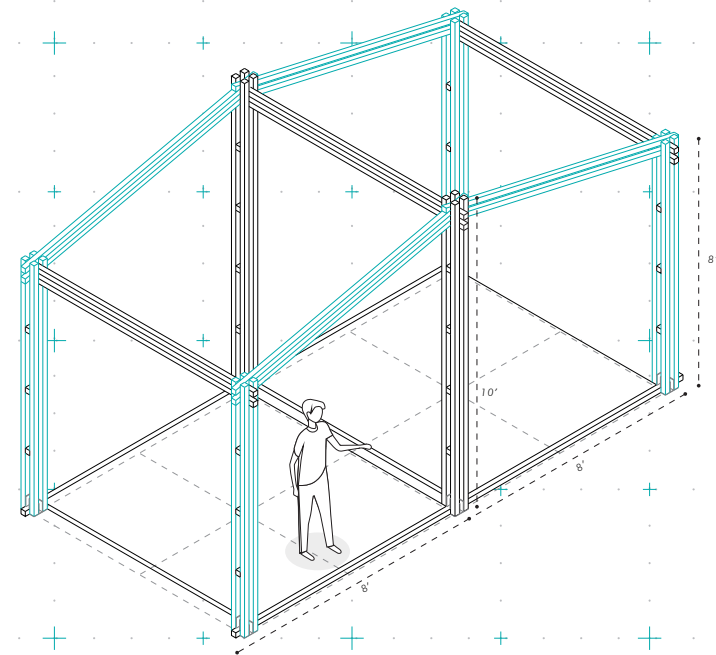
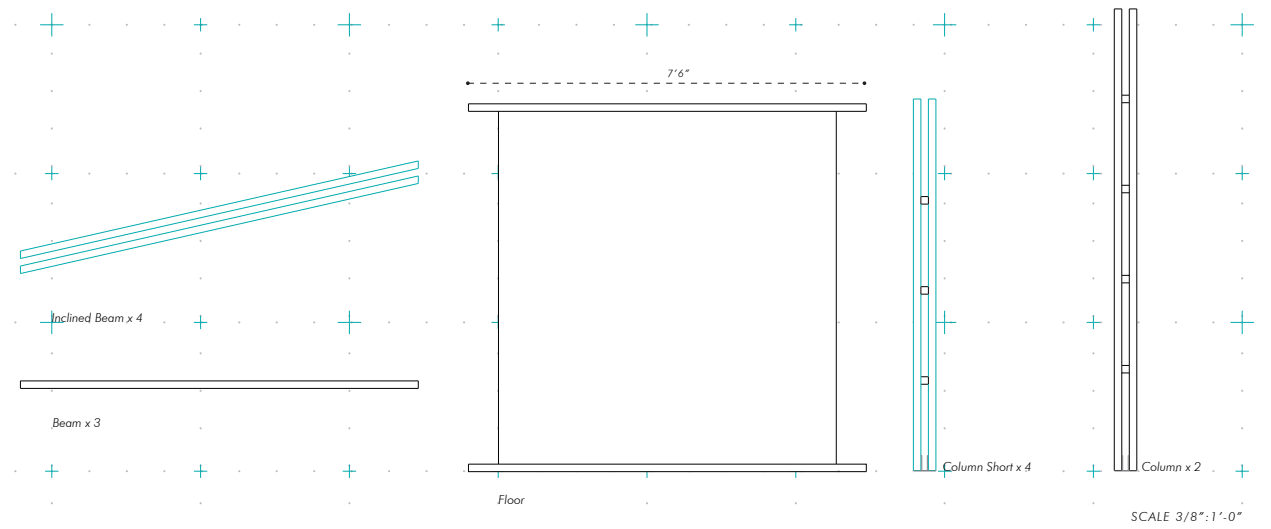
Structure

The structure consists of four columns, four beams, and a floor that interlace. Columns and beams are conformed by 2"x2"s so each column and beam has four 2"x2"s. This interlace is important as it provides a stable structure that permits other elements to be added in between the gaps. The goal of the structure is to provide a foundation to support the activities that live within. Two sizes of columns and beams allow different configurations of the structure to support the flow of water. For example, for the backyard and skill modules, the goal is to recollect water to sustain the activities, therefore the structures have inclined roofs. With the same sizes, there is also a possibility to generate the opposite. If the activities require water to be diverted from the module, the roof can adopt the shape of a pitch instead.





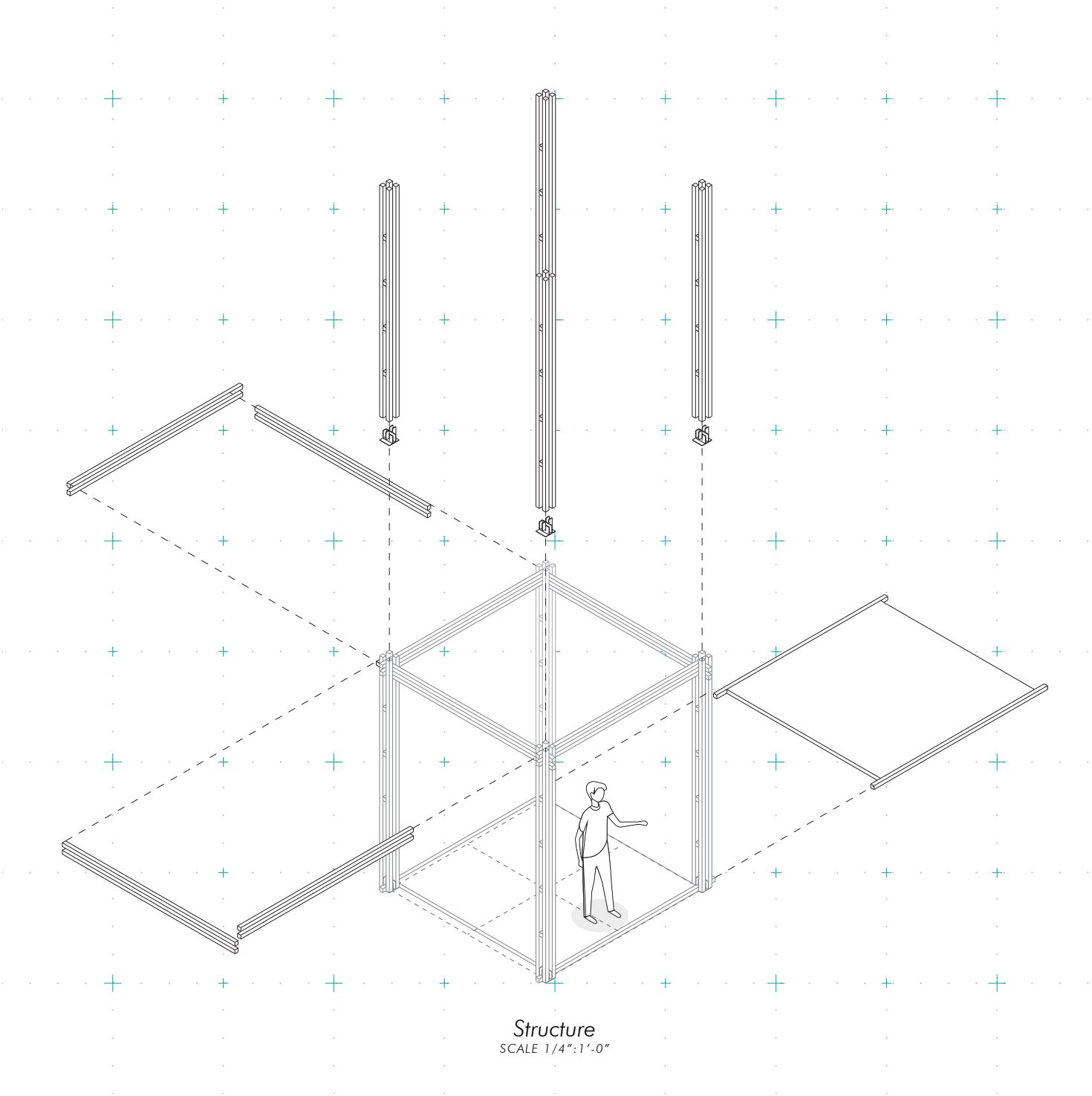
*Inclined Roof Structure Module*  
SCALE 1/4":1'-0"



*Pitch Roof Structure Module*  
SCALE 1/4":1'-0"



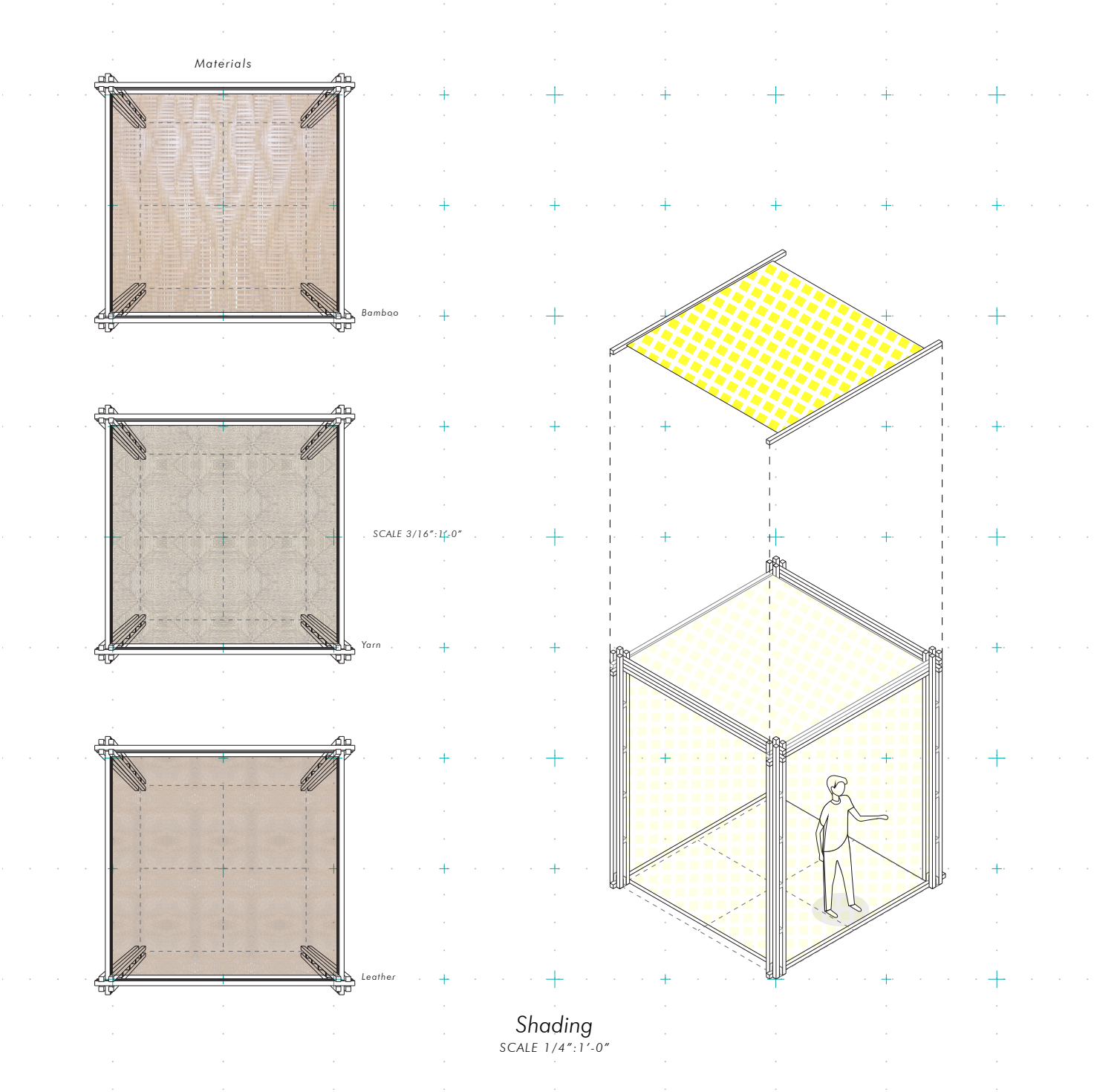
# system elements



Structure  
SCALE 1/4":1'-0"

Shading

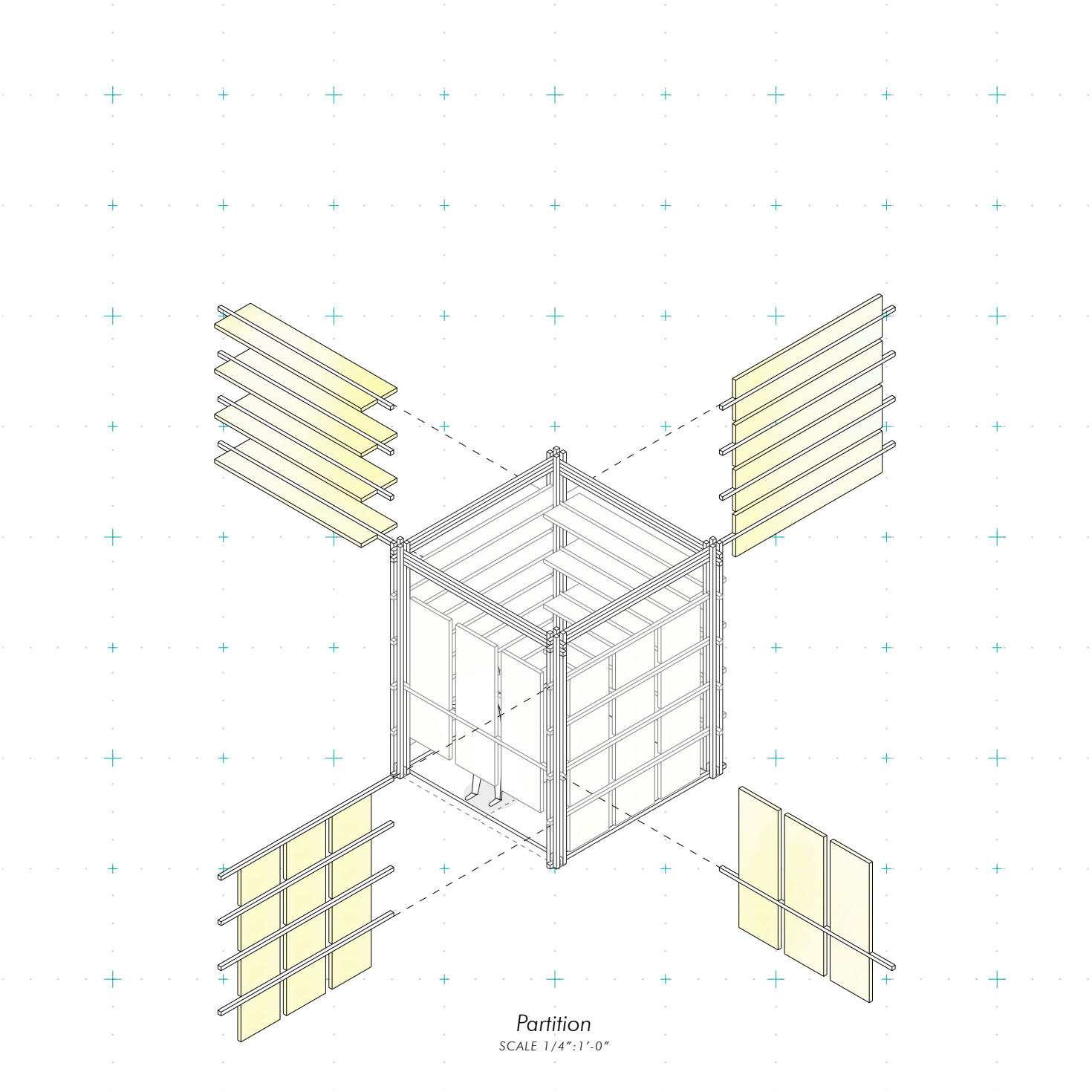
Since the structure interlaces, all the elements can be easily attached or changed by the community. There are different shapes that the shading elements can take. These can easily be placed into the structure or removed depending on the function of the space. For instance, for the market module, a draped shading could be used to allow ventilation to flow through the module. These shading elements could also be placed vertically and act as partitions that keep the modules ventilated. These shading elements can be easily attached, leaving room for communities to design their own shading. Most cultures have unique textiles that they weave, so the products they produce that reflect their culture can be added to the system.





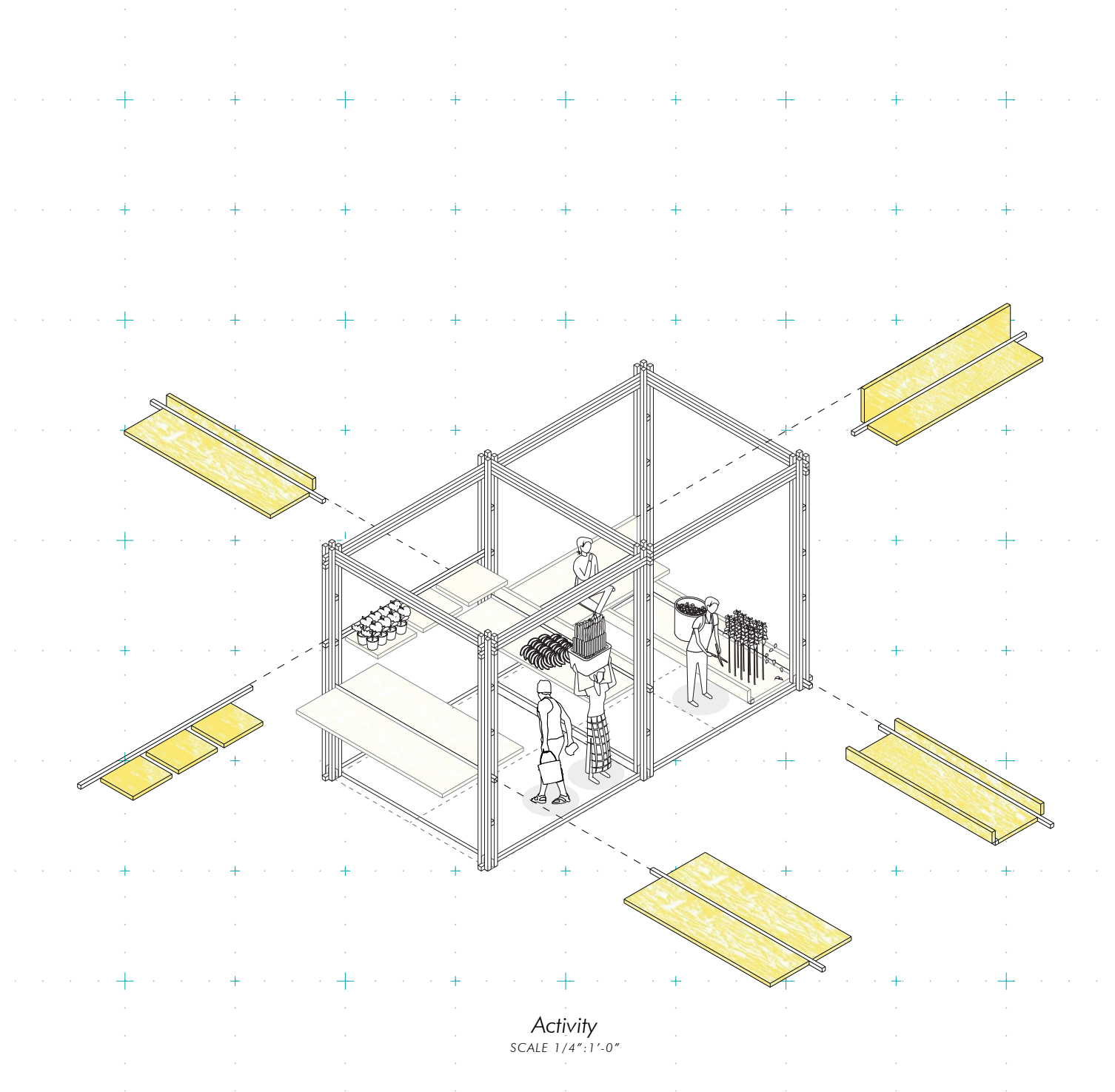
**Partition**

Partitions represent the third element of the module. Partitions can be easily added in between the structure with the aid of hinges. The goal of partitions is to provide various privacy levels in the module and further protect from the exterior. There is a possibility of multi-functionality with partitions as they can easily be rotated through the hinges. This can create different levels of privacy or serve as functional surfaces.

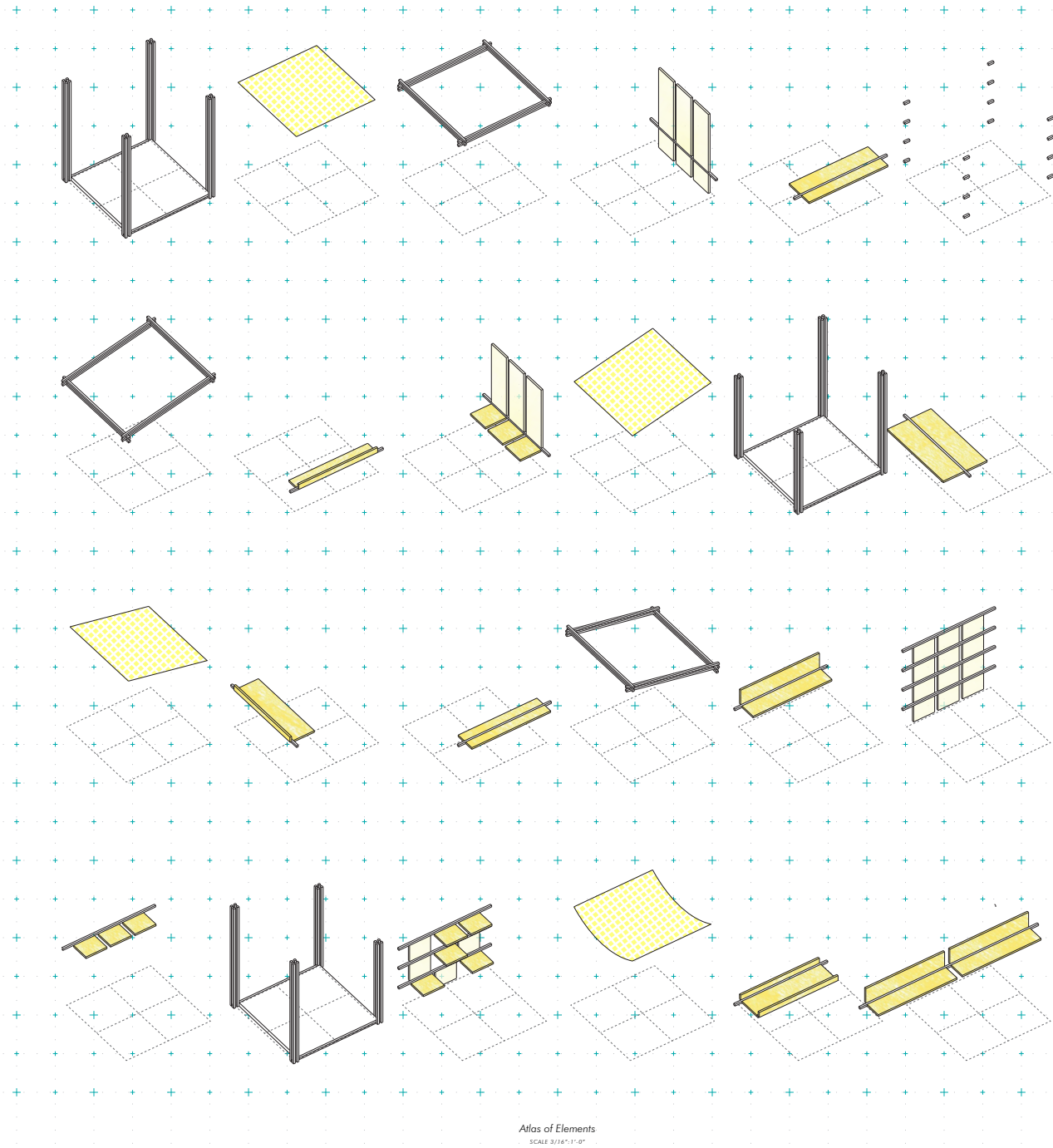


### Activity

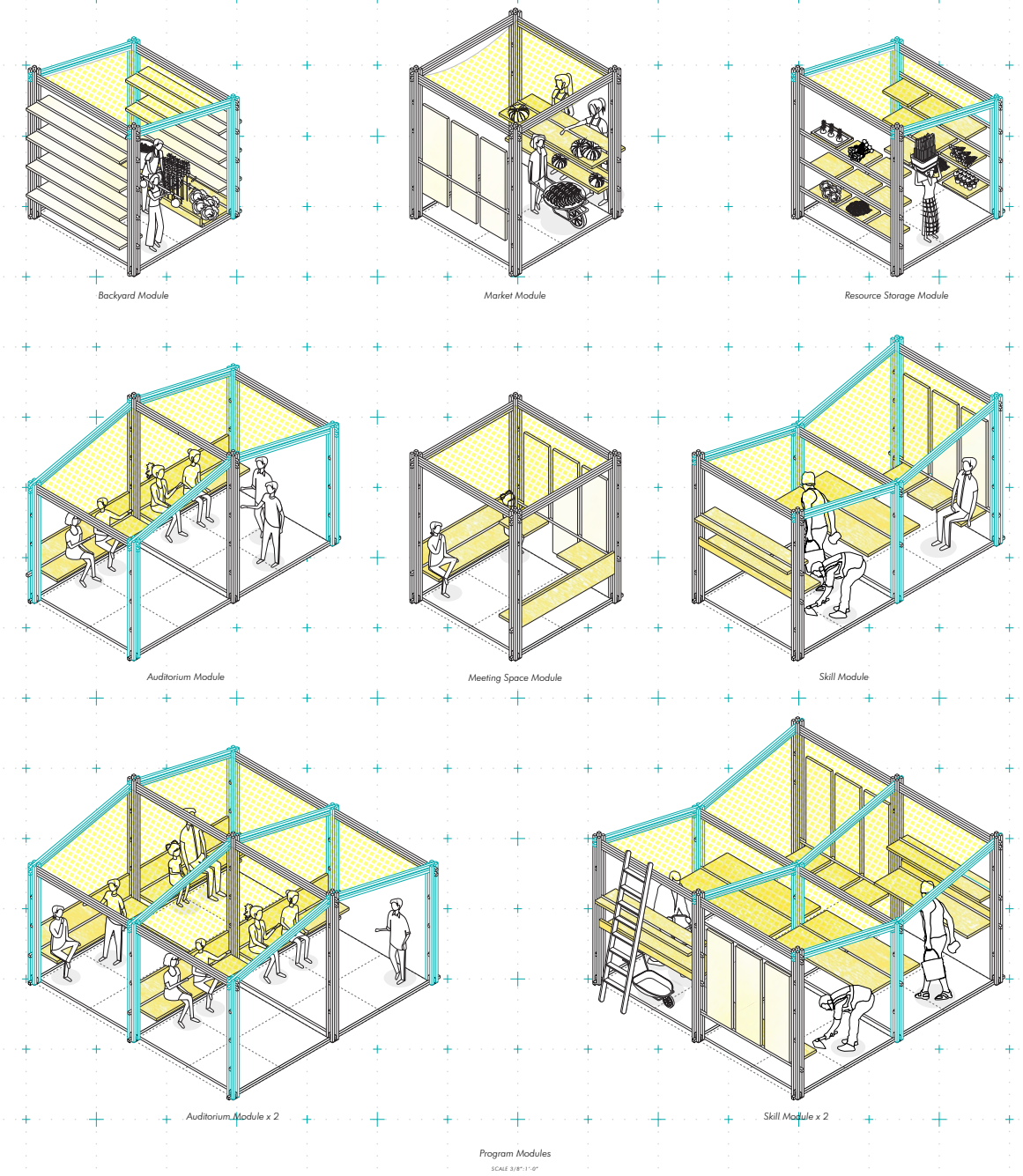
Lastly, the fourth element of the module is activity. These elements encourage a specific activity to take place in each module. An instance would be benches for the auditorium and meeting modules. These modules require sitting spaces for people to gather comfortably at any time. If there is a large gathering, these benches can be added or removed as they have the same hinge system. This same bench could potentially be rotated flat and be used in another module. Once it is flat, it could act as a large table for the skill module where surfaces are needed to produce products. All the activity elements can be reconfigured into other shapes to reflect the activity of the module.



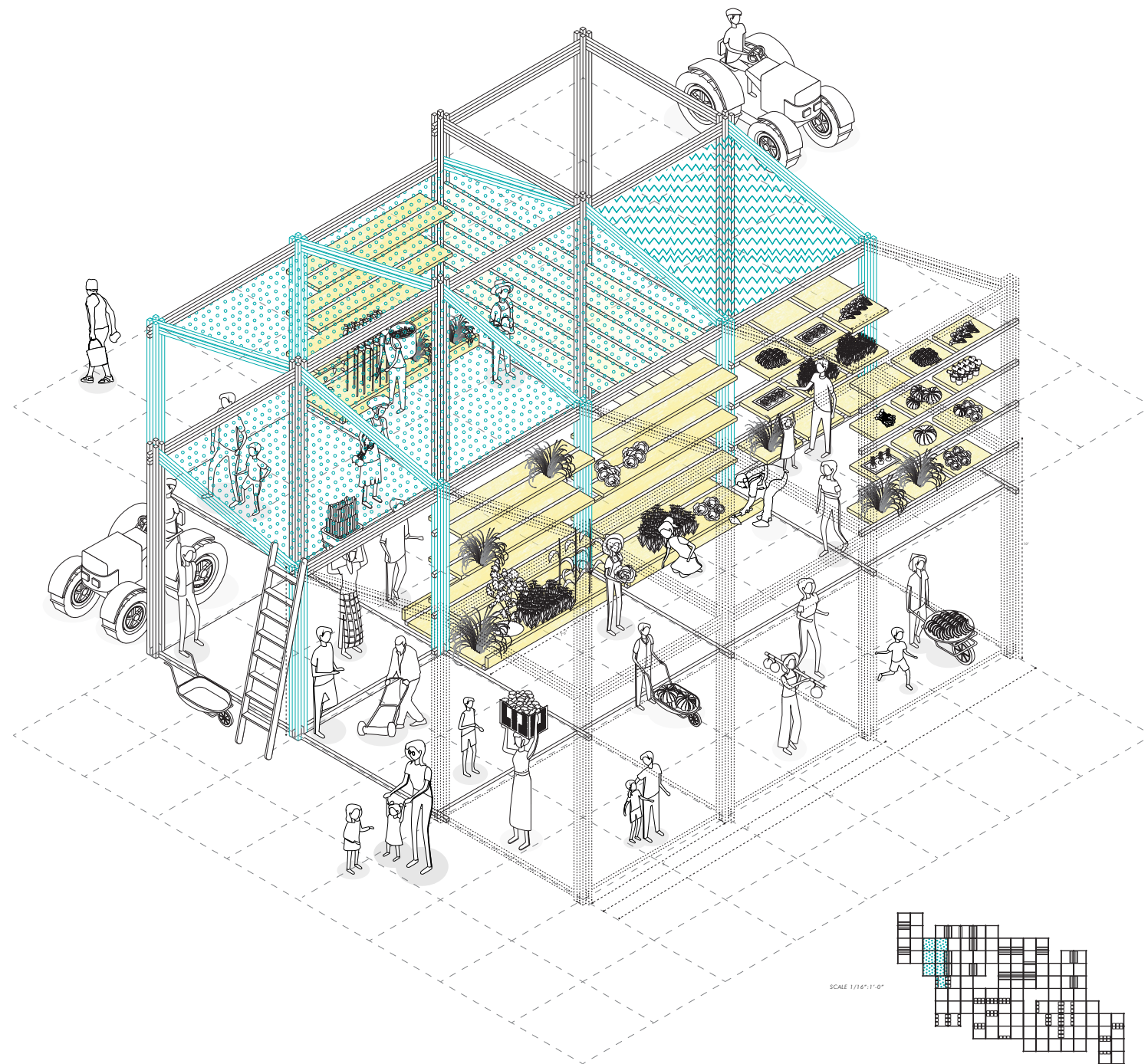




Atlas of Elements  
SCALE 3/16"=1'-0"



Program Modules

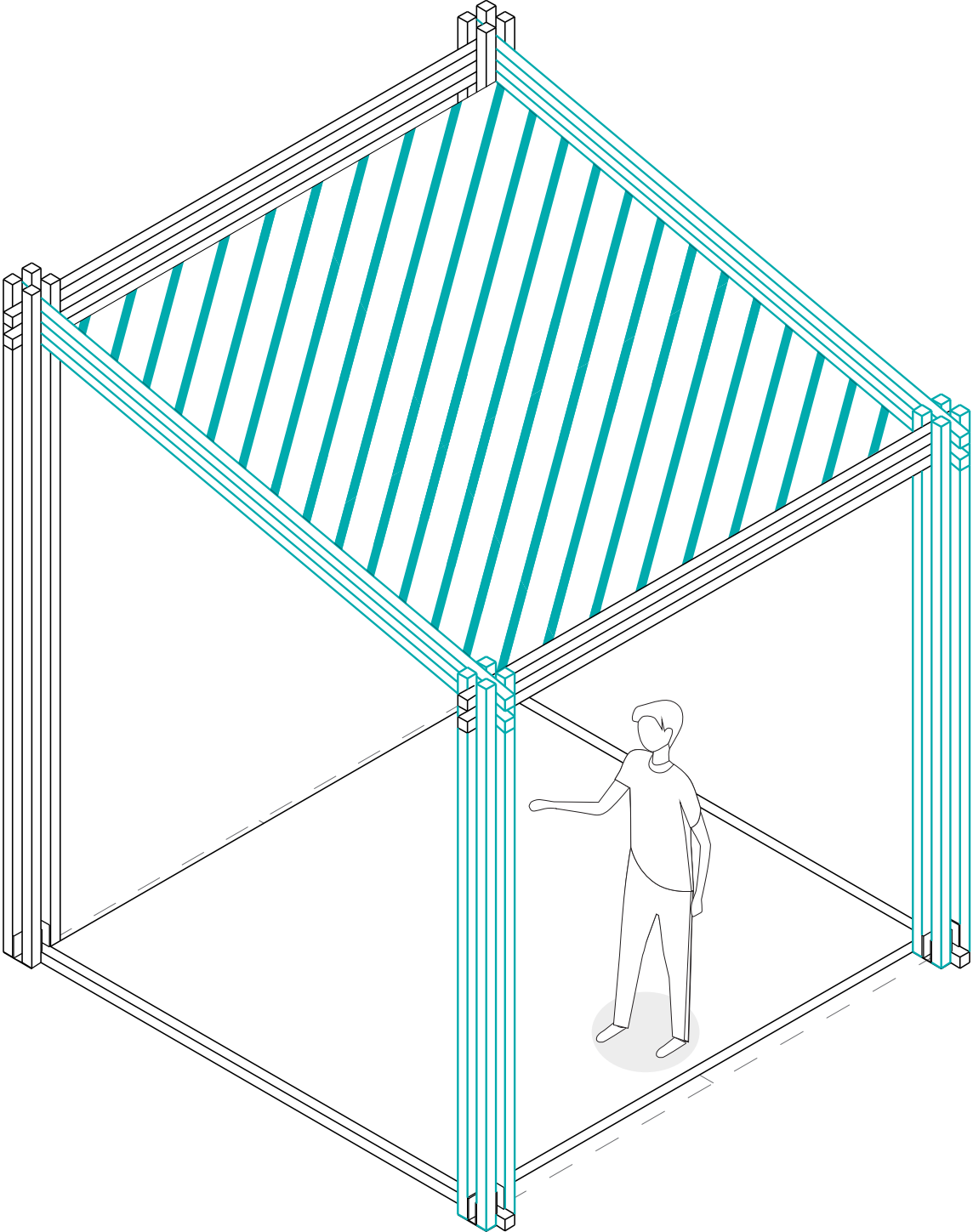
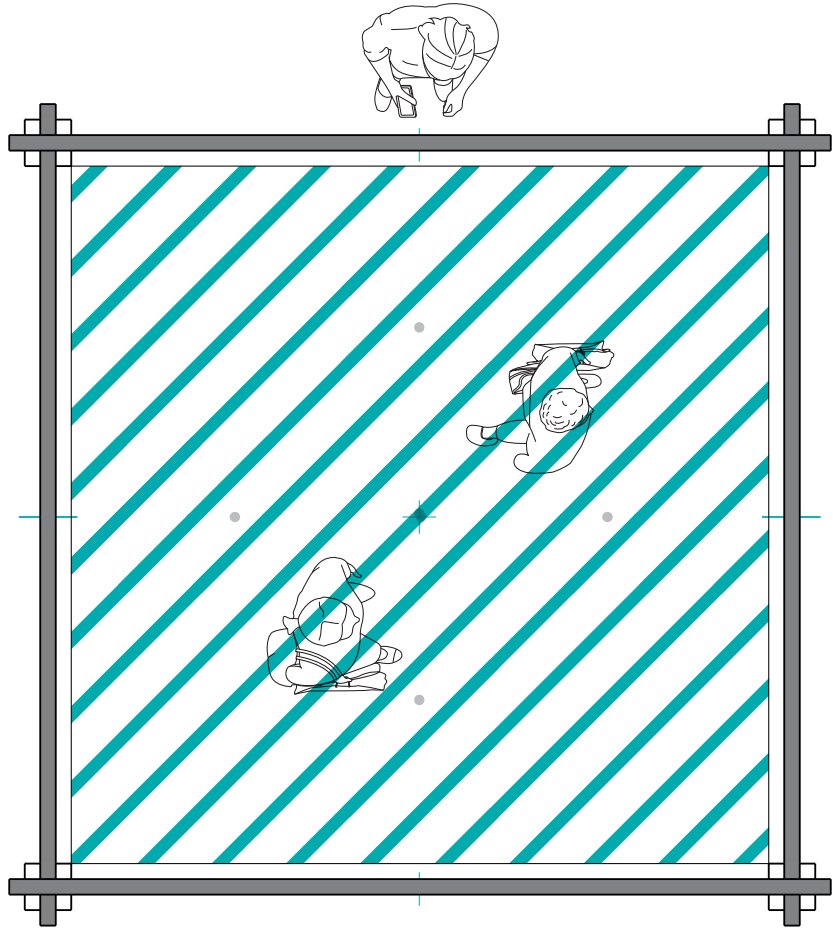


Gardening System  
SCALE 1/2" = 1'-0"

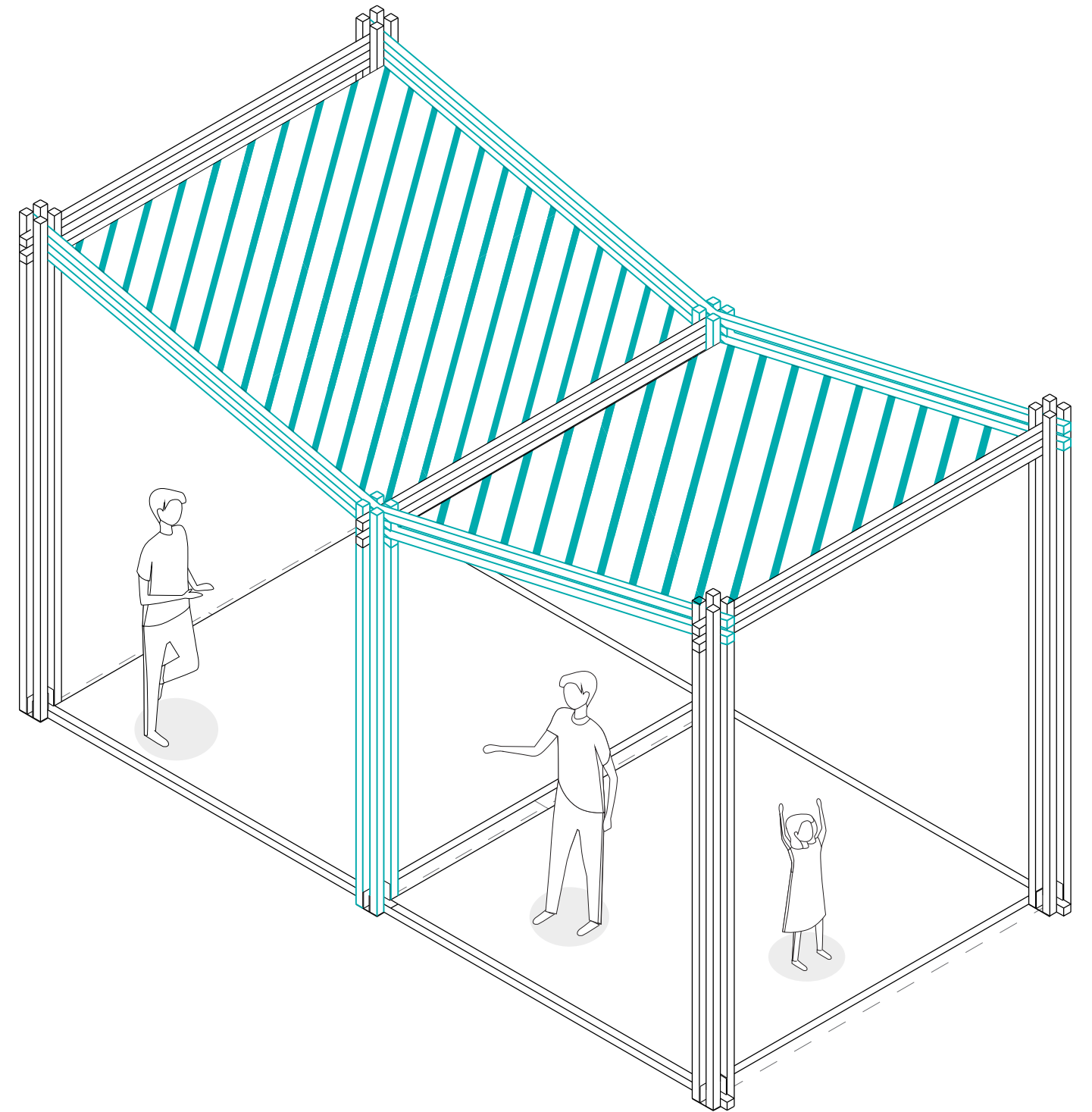
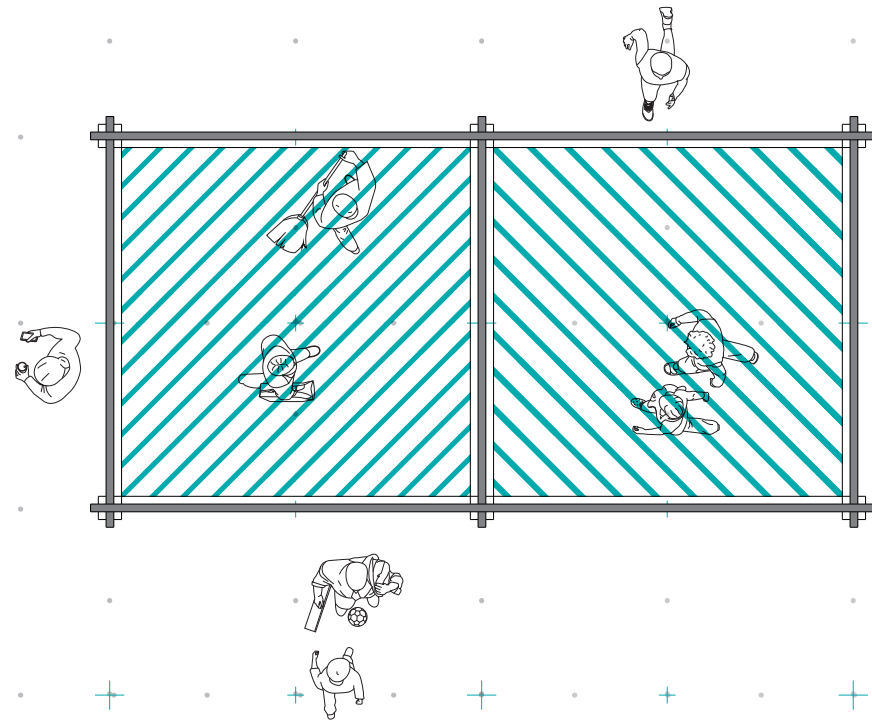
Gardening System Detail showing a close up of the activities that happen and location legend (Palacios 2023)

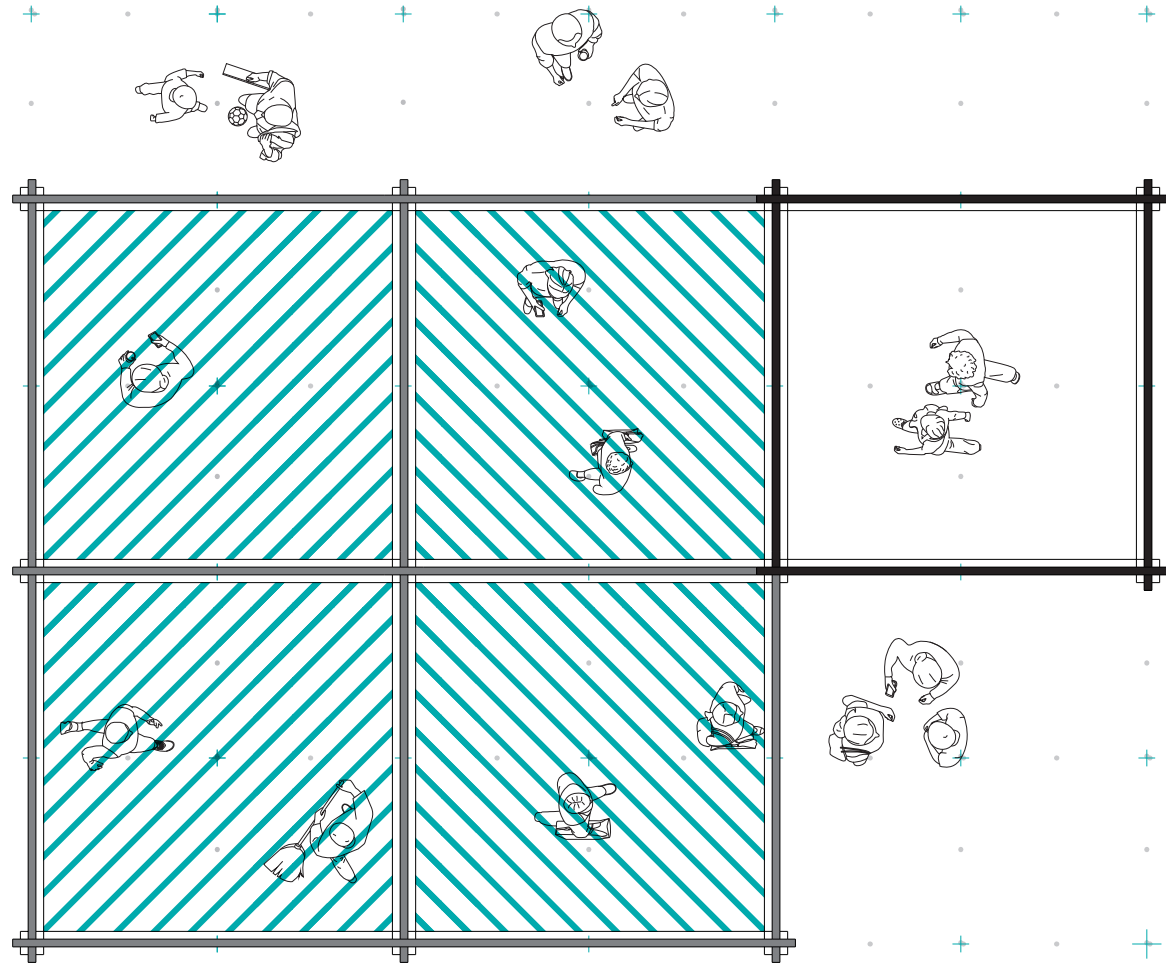


growth

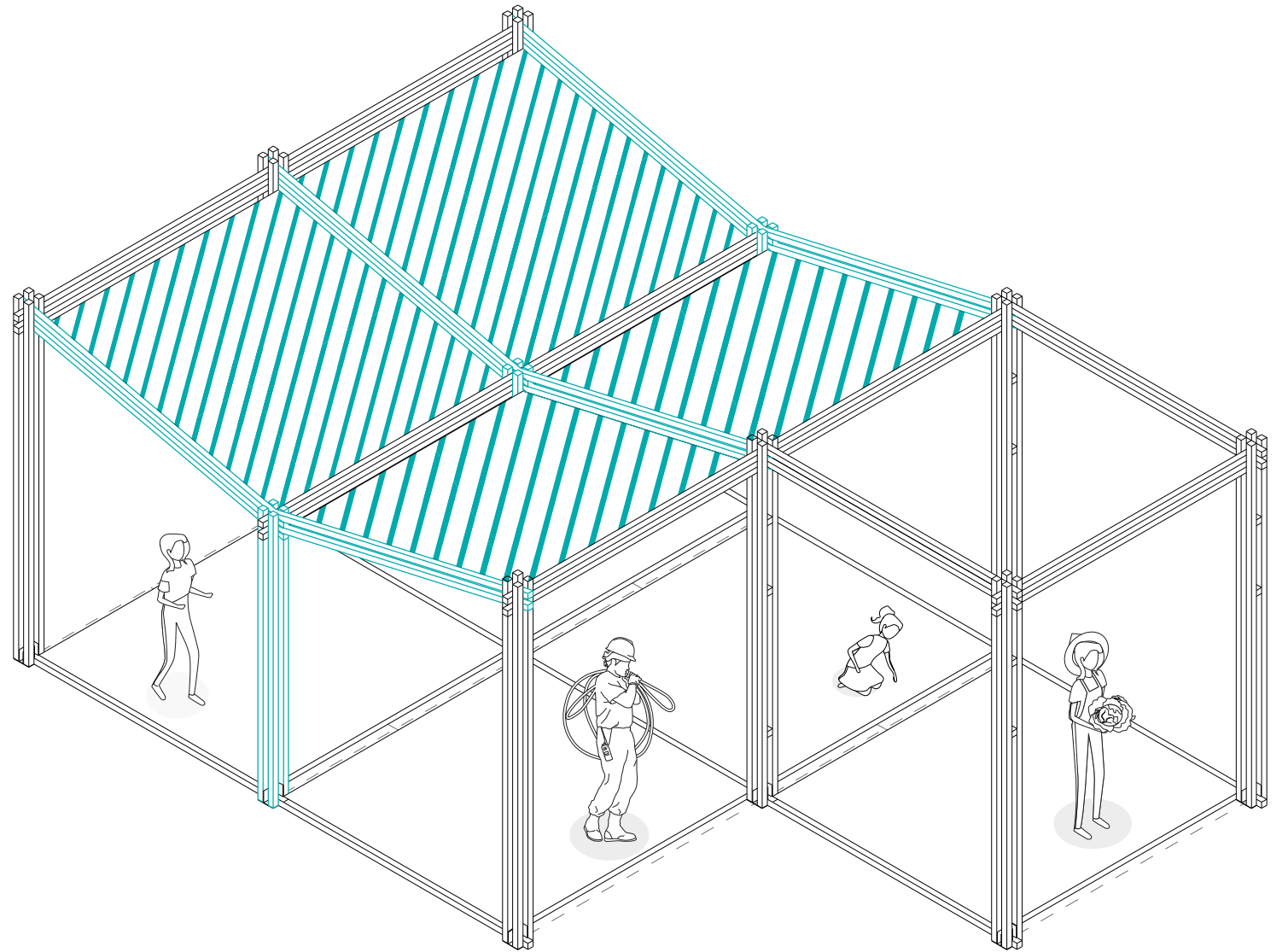


# growth

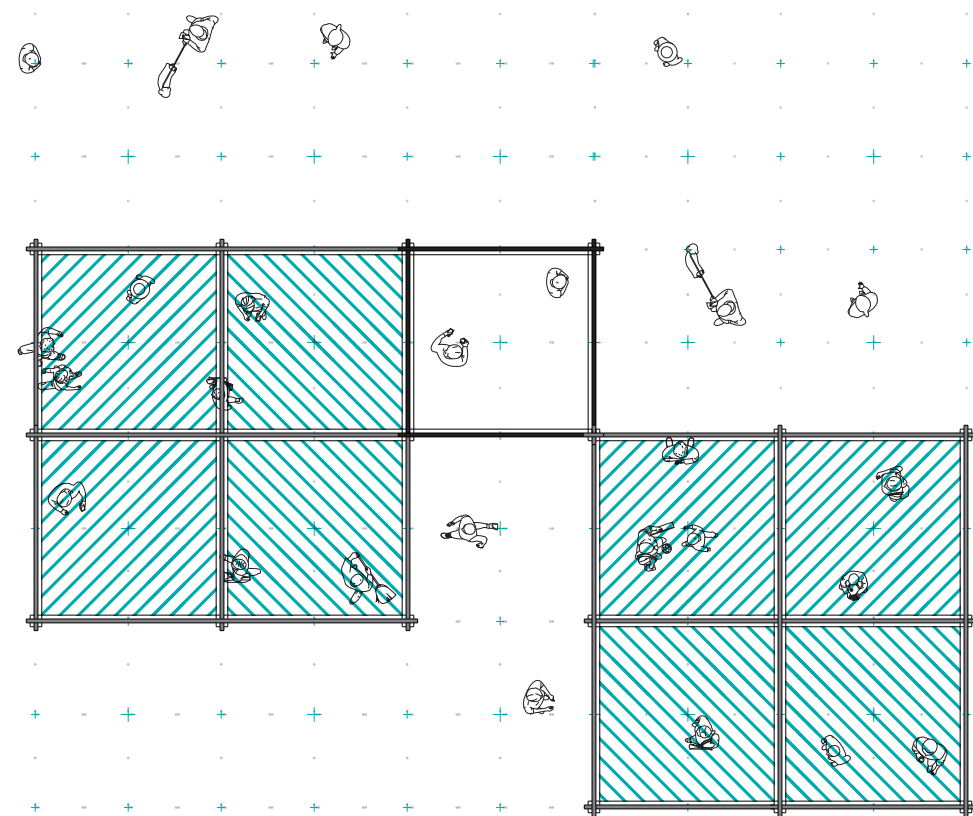




growth

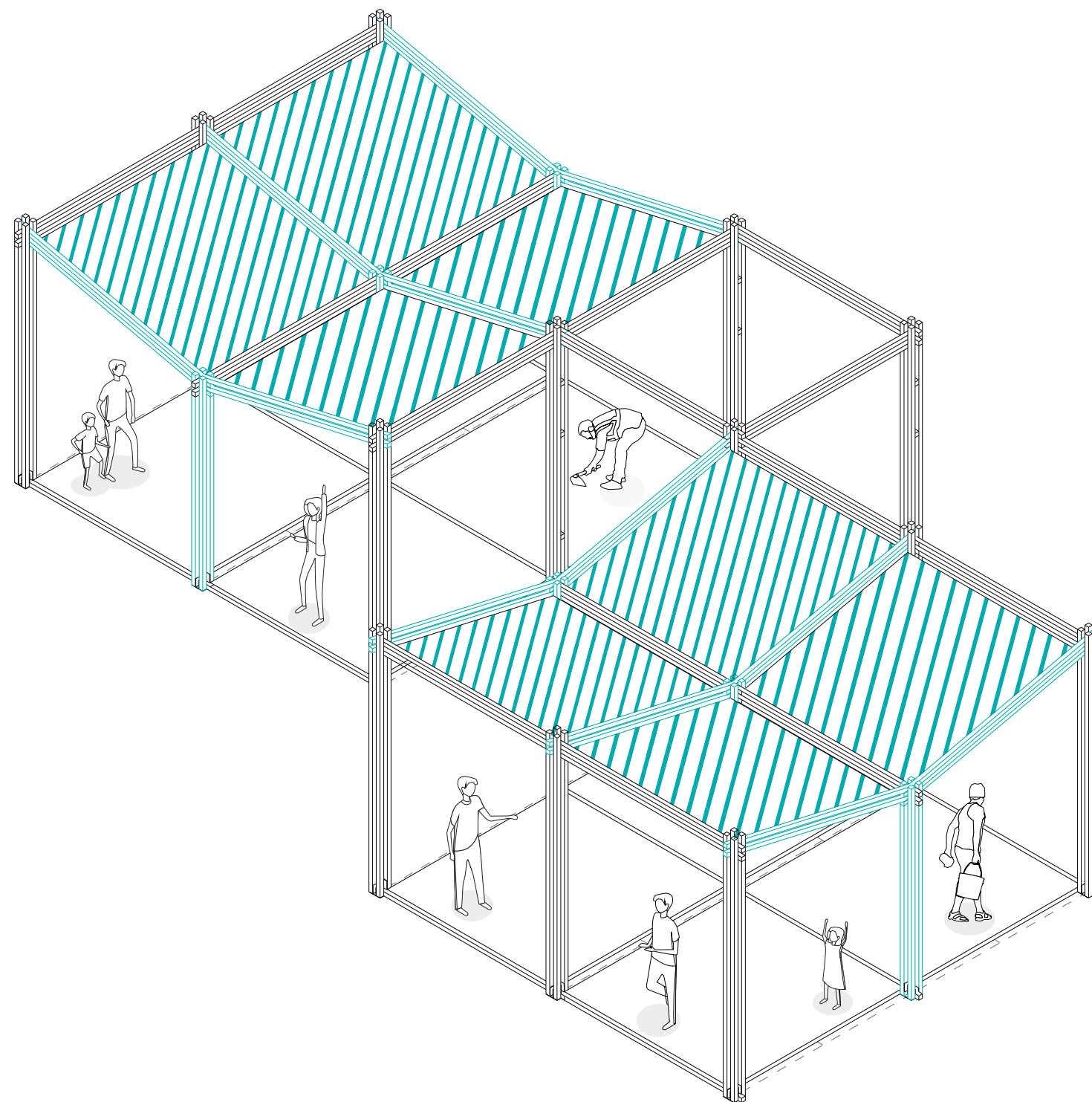






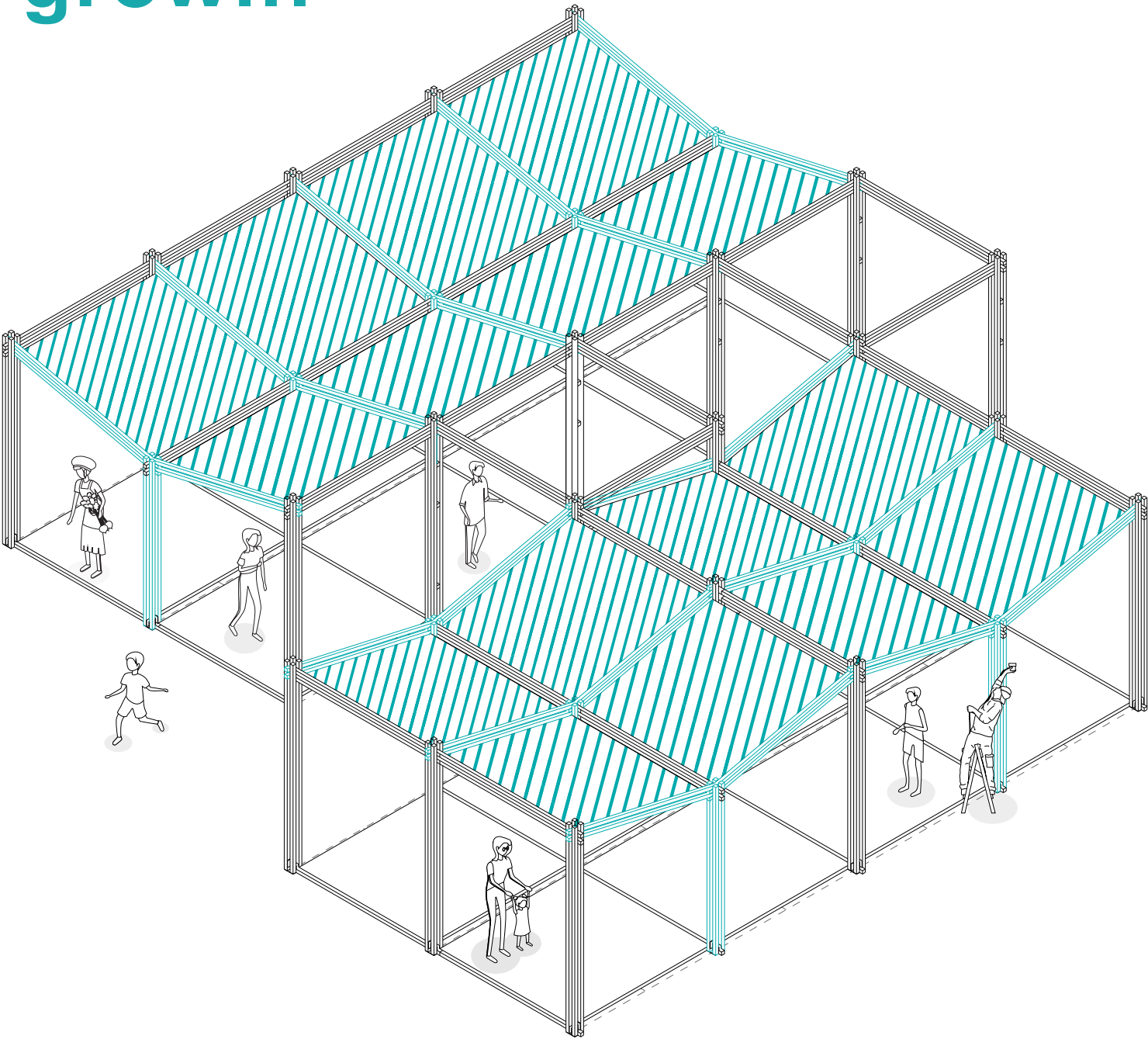
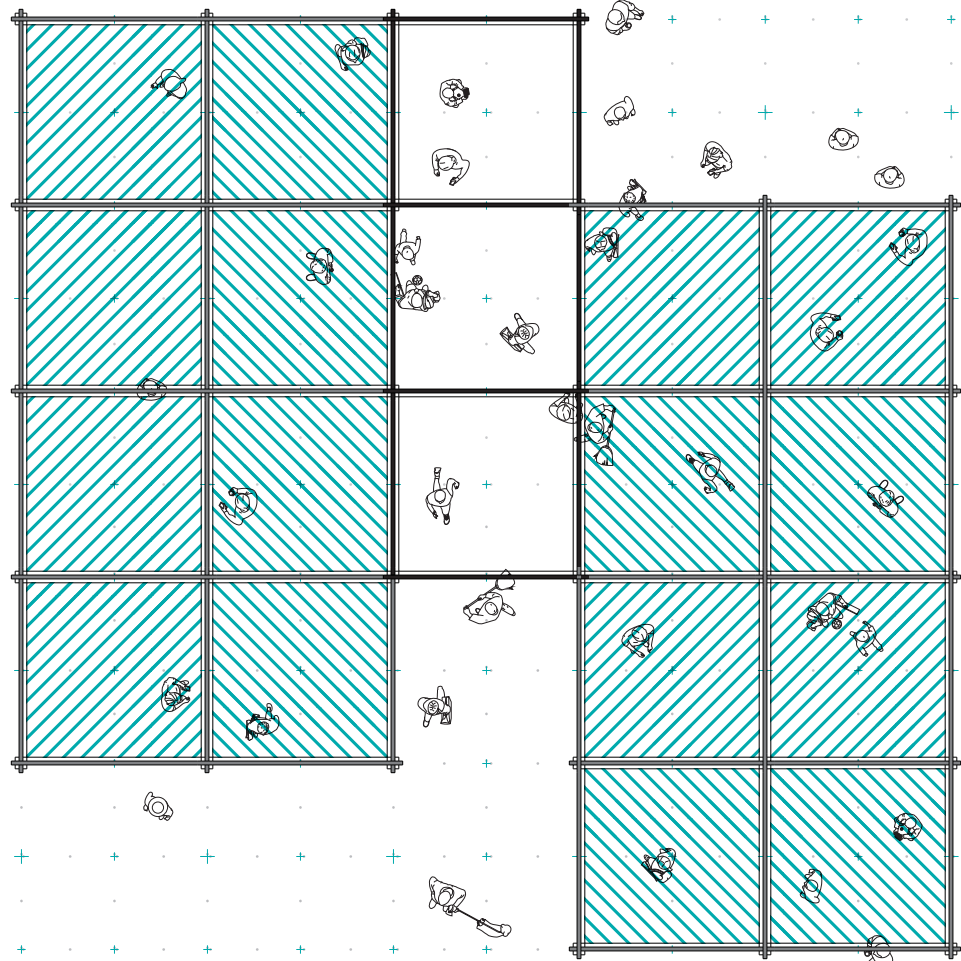
74

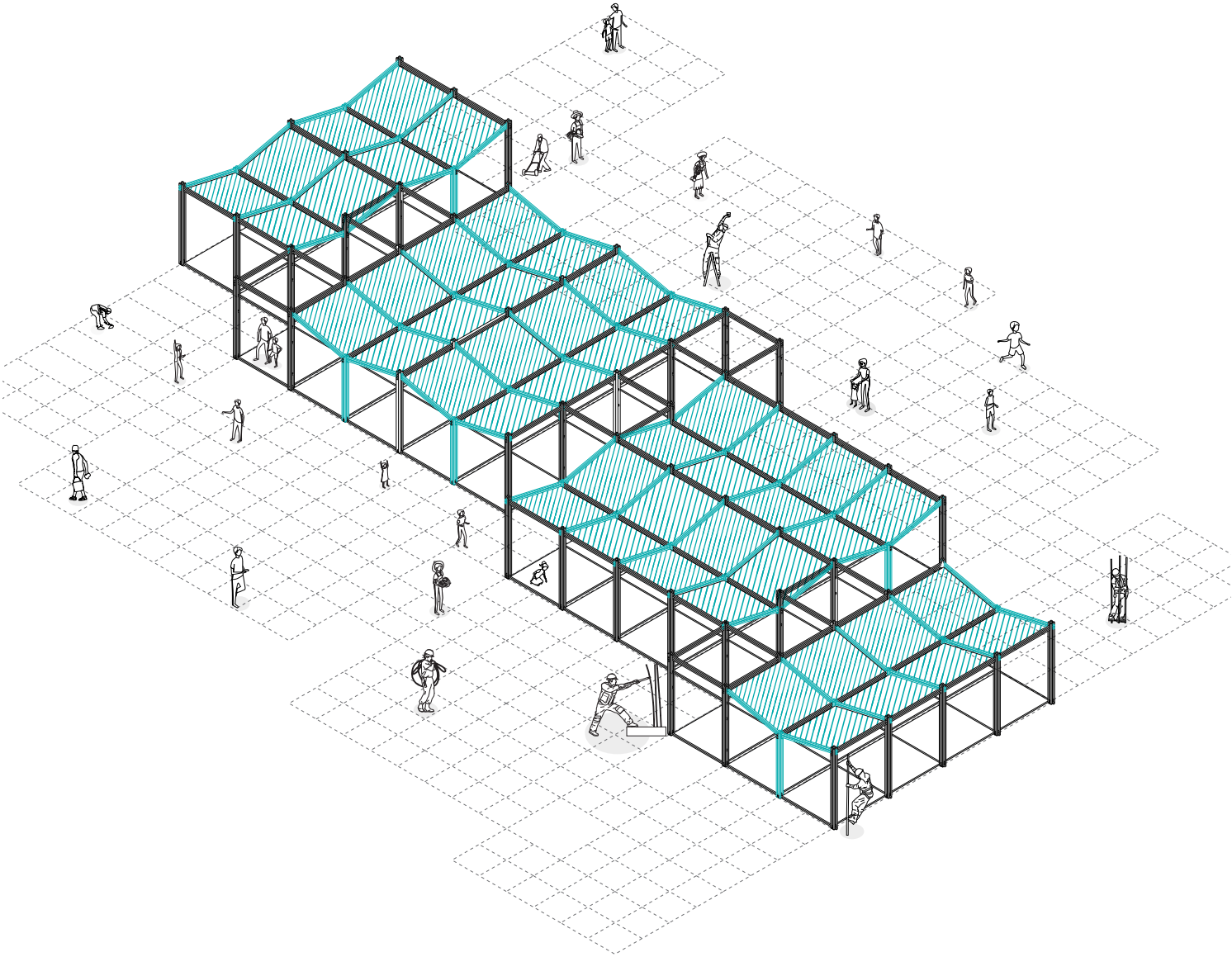
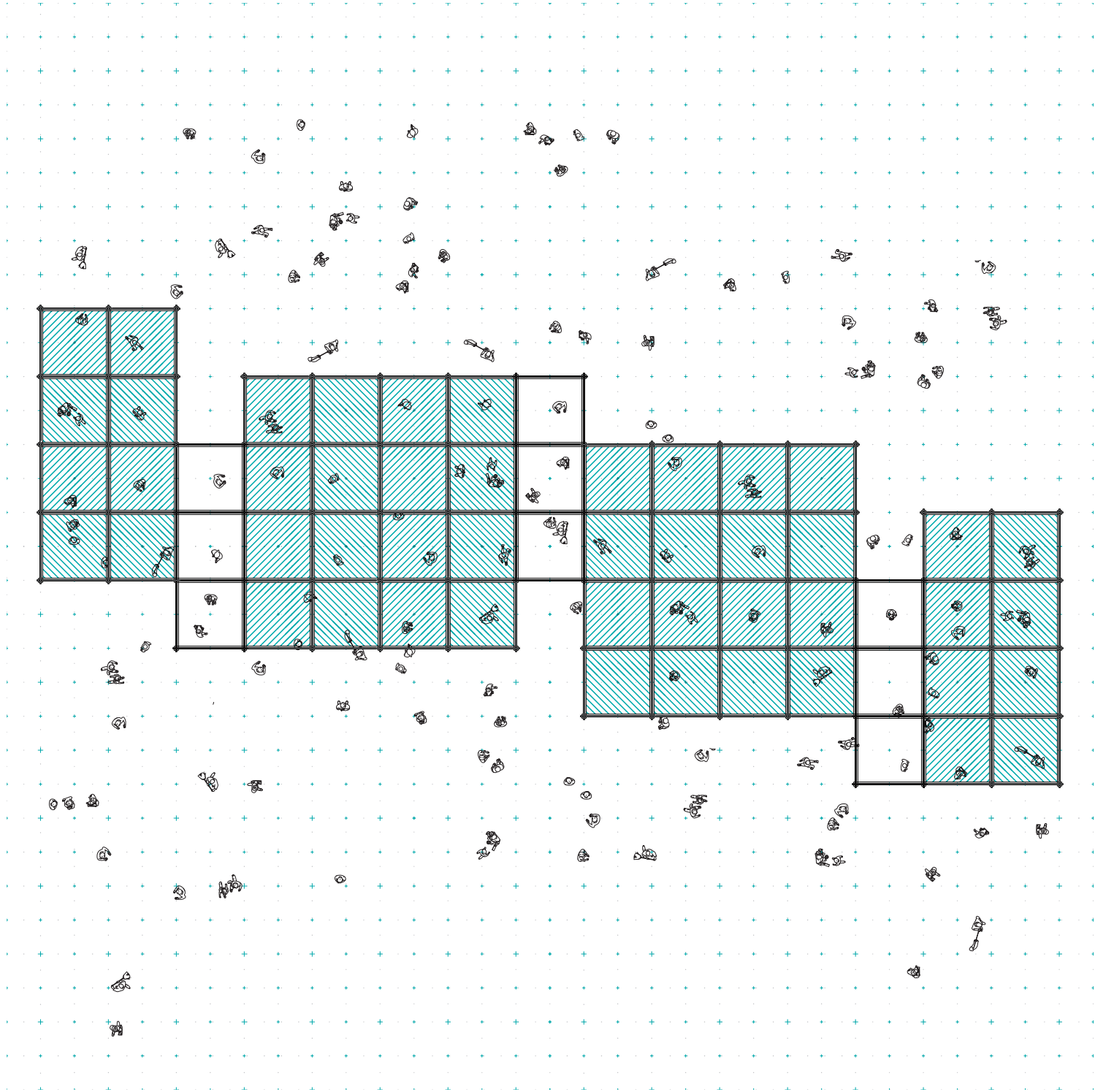
growth



75

growth



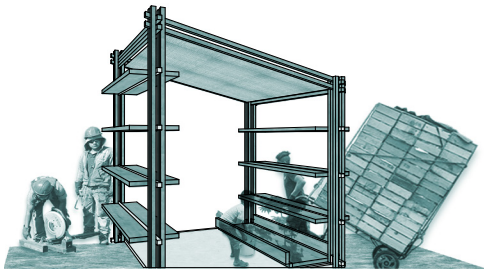


growth

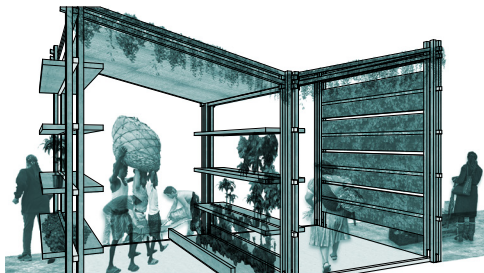


Conclusion

“Build your architecture from what is beneath your feet.” – Hassan Fathy



Perspective (Palacios 2023)



Perspective (Palacios 2023)

The current models of post-disaster relief hinder community’s resiliency and autonomy preventing them from reconstructing a socio-economic system because of the impermanence they hold during the contingency. In particular, it was demonstrated in three different disaster scenarios how temporary shelters were not the most appropriate solution and illustrated how there were repeating elements that were alluding to the possibility of a socio-economical system that could embark all sequences of the continuum.

The analysis explored how pre-existing elements, water stations, schools, and population density could be reconfigured to create programmatic systems based around everyday activities that work together towards the reconstruction and autonomy of communities after a disaster, and showed how regardless of the disaster these elements were constantly present.

This project challenged the conventionality of temporary shelters, emphasizing the disconnect between the contingency and how humanitarian agencies should stop providing low-to-middle-income countries a single solution to a complex issue. In doing so, this thesis proposes an atlas of structures and elements that could be assembled to create the Workshop; the solution that develops and expands over time as communities are engaged and work towards reactivating their resiliency.

Disasters will always be present and unavoidable in our society as it is impossible to prevent them in most cases. Designers should not be focusing on creating yet another design hoping it will act as a solution. Architects should focus on analyzing the existing conditions and design a system that departs from it. Architects and designers should be embracing how communities can be guided through the contingency and shape apprentices that know how to react to any kind of disaster.

of the

contingency...?

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