

**FINDING A NEW COMMONS**  
*Re-Inhabiting the School in Post-Urban Japan*

by  
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## AUTHOR'S DECLARATION

*This thesis consists of material all of which I authored or co-authored: see Statement of Contributions included in the thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.*

*I understand that my thesis may be made electronically available to the public.*



## STATEMENT OF CONTRIBUTIONS

Julia Nakanishi was the sole author of Chapters 4 and 5 which were written under the supervision of professor Lola Sheppard and were not written for publication. This thesis consists of one manuscript written for publication. Exceptions to sole authorship of material are as follows:

Research presented in Chapter 1,2 and 3:

This research was conducted at the University of Waterloo by Julia Nakanishi under the supervision of professor Lola Sheppard. Julia Nakanishi designed the study with consultations from professor Lola Sheppard and assistant professor Jane Hutton. Julia Nakanishi drafted the manuscript and each author provided intellectual input on manuscript drafts. Excerpts of these chapters were published in *Dearq 26: Cumulus: The Design After*.

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## ABSTRACT

Japan's megacities are often captured as dense, dynamic and ever-expanding. These images, disseminated in popular media, belie a growing national phenomenon; urban migration, a declining birthrate and an aging population have transformed Japan's countryside over the past thirty years. These demographic changes have had a slow but dramatic effect, resulting in socio-economic decline, abandoned buildings and a loss of local cultures across the country. This thesis explores how re-inhabited architecture might facilitate the preservation of culture, knowledge, education, and community connections to local contexts.

Among the vast number of leftover buildings in Japan's rural areas, the public school is becoming increasingly prevalent due to waning fertility rates. These vacant structures, referred to as *haikō* in Japanese, are imbued with collective memory. In villages needing a revival of public and cultural spaces, schools with existing relationships to the community are potent opportunities for re-use. Using fieldwork consisting of documenting *haikō* in three culturally and geographically distinct sites (Sado Island, Niigata Prefecture, Kamocho region, Tsuyama Municipality, Okayama Prefecture, and Kamiyama Village, Tokushima Prefecture), and ethnographic interviews with community members, the three design projects of the thesis explore how the re-use of *haikō* could generate new rural lifestyles and micro-economies.

The research presents emerging methodologies for designers working in the context of depopulating communities, which includes interviews with communities, analytical site mapping, and techniques of building re-use. This concept of "degrowth" poses a challenge for architecture, a profession significantly influenced by the capitalist structures and administrative frameworks of urban areas. In this way, Japan's rural areas, or "the post-urban" are a testing ground for new design processes, programmatic overlaps and plurality in public architecture.

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**CHAPTER 1**  
**Introduction:**  
**Where Did Everybody Go?**



## 1. Introduction: Where Did Everybody Go?

### 1.1 The Disappearing Village

*It's a humid day in June, the middle of the monsoon season in Japan. I'm sitting in the passenger seat of a delivery van, in Kamiyama Village, Tokushima Prefecture, catching a ride to my next site visit. The windows are down, the air is heavy and hot, and we are driving on an unmaintained, winding mountain road. Tree branches hang too low, and rocks are sporadically scattered on the asphalt. I lean out the window. The Kamiyama River runs alongside the road, moving rapidly in the opposite direction. I've never seen river water as clear as this. It flows over white boulders that I recognize from the retaining walls, garden walls and buildings in the village, a local motif.*

*"Why is the water so clean?" I ask the driver. He laughs darkly.*

*"Nobody lives here!"*

The quiet roads of Kamiyama are a stark contrast to Japan's dynamic, sprawling, ever-evolving metropolises. Cities like Tokyo and Osaka captivate public attention as centres of culture, economy and contemporary lifestyles. Images such as the one of Shibuya Crossing continue to dominate international media as snapshots of current Japanese life. Contemporary architecture practice has primarily focused on studying and innovating in urban contexts where capital investment drives growth. As a result of the focus on cities, the fragmented states of rural regions only a hundred kilometers outside of centres such as Tokyo are often overlooked, and many are on the verge of collapse.

This research references and builds upon the discussion around shrinking cities, which commonly refers to the effects of aging populations, vacancy, and economic decline in urban areas. This thesis addresses how these demographic changes have affected marginal rural areas.

Rural depopulation is a problem that has evolved over the past thirty years and is primarily attributed to a rapidly decreasing birth rate and urban migration. The emptying of rural areas has resulted in socio-economic decline and disconnect to local contexts. Towns and villages dispersed throughout Japan are advancing towards an erosion of traditions, cuisines, and crafts that embody their local contexts. This ongoing deterioration of local cultural activities has resulted in a sense of national distress as Japan's remaining rural settlements become increasingly isolated and forgotten.<sup>1</sup> The term *genkai shuraku*, which translates to "marginal village", was developed in 1991 by sociologist Akira Ono. The term refers to municipalities with a majority of the population being over 65 and are deemed "likely to disappear"<sup>2</sup>. This term is among many words that evolved to describe the various effects of Japan's depopulation phenomenon.

This thesis examines the potentials of regional cultures in Japan's countryside and asks, "what role can architecture play in preserving them?". Using three rural communities as sites of exploration, the research proposes that architecture can facilitate material processes that will generate unique opportunities for cultural, social, and

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1 Florian Coulmas, *Population Decline and Ageing in Japan: The Social Consequences* (London ; New York: Routledge, 2007).

2 Feldhoff Thomas, "Shrinking Communities in Japan: Community Ownership of Assets as a Development Potential for Rural Japan?" *Urban Design International*, no. 18 (Nov 21, 2012), 99-109.



*Figure 1.1: Shibuya Crossing, Tokyo*  
*Figure 1.2: A deserted street in Kamiyama, Tokushima Prefecture*



*Figure 1.3: “Rural knowledge”: an array of activities, materials and processes that this thesis addresses and incorporates*





economic activity. The research assumes that Japan's many rural cultures come together to establish Japan's identity, and that the maintenance of their unique characteristics is critical. Nevertheless, the objective is not to look backwards, but to imagine how architecture can leverage existing knowledge and imagine local, smaller-scale, and contemporary economies.

The questions raised in this thesis are influenced by a number of forces at play in Japanese society; the national birth rate is rapidly declining, economies are shrinking, the ratio of retired citizens to working-age adults is growing, the presence of cultural heritage is diminishing, and cities are continuously expanding. These demographic changes are influencing other societal evolutions, such as Prime Minister Shinzo Abe's "Womenomics" initiative, which advocates for a greater support of working women with families, in response to an increasingly reduced workforce<sup>3</sup>. Some recent outputs of this initiative include enforcing maternity leave (though this is primarily a policy in larger corporations and institutions), subsidizing education and establishing trade programs especially geared towards women. Among all these factors, exploring a new, sustainable lifestyle in Japan's marginal rural areas is becoming increasingly important.

While the research is focused on the specificities of the Japanese context, these demographic changes reflect emerging trends in other countries in the Global North<sup>4</sup>. In a time when productivity and development are prioritized, the shift in thinking towards communities with slower economies and smaller populations poses a challenge. In the book "Degrowth: Vocabulary for a New Era"<sup>5</sup>, Giorgos Kallis, Federico Demaria and Giacomo D'Alisa define degrowth as a school of thought that critiques economic growth as "a social objective", and encompasses a new "desired direction" where 'sharing', 'simplicity', 'conviviality', 'care' and the 'commons' are primary significations of what this society might look like<sup>6</sup>. The work of this thesis imagines what design after degrowth in Japan might look like, contributing to an increasingly acute discourse for architects.

## 1.2. Sado Island: A Case of a Region Embracing Degrowth

In the face of the negative effects of depopulation in Japan, there are some hopeful prospects. Sado Island, one of the study areas of this thesis, is a region embracing its shrinkage. Often referred to as a "microcosm of Japan" due to its variety of landscapes and cultures, Sado is most well-known for its saké production as well as agricultural practices, fisheries, and forestry<sup>7</sup>. Sado Island's number of towns and villages decreased from twenty-six to ten over fifty years, and in 2004, all remaining municipalities amalgamated into Sado City. Currently, many rice fields stand abandoned, along with lengths of *shotengai* (shopping streets) that served local residents and sold local goods to tourists in the main port of the island.

The lack of demand for local goods has led to a decline in Sado-specific production techniques. This deterioration of local processes can be described as a

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3 Rebecca M. Nelson and Emma Chanlett-Avery, "'Womenomics' in Japan: In Brief," *Current Politics and Economics of Northern and Western Asia* 23, no. 4 (August 1, 2014), 49-58.

4 Phillip Oswalt et al., *Shrinking Cities Volume 2: Interventions* (Germany: Hatje Canz, 2006).

5 Giorgos Kallis, Federico Demaria and Giacomo D'Alisa, "Introduction: Degrowth," in *Degrowth: Vocabulary for A New Era*, eds. Giacomo D'Alisa, Federico Demaria and Giorgos Kallis (New York: Routledge, 2015), 3.

6 Ibid.

7 Peter C. D. Matanle, *Japan's Shrinking Regions in the 21st Century* (Amherst, N.Y.: Cambria Press, 2011).



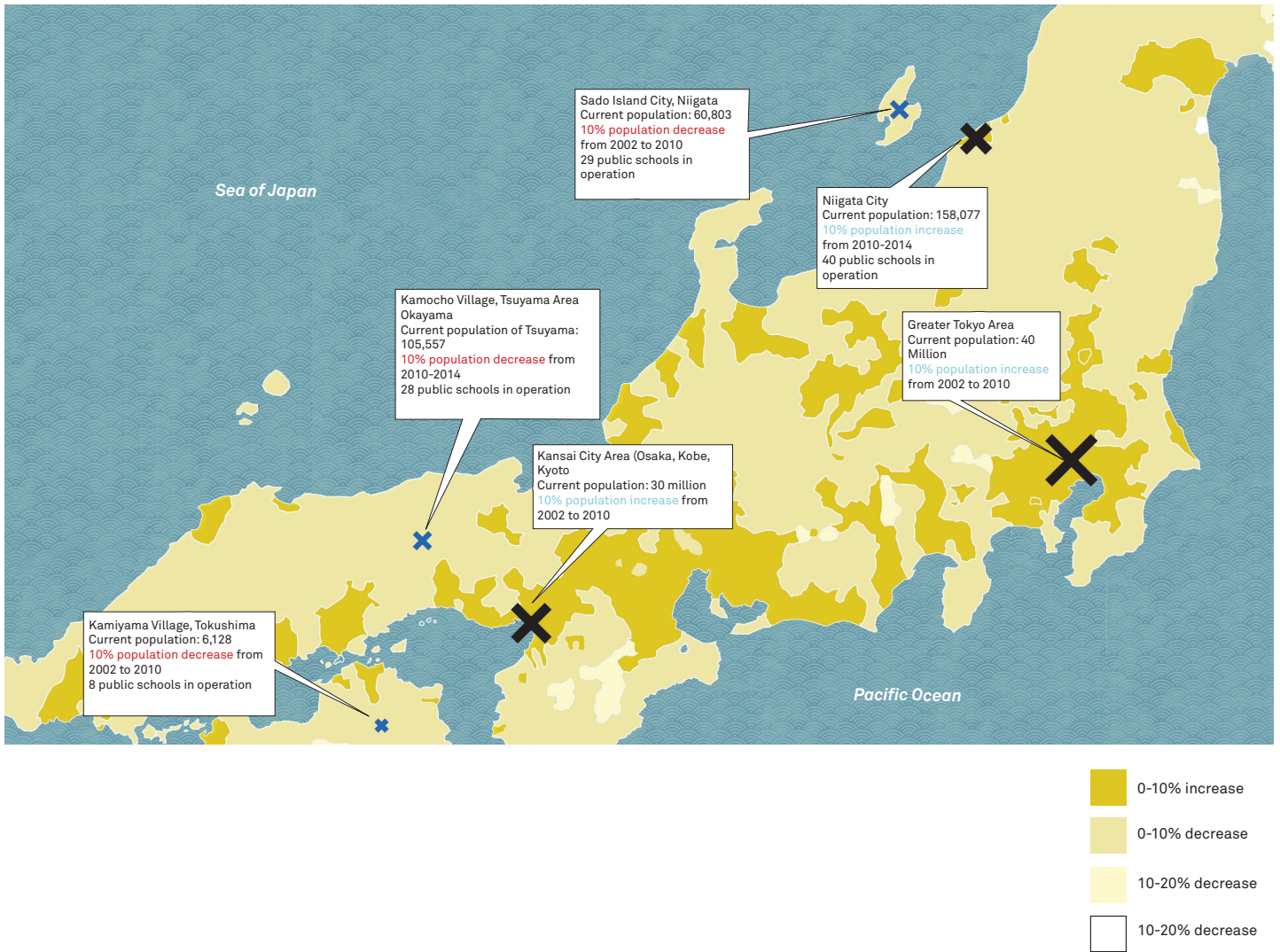


Figure 1.4: Concentrations of population increase and decrease in Japan. The x's denote focus areas of the thesis: sites of depopulation and urban "attractor" cities that are the result of urban migration



*Figure 1.5: A dark village street on Sado Island*



*Figure 1.6: A series of closed shops on a main street in Ryotsu Port, Sado Island, previously a hub of shops, bars and restaurants*





*Figure 1.7: The traditional rice paddy landscape of Sado Island, in the process of being re-integrated into common farming practices*



*Figure 1.8: Industrial rice farming landscape in the Kuninaka Plain, Sado Island*

collective loss of regional knowledge. Residents of the island expect that, despite various efforts, the island's population will not experience regrowth<sup>8</sup>. Instead of planning for an unlikely future, islanders are learning how to mediate degrowth through the restructuring of their local industries and lifestyles. While many regions in Japan are shrinking rapidly, a number of communities are accepting depopulation as way to see new opportunities in work and life.

For these places, efforts made towards achieving population and economic stability aim at making a link with local character. In addressing shrinkage, the residents of Sado are expressing a need for more educational spaces for saké brewing and farming as well as more spaces for the community and tourism. The opportunity to design spaces that facilitate these traditional practices in a more public way creates a unique context for architecture.

In *Towards a Critical Regionalism*, Kenneth Frampton outlines that architecture can highlight the unique characteristics of a region in order to reinforce the identities of the community that lives there<sup>9</sup>. In addition to the materials and tectonics of a building, these guidelines for critical regionalism can be applied to the design of local industry<sup>10</sup>. Lewis Mumford states that regionalist architecture is not only about locally available building material or the recycling of historic vernacular techniques, but a design that closely responds to the conditions of life in a particular area<sup>11</sup>.

Saké brewers of Sado are currently developing a new “regionalism” through production and export techniques. Brewers are in the process of identifying new global clients to maintain a demand for their products and share the island's culture while improving the sustainability of the local brewing process. This includes new opportunities for education, working with new waste disposal technologies and rice farming practices<sup>12</sup>. The rehabilitation of the traditional, terraced rice paddy system that supports endangered animal species is gradually becoming part of Sado's agricultural narrative.

### 1.3. Context Summary

This thesis focuses on three geographically distinct sites where depopulation has been documented—Sado Island in Niigata Prefecture, the Kamocho Monomi in Okayama Prefecture and Kamiyama Village in Tokushima Prefecture. These sites were chosen based on existing community-driven initiatives in each to mitigate depopulation and sustain culture. Additionally, the local industries of each place are deeply rooted in their unique ecosystems and biophysical conditions, as well as the traditions of working with them. In Sado, there is a focus on developing the rice and saké industries in culturally and environmentally conscious ways. In the Kamocho region of Okayama, a number of efforts have recently emerged to revitalize the forestry industry and use

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8 Matanle, *Japan's Shrinking Regions in the 21st Century*

9 Hal Foster, *The Anti-Aesthetic: Essays on Postmodern Culture*, 1st ed. (Port Townsend, Wash.: Bay Press, 1983), 16-30.

10 “Critical Regionalism: Between Local and Global,” last modified April 12, accessed November 12, 2019, <https://www.guggenheim.org/blogs/map/critical-regionalism-self-maintenance-between-local-and-global>.

11 “Critical Regionalism: Between Local and Global,”

12 Peter Matanle and Yasuyuki Sato, “Coming Soon to a City Near You! Learning to Live ‘Beyond Growth’ in Japan's Shrinking Regions,” *Social Science Japan Journal* 13, no. 2 (2010), 187-210. doi:10.1093/ssjj/jyq013.





*Figure 1.9: Author with a family from Kamocho, Okayama, standing beside the family's rice fields.*

of local cedar. In Kamiyama, an initiative called the “Food Hub Project” combines agricultural education, local foods and communal dining to re-invent community interaction<sup>13</sup>.

The thesis proposes design projects that build on the needs of the needs resulting from degrowth in each site. The design projects are intended to serve the existing populations, which consist primarily of elderly citizens, by integrating them in new industrial and educational activities. While the elderly population is a major stakeholder of each proposal, the designs focus on developing programmatic scenarios for the surrounding community which might encourage younger urban dwellers to return to or move to the countryside.

Due to the broad nature of the term “culture” and its many historical meanings, this thesis will use the definition of culture as explained in Galen Cranz’s book, *Ethnography for Designers*<sup>14</sup>. Semantic ethnography uses the word “culture” to describe a certain type of knowledge that is shared among people; in the context of this thesis, some examples include saké brewing, fishing, woodcraft, and rice farming. Culture in this case does not refer to the products that result from each activity, such as the saké itself or a piece of furniture; but rather, the knowledge and skills required to produce material objects, or “the knowledge that must be shared for communication to occur”<sup>15</sup>. Cranz states that culture is learned, shared, and encoded in the language of a particular group of people, and, that by engaging with it, designers can understand the forces that organize people’s behavior in space<sup>16</sup>. By understanding this shared knowledge, designers can interpret the social settings in which they are designing and improve their design interventions.

#### 1.4. “Haikō”: Japan’s Vacant Public Schools, Leftover Places

*Travel Log*  
*Kamiyama, Tokushima*  
*June 23, 2019*

*The junior high school sits on a plinth of artificial terrain. This one has a dramatic backdrop of tall mountains, and the entire building is wrapped in a kind of mesh. I’m reminded of furniture in basements, covered dusty sheets. Sato-San, my local guide for the day, gestures at the road that leads to the building.*

*“This was my school. In my day, around this time in the afternoon, this road would have been jammed with teenagers on bicycles. We all came and went at the same time, in a big pack, bells ringing, sometimes hundreds of kids... but we haven’t heard or seen anything like that in a while. Back then (1970), kids were bursting from the seams of this school. You hardly see any kids these days.”*

The current state of socio-economic decline in Japan’s countryside is possibly most evident in the stark abandonment of buildings. Travelling through these rural locations during the summer of 2019, the emptiness was apparent in the vast number of *akiya* (a term meaning ‘abandoned house’), shuttered storefronts, and public institutions.

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13 “The Food Hub Project,” accessed June 20, 2019, <http://foodhub.co.jp/daybook/571/>.

14 Galen Cranz author., *Ethnography for Designers* (Abingdon, Oxon: Routledge, Taylor & Francis Group, 2016).

15 Cranz, *Ethnography for Designers*

16 Ibid.





*Figure 1.10: A vacant school in Kamiyama, Tokushima Prefecture. The school is built with a typical concrete structure.*

A recurring and recognizable type of abandoned building was the public school, which become obsolete after the decrease in child population<sup>17</sup>. In Japanese, the term *haikō* was developed to describe this building phenomenon. The Japanese school building type evokes an architectural monumentality that is connected to the political motives of the curriculum as well as its function as environmental relief infrastructure. When natural disasters damage homes and public infrastructure, the local public school auditorium is converted into temporary accommodation and a hospital. Schools are typically fortified, constructed on top of artificial topography that positions the school high above flood lines, and are often built from thick, precast concrete. The school's high ground and structure provide a resiliency for the natural disasters that Japan faces. In the context of these disasters, the school building is adapted to house displaced members of the community.

The typical *haikō* is a compelling site for architectural intervention due to the national consistency of its architecture and the curriculum it houses. The public school is a collective experience and memory shared by all Japanese citizens. Building on these factors, some depopulating communities have proposed and implemented strategies for re-inhabitations of *haikō* with the goal of improving social and economic conditions<sup>18</sup>. The modular construction and immutable structures of the schools have demonstrated flexibility by accommodating a variety of programs. The research documents case studies of school reuse and build upon these initiatives.

The rigidly structured Japanese school curriculum is a response to what the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) describes as a “spread of undesirable ‘individualism’ or ‘me-ism’ that “leads individuals in this society to lose their sense of responsibility, sense of justice or ambition”<sup>19</sup>. The goal of this education system is not just to provide academic learning but also a sense of public responsibility and community mindedness. This overarching framework was developed after World War II, an era in which Japan was rebuilding itself as a nation and undergoing economic and social reform. These government motives are depicted in the consistent opportunities provided to Japanese children in their schools: from facilities to learning materials to activities aimed towards educating productive citizens. All proceedings within the school are executed in a highly organized and arguably disciplinary<sup>20</sup> fashion that reflects the rigidity of the building's architecture.

My own experiences as a student in the Japanese public school system validated the monumental role that schools play in Japanese culture. Being half Japanese and growing up with a parent still rooted in the culture, I spent many summers in the suburbs of Tokyo. For four of these summers I attended local public schools under a cultural experience program for foreign students holding Japanese citizenship. The schools I attended were in my grandparents' suburban community in Chiba, a one-hour train ride from central Tokyo. The school's location was on the edge of an agricultural

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17 “Empty School Buildings: Re-use Or Recycle?” last modified November 20, accessed September 10, 2018, <https://www.japantimes.co.jp/life/2003/11/20/lifestyle/empty-school-buildings-re-use-or-recycle/#.W-nv0HPkGn0>.

18 “Empty School Buildings: Re-use Or Recycle?”

19 “Current Status of Education in Japan and the Challenges of the Future,” accessed September 10, 2018, <http://www.mext.go.jp/en/policy/education/lawandplan/title01/detail01/sde-tail01/1373814.htm>.

20 Michel Foucault 1926-1984., *Discipline and Punish : The Birth of the Prison*, 2nd Vintage Books ed. ed. (New York: Vintage Books, 1995).



*Figure 1.11: Archival image of the annual Sports Day at an elementary school in Senri, Osaka Kansai Area, 1975*



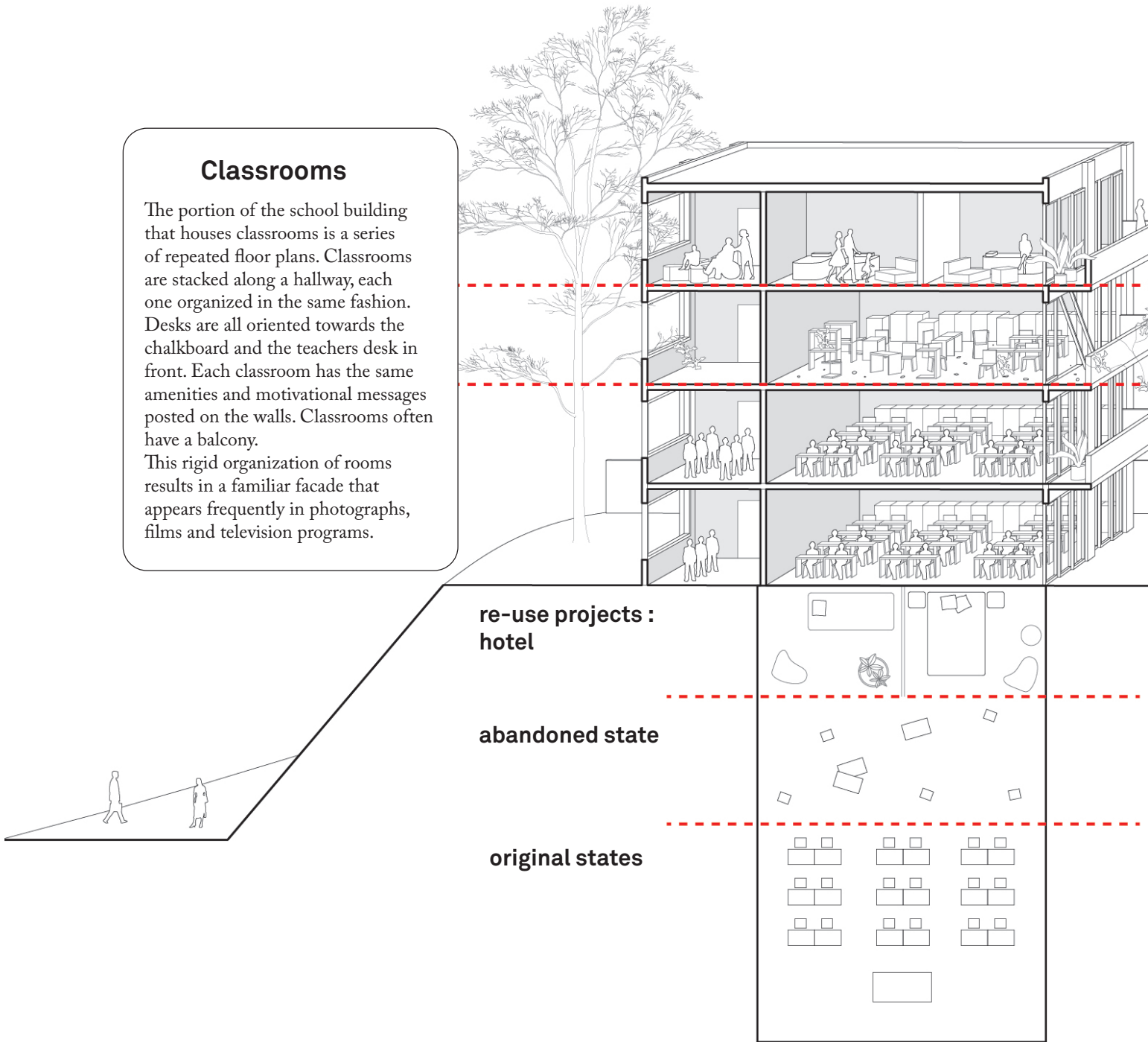


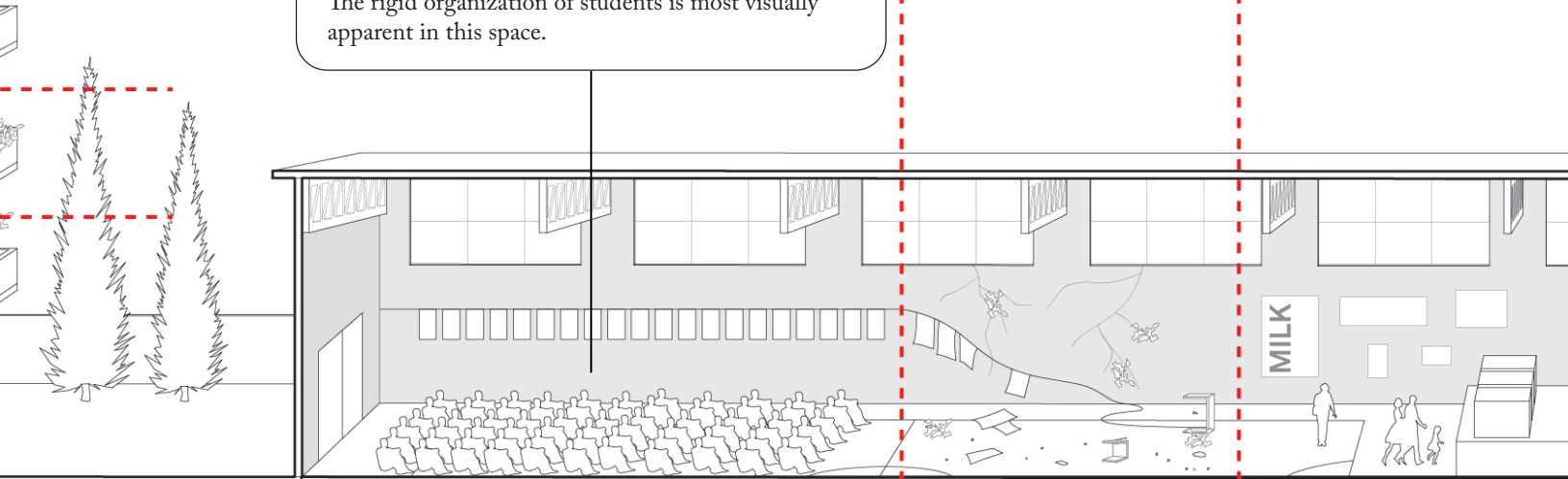
Figure 1.12: Sectional diagram illustrating the typical school typology in Japan, overlaid with different stages of occupancy: the existing function of the school, the vacated state and examples of existing re-use projects.

## Gymnasium

The gymnasium is a large, multifunctional space that also serves the community that the school is located in.

In addition to housing assemblies and sports events, the gymnasium serves as a disaster relief zone.

The rigid organization of students is most visually apparent in this space.

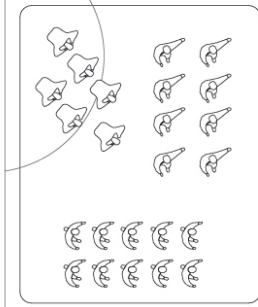


floor plan

assembly

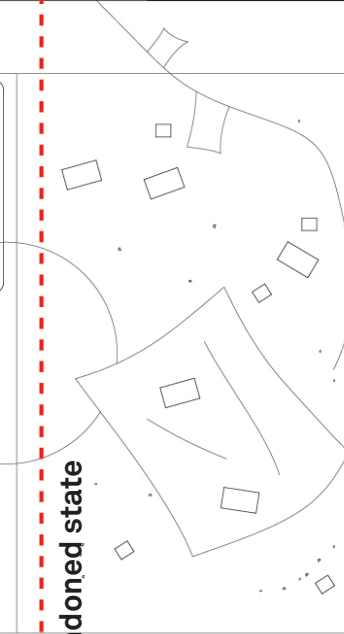


original state

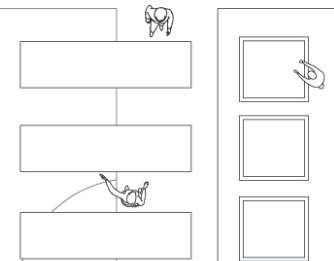


sports event + temporary shelter

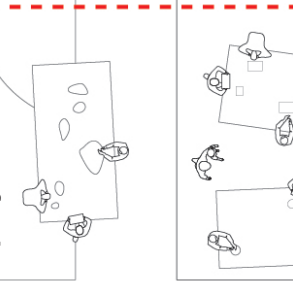
abandoned state



dairy farm + production +



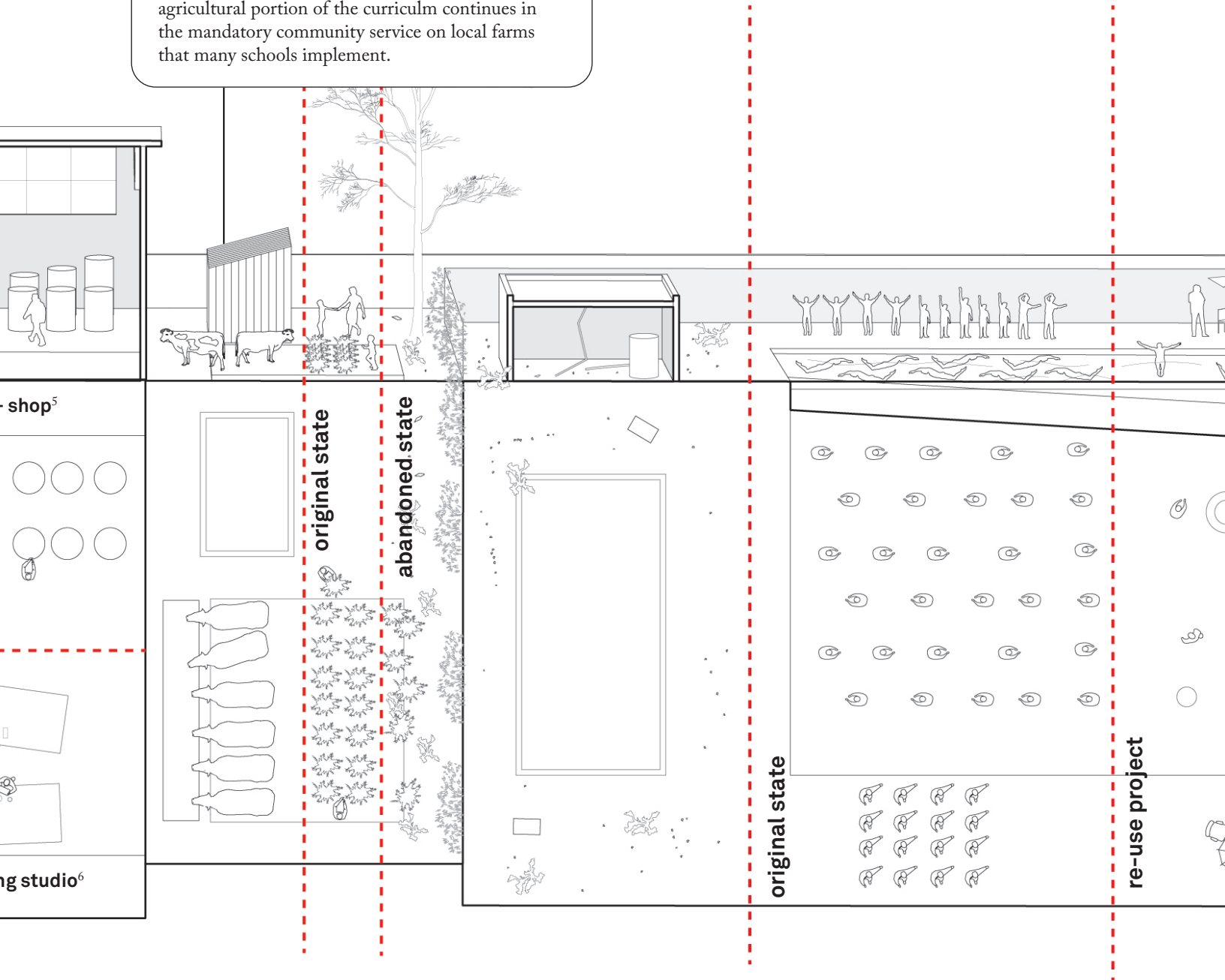
re-use projects



community woodworkin

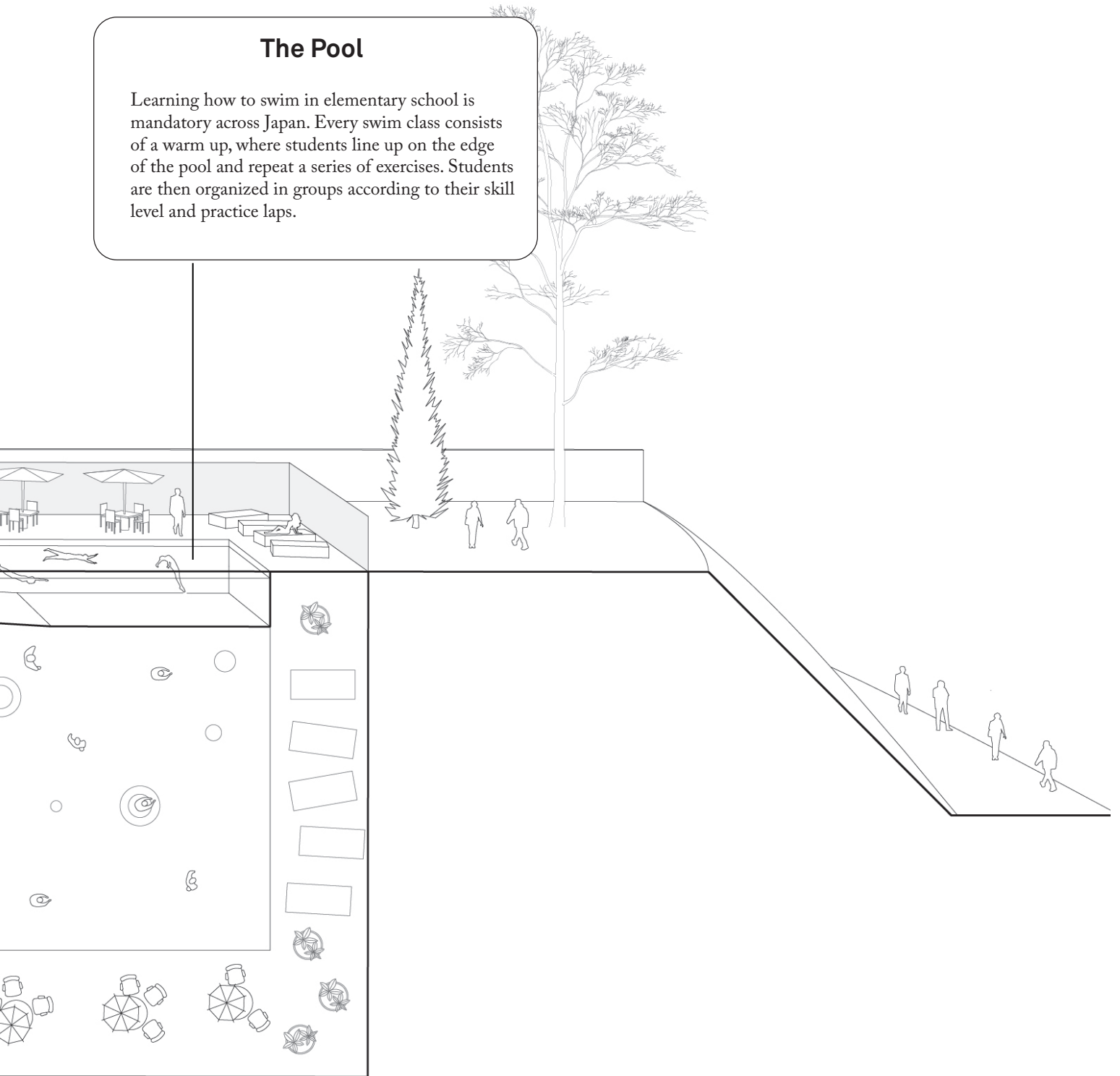
## School garden

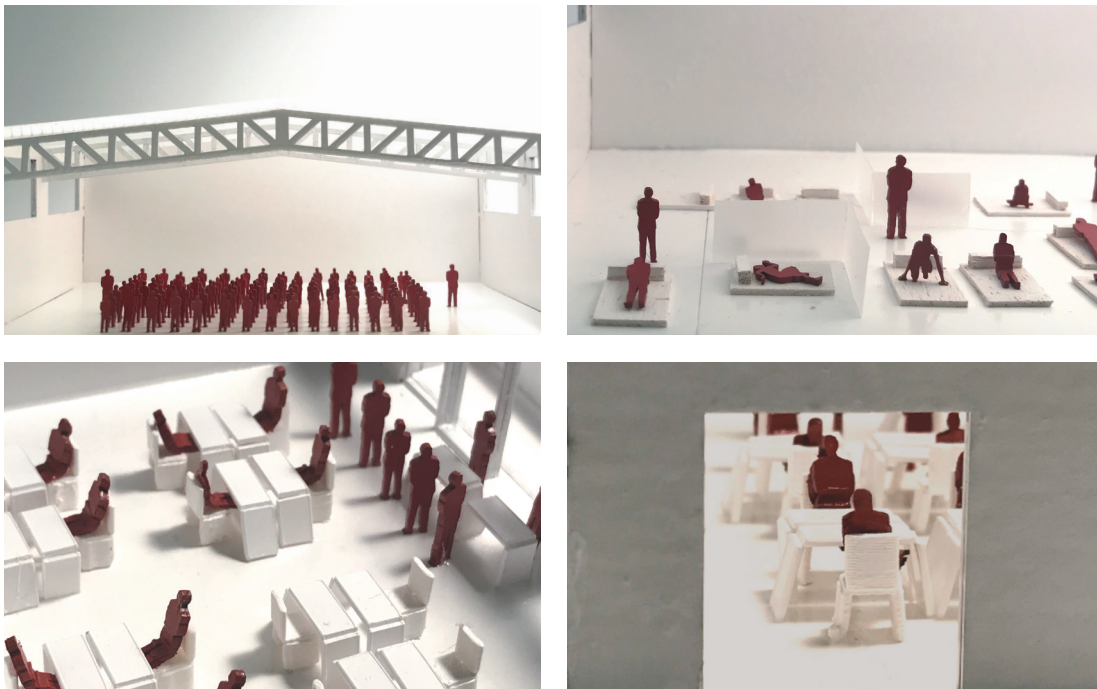
An integral part of the Japanese elementary school curriculum is learning about agriculture and the sources of food. Most schools have an allocated area on the grounds for cultivating a variety of vegetables and practicing animal husbandry. The agricultural portion of the curriculum continues in the mandatory community service on local farms that many schools implement.



## The Pool

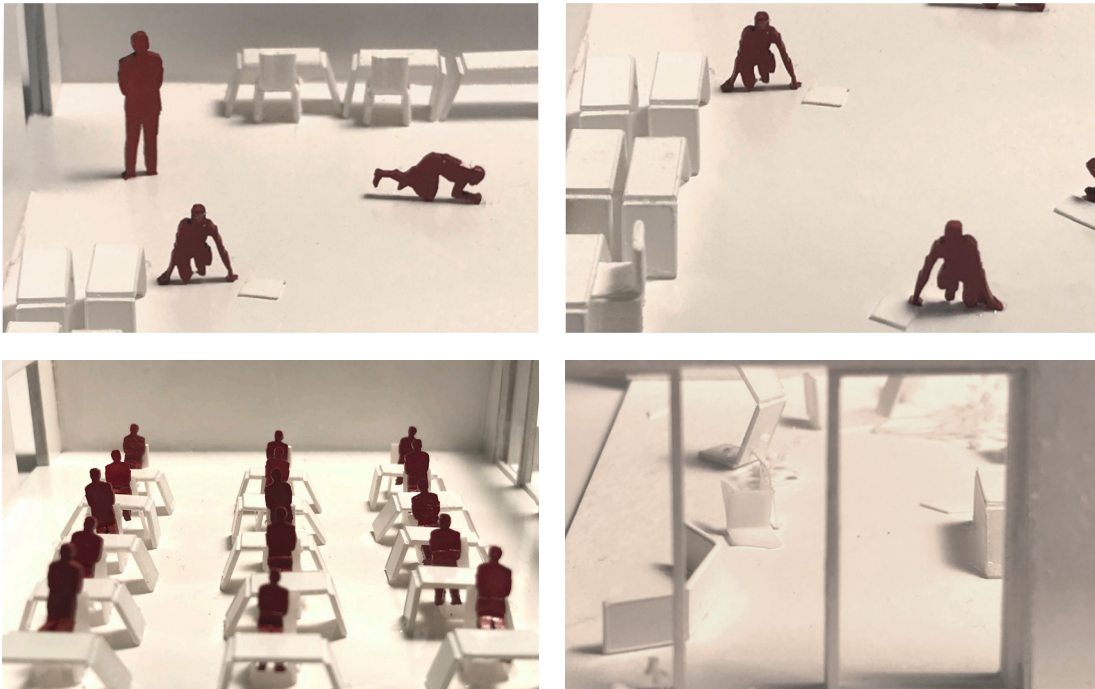
Learning how to swim in elementary school is mandatory across Japan. Every swim class consists of a warm up, where students line up on the edge of the pool and repeat a series of exercises. Students are then organized in groups according to their skill level and practice laps.





*Figure 1.13: Physical study models at 1:100 scale, depicting existing modes of occupancy of a typical Japanese school building: assembly in the gymnasium, lessons taking place in classrooms, the gymnasium converted into a disaster relief zone and classrooms re-organized for the lunch hour*





*Figure 1.14: Physical study models at 1:100 scale, depicting existing modes of occupancy of a typical Japanese school building: students cleaning the classroom, students seated for a lecture and a vacated classroom*



*Figure 1.15: A gymnasium occupied by people affected by the 2011 tsunami*





*Figure 1.16: A vacant school, demonstrating the typical typology: a main school building connecting to a gymnasium structure, with additional outdoor facilities*

area, and my walk to school cut through rice fields and vegetable gardens, sometimes crowded with elementary school students participating in community service activities. Throughout the summer a number of events were held on school grounds that attracted all generations of the surrounding community: the *bon-odori*- a festival honoring ancestors- and the annual Sports Day, an annual event of recreational physical activities that students compete in. Considering my experiences as a student in Chiba's *Kasori* district, the role of the school within a Japanese community is clear; public schools are central to the planning of communities in Japan, and the schools themselves are an accurate representation of a Japanese nationalist and public architecture.

Over the course of this thesis, the behaviors of users within the school and the recurring architecture were analyzed using Atelier Bow-Wow's approach in Behaviorology<sup>21</sup> and Commonalities<sup>22</sup>. The new occupations of the buildings were proposed using Hannah Arendt's theory of plurality.

Behaviorology looks at a building as a network of relationships between humans, the natural environment, and the structure itself. Stemming from Bruno Latour's Actor Network Theory (ANT), Behaviorology challenges designers to understand and visualize how architecture can be positioned as a network of "actors", which includes objects, landscapes, processes, ideas as well as humans<sup>23</sup>. In the case of Sado Island's agricultural practices, the influence of animals and other physical and geographical factors are distinctly integrated with the actions of humans in the community. Actor Network Theory can be applied to architecture through its inclusion of non-living objects, placing an equal value on their contribution to the making of a building or landscape<sup>24</sup>. These contributions, exchanges and relationships between actors constitute a network. Additionally, Actor Network Theory illustrates that as much as humans construct their artifacts, "artifacts construct and configure us"<sup>25</sup>. In the context of Japanese public schools, the political influence on the design of schools is evident in its uniform construction and modularity; students are configured by their school building and move in a highly controlled manner. The Behaviorology theory addresses elements of ANT to further discuss the emotional relationships between users and architecture while including non-human actors in the discussion. Commonalities, also developed by Atelier Bow-Wow, is a theory that states that specific relationships between actors repeat themselves in various situations and can be called "common" behaviors of people and objects. Despite the Japanese context of this thesis, theoretical frameworks from Western thought are used due to their connection to the methods of Atelier Bow-Wow, which ground the methods of analysis and representation in their office's research and design work.

In *the Human Condition*, Arendt writes about the need for plurality and a space of appearance by arguing that healthy communities require a vibrant public life that allows

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21 Kaijima, Momoyo and Tsukamoto, Yoshiharu, Behaviorology (New York: Rizzoli, 2010).

22 Kaijima, Momoyo and Tsukamoto, Yoshiharu, Commonalities: Production of Behaviors (Tokyo, Japan.: LIXIL Publishing, 2014).

23 Kaijima, Momoyo and Tsukamoto, Yoshiharu, Behaviorology

24 Kjetil Fallan, "Architecture in Action: Traveling with Actor- Network Theory in the Land of Architectural Research," *Architectural Theory Review* 16, no. 2 (2011), 184-200. doi:10.1080/13264826.2011.601545.

25 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford, UK: Oxford University Press, 2005).

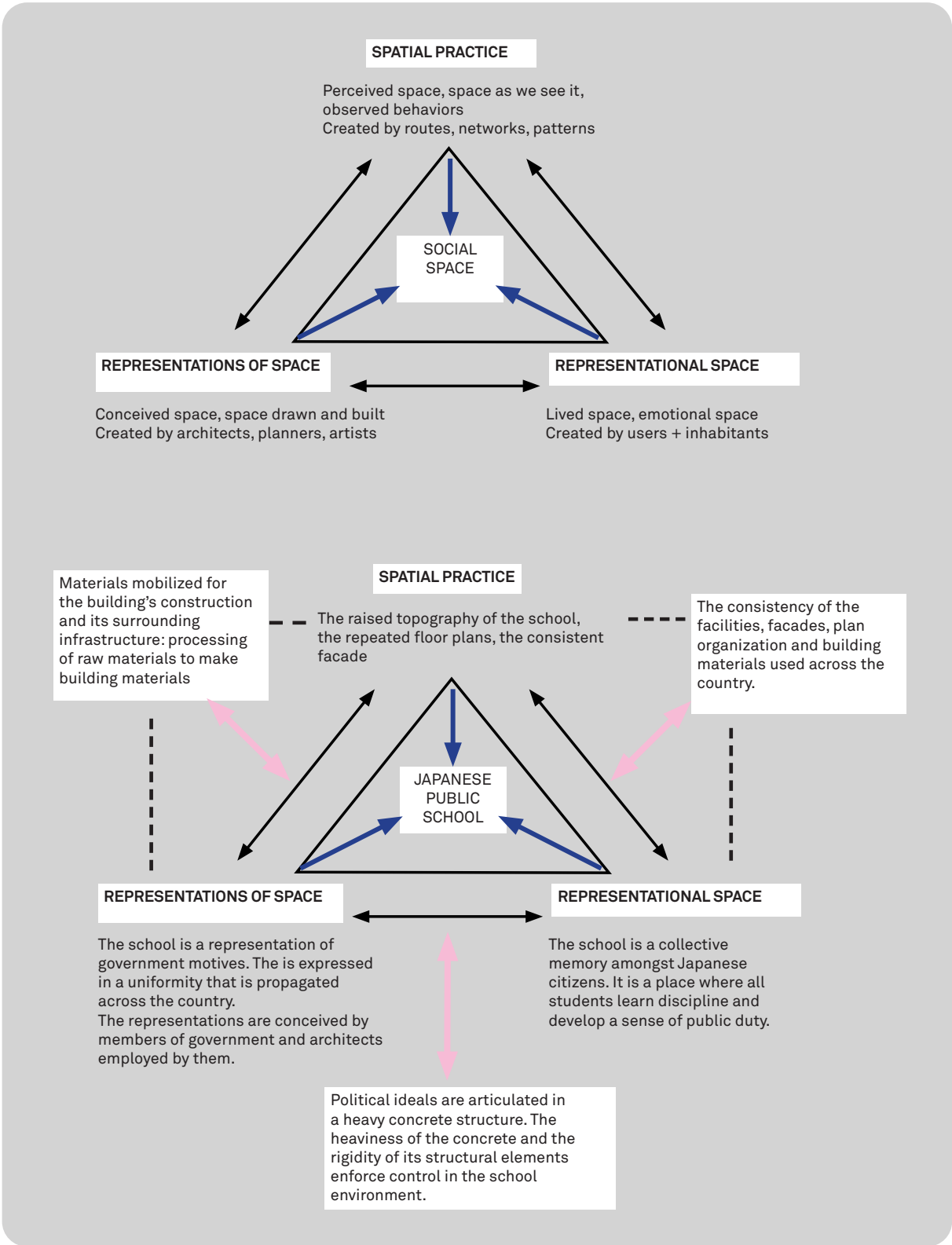


Figure 1.17: Diagram summarizing Henri Lefebvre's theory of Social Space, applied to Japanese Public Schools and overlaid with Bruno Latour's Actor Network Theory

for citizens to disclose their uniqueness<sup>26</sup>. This public life is supported by a distinct place of appearance, which relies on community members coming together to act on public matters<sup>27</sup> and, in the context of this research, local concern. Using the writing by Atelier Bow-Wow, Arendt, and Latour as analytical tools, the Japanese public school in its original state can be considered, despite government motives directed towards social responsibility and communal concern, an example of anti-plural space that facilitates controlled behavior. The school is part of a greater network of societal ideals propagated by MEXT: ideas which this research seeks to challenge as these spaces are adapted for new users and new norms such as enabling women and the elderly to work more consistently, and places where Japan's rural communities can celebrate their "uniqueness".

This research examines the possibility of architectural interventions in Japan's haikō that aim to expand on the fading knowledge (processes and traditions) of its surrounding region. This is exercised through proposals implementing local production bound to the unique characteristics of the physical landscape and designing spaces for public interaction in selected sites. The industrial programs include educational saké brewing facilities, wood processing and manufacturing and agricultural labs. These industrial activities overlap with other social and public ventures. The selection and design of these programmatic opportunities was informed by fieldwork in each site.

Inevitably, the designs propose a change of meaning for these buildings: schools that previously represented a national approach to education and identity are re-appropriated to accommodate highly specific programs bound to their local community. This will change the current anti-plural structure of the building in order to imagine new collective futures and subtle social infrastructures that empower historically under-represented groups, such as working mothers and the elderly. The projects envision a new network of relationships between a region's natural resources, production facilities, distributors, consumers, farmers, manufacturers, and architects.

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26 Hannah Arendt, *The Human Condition*, 2nd ed. ed. (Chicago: University of Chicago Press, 1998).

27 Ibid.

## The Vacant School and its surrounding network of actors

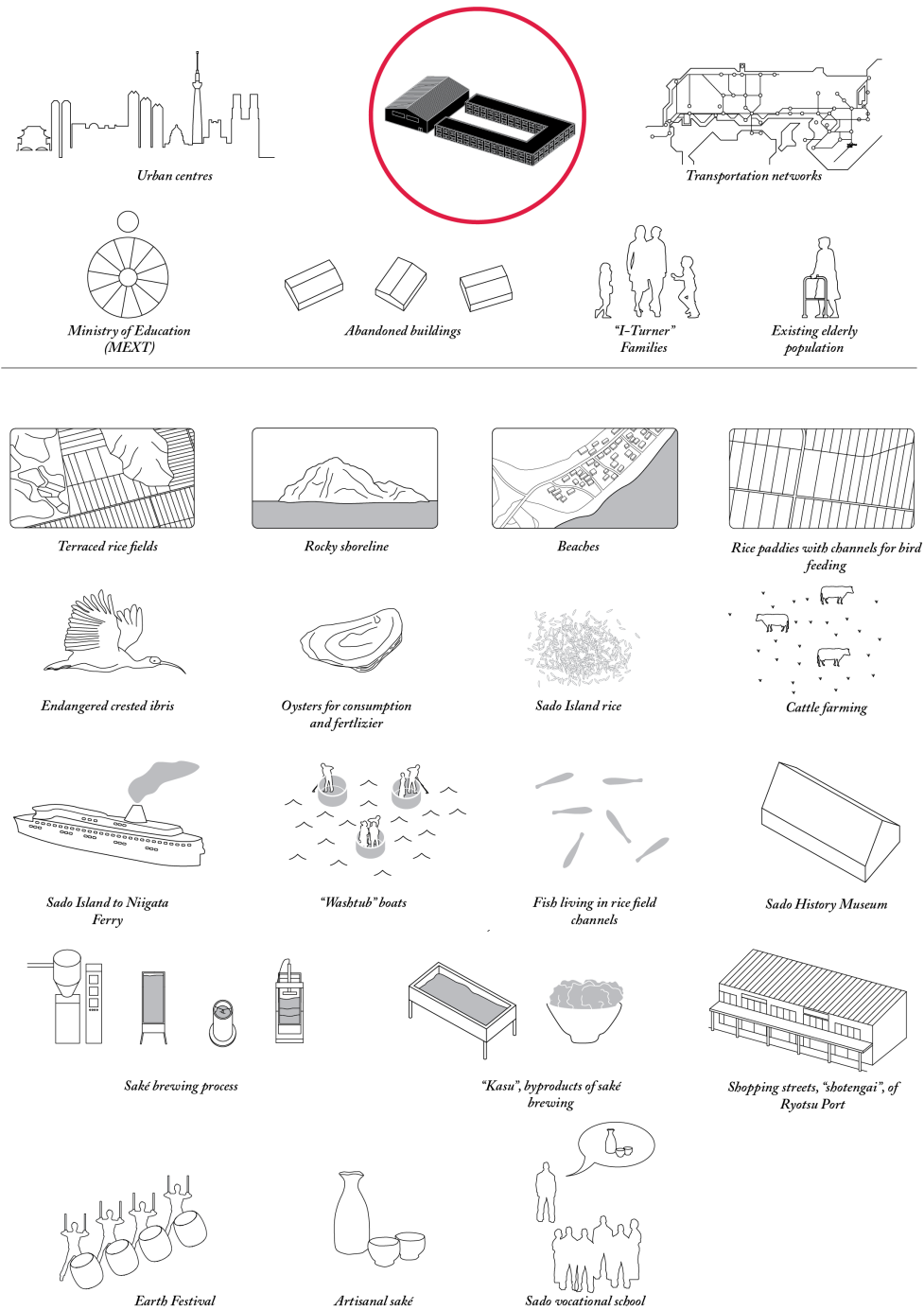


Figure 1.18: Diagram of the stakeholders of Sado Island, illustrated the application of Actor Network Theory to the context research; processes, animals, people, events and institutions are given equal value in considering design proposals for each site.





**CHAPTER 2**  
**Architecture's Role in Degrowth**

## 2. Architecture's Role in Degrowth

### 2.1 Posturban Japan as a Place of Experimentation

*The office of dot Architects is small and homey; a group of designers work tucked away in a repurposed industrial compound in Osaka's historic shipbuilding district. A large steel shed has been divided into smaller workshops and studios, and large piles of wood and metal create meandering pathways through the complex.*

*I sit at the modelmaking table in the small office with Toshikatsu Ienari, principal of dot Architects.*

*Ienari-San has focused much of the work of his office on areas in Japan undergoing depopulation. We speak about his project, Umaki Camp in Shodoshima, Kagawa Prefecture, and the work he does more locally in the neighborhood that the office is situated in – Suminoe Ward– which is also experiencing the common effects of depopulation. Like many areas, half of the residents of Suminoe are elderly citizens living alone, there is an abundance of akiya and an overall lack of collectivity<sup>28</sup>.*

*We speak about how architects working in these conditions can design and build in ways that a local community can establish meaningful relationships with a project. We discuss how these places operate in a different way, especially if they are located outside of the city, in terms of time and daily life. “This different pace and scale create opportunities for architects to push the boundaries on what can be considered part of a design project,” Ienari-San says. “It can also be up to the architect, who has spent time learning about the needs of a particular group of people, to add other important things.”*

*We are flipping through photos of Umaki Camp, a multi-purpose community space. We stop on a picture of a goat. “We designed a goat pen and brought this goat to live at Umaki Camp, because buildings are boring when it's just people that occupy them.” Ienari-San says, laughing. “They took turns feeding it, and it became a kind of social condenser because people would talk to each other about their concern for this goat. Architecture can make those kinds of opportunities for people.”*

A large portion of architectural discourse and practice responds to urban growth and technological advances associated with the city. How can architects adapt their skill sets and use design thinking to support rural lifestyles with significantly different values from cities? Can architecture facilitate a “slower” daily life instead of a rapidly productive future?

Additionally, how can urban dwellers adapted to the characteristics of city life be inspired to move to rural villages? While some published interviews with residents of villages describe scenarios where people moved back to their hometowns after attending university or working in cities for a number of years, predictive demographics indicate that more urbanites will need to move to the countryside to avoid the complete disappearance of most communities<sup>29</sup>.

In 2018, the Canadian Centre for Architecture (CCA) developed a project called *Islands and Villages* with Kayoko Ota, editor of the book *Project Japan*<sup>30</sup>, which was a collaboration between Rem Koolhaas and Hans Ulrich Olbrist on metabolist

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28 Julia Nakanishi, Interview with Architect Toshikatsu Ienari, June 18, 2019a.

29 Matanle, “Coming Soon to a City Near You! Learning to Live ‘Beyond Growth’ in Japan’s Shrinking Regions,” 187-210

30 Rem Koolhaas, Hans Ulrich Olbrist and Kayoko Ota, *Project Japan: Metabolism Talks...* (Germany: Taschen, 2011).



*Figure 2.1: Umaki Camp, Shodoshima*

architecture. *Islands and Villages* strongly contrasts the era of metabolism in Japan. The project consists of essays and documentaries that feature architects typically practicing in the city in the unfamiliar context of depopulating rural areas. In her essay *The Posturban Phenomenon*, Ota states that these conditions provide “a new testing ground that involves reclaiming a process of understanding society through elaborate research, defining needs with residents and envisioning the various forms that a solution could take”<sup>31</sup>. The Japanese countryside is described as a space for “unconventional measures and experimentation, beyond the administrative frameworks and capitalist logics of urban centers” by Ota, and in this way, “post-urban space”<sup>32</sup>.

Four architecture projects were featured as a part of *Islands and Villages*. One was *Umaki Camp* by dot Architects, and another was *The Fishing School* by Atelier Bow-Wow. *Umaki Camp*, as described, is a multi-purpose community space that designed to accommodate existing festival traditions in the village of Umaki. The building, designed and constructed by dot Architects, was developed through both formal community meetings and informal sessions between architects and residents. The materials for the buildings were locally sourced and processed on site, often with the help of the community members. The white stones and burnt cedar are recognizable emblems of Shodoshima. Toshikatsu Ienari stated that the informal assistance they received from the residents of Umaki was an unexpected but significant way for architects to conduct research on the needs of their users. Using the research, the architects drove the program of the project; dot Architects established public events and uses for the spaces that harnessed existing cultures and created new ones. The decision to design a community kitchen came from an existing culture of *tabedasuke*- which translates to “helping to eat”, where residents of Umaki share excess produce from their gardens with their neighbors. The kitchen created a place for residents to cook with their surplus vegetables together, something that everyone had been “too shy” to do before, as well as a public repository for extra food<sup>33</sup>.

Similarly, *the Fishing School* by Atelier Bow-Wow in Momonoura, Miyagi Prefecture was much more than the space and construction. The architects were heavily involved in the design of the curriculum of the school, which was intended to revitalize the fishing industry of a village heavily impacted by the 2011 tsunami. The “curriculum design” involved developing course materials, graphics and community events, all through in-depth interviews, workshops and time spent on-site in Momonoura<sup>34</sup>.

As discussed by Ota, much of this work incorporates unprecedented workflows that involve detailed research and design thinking and does not always manifest itself in physical tectonics. The designers in the examples are working to create different kinds of structure supported by the design of space, a process that involves a multitude of methodologies. As stated in the *Posturban Phenomenon*, the rural contexts of the projects allow for unstructured experimentation for different ways of working and the possibilities of “degrowth architecture”.

The research of Hiroto Kobayashi, professor at Keio University and principal at

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30 *Dot Architects in Shodoshima*, Film, directed by Kayoko Ota (Tokyo, Japan: 2018)

31 Kayoko Ota, “The Posturban Phenomenon,” *The Canadian Centre for Architecture*, no. Islands and Villages (2018). <https://www.cca.qc.ca/en/articles/issues/26/what-about-the-provinc-es/56455/islands-and-villages>.

32 Ota, “The Posturban Phenomenon

33 Julia Nakanishi, Interview with Architect Toshikatsu Ienari

34 Ota, “The Posturban Phenomenon





*Figure 2.2: The community kitchen at Umaki Camp.  
Figure 2.3: The traditional doma kitchen in the Tané House*

Kobayashi Maki Design Workshop, also follows processes similar to those featured in *Islands and Villages*. However, while dot Architects and Atelier Bow-Wow have executed their design work and research in multiple locations in Japan, Hiroto Kobayashi's research on depopulation is uniquely rooted in one site, the Tané Valley of Shiga Prefecture. Hiroto Kobayashi's relationship with the community of Tané has been evolving for over ten years and has consisted of design projects and annual workshops with his students and members of Tané. The design work has been kept light in terms of physical intervention and has focused primarily on the ongoing renovation of a large old house in the village instead of the construction of new buildings.

The house, referred to as *The Tané House*, is built with vernacular construction techniques of the area and is located in the middle of a traditional Japanese agricultural landscape of rice paddies bound by forest. Hiroto Kobayashi's lab at Keio University has made incremental changes to the house with the intention of it becoming a flexible community centre. The workshops organized by the Kobayashi Lab bring high school and university students based in Tokyo to *The Tané House*, with the aim to educate visitors as well as local youth on cultural events and activities important to the region<sup>35</sup>. These workshops often involve round-table discussions with people of all generations on the rapidly declining population of Tané.

I visited the Tané House as part of my fieldwork in Japan with some of Hiroto Kobayashi's students. We slept on the *tatami* of the common space, cooked meals in the traditional *doma* kitchen, and held informal discussions with local residents that visited the house during our stay. It was June, which is onion-harvesting season, and we were gifted with bags of sweet, fresh onions along with friendly conversation. These warm and casual exchanges highlighted the strong relationship that an architect with no personal connection to rural Japan had developed over a long, dedicated period of time. It was a reminder that when developing a project like Hiroto Kobayashi's, social responsibilities to a number of people are a part of practice.

*Umaki Camp, the Fishing School* and *the Tané House* all aim to incorporate strategies for sustaining the socio-cultural values of local communities. In a country where so much knowledge is directly tied to rural regions, solutions for restoring them are becoming increasingly urgent. As illustrated in *Part 1*, *critical regionalism* is one framework for developing an argument for local cultures. Kenneth Frampton suggests that critical regionalism can be achieved by redirecting the attention from visual stimulus, propagated by the metropolis, back to the physicality and materiality of our environments. Life in cities is framed by similar built environments that serve as products of globalism, while rural life is characterized by the unique relationships a community has with local conditions<sup>36</sup>. Through different combinations of educational, industrial and social programming, the projects of *Islands and Villages* and the Tané House find ways of allowing local life and culture to continue to develop despite the degrowth circumstances. In similar ways, the design projects of this thesis aim to highlight local relationships through different types of program. The programming of the re-inhabited schools explores different proportions of industrial/economic, cultural and social activities.

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35 Julia Nakanishi, Interview with Hiroto Kobayashi, May 30, 2019.

36 Jacky Bowring and Simon Swaffield, "Think Global, Think Local: Critical Regionalism and Landscape Architecture," *Landscape Review* 9, no. 2 (2004), 1-12. <http://search.proquest.com.proxy.lib.uwaterloo.ca/docview/1609296684?accountid=14906>.



*Figure 2.4: People gather outside the Tané House for a workshop*



The haikō provide a potential site for remediation, due to the existing, environmentally resilient infrastructure and their place in the local imaginary. In addition to addressing programs that could be implemented in the school buildings to stimulate local economies, culture, and knowledge, it is important to address the significance of the embedded meanings of these schools when designing for adaptive re-use. The schools in their existing condition evoke a national narrative of school culture common to every Japanese citizen.

In understanding the initial intentions, it is critical that we address the need for a more local approach of sharing knowledge in a way that can sustain cultural processes and production. Through specific educational and productive programs, communities can re-establish relationships with their surrounding landscape, and in doing so, reinforce personal identities.

Using a similar mixed-methods approach to the previous examples, the design research seeks untapped opportunities for micro-economies, education, and community interaction and the potential of new programmatic overlaps. The buildings are designed to be microcosms of different community elements and demonstrate alternate futures for each region. With different emphases on social interaction, culture, and economy in each, the intention of each “demonstration” is to imagine that the project would promote the movement of urban families and young adults to rural areas to the point where the sharp population decline of each study site is slowed down. Additionally, the re-incorporation of women as critical agents in the economic, social and cultural life of these communities is a central agenda of this thesis. Through designing spaces that reflect developing government initiatives for working women, the re-use proposals envision how rural family lives might evolve. Some examples of these programs and spaces include daycares, community kitchens, shared household and professional duties and other social infrastructures. These projects, in effect, offer modest demographic and economic counterpoints to the narrative of decline currently shaping these communities.

The Ministry of Education has acknowledged the opportunities offered by vacant school buildings, and a number of re-use projects already exist and are underway. In 2010, the *Haikō for the Future Project* was launched as an effort to educate Japanese citizens on how the schools could be used in economically and socially beneficial ways<sup>37</sup>. A publicly available document was created that provided examples of existing and potential re-use projects, as well as an online database identifying vacant schools that are safe and suitable for re-occupation. The document is routinely updated, providing photo documentation of each reported haikō, a local contact person, site data and written descriptions.

While travelling in Japan, I visited a number of existing re-use projects, both in rural and urban locations. One particularly successful project was the *Hota Road Station*, a vacant elementary school renovated into a complex of restaurants, a farmer’s market, hotel and community spaces in the seaside village of Kyonan in Chiba Prefecture. The architectural interventions consisted of interior retrofitting, the addition of a semi-conditioned winter garden along one façade, and new cladding on the original gymnasium building which had been converted into a market. The amalgamation of a number of programs meant that people of different demographics were using the building. People from the community were visiting the building as part of a regular routine, shopping for groceries at the market and occupying the workspaces for various

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37 “Haiko for the Future,” accessed May 15, 2019, [https://www.mext.go.jp/a\\_menu/shotou/zyosei/1296809.htm](https://www.mext.go.jp/a_menu/shotou/zyosei/1296809.htm)



*Figure 2.5: The farmer's market at the Hota Road Station. The original gymnasium building of the school has been re-clad in polycarbonate panels.*



*Figure 2.6: The addition of the engawa, or winter garden on the second floor of the Hota Road Station creates a covered walkway on the ground floor. The businesses that occupy the ground level use this space for small vending stands.*





*Figure 2.7: Typical hotel room in the Hota Road Station.*


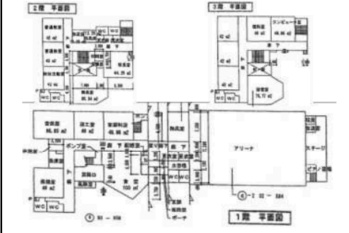
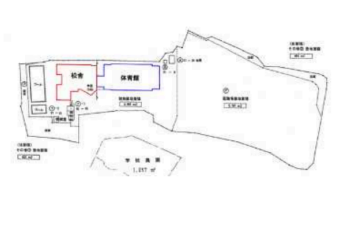
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		<a href="http://www.city.hirakawa.lg.jp/">http://www.city.hirakawa.lg.jp/</a>				
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		H9	校舎1,580 体育館670			
		校舎 体育館 運動場	校舎3 体育館1			
校舎等の外観写真		校舎等の平面図		校舎等の配置図		
						

Figure 2.8: A page from the database of “available” haikō, established and managed by the Ministry of Education



*Figure 2.9: The engawa, semi-conditioned addition to the original structure. The space functions as a flexible community space.*



cultural classes (calligraphy, painting), and visitors on tour buses were occupying the restaurants and staying at the hotel.

*Arts Chiyoda*, is another a successful public space that has changed the atmosphere of a downtown Tokyo neighborhood. The building's programs consist of artist studios, galleries, creative office space, a library and a café, and the ground floor is made entirely public. Many of the original walls of this level have been removed, and the original classroom furniture is distributed for flexible seating. It was unusual to see Tokyo salarymen lounging on school benches and watching YouTube videos at wooden desks while on their lunch breaks. Outside, people in corporate attire organized picnics on the grass and were lying in the hot sun. These examples of individual public expression were positive; however, each project was relatively minimal in its level of architectural intervention. In most cases, this is likely due to financial limitations, but some questions that emerged while documenting each case study were the possibilities and potential meanings of manipulating the school structures further.

As mentioned earlier in the text, this design research positions itself in a time where many forces are at play in Japanese society. Values are shifting in terms of lifestyle, gender roles, family structures and economic growth. The schools themselves are in many ways representations of traditional values that have remained unchanged in Japan post World War II, and the re-use projects proposed in this thesis are considered as an opportunity to de-stabilize the political symbols embedded in the buildings. Degrowth prompts a shift in thinking in Japan, and the design projects explore how architecture can play a role in displaying that change to communities.

## 2.2. Assumptions and Reflexive Statements as a Designer Working in Sites of Degrowth

As someone who grew up in downtown Toronto, Canada, and spent significant time in the suburbs of Chiba City, Japan, I did not have an existing personal relationship with rural and village life. My professional architectural experience is limited to urban settings and having not experienced agricultural activities first-hand, I hypothesized through theoretical research that these traditional practices have an intimate relationship to the landscape and residents that is worth preserving.

I grew up with strong ties to Japanese culture, language and family, but having been raised primarily in a Western setting, I conducted my fieldwork with the perspective on an outsider. Despite having a strong cultural base and language skills, I acknowledge that my ability to fully absorb the cultural nuances in each place is limited. Additionally, due to a more generalized understanding of Japanese culture, it is possible that there are undiscovered, valuable customs in each site that are not represented in this text and design work.

As an architecture student that has had the opportunity to receive post-secondary and graduate education as well as the ability to travel to remote areas in Japan, I am aware of certain advantages between depopulated Japanese communities and myself. It is important to me that this thesis, through background research that involves direct contact with the communities in question, does not take on the tone of a protagonist. In other words, my intention is not to assert myself within these communities as a privileged problem-solver in a socially and economically sensitive context. I hope to, as much as possible, use architecture as a unique approach for facilitating and reinforcing existing processes and relationships.



*Figure 2.10: The ground level of Arts Chiyoda. The space is full of people working in nearby office towers taking lunch breaks.*



**CHAPTER 3**  
**Methods and Fieldwork Findings:**  
**Community Conversations and Documenting Degrowth**

### 3. Methods and Fieldwork Findings: Community Conversations and Documenting Degrowth

#### 3.1. Community Conversations: Needs and Aspirations

To protect the privacy of research participants, pseudonyms have been used to name the community members interviewed in *Part 3* and *4*.

*Travel Log*  
*Kamiyama, Toksubima*  
*June 25, 2019*

*“When I was growing up, people from the city shamed people from the countryside. There was a word for it – inakamon – which translates to “country person”. This word holds a lot of negative weight. There was this idea everyone had that you weren’t worth much if you didn’t make something of yourself in the city. The good jobs that made good money were tied to good universities, and all these opportunities were in Osaka or Tokyo. Everyone tried their hardest to leave. I did the same, but at some point, I had to come back. It’s easy to feel isolated and alone in the city. It’s dense and loud, and no one has any idea who anyone is. Here, we all know each other, rely on each other and keep up with each other. Having communal trust is a better way to live, in my opinion.”*

*–excerpt from a conversation with Town Council Chairman of Kamiyama*

The research methods of the thesis can be broken up into three sections: context research on schools and rural degrowth in Japan, fieldwork which consisted of interviews with communities and site analysis, and design application. The background research on Japan’s depopulation crisis, regional identities, and political history of public schools was conducted through a mixed-methods approach that incorporated qualitative cultural studies and semantic ethnography methods. The cultural studies approach used both theoretical and empirical analyses<sup>38</sup> and was applied to understanding rural depopulation through data as well as theories relating to urbanization and critical regionalism in a Japanese context. This supported the analysis of cultural meanings of public schools using Arendt’s theory of plurality and Latour’s Actor Network Theory (ANT). These analyses were illustrated pre-fieldwork through mapping the existing social and physical relationships, networks, and stakeholders at the scale of the school building and its surrounding landscape. These maps were important tools to develop before travelling to each site and laid the groundwork for the narrative of each place. The narratives and histories of each were illustrated further through interviews and data collection in each physical location.

Demographic data and speculative narratives that emerged through the cultural studies methods led to the selection of three sites, each with a distinct context. The sites exemplify the diversity of Japanese landscape as well as regional cultures. The fieldwork was conducted using a semantic ethnographic approach. This included conducting in-person documentation and semantic ethnographic interviews with members of town councils, farmers, craftspeople, and individuals working in tourist industries. Semantic ethnography involves active listening techniques to obtain knowledge provided by

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38 Michael Pickering 1957-, *Research Methods for Cultural Studies* (Edinburgh: Edinburgh University Press, 2008).



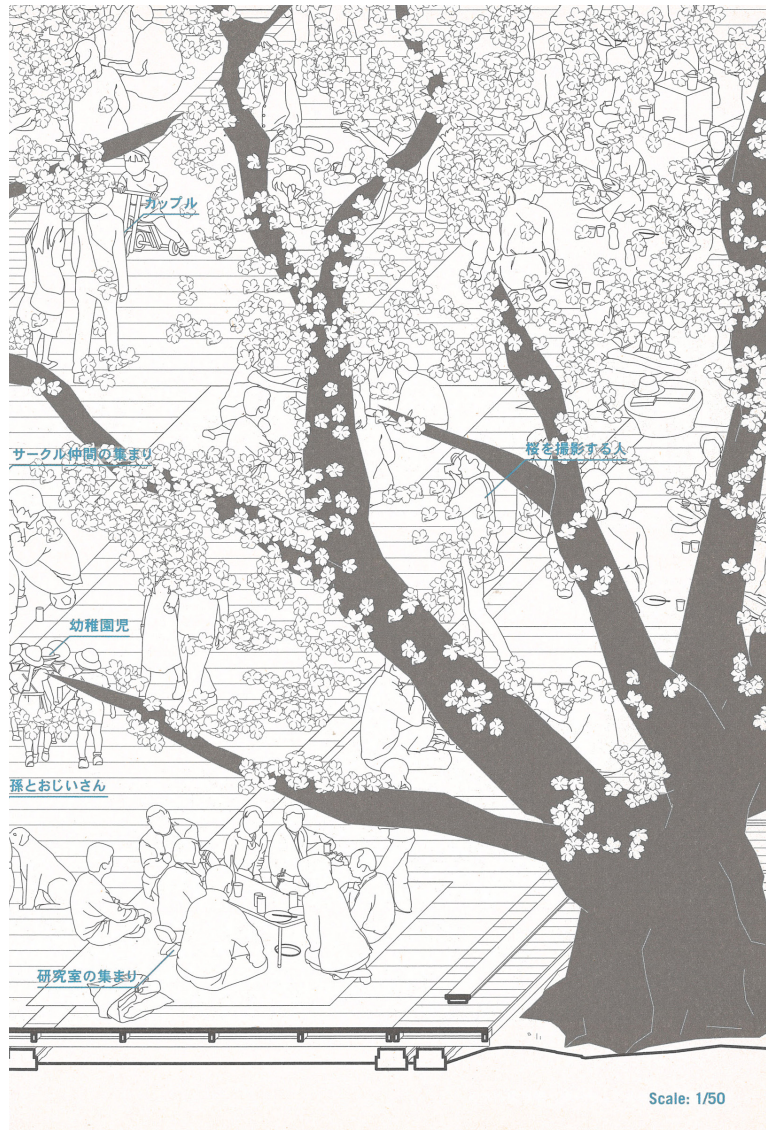
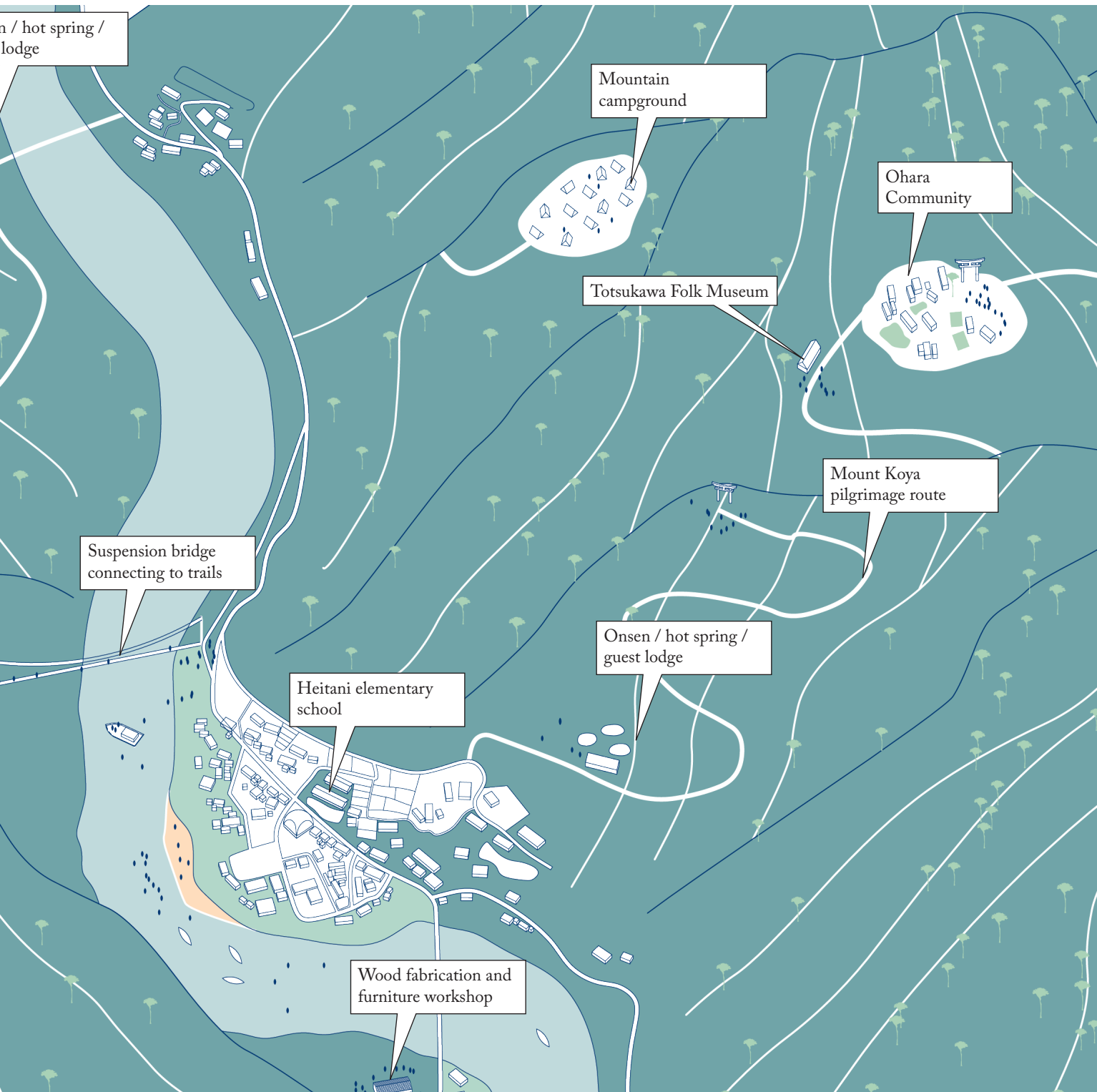


Figure 3.1: A drawing from the book “Commonalities” by Atelier Bow-Wow, annotating the behaviors and patterns of occupants visiting the grounds of the Tokyo Institute of Technology during cherry blossom season.





Figure 3.2: A preliminary site map, produced to experiment with graphic techniques that would communicate narratives about a community's culture and geography



people about their own culture<sup>39</sup>. These techniques help to uncover underlying spatial patterns that emerge in an individual's way of speaking that then allow for creative interpretation. These patterns, which consist of routes, particular rooms, objects, and characteristic places illustrated specific relationships that each community has with their rural landscape as well as their abandoned public schools.

These findings informed the design proposals in each site in various ways. One such finding was the way in which participants from all three towns described the idea of "gathering". When prompted to provide observations and opinions on the impacts that depopulation has had on their community, interviewees frequently mentioned the lack of spaces that provided opportunities for "gathering", or the decline of them as younger residents leave for cities and people age. Despite this, participants from each village described unique forms of conviviality. For example, participants from Kamocho explained their knowledge of the *irori*, fireplaces in traditional rural dwellings. The *irori* is a hearth that functions as a stove and is designed in a way that people can sit around it on all sides while meals are prepared. Learning from these traditional forms could help in designing community-relevant public spaces that attract people of all generations, such as one that incorporates eating, cooking, and sitting by a fire together.

Conversations with local residents in each site also included the experiences of young parents and other individuals who had moved back home or to rural locations for the first time after living in cities. The popular opinion was that the countryside provided a healthier and more relaxed setting for raising children along with a distinct relationship to the surrounding physical environment that felt nonexistent to most people in Japanese cities. One participant, a textile maker in Kamocho, reflected on her rural routines: "It was important for me to be able to teach my daughter about how the food and items of our daily lives are made. The rice that we eat is cultivated for a long time, watered for a long time, and then it is harvested and processed. Those transitions and relationships are so visually present where we live"<sup>40</sup>.

This more integrated relationship with nature also coincides with the common practice of subsistence farming in rural areas. Subsistence farming in this case refers to households that satisfy most of their individual consumption needs through producing their own food, usually while pursuing other forms of employment or work. In conversation with a rice farmer in Kamocho, they stated: "life in the countryside provides enough time for self-sufficiency (producing your own food), as well as opportunities for many other creative projects and types of work. I farm, I occasionally do musical performances at local events, and I grow plants and flowers to sell"<sup>41</sup>.

The abundance of space – both in the landscape and the many vacant buildings, provide a platform for projects and experimentation that are less available in the city. The manager of a makerspace in Kamiyama stated, "We were able to reuse an abandoned electronics factory as a fabrication space and maker lab, and there is lots of space for us to work. As a community we are continuously finding new things to make and do, and perhaps the next step is to have a space that is flexible and responds to these different experiments and changing needs"<sup>42</sup>.

One of the questions when moving forward with the research is how to incorporate this qualitative data into each school re-use proposal. This is where an interdisciplinary architectural approach becomes important. The interview method

39 Cranz, *Ethnography for Designers*

40 Julia Nakanishi, Interview with Participant 01 from Kamocho, Okayama, June 20, 2019b.

41 Julia Nakanishi, Interview with Participant 02 from Kamocho, Okayama, June 20, 2019c.

42 Julia Nakanishi, Interview with Participant from 02 Kamiyama, Tokushima, June 28, 2019e.



*Figure 3.3: Author preparing foods for grilling on a farmhouse iroiri*

proved to be highly informative about the daily lives and needs of the people who would be the users of the proposed building. After the interview responses were transcribed, a chart was generated to translate qualitative responses into visual and spatial information that would contribute to the design process. The responses were organized in terms of the “work” of each participant, which included economic, cultural and social activities, such as farming, managing community initiatives, and raising families. Because the interview responses yielded important relationships between the “work” and the spaces needed (both practically and emotionally) for that work to happen, these places are represented visually on the chart.

The gathering of interview responses, which involved weeks of long conversations with community members, as well as in a way that can be applied to design, is outside of an architect’s typical design repertoire. Practicing skills in interviewing and connecting with strangers, forming parallels between the personal stories of participants and space, and proposing social events and industrial activities are all interdisciplinary skills required when designing architecture that addresses the needs of a particular community.

### 3.2. Documentation: Haikō, Landscapes and Behaviors

A large portion of the fieldwork was dedicated to different methods of documenting the effects of depopulation. The dissecting of spaces in Atelier Bow-Wow’s books *Commonalities* and *Windowscape 3* were used as references when making analytical drawings during the fieldwork phase. The drawings in *Commonalities* include particular detail and annotations regarding the materials, landscape and architecture of each place, and how users interact with each element. *Windowscape 3* uses similar techniques but focuses on drawing material processes in Japan’s traditional industrial workspaces. These examples highlighted important details to record while documenting sites and program from the perspective of an architect. While producing drawings that used these techniques, it was found that the drawings, which highlighted local cultural characteristics, were a useful tool in the interview. A drawing that recorded traditional forms of agriculture in Kamiyama led to a long conversation about a participant’s childhood and growing up in the village: “People find it hard to believe that we grow crops like wheat in such extreme topography. But we’ve been making these stone retaining walls for years, hauling and using stones from the river.”<sup>43</sup> These experiences combining drawing and interviewing demonstrated the possibilities of different forms of communication between architects and the public.

In addition to practicing methods of drawing, the fieldwork also consisted of creating evidence of degrowth through photography. To make a case for vacant schools as abundant opportunities, drone documentation was used to document the many haikō found in each site, capturing enough information about a building’s state and context to form conceptual design proposals. The footage captures the large amounts of available space that the schools offer, and each structure’s unique siting. Sometimes located at the foot of a steep mountain or next to a river, the schools are often surrounded by distinct landscape features deeply valued by the people of each region.

This array of vacant schools provides supporting evidence for Japan’s depopulation phenomenon. They are emblems of the past and what might be to come.

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43 Julia Nakanishi, Interview with Participant 01 from Kamiyama, Tokushima, June 28, 2019d.





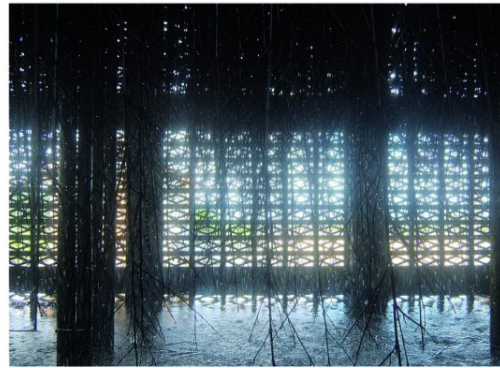
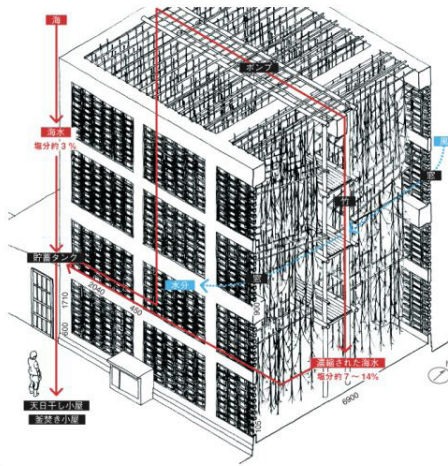
*Figure 3.4: Haikō in Sado Island, Niigata Prefecture*



### 沖繩海塩研究所 採かんタワー

● 沖縄県島尻郡粟国島

沖縄県粟国島にある製塩所。海水を濃縮させるタワーは、台風に耐えるため、鉄筋コンクリート造でできており、コンクリートの柱・梁の間にコンクリートブロックがはめこまれている。手作りで作った壁面の孔あきコンクリートブロックは風を通す窓の役割をしている。タワーの内部には沖縄恩納村で採れた竹が吊るされ、ポンプで上げられた塩分濃度3%の海水は、竹をつたってしたり落ちる間に横から吹く風によって水分が蒸発し最大で15%に濃縮される。濃縮後の海水は釜吹きか天日干しによって製塩される。



塩

Figure 3.5: Excerpt from “Windowscape 3, showing a dissection of a sea salt facility

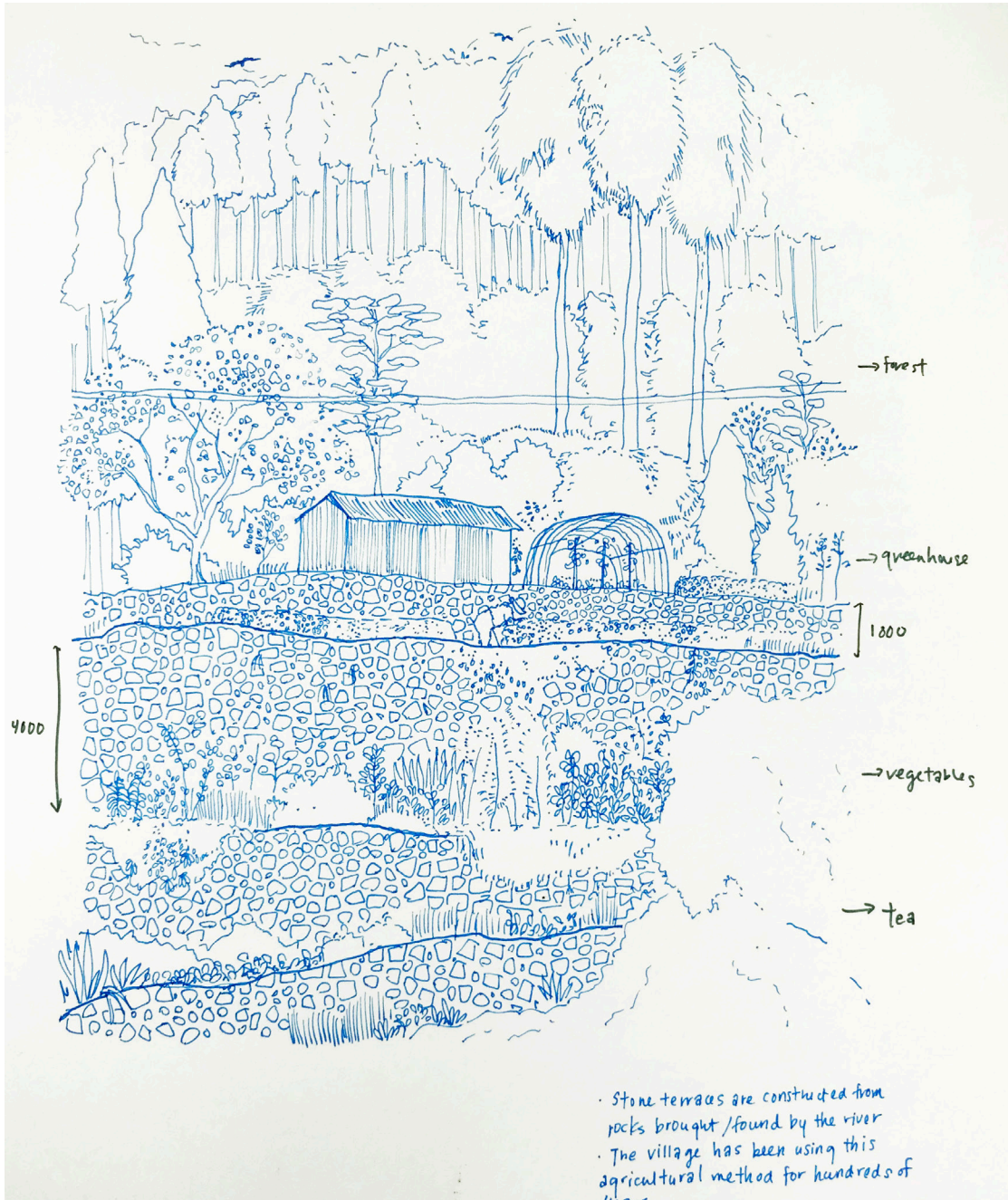


Figure 3.6: Annotated sketch of Kamiyama's agricultural retaining walls and landscape





*Figure 3.7: An elderly resident in Sado tends to a vegetable garden*



*Figure 3.8: An elderly woman walks on a deserted street in Mimasaki, Okayama*





*Figure 3.9: Examples of akiya, or houses vacant due to depopulation*





*Figure 3.10: A series of haikō in Sado Island, Kamocho and Kaniyama*





*Figure 3.11: A series of interior and exterior shots of haikō in Sado Island, Kamocho and Kaniyama*



*Figure 3.12: A series of interior and exterior shots of haikō in Sado Island, Kamocho and Kaniyama*





*Figure 3.13: A textile workshop in Mimasaki, Okayama: documentation from an interview with a textile artist*



*Figure 3.14: The process of making a scarf using the “itajime-shibori” technique. Here the wooden blocks are about to be clamped to the cotton cloth, which will create the pattern on the textile.*





*Figure 3.15: Author and local farmer in Kamocho Monomi, Okayama, tilling the soil of a rice paddy*



*Figure 3.16: The storeroom of Obata Shuzo Brewery in Sado Island, taken while touring the workspaces*





*Figure 3.17: Agricultural secondary school in Kamiyama, Tokushima*



*Figure 3.18: The Kamiyama Makerspace, which occupies a repurposed electronics factory*

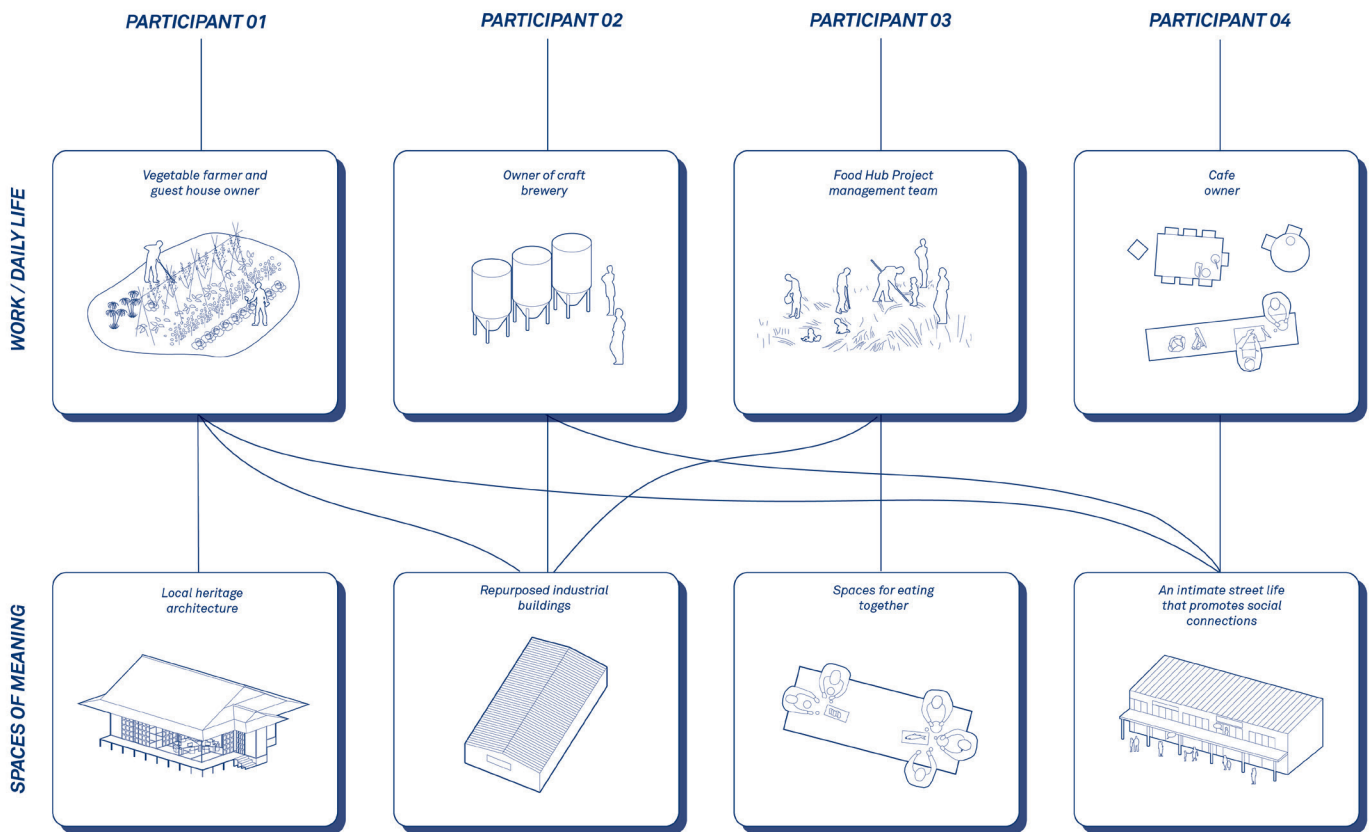


Figure 3.19: An example of a spatial interview chart, categorizing qualitative data based on the work and occupations of participants, and how this work is associated with particular spaces and landscapes. These relationships were then considered in the design proposals.





*Figure 3.20: Aerial of a typical farmhouse in Kamocho Monomi- the architectural form of the roof is an important icon for the community.*



**CHAPTER 4**  
**Design Applications:**  
**Three Villages, Three Design Projects**

## 4. Three Villages, Three Design Projects

As illustrated previously in the text, each site chosen for this thesis exemplifies ways in which local communities are working to slow down the predicted population loss. The following design proposals are provocations, as opposed to technical resolutions, that build on these existing efforts.

### 4.1. Sado Island Rice Village

*Travel Log*

*June 10, 2019*

*Sado Island, Niigata Prefecture*

*It only takes three hours to get to Sado Island from Tokyo. One bullet train that shoots through the forests of Gunma and an hour on a ferry bring me to an entirely new landscape, shrouded in mist. Driving to my hotel, I pass only a few cars and an elderly woman wrapped in a plastic raincoat, pattering precariously up a steep slope in an electric wheelchair. The scene is reminiscent of the photos in newspaper articles on depopulation I had read, which often depict an elderly person travelling alone in an empty landscape.*

*The streets consist of boarded-up storefronts, abandoned hotels and closed pachinko parlours. It's off-season, but most of these places look permanently vacated. A number of shops have signs that say things like, "thank you for fifty years of business". There is an unplaceable eeriness to the silence. The number of casinos, hotels, bars and restaurants make it seem like the streets were bustling with people only days ago. It's raining.*

*I pass the occasional farmer clad in raingear working in a field. Many of the paddy fields are large areas of exposed soil, meaning they are no longer in use. It's easy to tell which ones have been abandoned because productive rice paddies look like reflective pools brimming with water. In many places, the absence of people emphasizes how strikingly beautiful and unmarked the landscape seems: thick forests, vast, wild, fields and endless, untouched beach. Foliage reaches up on shuttered houses and shrines. It's as though the island is slowly eating up what's been left behind of a distant village life.*

I'm sitting in a café with Tanaka-San, who recently retired from his position in the Sado City Hall and now runs a tourist business, renting cars and renovating *akiya* into vacation homes. "There just aren't things for young people to *do*," he exclaims. "There are no universities, no stores that the young people like, no movie theatres or places to have fun. We've recently developed a satellite campus of for the vocational school in Niigata City, which has helped, but change in general is slow. People are bored here, and then they leave."<sup>44</sup>

The Sado Island Vocational School was established in 2008 as a way to promote regional crafts and skills to younger generations, and a response to the lack of post-secondary education on the island. One of the primary reasons for out-migration on the island has been to attend universities and colleges on the mainland. Most high-level education in Japan is focused on preparing students for types of employment than can only be found in urban areas, causing students from rural areas to secure jobs and lifestyles away from their hometowns<sup>45</sup>. Informants from Sado Island have also argued

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44 Julia Nakanishi, Interview with Participant 01 from Sado Island, 2019f.

45 Peter C. D. Matanle, *Japan's Shrinking Regions in the 21st Century* (Amherst, N.Y.: Cambria Press, 2011).





*Figure 4.1: A map showing Sado Island's location in relation to mainland Honshu and Niigata City, the closest urban area.*



*Figure 4.2: A small Shinto shrine on rugged rocks on the shore of a beach on Sado Island.*





*Figure 4.3: Two vacant houses side by side on a street in Ryotsu Port, Sado Island*

that the jobs found in cities are on average more secure, with better benefits and pay. “Rural life is a lot of hard, physical work!” a farmer declared in an interview by the *Shrinking Regions Group*<sup>46</sup>. “City people are shocked by how much more rigorous and demanding than sitting at a computer in an office day after day”. There is little incentive towards moving back to conduct physically intense labour, and the tourist industry of Sado often results in irregular employment.

The vocational school, a satellite campus of the *Niigata Sogo Gakuin*, which is located on the mainland of Honshu, provides education in traditional crafts and building construction as well as trades such as forestry and environmental management. While saké brewing isn’t incorporated in the vocational school’s program, local breweries associated with the Niigata Saké Brewers Association have established intensive courses open to the public to learn more about the brewing process, tasting and business opportunities around craft saké. Obata Brewery’s education program, “*Gakkogura*”, consists of a number of different courses of different lengths open to Sado residents, foreigners, and other visitors from across Japan<sup>47</sup>. Students learn the history of Obata Brewery’s signature “*Manotsuru*” saké and the ways in which every part of the process is made local. *Manotsuru* is a type of saké that has been produced with rice farmed using regional and sustainable methods; the fields are feeding grounds for *toki* that have been fertilized with local oyster shells<sup>48</sup>. The *toki* is an endangered bird and motif on the distributed *manotsuru* saké.

Similar to Obata, a number of Sado Island brewers are interested in educating future brewers as well as advertising their product with an environmentally symbiotic narrative. *Manotsuru* saké fits into a network of other human and non-human actors that includes the brewers, the traditional equipment used, farmers, rice paddies and the birds that live in the landscape. *Sado Rice Village* proposes a merging of the existing brewery-run saké-making courses with the Sado Vocational school and designing the classroom spaces in the same complex as related industrial spaces. The school site is located in *Hamochi*, an area of the island where organic rice farming has been thoroughly re-integrated, and the most sightings of the endangered *toki* occur.

Another more recent project within the saké brewing community is finding opportunities for re-using waste materials, such as the *beifun*, rice powder produced during the milling process, and *kasu*, a starchy rice paste that emerges during the pressing of the saké post-fermentation. Both of these by-products are base ingredients for a number of other Japanese traditional food products; pickles and other preserves, rice cakes, flours and other specialty goods. *Kasu* can also be used to produce fertilizer for rice farms, cattle feed, as well as other household products such as cleaning solvents. The skills and equipment needed for making these products are become increasingly less common, and *The Rice Village*, the design proposal for this region, incorporates facilities that produce these goods in a public and social setting. While providing space for traditional practices, adjacent programs that could potentially develop micro-industries in new ways are added. For example, rice vinegar can be produced in the same facility as saké, using the same fermentation process and tools. *The Village* would support the making of specialty vinegars that could be paired with the other agricultural production in Sado.

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46 Matanle, Japan’s Shrinking Regions in the 21st Century

47 “Gakkogura: School Brewery Project,” accessed November 10, 2018, <https://www.obata-shu-zo.com/home/gakkogura/gakkogura1eng.asp>.

48 Ibid.





*Figure 4.4: Two wild tiki feeding in a rice paddy near the haiko site chosen for the design project*

*The Village* is primarily an educational and demonstrative space with some economic output, where new forms of education and collective making would stimulate small rice-related businesses in the community. Through spatial organization, the cycle of rice cultivation, fermenting, waste management and re-use visible and accessible to visitors and members of the community. Additionally, a daycare is included in the project, with the intention of the early learning program to be strongly connected to the agricultural and processing culture of the complex, as well as the surrounding rice producing landscape.

The daycare, which is proposed in a time when paid childcare is still uncommon in Japan<sup>49</sup>, speaks to changing national policies. Is it possible that integrating childcare with workspaces and other educational facilities could change the way a community's views toward it? *The Village* imagines a scenario where mothers would be able to work in the vocational school, or the brewery or winery next door and take lunch breaks with their young children. The rice that is processed in the brewery is taken from the same plant that makes up the wall assembly of their children's daycare, and rice that is served at meals in the community kitchen. Could the accessibility of processes involving rice cultivate a new village life?

The architectural scheme of the project consists of cutting up the existing school building and inserting new volumes to create similar proportions to the existing village fabric on the island. The vernacular Sado villages are characterized by narrow alleyways that open up to shared gardens, and the project recreates this spatial intimacy. The metal sheeting of the large existing gymnasium is removed while leaving the roof structure behind, creating a trellised outdoor space. The trellis functions as a structure for hanging dried food and growing plants for shading. The space is then filled with smaller volumes that resemble houses in a village, each with a different function. The existing classroom building is split to create two smaller volumes and a passage to the rice storage building.

Programmed public spaces are inserted within the complex – such as a community firepit and a playful, productive landscape which are intended to develop new forms of recreation and revitalize old ones.

As Tanaka-San remarked in the interview, he feels there is a correlation between population loss and a particular lack of entertainment. That being said, everything that the island is “missing” – movie theatres, fashion boutiques, concerts, *kabuki* theatre – are all undoubtedly urban activities in Japan, geared towards consumption and popular culture. The design projects of this thesis respond to this idea of “boredom” that results from the lack of these particular activities, exploring different methods of recreation, work and daily patterns that contrast city life.

In *the Rice Village*, recreation, education, and industry overlap to create a productive, intergenerational environment. Is it possible that through these overlaps, a new sustainable way of life could emerge? Perhaps one that does not put fun, work, and family into different categories, but allows for a sustainable combination of them all?

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49 Rebecca M. Nelson and Emma Chanlett-Avery, “Womenomics” in Japan: In Brief,” *Current Politics and Economics of Northern and Western Asia* 23, no. 4 (August 1, 2014), 49-58.



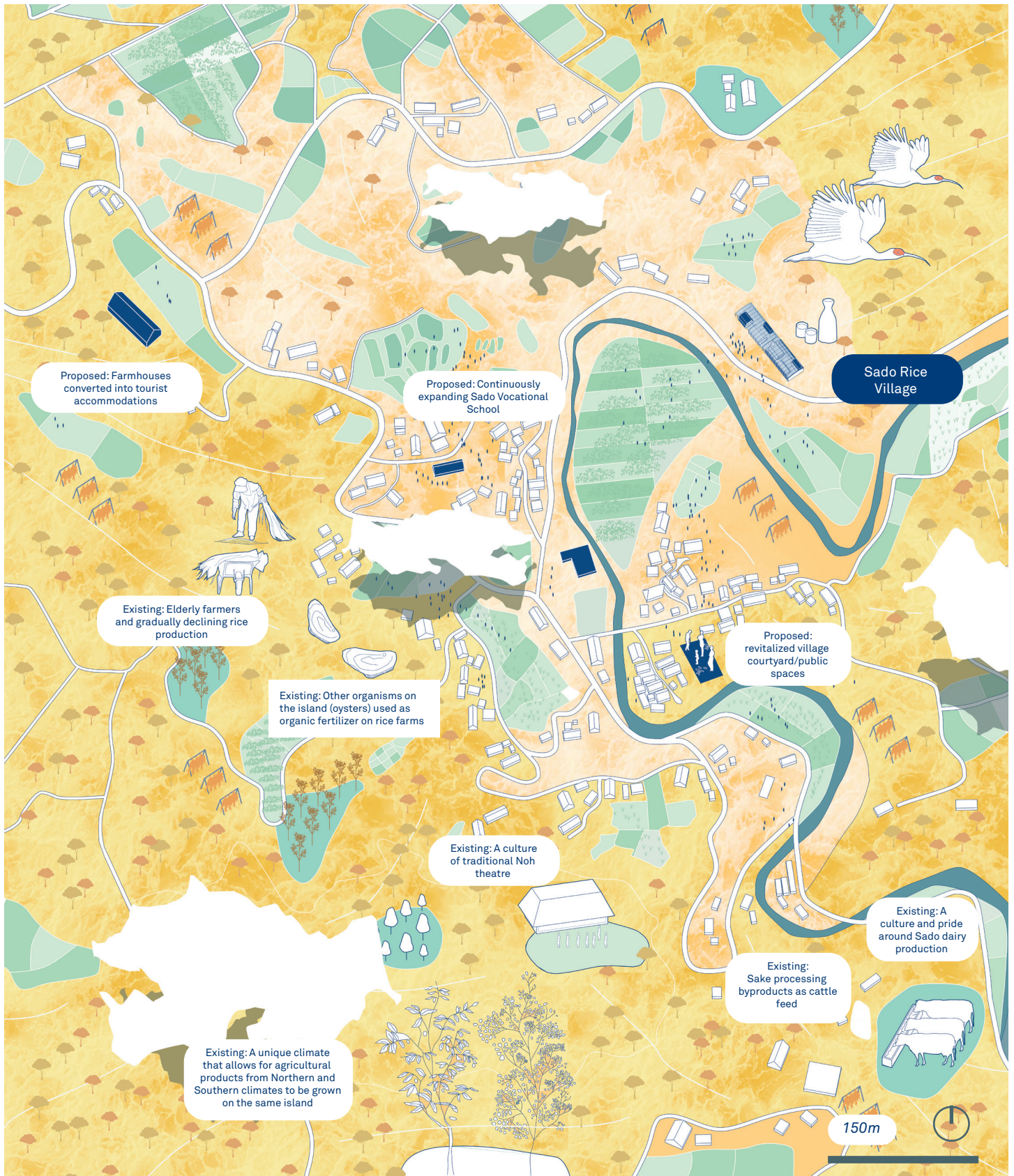


Figure 4.5: A site plan of the haiko site, highlighting existing cultural practices, values, and agricultural tradition, as well as proposed programs that would emerge with the re-inhabitation of the haiko





*Figure 4.6: Aerial image of the site in its current condition*





*Figure 4.7: The school in its existing condition*



*Figure 4.8: Axonometric showing current site conditions and relationships*

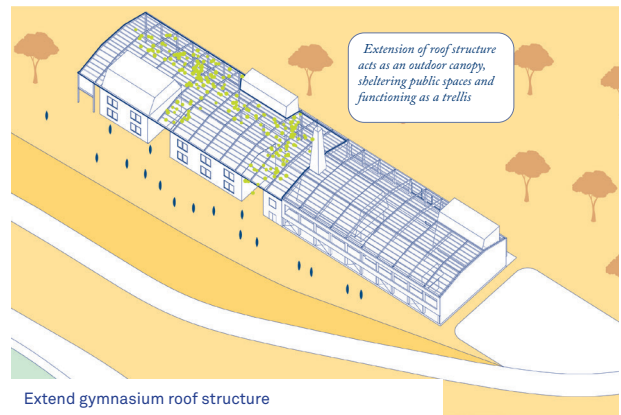
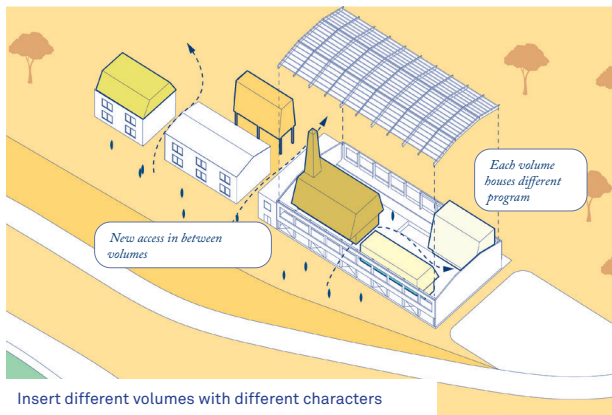
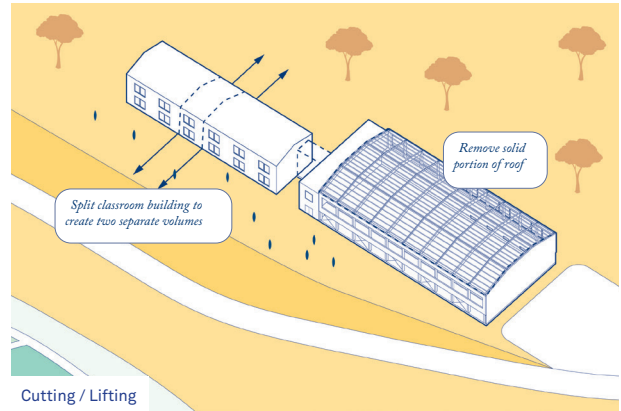
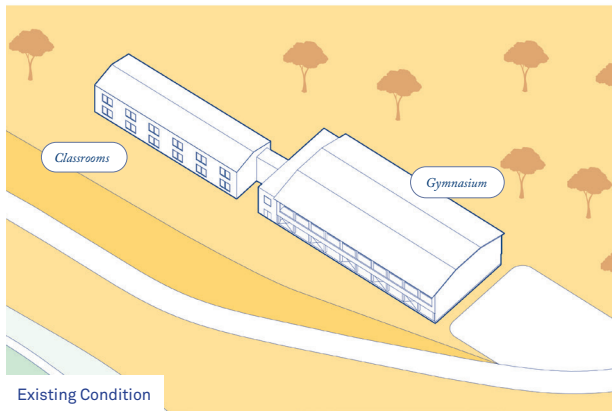
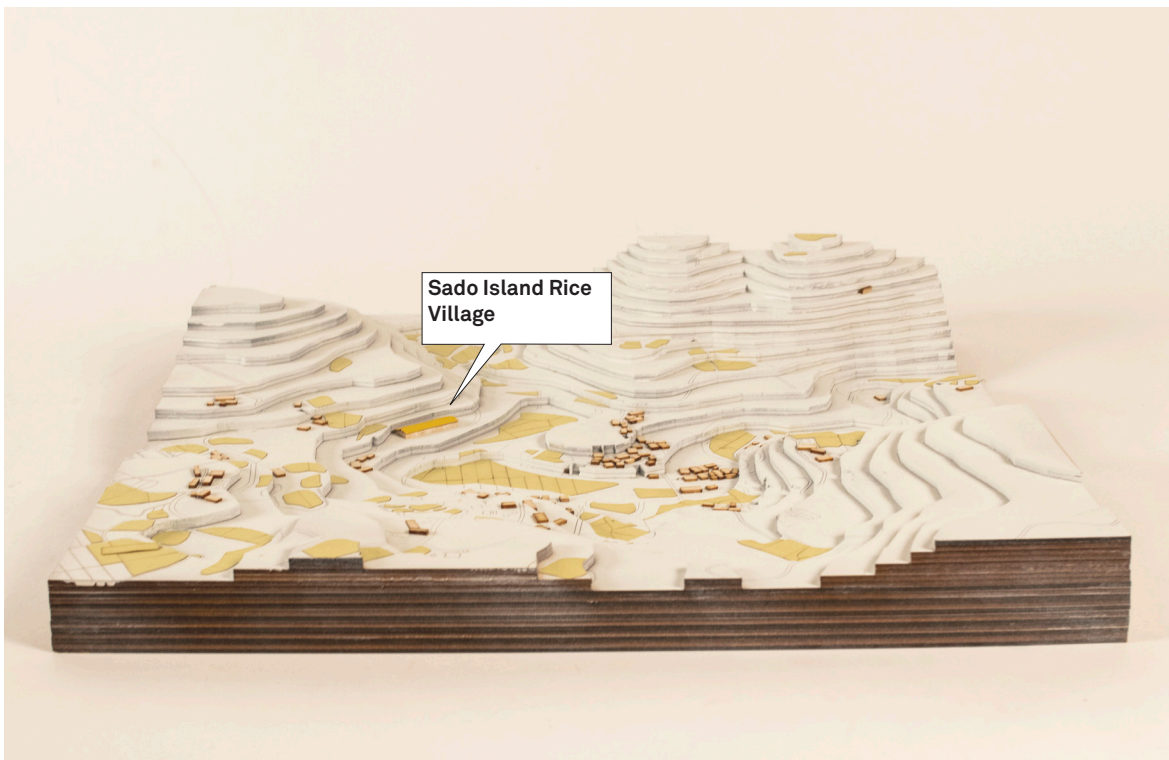


Figure 4.9: Morphology diagram outlining the architectural strategies for the re-inhabitation project



*Figure 4.10: 1:2000 site model showing context of Sado Island Rice Village*

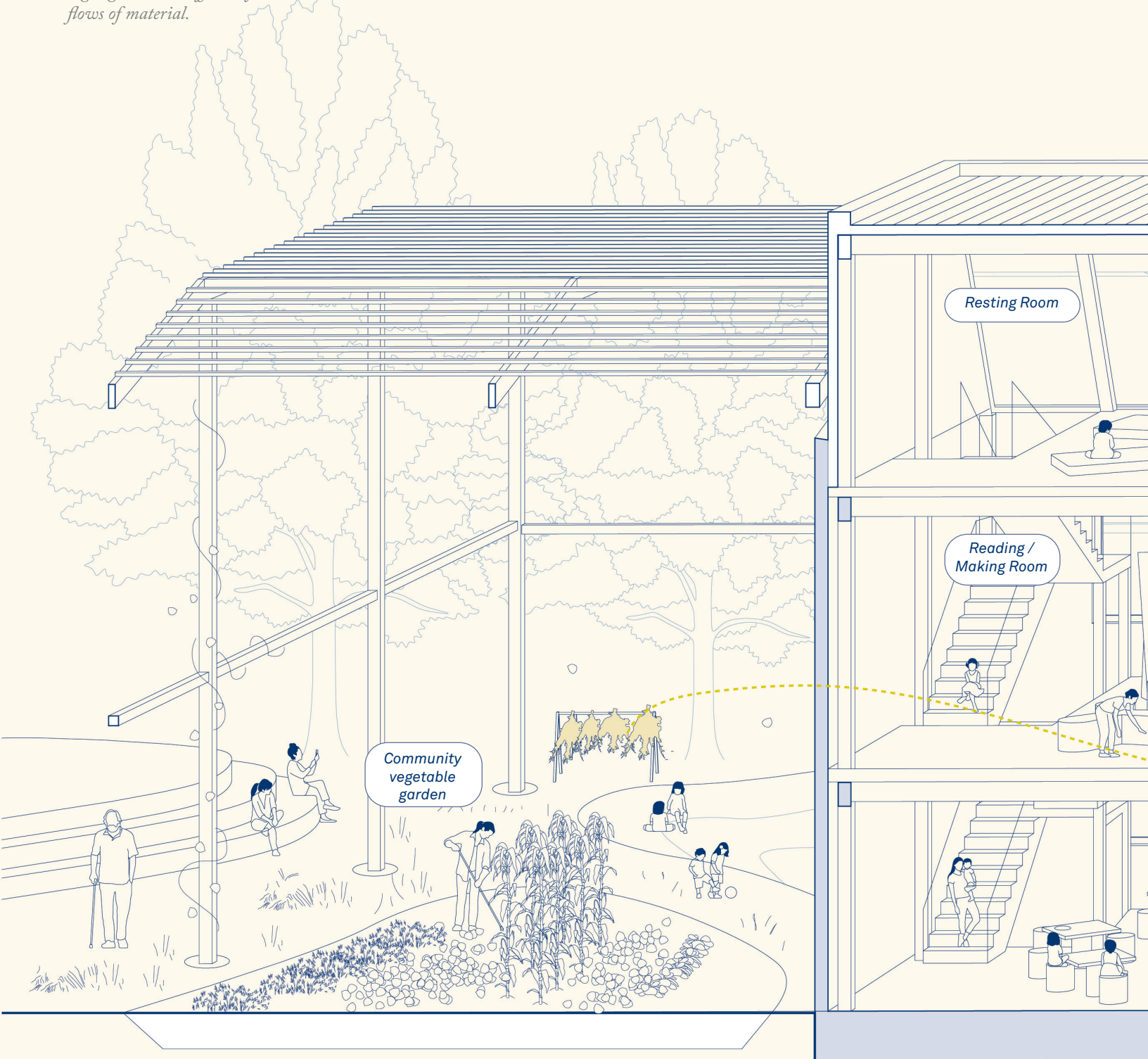




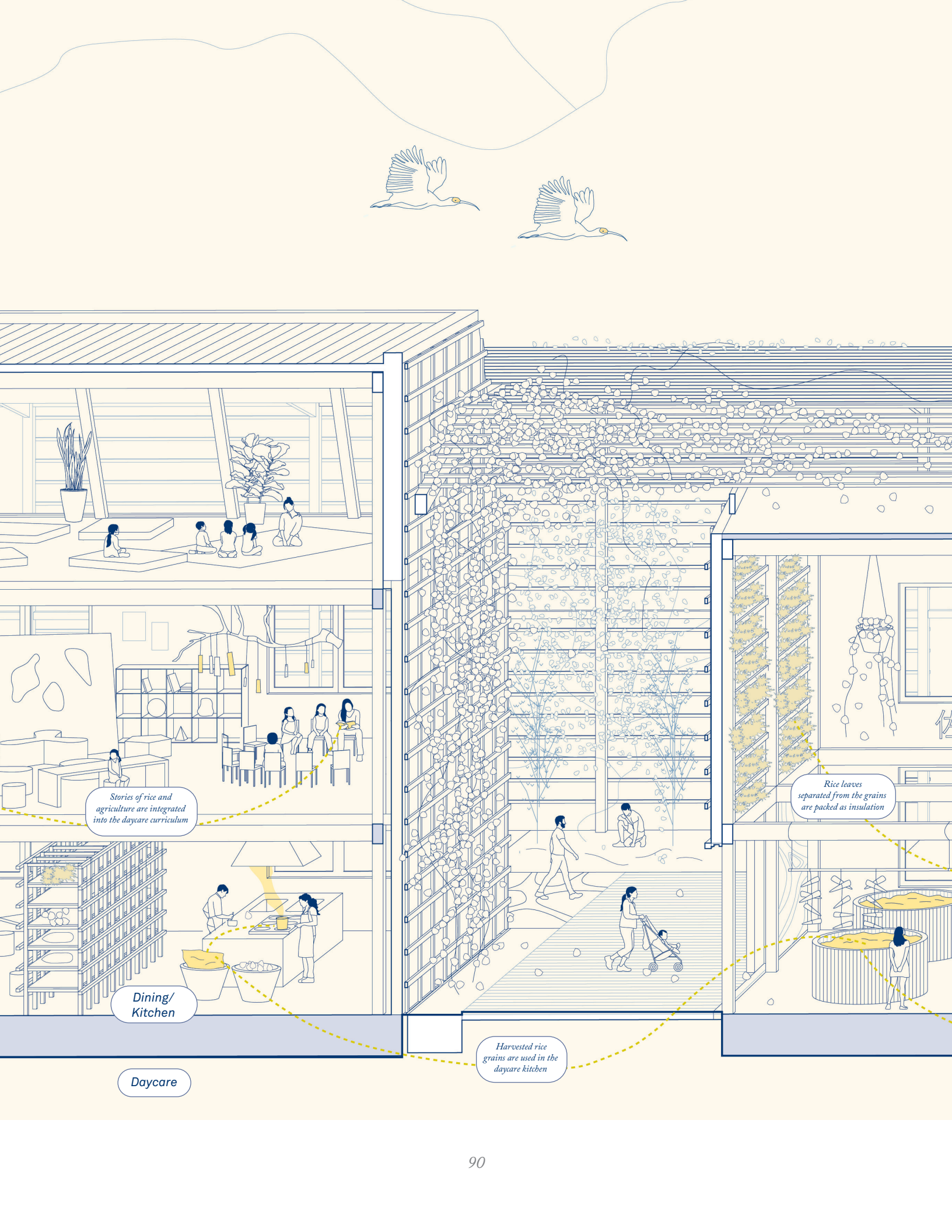
*Figure 4.11: 1:2000 site model: green patches depict surrounding rice paddy landscape*

## Finding A New Commons: Three Villages, Three Design Projects

Figure 4.12: Sectional perspective drawing of the design project. The areas that are hatched blue indicate the existing structure, and the white hatch indicates new construction. The yellow portions highlight rice in different forms, and the dashes lines illustrate the flows of material.







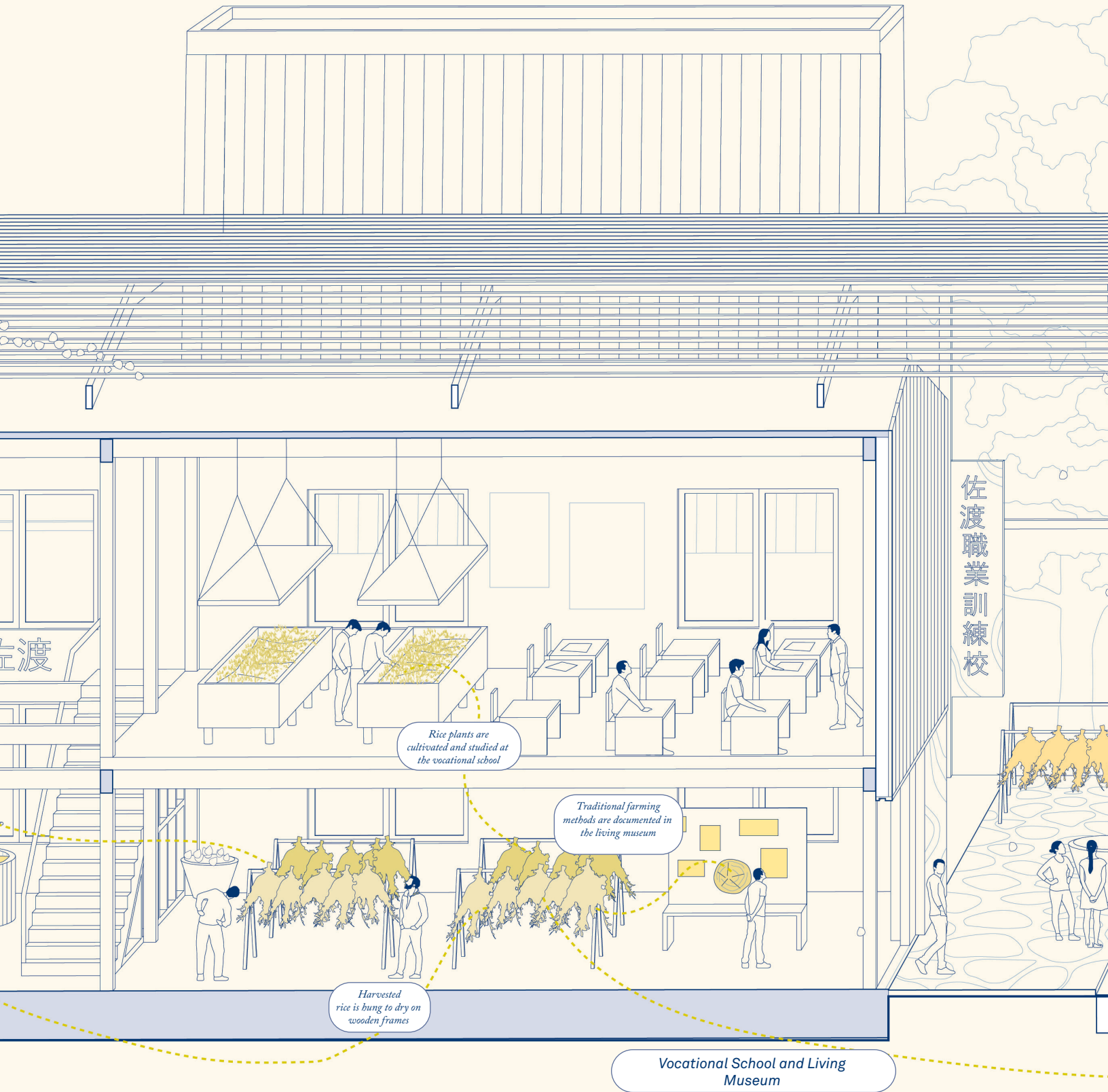
Stories of rice and agriculture are integrated into the daycare curriculum

Rice leaves separated from the grains are packed as insulation

Dining/  
Kitchen

Harvested rice grains are used in the daycare kitchen

Daycare



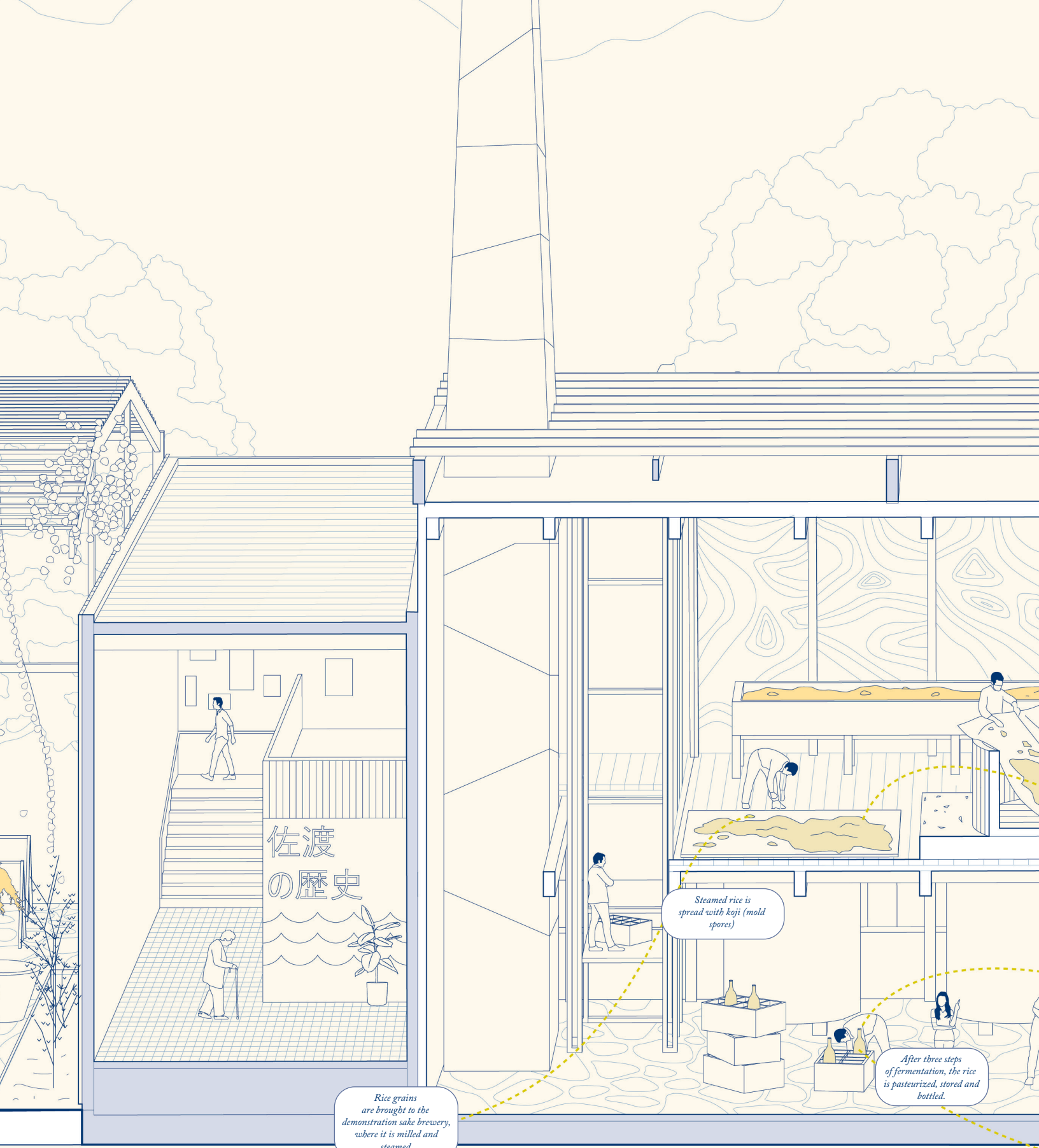
*Rice plants are cultivated and studied at the vocational school*

*Traditional farming methods are documented in the living museum*

*Harvested rice is hung to dry on wooden frames*

**Vocational School and Living Museum**





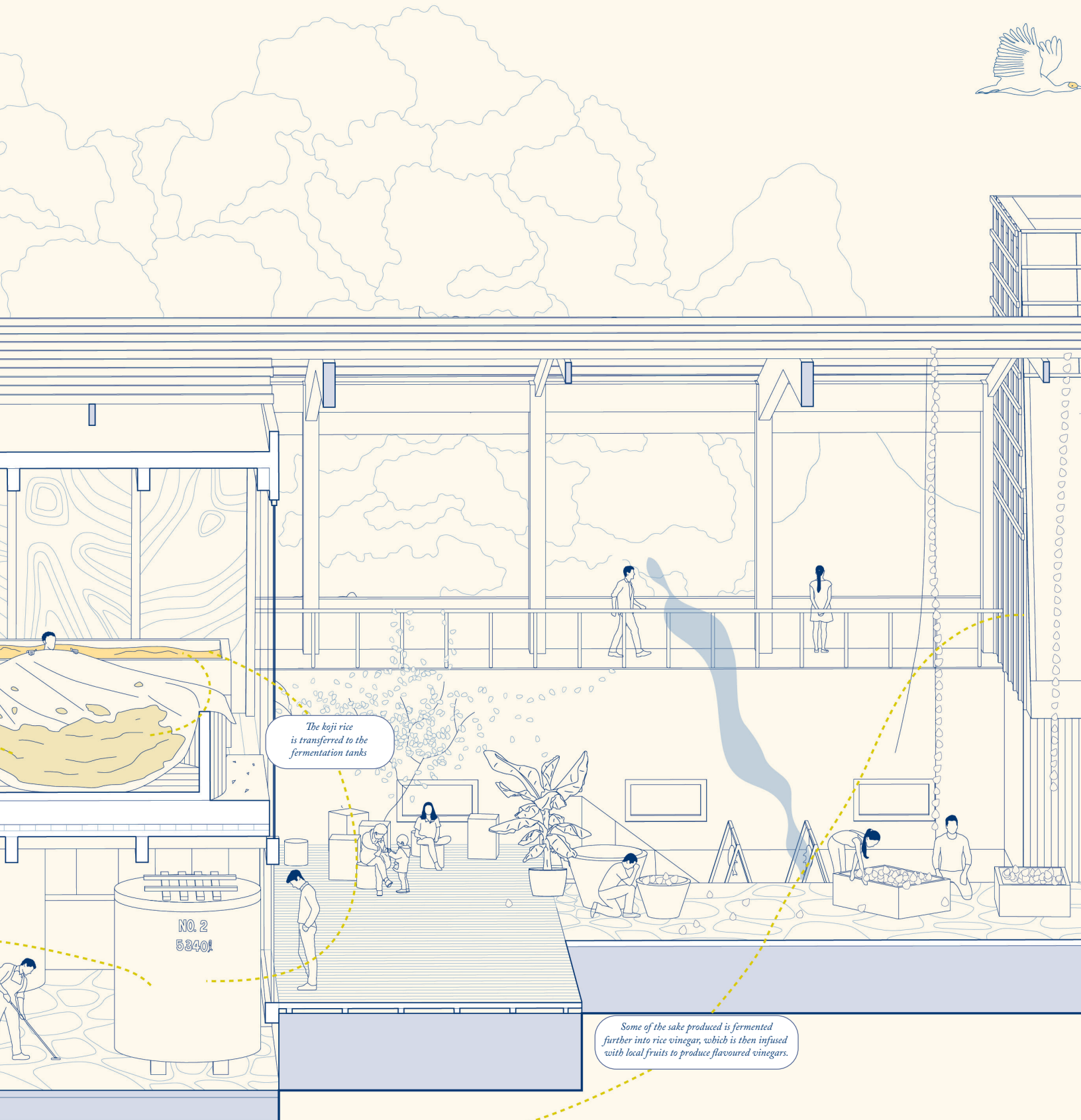
佐渡  
の歴史

Rice grains are brought to the demonstration sake brewery, where it is milled and steamed

Steamed rice is spread with koji (mold spores)

After three steps of fermentation, the rice is pasteurized, stored and bottled.

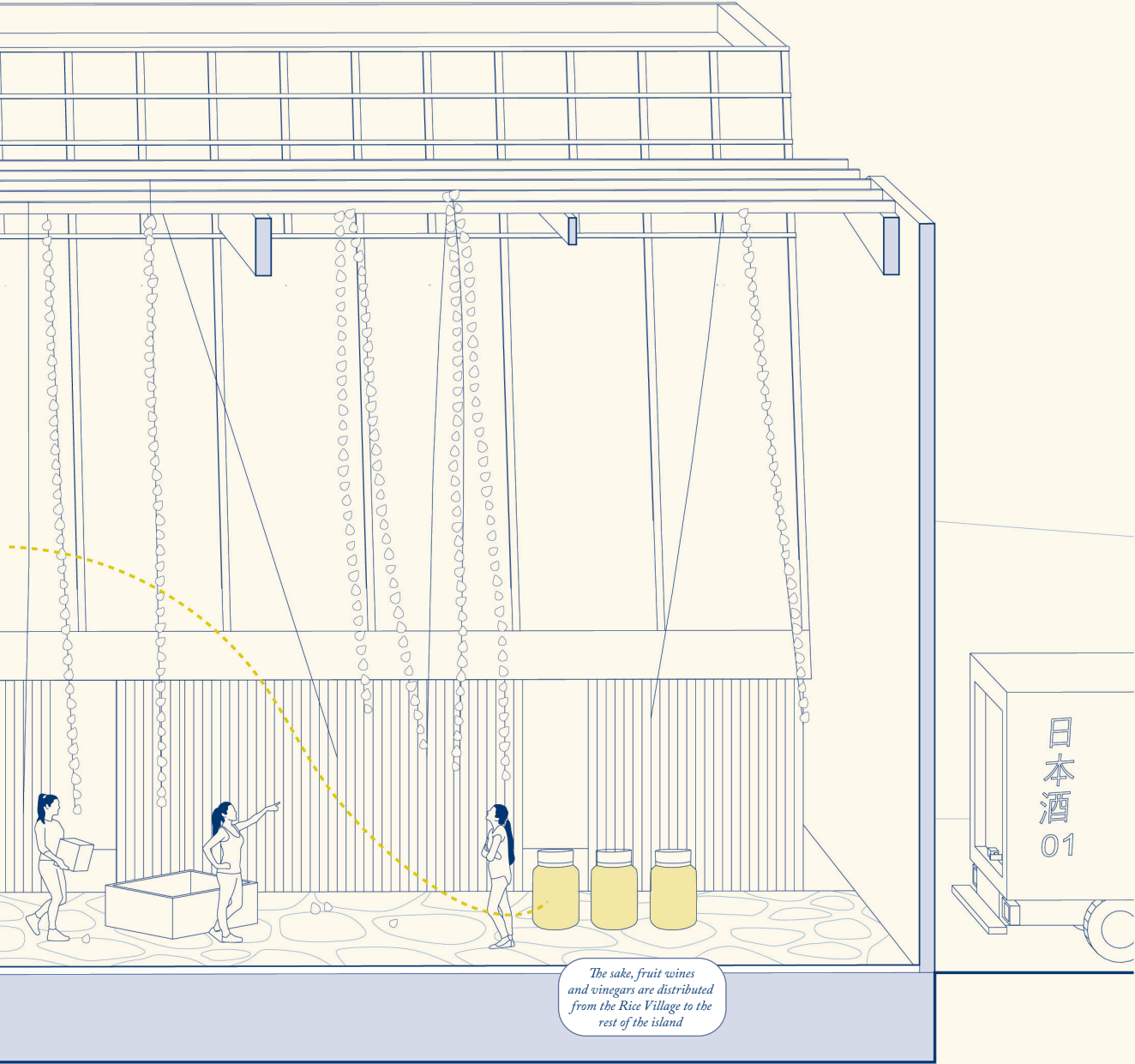
Demonstration Sake Brewery



*The koji rice is transferred to the fermentation tanks*

*Some of the sake produced is fermented further into rice vinegar, which is then infused with local fruits to produce flavoured vinegars.*

Wine Making Building



*The sake, fruit wines and vinegars are distributed from the Rice Village to the rest of the island*





*Figure 4.13: 1:75 Physical Model of Sado Island Rice Village*









*Figure 4.14: Landscape surrounding daycare building in Sado Island Rice Village*





*Figure 4.15: Industrial and social gathering spaces in the existing gymnasium structure*



*Figure 4.16: Industrial spaces: fermentation and sake-making*





*Figure 4.17: Daycare addition to existing structure, and new wooden trellis extending above*



*Figure 4.18: Landscape, trellis and community activity*



*Figure 4.19: New pathways between split volumes, and a sectional portion showing the rice plant wall assembly of the daycare structure*

## 4.2. Kamocho Monomi Timber Commons

*Travel Log – June 20, 2019  
Mimasaki, Okayama*

*The workshop smells like cedar and earth. Large bushels of rough, wood strips line the old wooden walls. We're making dye from cedar bark, soaking the pieces in large metal vats. A sweet-smelling steam is rising from the brew.*

*Ami and her partner renovated this house is on a quiet, Edo-era street, meaning many of the buildings are around three hundred years old. While many of the houses and storefronts are empty, a number of them have slowly been re-occupied by other artists and families. Ami explains that Okayama Prefecture provides subsidies to young families, alleviating a significant portion of living costs to promote migration to rural areas.*

*Ami separates the hot dye from the boiled cedar pieces. She then slips a piece of cotton cloth into the brew to let it steep. After some time, she removes it from the dye, wrings it tightly and unrolls a soft pin, cedar hue.*

The community of Kamocho Village and its surrounding region in Tsuyama, Okayama is trying to change the way residents think about trees. Local people have forgotten how to make things with them, how to cut them, and how to manage them. Fifty years ago, excess trees were planted to meet the supply demands of commercial construction<sup>50</sup>. But when the number of forestry workers gradually declined, the forest became unmaintained, the tree canopy grew to be too thick, and this led to a number of other problems. The ecosystem of the forest floor changed, causing plant species to die. As a result, the deer population that relied on the plants began roaming the villages, destroying crops, and getting caught in fences. Houses with thatched roofs that are built with traditional wood joinery fell into disrepair as the number of trained carpenters dwindled.

I met a number of younger families while on my site visit in Kamocho. Ami is part of a small wave of artists that settled in the region, taking advantage of the surplus of abandoned houses for studio space. Originally from the region, she worked at a corporate textile company before deciding that she wanted the freedom to make her own work and to raise her children in her hometown. As illustrated in *Part 3*, Ami is an example of a rural resident with multiple outputs of work: designing her own textiles, growing her own vegetables, running a guesthouse, teaching dyeing classes, and selling local goods in her gallery space. Ami makes dyes out of many kinds of natural ingredients, such as citrus fruits, flowers and other plants, but focuses her workshops on the using cedar trees. "This colour is specific to this place. I want everyone who visits the workshop and makes something here to remember that."<sup>51</sup>

*Kamocho Monomi Timber Commons* re-inhabits a haikō situated in a valley, next to the Kamo River. It's a more recent build; the exterior paint seems fresh and an addition has been recently made to the gymnasium building. The village fabric that surrounds it is relatively lively. The school is adjacent to a retirement home that is expectedly full, and a popular tofu restaurant is located nearby. There is an abandoned timber yard up the road. *Timber Commons* is proposed as an outpost space for art and design schools in Tsuyama, Okayama and the Kansai Metropolitan area, the most accessible urban areas from

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50 Nakanishi, Interview with Participant 01 from Kamocho, Okayama

51 Ibid.





Figure 4.20: A map of Kamocho Monomi in relation to closest urban areas, Okayama City and Tsuyama City





*Figure 4.21: Aerial image of the site in its existing condition*



*Figure 4.22: Aerial image of the valley that the haiko site is situated in*

Kamocho. The project posits that through creating a creative hub focused on the use of local timber, adjacent forestry-related enterprises would follow, such as tree nurseries, a re-occupation of the vacant timber yard, shops, galleries and guesthouses.

Similar to *Sado Rice Village*, the *Timber Commons* incorporates the lifting and removal of roofs. A strip of public programs is inserted, which require higher floor-to-ceiling height than the existing building. The public zone is extended across the topographic change in the site, bridging the two existing structures. The public program consists of an archive, an onsen, a community *irori*, kitchen, makerspace and lecture hall. The rest of the school building's classrooms would be converted into live-work spaces for artists, designers and students. The project, like the *Rice Village*, focuses on incorporating the flows and presence of local materials into the organization and architecture.

The archive is a proposed collection of educational materials relating to forestry and timber processing. The baths, in addition to offering a new social and public amenity, are designed using similar materials to the baths of the traditional houses of the region, many of which still use firewood to heat the water. The *irori*, or community fire, is a larger reproduction of the smaller *irori* in vernacular rural dwellings. While the use of *irori* are typically limited to traditional farmhouses and restaurants, its placement in the building imagines a new space for sharing food, conversation and knowledge. Both the *irori* and the kitchen respond to a culture of sharing homegrown vegetables and rice in Kamocho, similar to Toshikatsu Ienari's stories of Shodoshima.

The large, pitched roofs of the building echo the farmhouses and function as chimneys for the programs emitting steam and smoke. The roofs are proposed to be constructed from local cedar, and they connect to a public, timber walkway that provides access to the different programs. The walkway also provides views down into the main workspace, previously the school gymnasium. The main workspace is dedicated to different scales of woodcraft and carpentry, occupied with shop equipment and fabrication labs. A textile and garment studio sit above, where offcuts and waste material from the cedar wood produced in the wood shop would be processed. The opaque back wall of the gymnasium would be converted to glass, opening a view of the river and mountainous landscape.



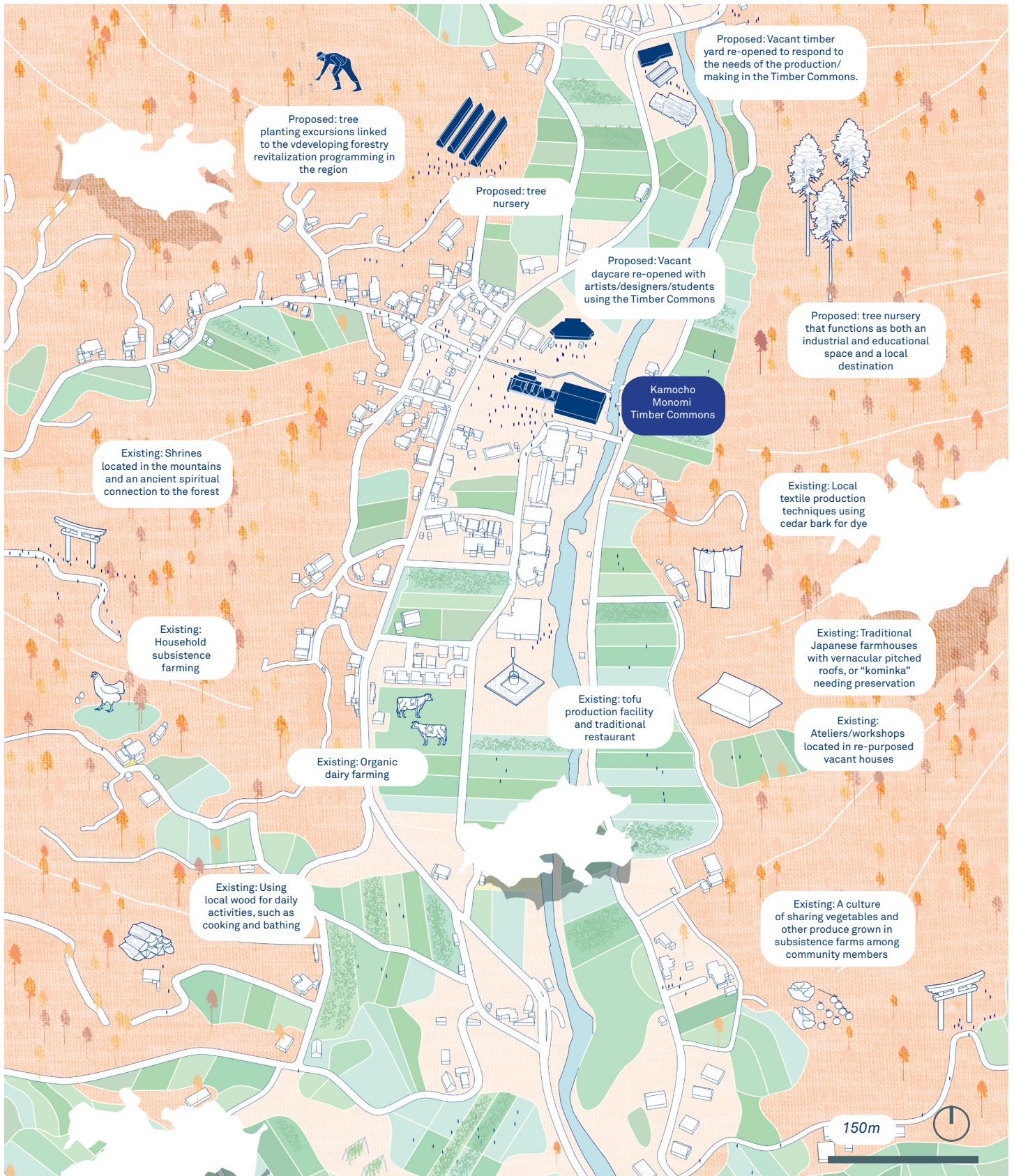
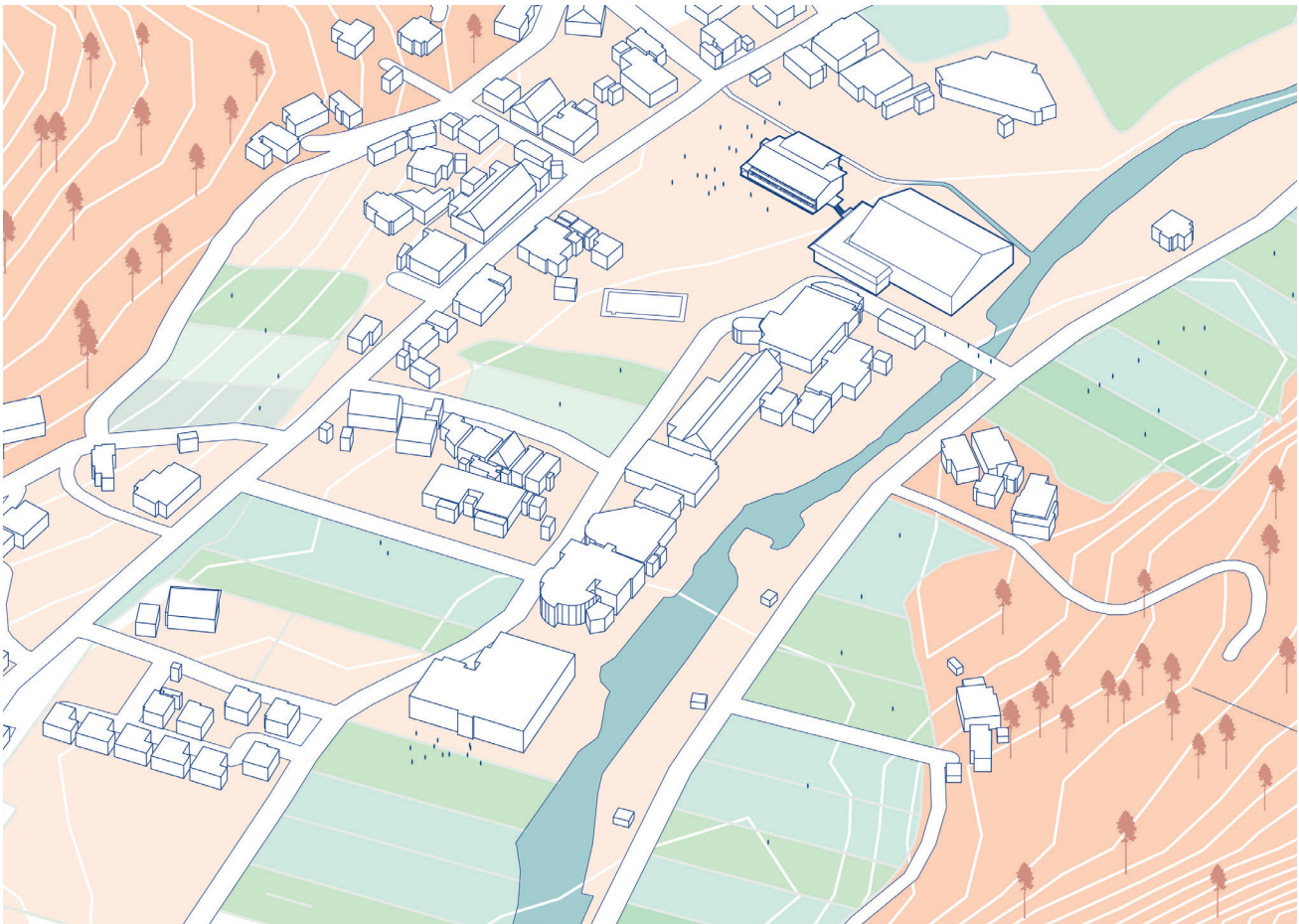


Figure 4.23: A site plan of the haiko site, highlighting existing cultural practices, values, agriculture and forestry-related traditions, as well as proposed programs that would emerge with the re-inhabitation of the haiko.





*Figure 4.24: Axonometric showing current site conditions and relationships*

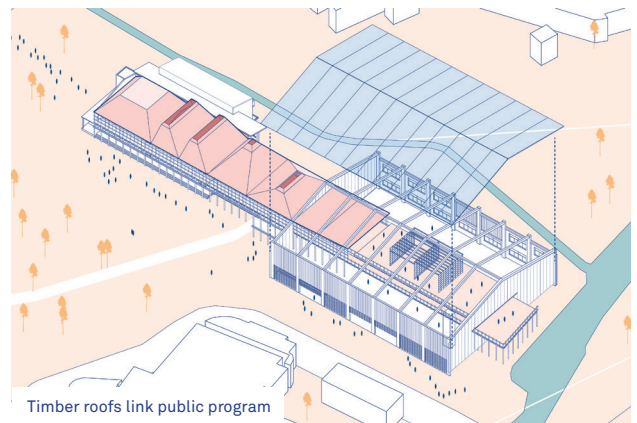
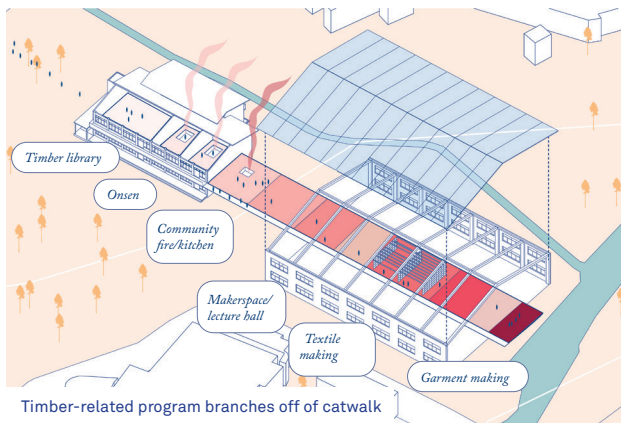
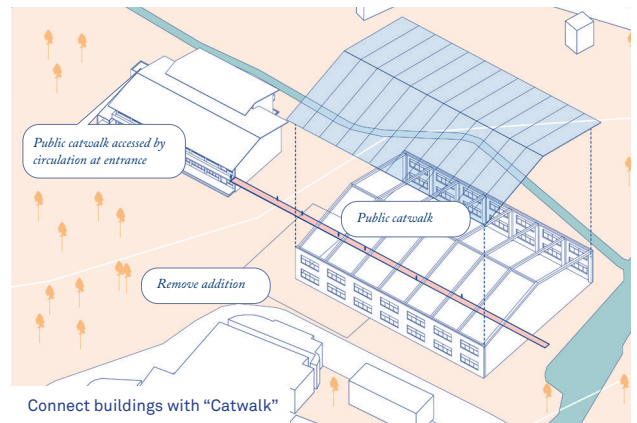
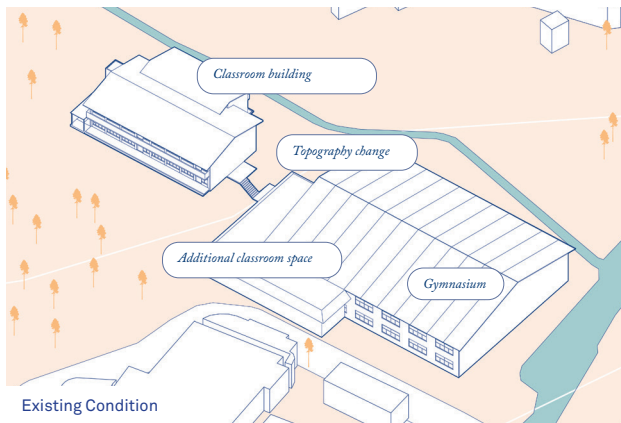
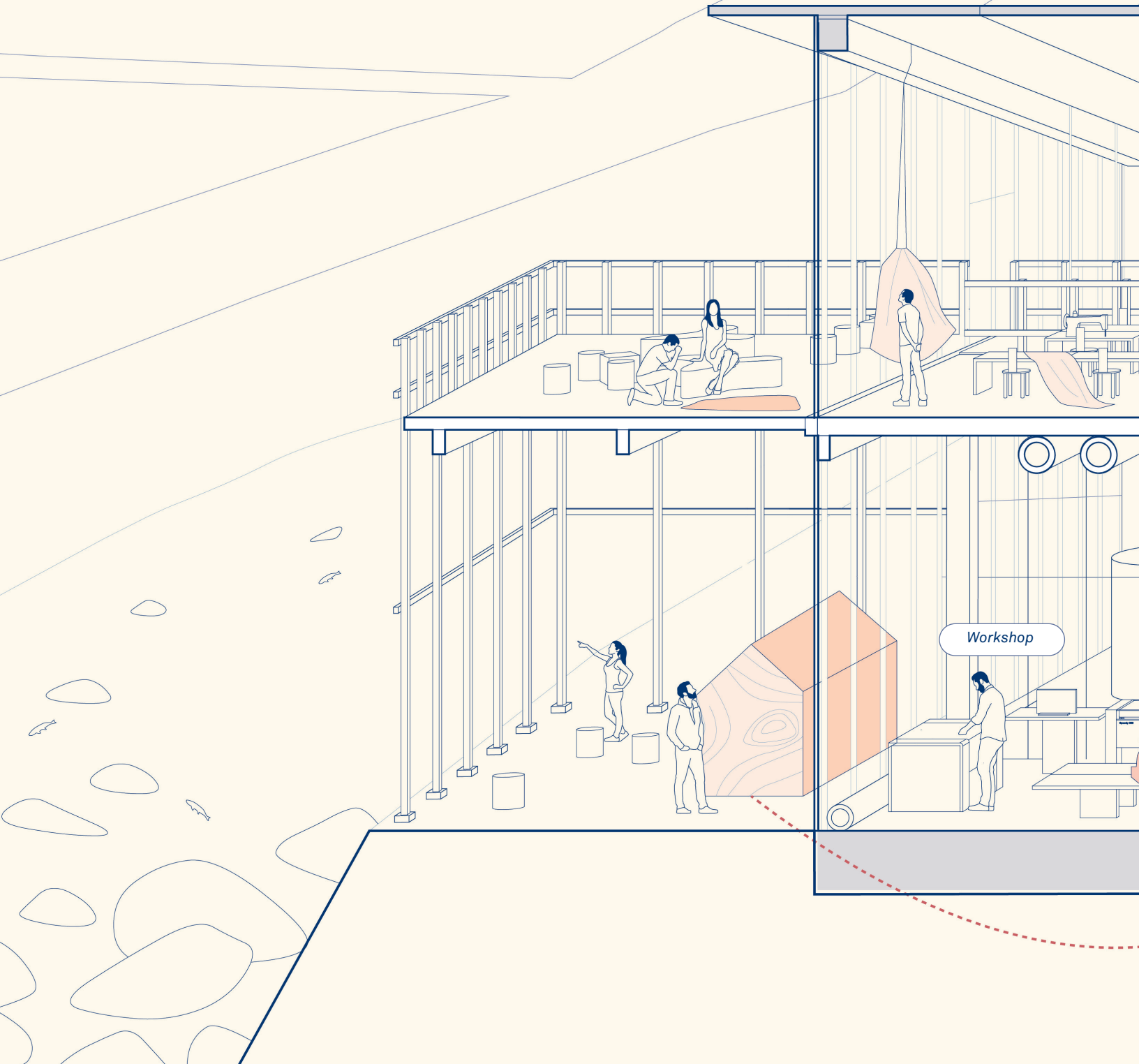


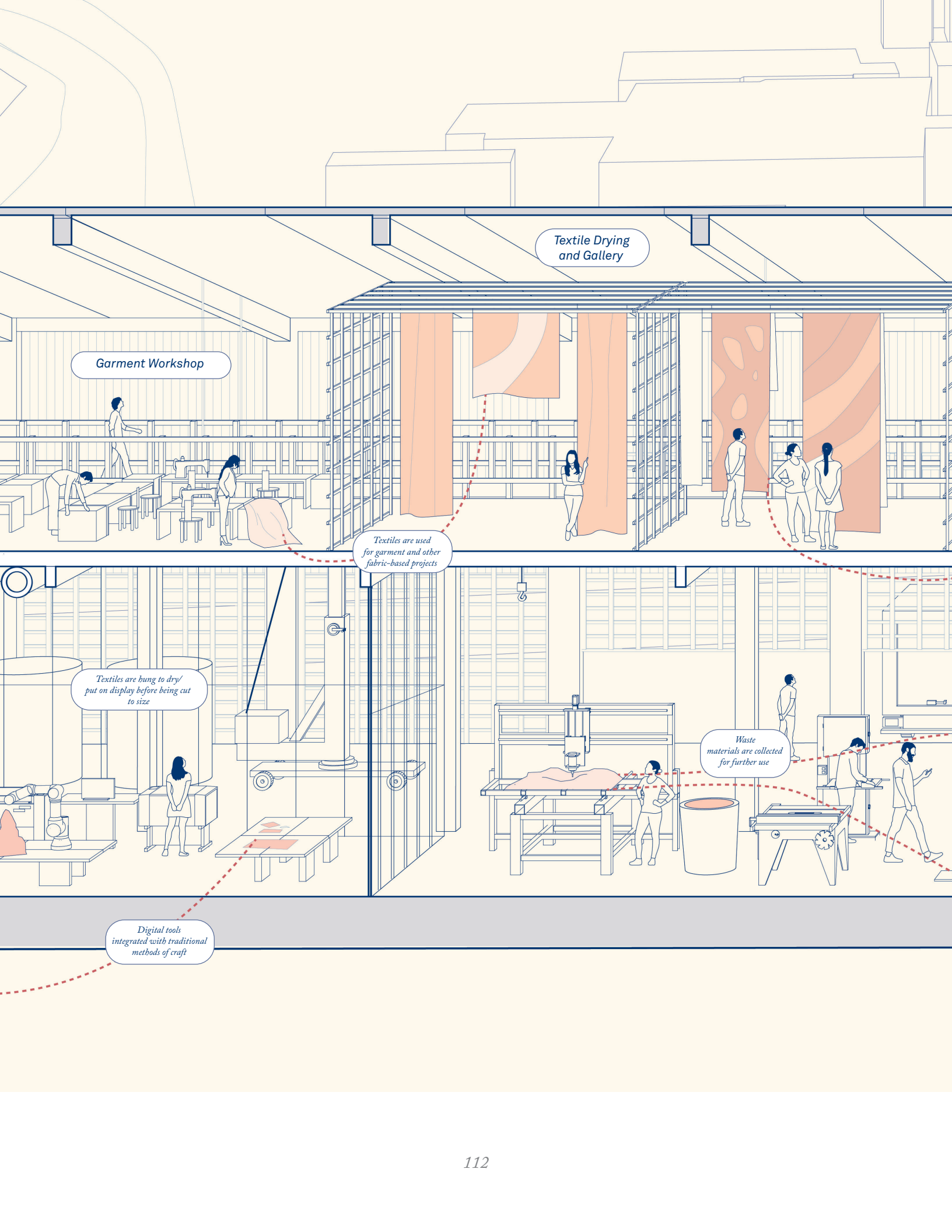
Figure 4.25: Morphology diagram outlining the architectural strategies for the re-inhabitation project

## Finding A New Commons: Three Villages, Three Design Projects

Figure 4.26: Sectional perspective drawing of the design project. The areas that are hatched blue indicate the existing structure, and the white hatch indicates new construction. The pink portions highlight the use of timber in different forms, and the dashes lines illustrate the flows of material.







Textile Drying and Gallery

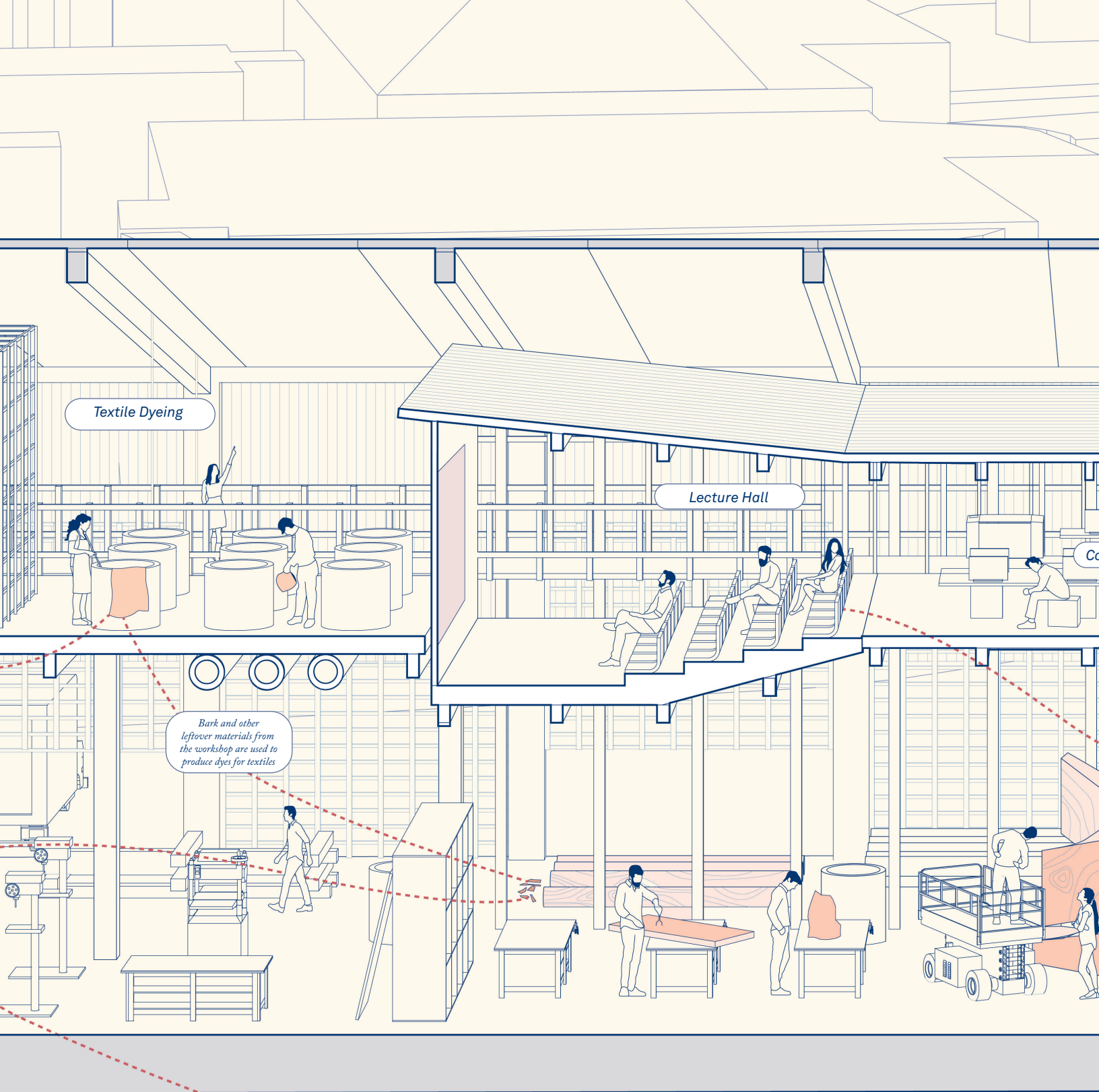
Garment Workshop

Textiles are used for garment and other fabric-based projects

Textiles are hung to dry/ put on display before being cut to size

Waste materials are collected for further use

Digital tools integrated with traditional methods of craft

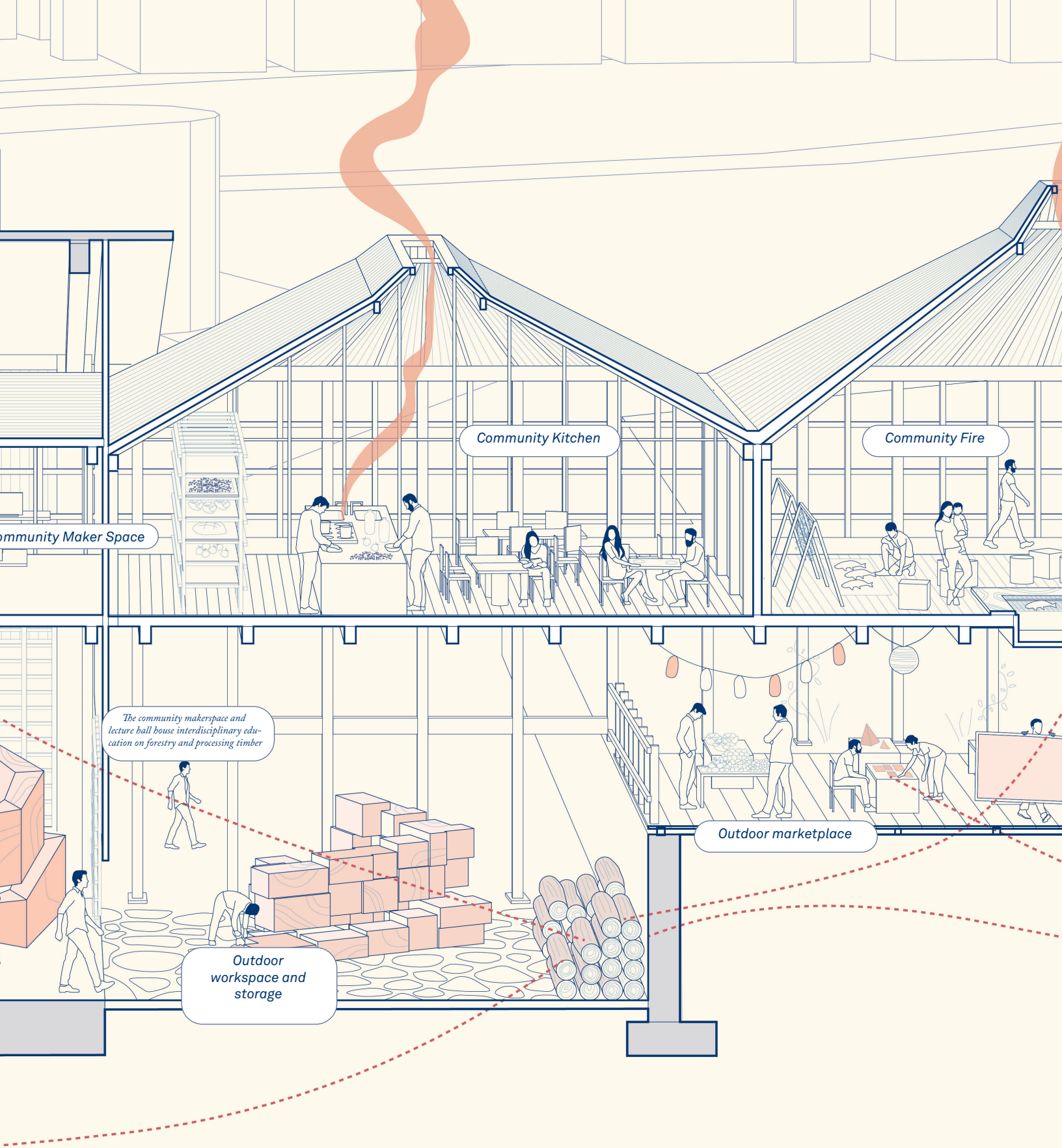


Textile Dyeing

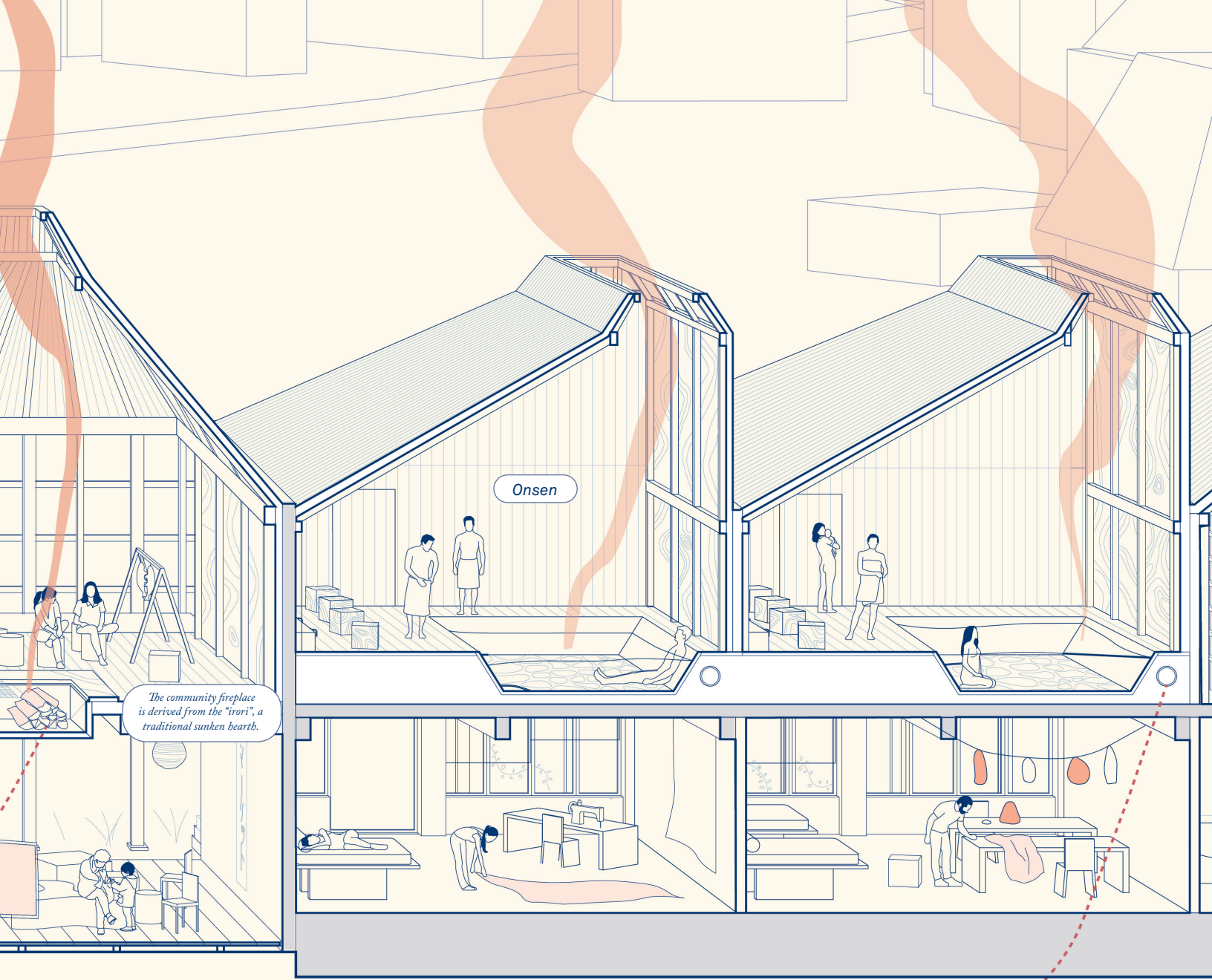
Lecture Hall

Bark and other leftover materials from the workshop are used to produce dyes for textiles

Local timber is used for craft training, art projects and digital fabrication



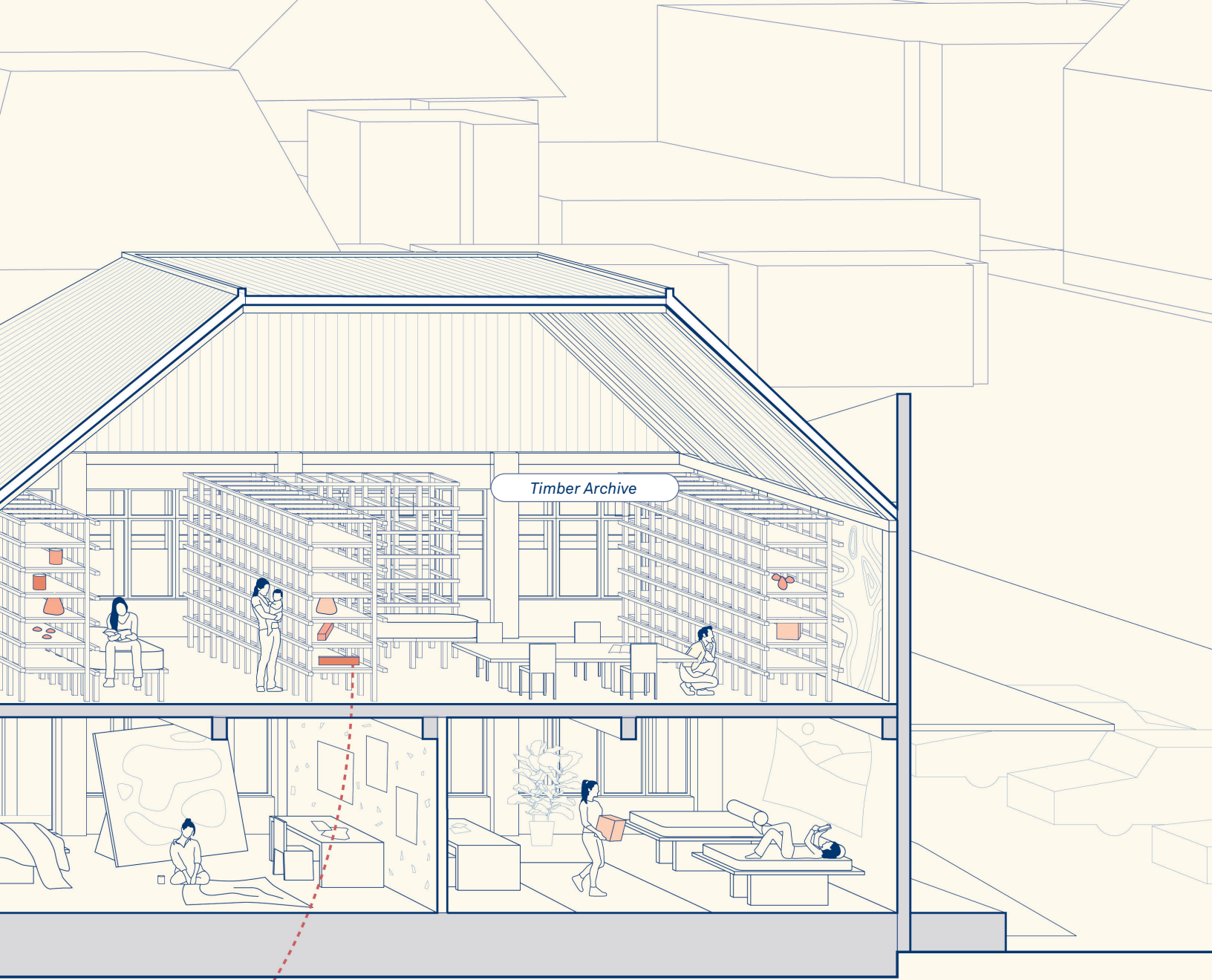




Live / Work Studios

Traditional farmhouses use local firewood to heat bathwater. This connection is evoked through wood finishes and the pitched roof of the community onsen.

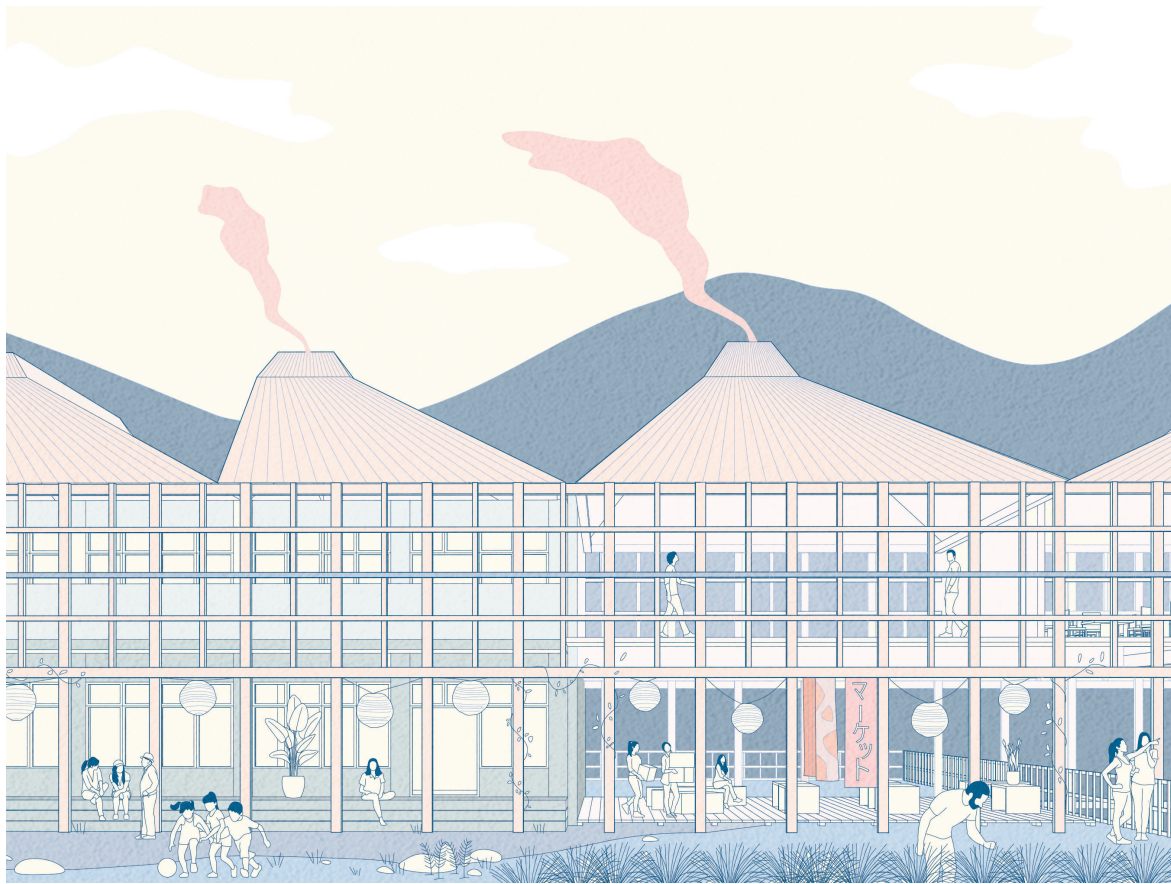




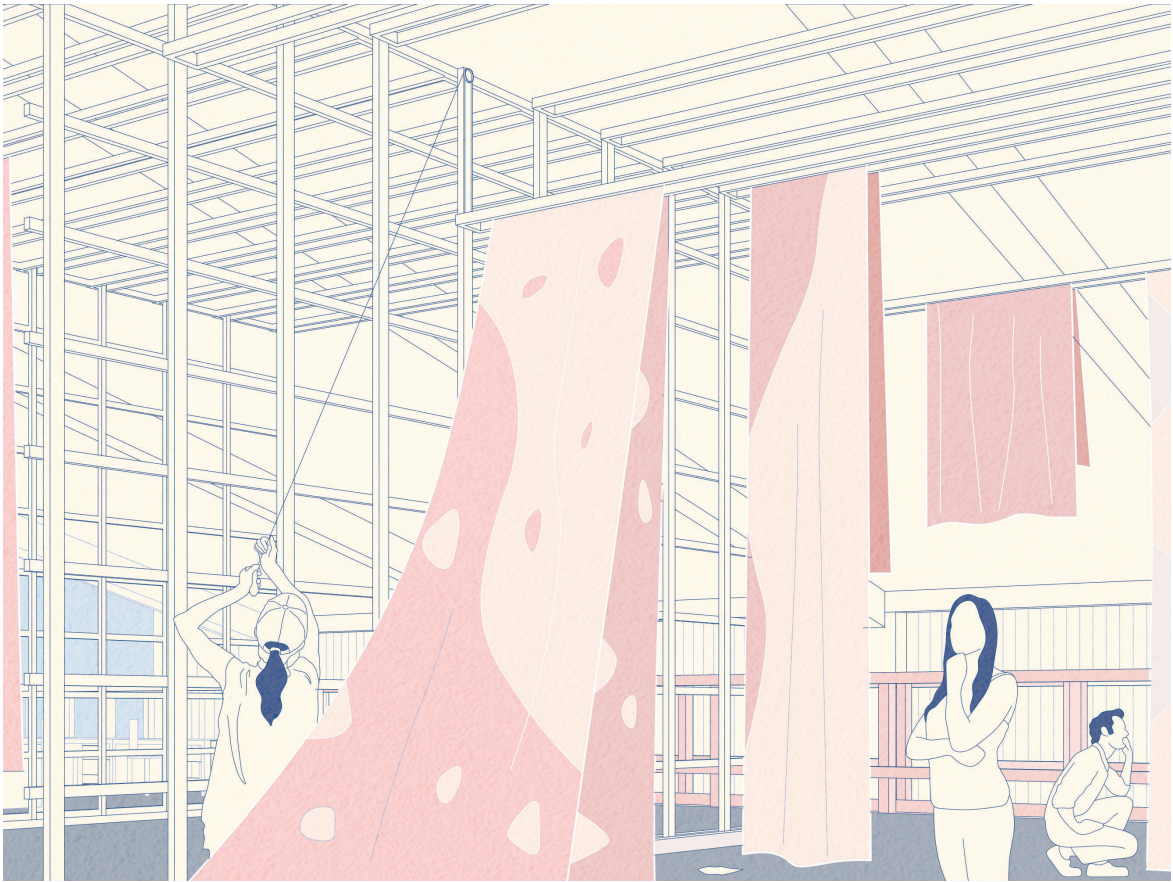
Timber Archive

Live / Work Studios

*Artifacts produced in the building are stored in the community timber library, adding to the region's collective history*

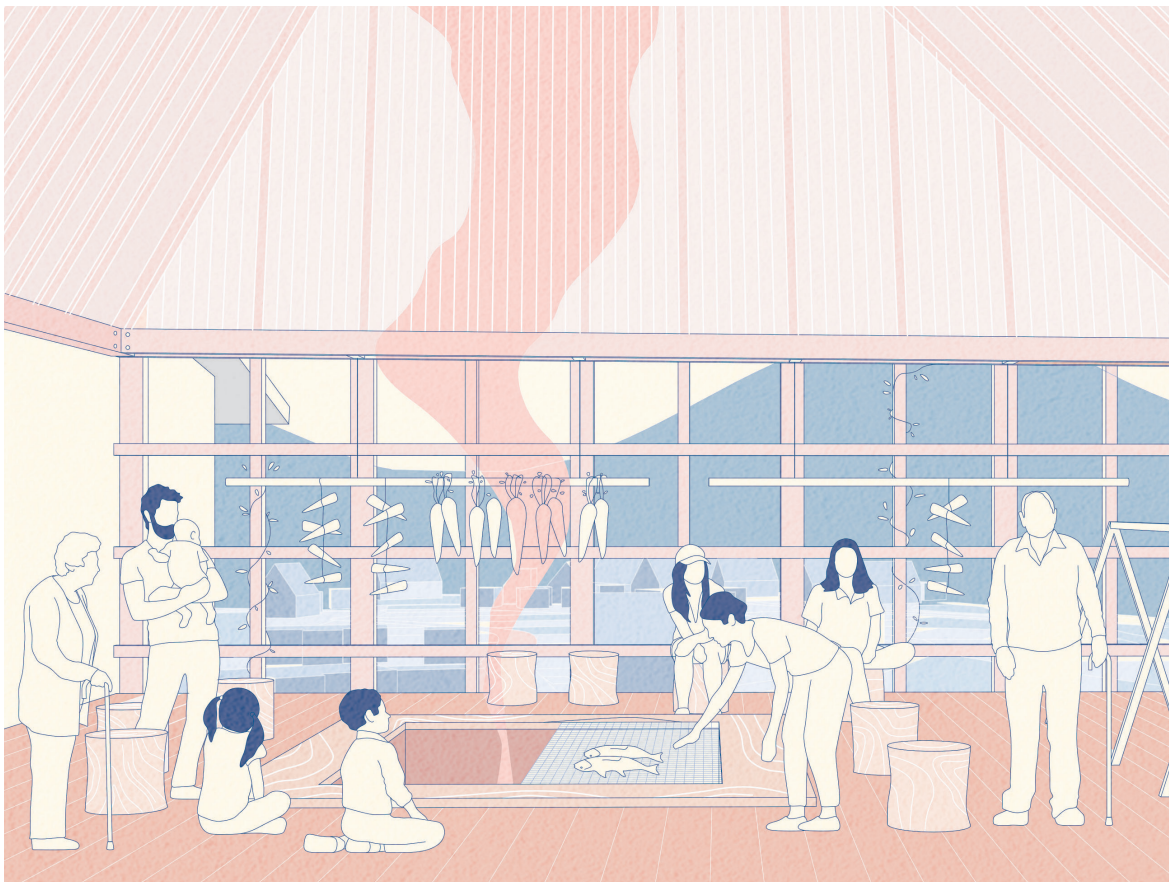


*Figure 4.27: Perspective showing additions proposed to the existing facade*



*Figure 4.28: Perspective of the proposed textile workshop;  
students are at work, hanging textiles to dry*





*Figure 4.29: Perspective showing the community fireplace, or irori*





Figure 4.30: Enlargement of Section Showing Material Flows of Timber

### 4.3. Kamiyama Community Food Lab

*Travel Log*

June 27, 2019

Kamiyama Village, Tokushima

*Kamiyama- which translates to “God’s Mountain”- is located on Shikoku, one of Japan’s most southern islands. The landscapes I pass through echo Haruki Murakami’s descriptions in Kafka on the Shore. The village is located so deep in the mountains that from a distance it looks as though the clouds are hovering only a few meters above the houses.*

*I’ve borrowed a bicycle from the guest house, and I ride through the cascading tea fields and into town. Humidity hangs in the air. It’s so hot.*

*In Kamiyama, I spot more people that appear close to my age than in Sado and Kamocho. It feels like a depopulated place that’s already moving forward in a visible way. There are just as many haikō and empty houses, but there is a different kind of almost-urban life here. Storefronts are occupied by people on laptops, there are artisanal coffee shops, book shops, and pizzerias. Posters for an upcoming art festival are papered onto telephone poles. People spill out of a bakery that looks onto a wheat field. There are childrens playing in a schoolyard.*

Kamiyama Village is located one hour by bus from Tokushima City. Nestled in the mountains, it is a place with longstanding agricultural traditions and practices that navigate the site’s extreme topography. Terraced productive gardens are supported by *tanada* stone retaining walls- a particular technique of wall-building that has existed in this community for over two hundred years.<sup>52</sup> Kamiyama is most well-known for the production of *sudachi*, a citrus fruit in between lemon and lime, as well as heirloom wheat. Kamiyama has recently seen an influx of millennials, particularly those in the IT industry, who have set up outpost offices in vacated storefronts<sup>53</sup>. Many have young families and have moved to, or back to Kamiyama in pursuit of a better quality of life.

The village is home to a successful community initiative called *The Food Hub Project*. This project exists primarily as a cafeteria restaurant and bakery that promotes the variety of local wheat, vegetables, fish and dairy in Kamiyama. The bakery was intended to sustain the wheat production of the region, responding to the collective concern towards the declining number of farmers. Freshly baked bread was not common in the village prior to *the Food Hub*, and the bakery is now a bustling place of social interactions. The intention of *the Food Hub* is not to expand their bread or agricultural production far out of Kamiyama<sup>54</sup>. A larger concern is to preserve the unique agricultural knowledge of the region, and contribute to a less impactful, closed-loop way of living.

When interviewing one of the coordinators, he expressed, “we are not here to make a huge profit. *The Food Hub* is not here to make sure Kamiyama products end up in high-end grocery stores in Tokyo. Instead, we hope to use food as mode of communication, that connects small producers to small consumers like us. We’re not anti-mass produce, but we can’t rely on it forever.” *The Food Hub* is a model for other

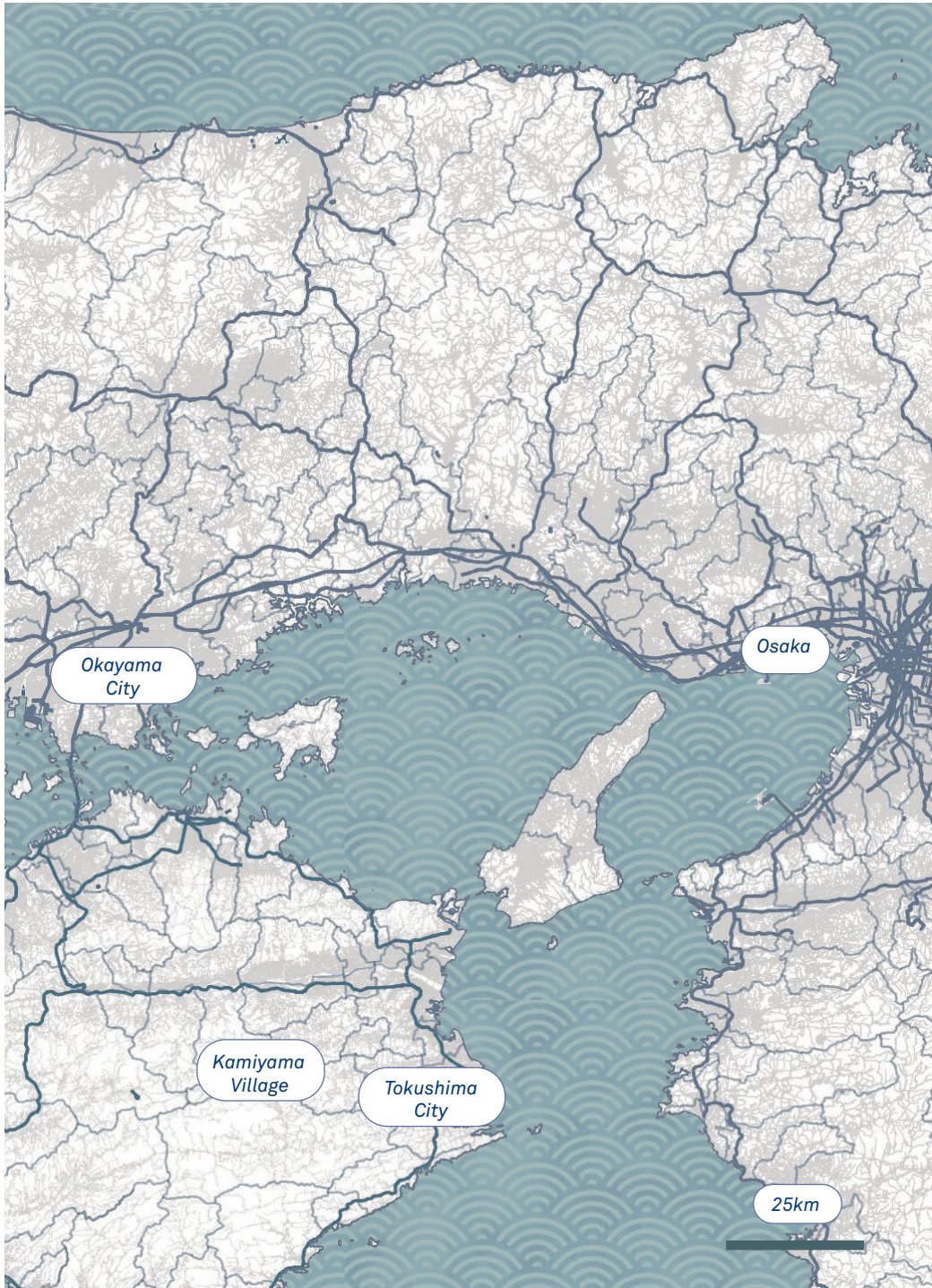
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52 *Hajime Ishikawa in Kamiyama*, Film, directed by Kayoko Ota (Tokyo, Japan: 2018)

53 Keiko Ujikane, “Millennial Movers Revive Japanese Mountain Towns Amid Depopulation,” *Japan Times*, March 15, 2017. <https://www.japantimes.co.jp/news/2017/03/15/national/millennial-movers-revive-japanese-mountain-towns-amid-depopulation/#.Xi3kxRNKiwk>.

54 Nakanishi, Interview with Participant from Kamiyama, Tokushima





*Figure 4.31: A map showing Kamiyama's location in relation to urban areas, Okayama City, Tokushima City and Osaka (Kansai Region)*





*Figure 4.32: Aerial image of the site in its existing condition*





*Figure 4.33: Aerial perspective of the selected haiko for Kamiyama. In this building the gymnasium space is stacked on top of three levels of classrooms.*



*Figure 4.34: Aerial image of the landscape surrounding the site*





*Figure 4.35: Aerial perspective of nearby village fabric*



shrinking villages in Japan, but other countries in the Global North that will soon need to embrace smaller futures can learn from their thinking.

There are a number of adjacent programs run by *the Food Hub*, such as a Chef-In-Residence program and workshops for elementary school students. The Food Hub also partners with the Kamiyama Agricultural High School, a vocational secondary school that attracts students from all over Tokushima Prefecture.

The *Community Food Lab* builds off of the agricultural school and the Food Hub Project, proposing labs and other spaces of experimentation and research that would allow for Kamiyama to further develop its agricultural identity. The haikō site is located at the base of a steep slope and branches off the main road. The building typology responds to extreme topographical conditions; the existing gymnasium is stacked on top of three levels of classrooms.

The *Food Lab* would focus not only on new forms of production, but also address the larger goals of the *Food Hub Project* to develop a decentralized food system. *The Food Lab* would involve research into methods of composting and other strategies of closed loop agriculture, as well as farm fishing. The proposed program addresses the fact that Japan relies on imported goods for the majority of its food consumption<sup>55</sup>, and new methods of self-sustenance are increasingly required.

The architectural interventions are mainly contained within the stacked building structure. An exterior freight elevator is added to allow for materials to be moved throughout the building, such as vegetables grown in the building, seedlings, soil and ingredients for the restaurant and cooking school. On the inside, interior walls are removed of the classroom floors. Six meters is offset from the perimeter of the building to allow for circulation on each level, as well as flexible, semi-conditioned workspace. The existing floor past this space is removed, exposing the steel structure. New floor plates are added into the structure, creating double height spaces and new vertical relationships. This interior “core” is wrapped in glass, resulting a conditioned space for more experimental programs, such as a composting lab, a fish farm, a seed archive and a cooking school. The steel roof is replaced with transparent material that would allow for the prior gymnasium space to function as a greenhouse.

This project is intended to generate ideas about new agricultural futures. With the design of flexible spaces that build on existing agricultural histories as well as new thinking, what could emerge from a community that is already acting proactively about how they might live? How can we learn from places trying to live “smaller” in the face of other pressing global matters, such as climate change? Kamiyama may be an important player in this discussion.

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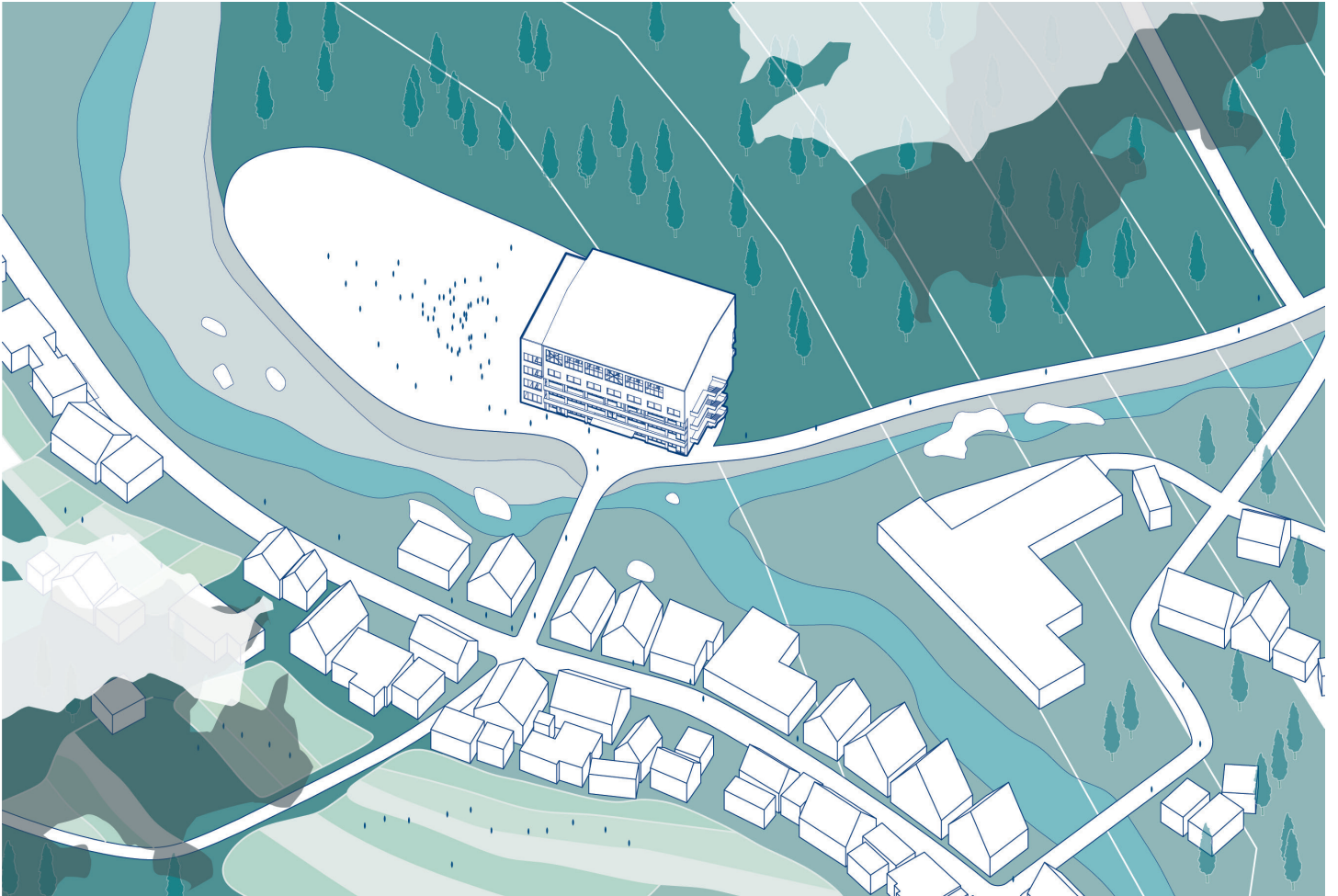
55 Brendan F. D. Barrett and Mark Notaras, “Future of Food in Japan,” Our World: United Nations University (. <https://ourworld.unu.edu/en/future-of-food-in-japan>).





Figure 4.36: A site plan of the haiko site, highlighting existing cultural practices, values, and agricultural traditions, as well as proposed programs that would emerge with the re-inhabitation of the haiko





*Figure 4.37: Axonometric showing current site conditions and relationships*



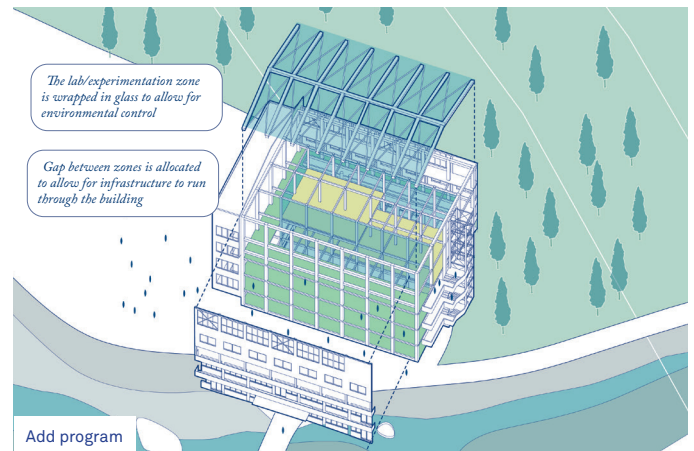
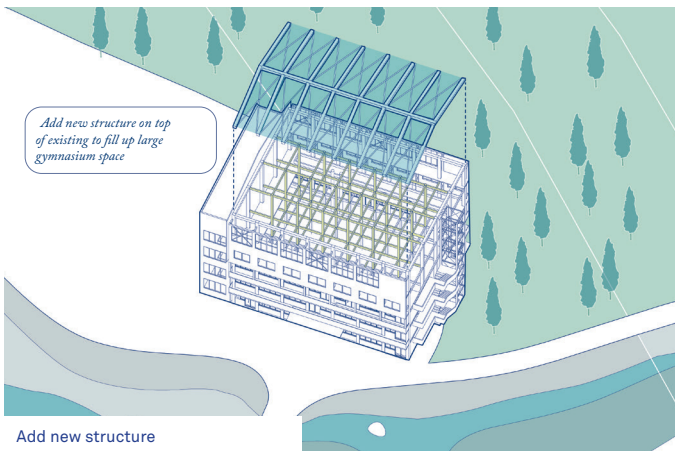
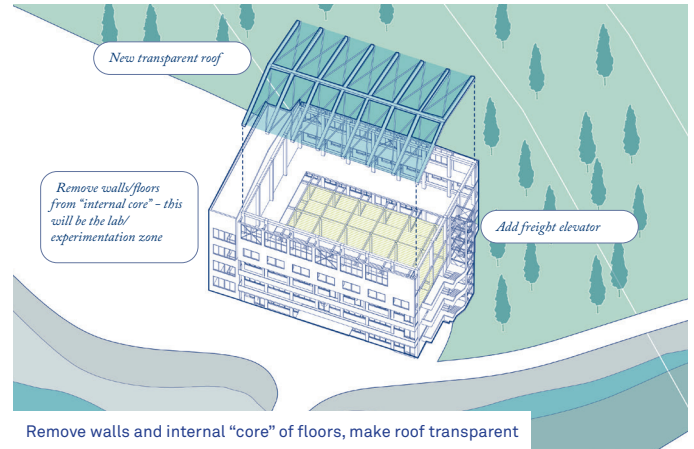
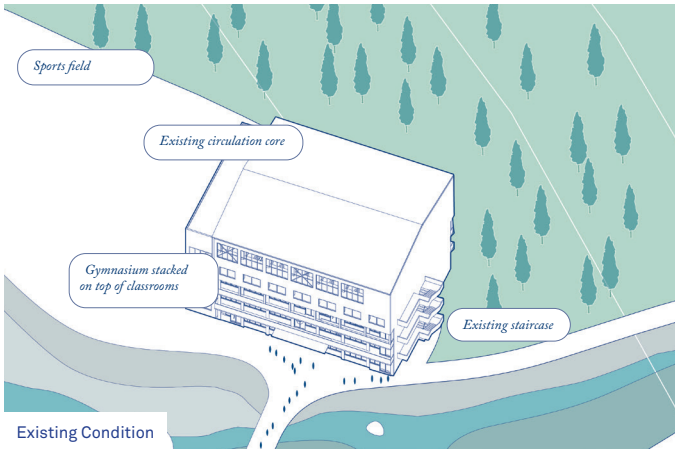


Figure 4.38: Morphology diagram outlining the architectural strategies for the re-inhabitation project





Figure 4.39: Enlarged site plan, highlighting local cultural practices that influenced the design work



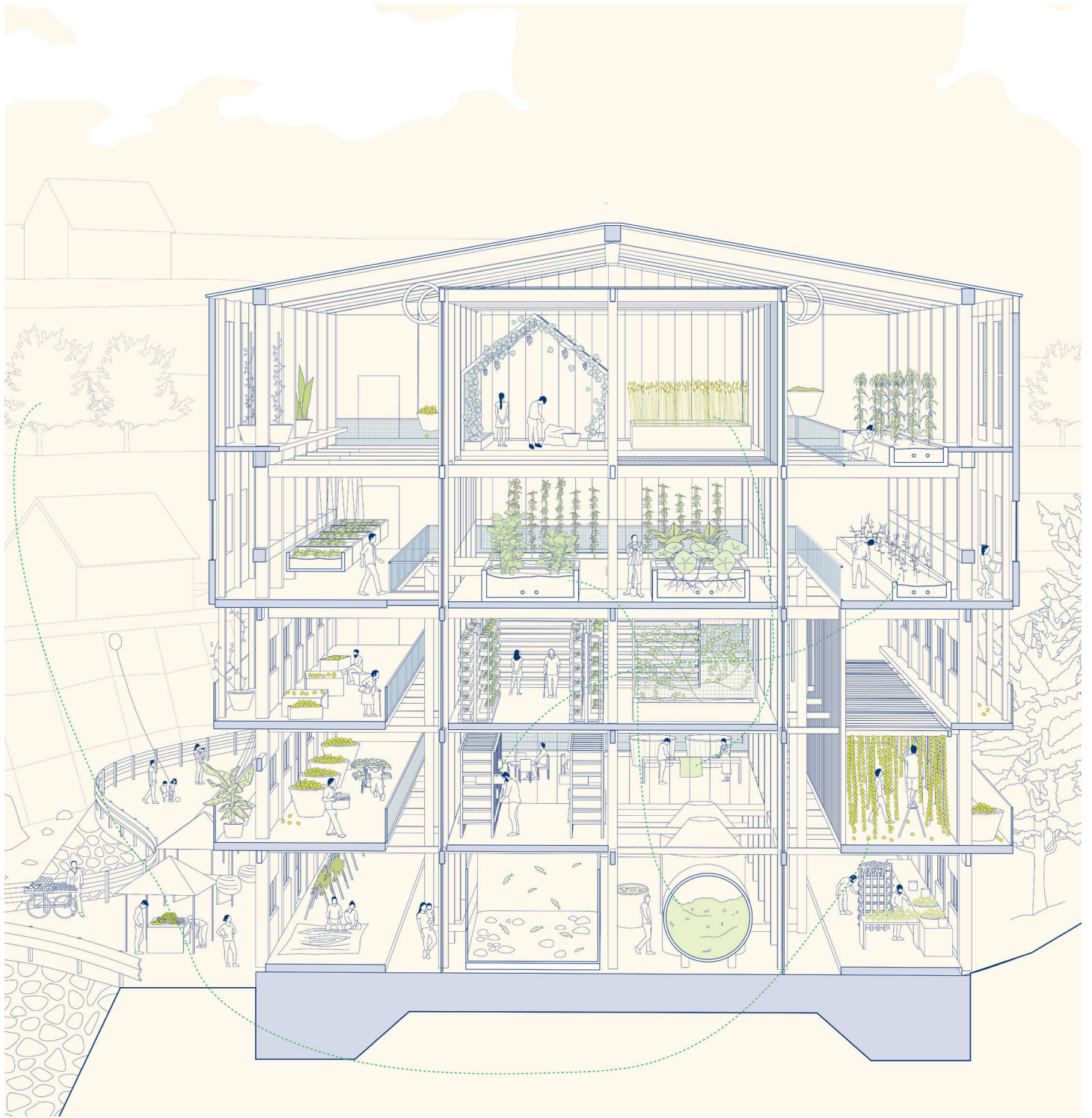


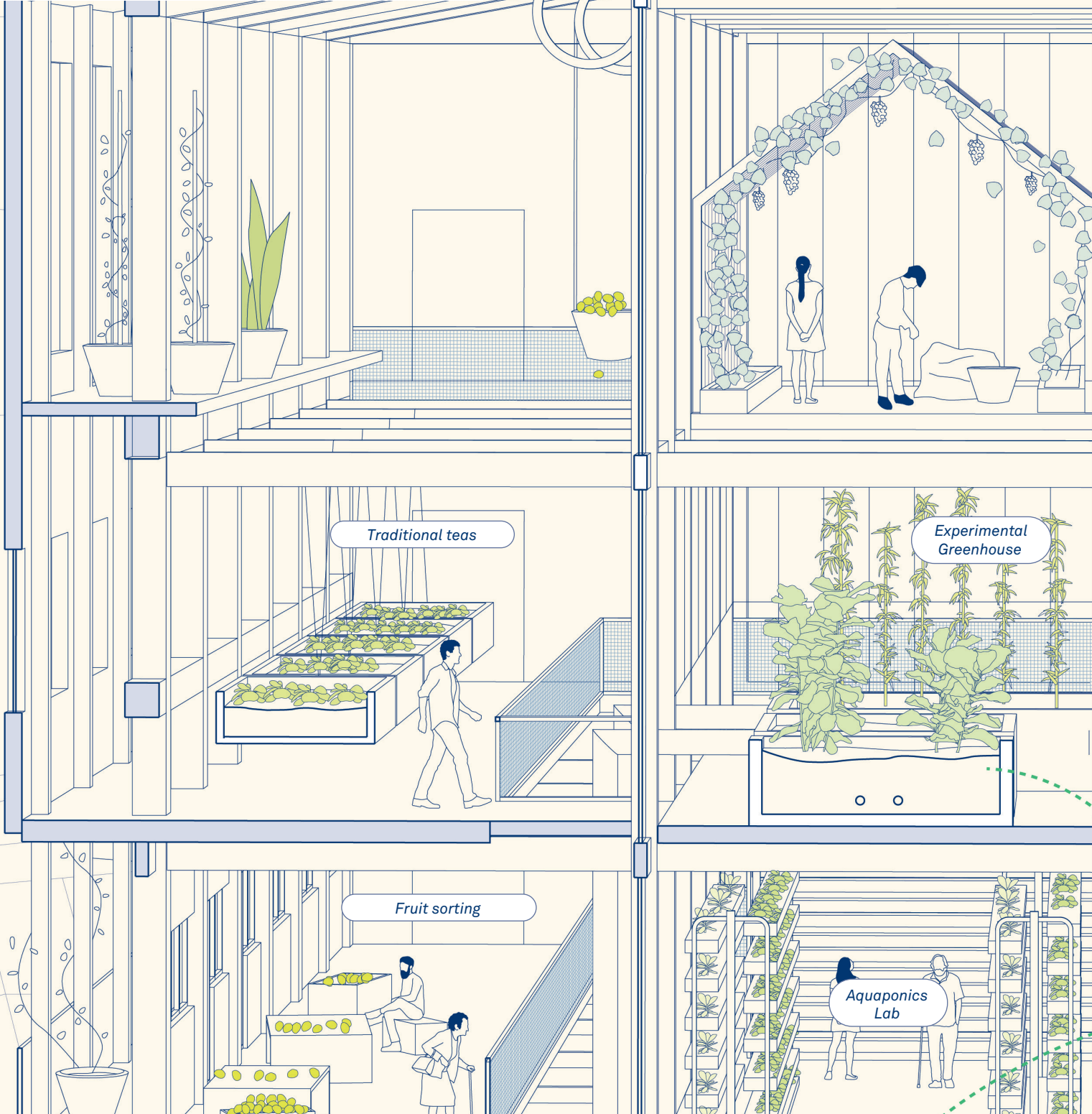
Figure 4.40: Sectional perspective of the haiko-re-use project

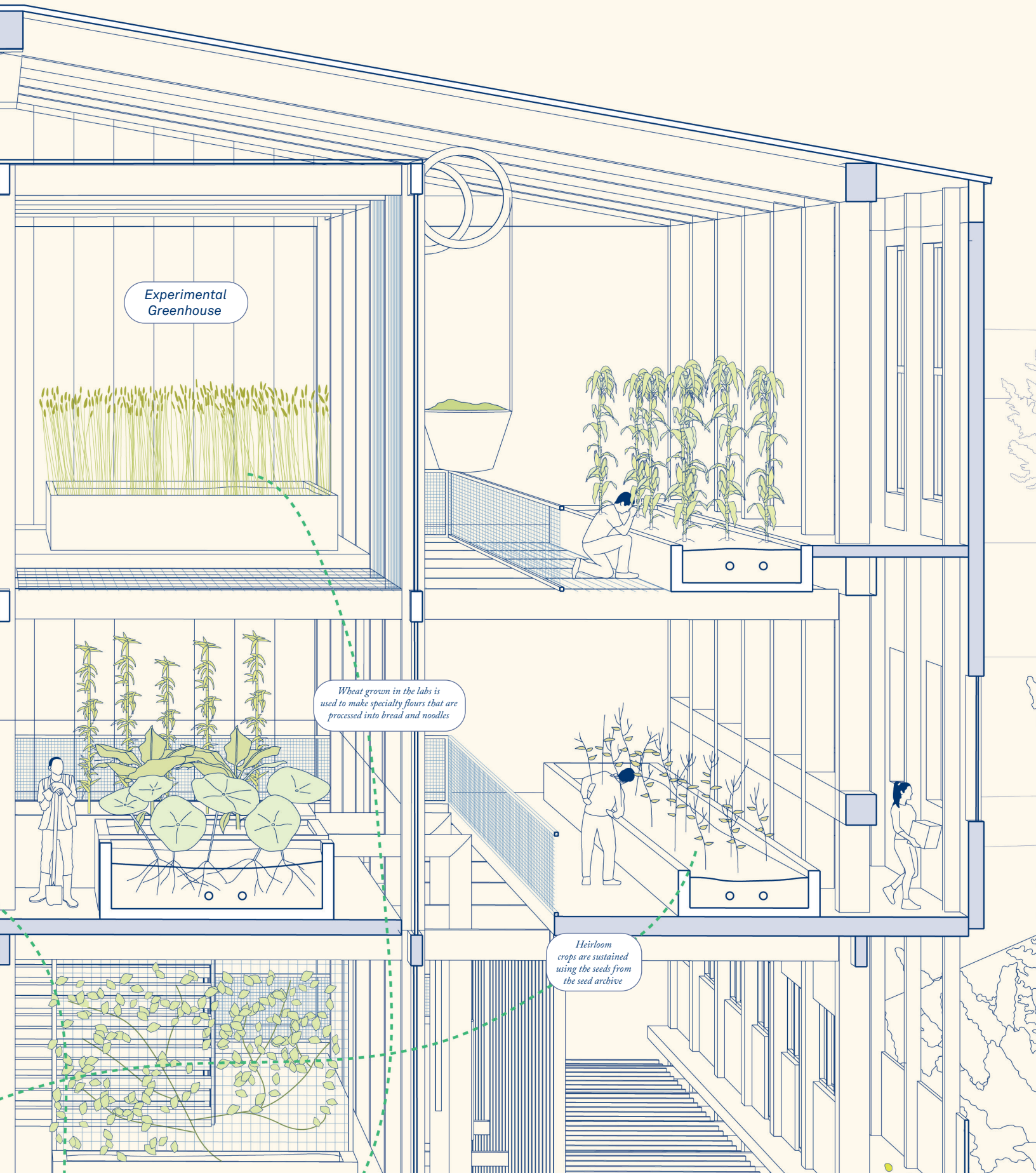


## Finding A New Commons: Three Villages, Three Design Projects

Figure 4.41: Enlarged sectional perspective drawing of the design project.

The areas that are hatched blue indicate the existing structure, and the white hatch indicates new construction. The green portions highlight processing of agricultural produce and waste in different forms, and the dashes lines illustrate the flows of material.





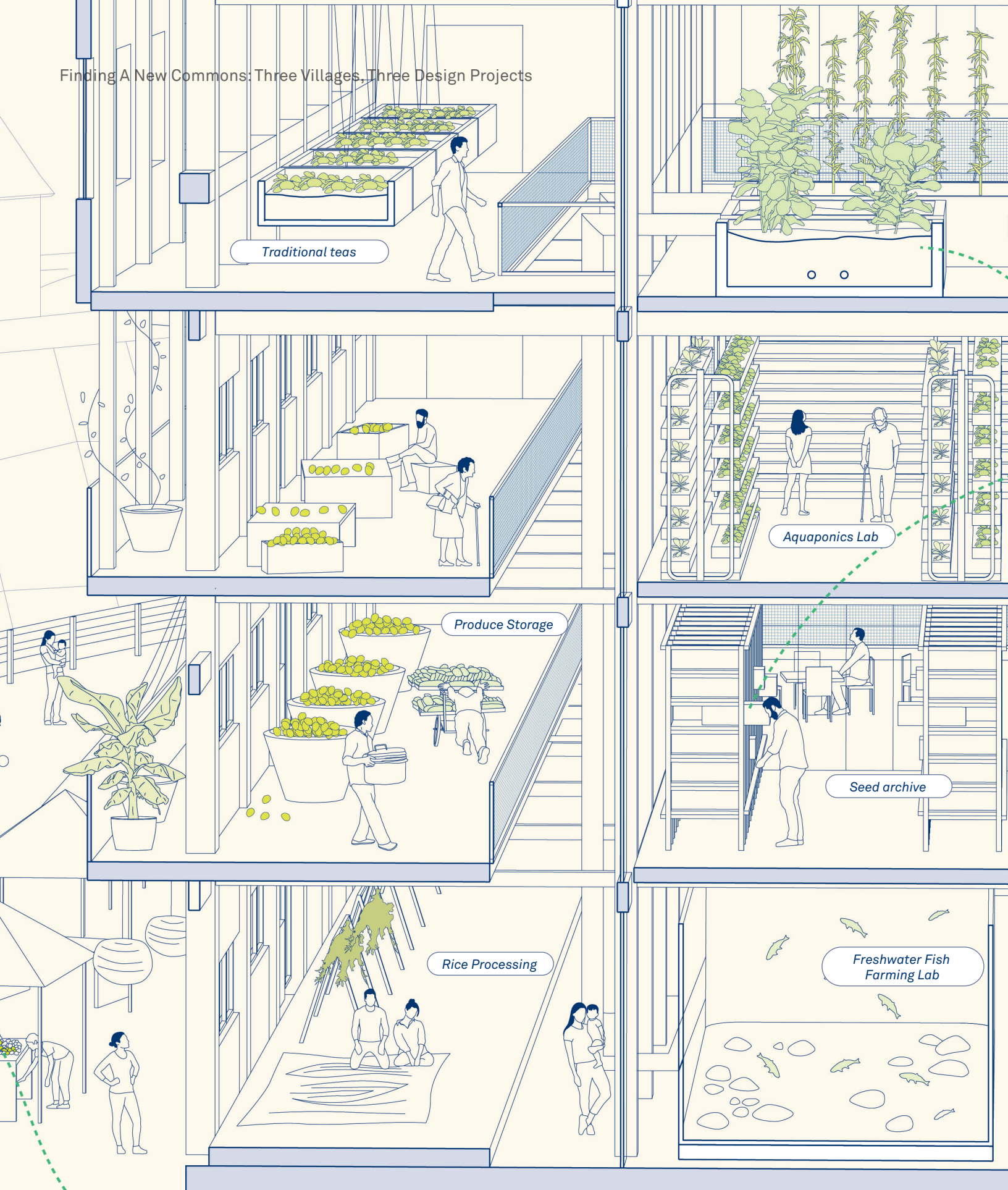
Experimental Greenhouse

Wheat grown in the labs is used to make specialty flours that are processed into bread and noodles

Heirloom crops are sustained using the seeds from the seed archive



Finding A New Commons: Three Villages, Three Design Projects





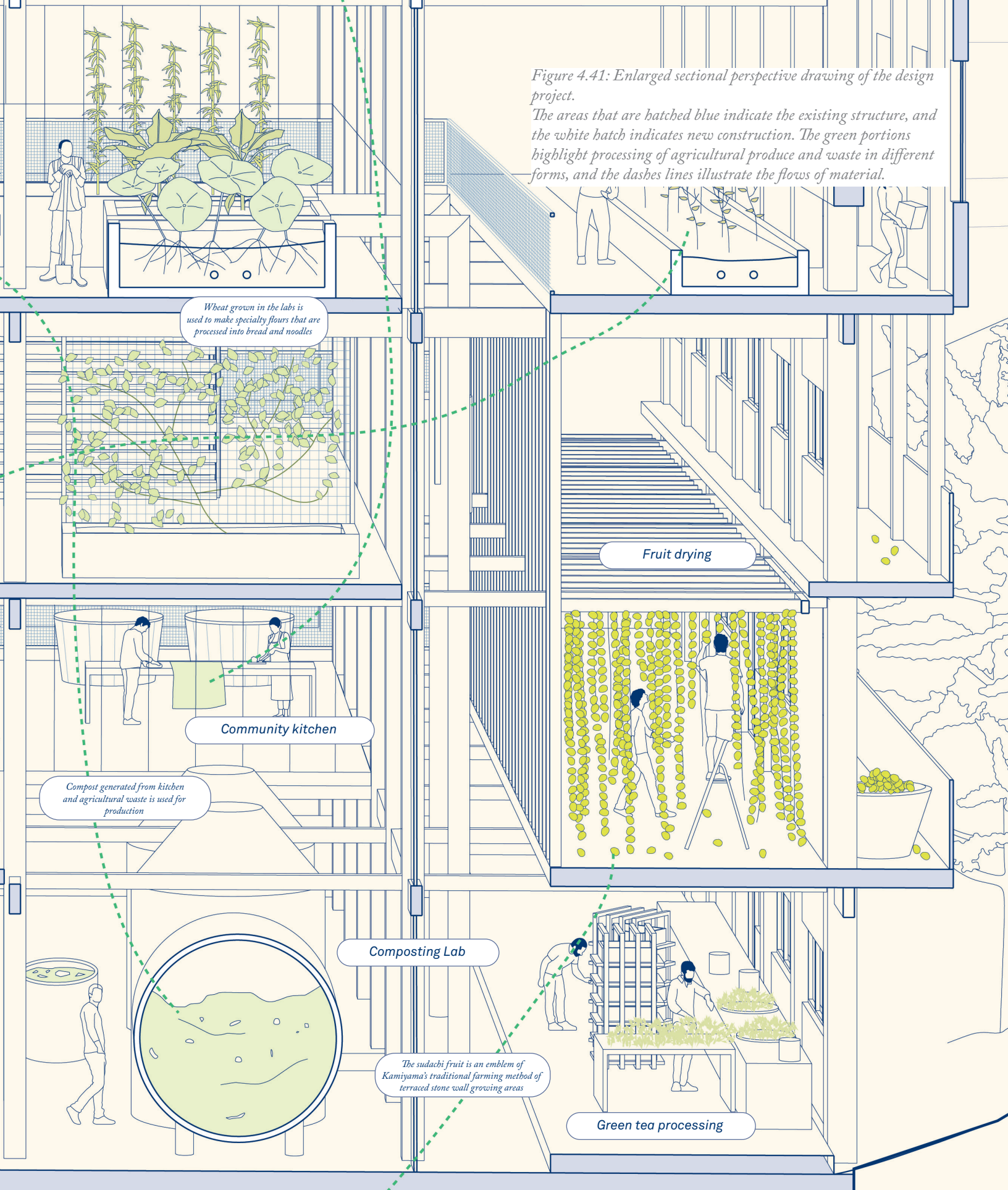


Figure 4.41: Enlarged sectional perspective drawing of the design project.

The areas that are hatched blue indicate the existing structure, and the white hatch indicates new construction. The green portions highlight processing of agricultural produce and waste in different forms, and the dashes lines illustrate the flows of material.

Wheat grown in the labs is used to make specialty flours that are processed into bread and noodles

Fruit drying

Community kitchen

Compost generated from kitchen and agricultural waste is used for production

Composting Lab

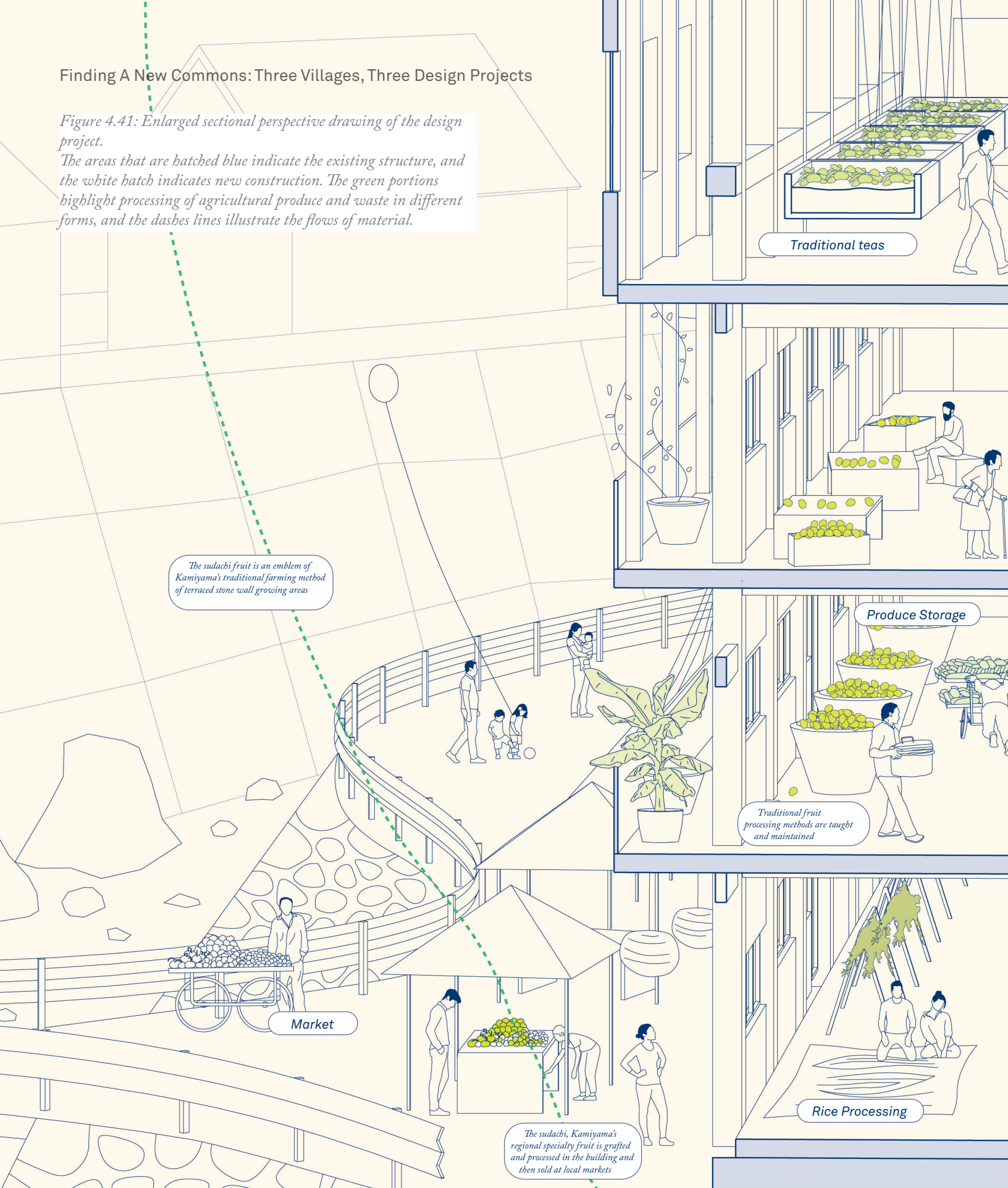
The sudachi fruit is an emblem of Kamiyama's traditional farming method of terraced stone wall growing areas

Green tea processing

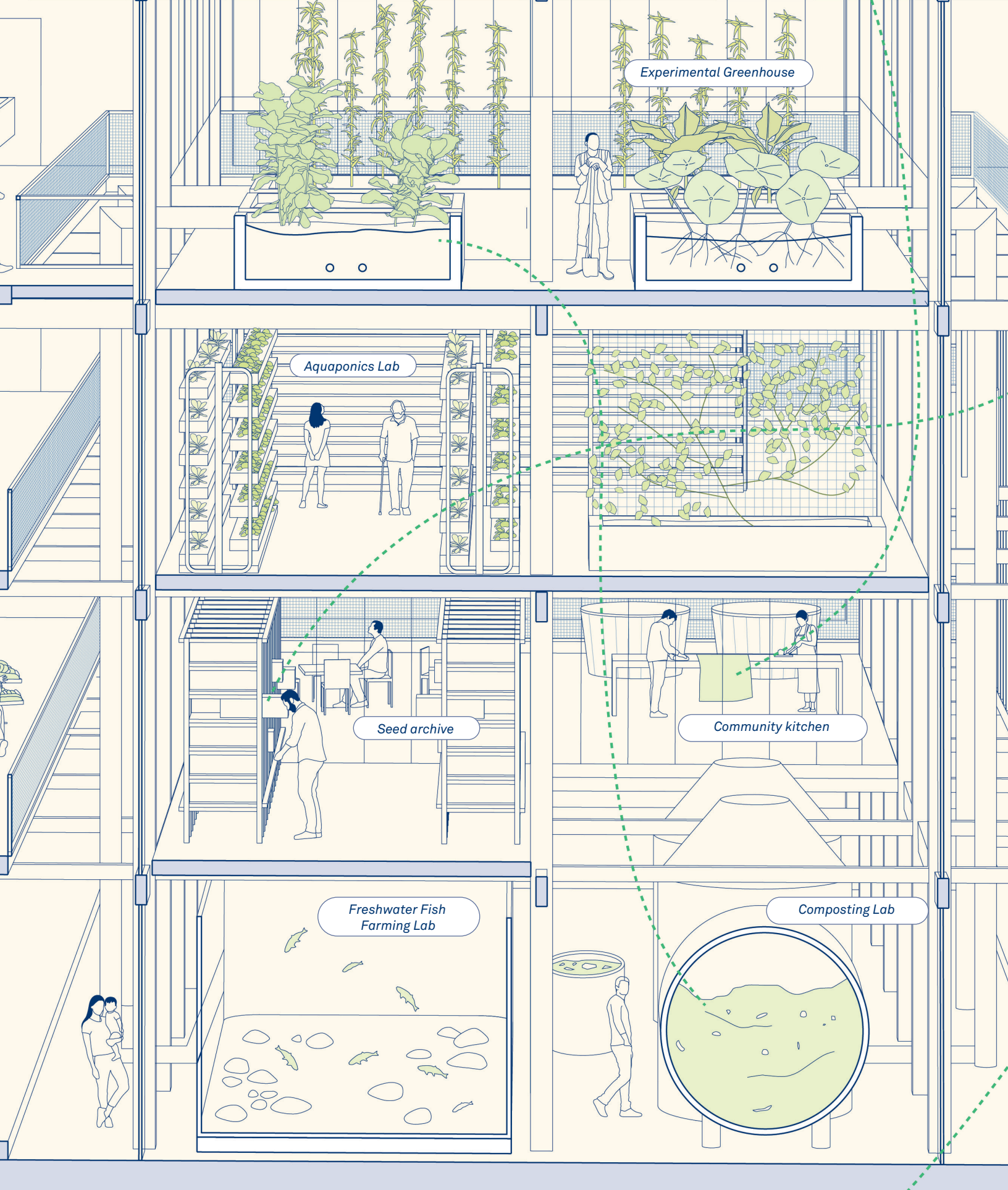
## Finding A New Commons: Three Villages, Three Design Projects

Figure 4.41: Enlarged sectional perspective drawing of the design project.

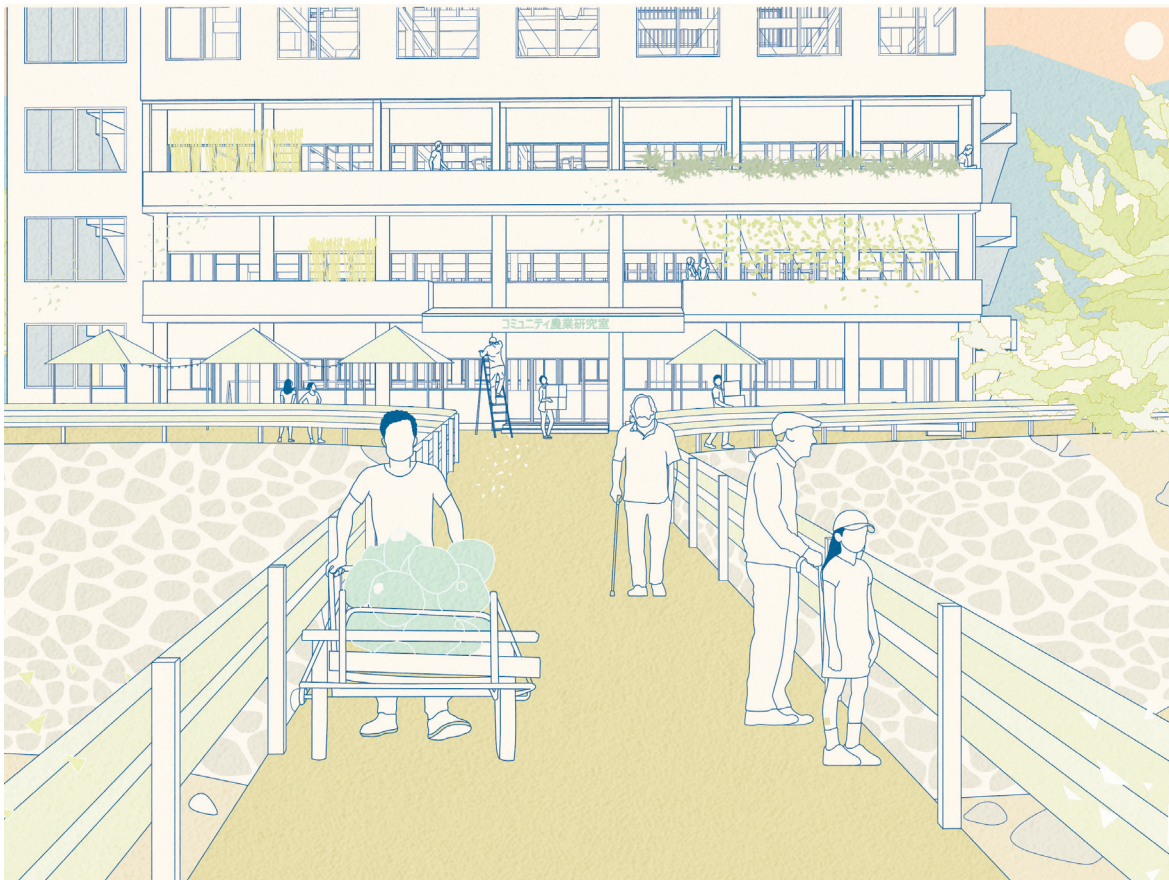
The areas that are hatched blue indicate the existing structure, and the white hatch indicates new construction. The green portions highlight processing of agricultural produce and waste in different forms, and the dashes lines illustrate the flows of material.



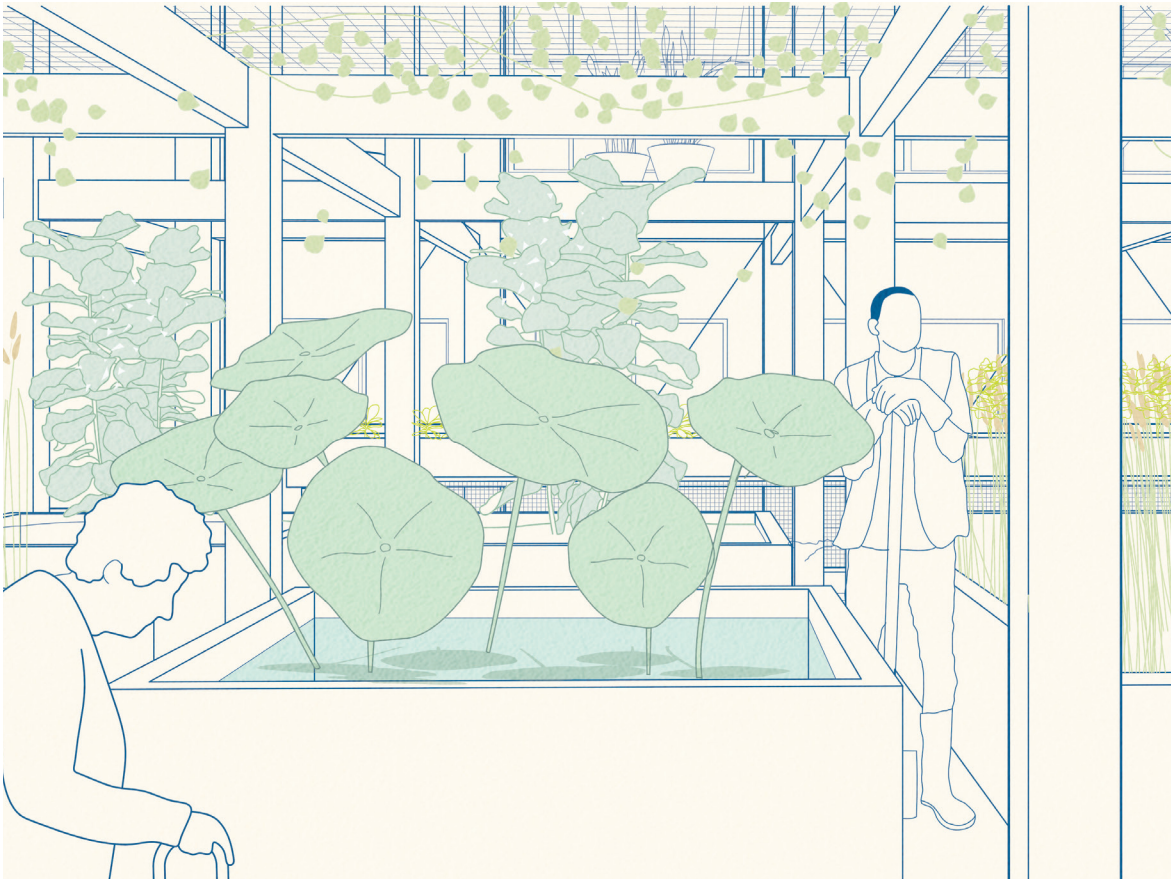




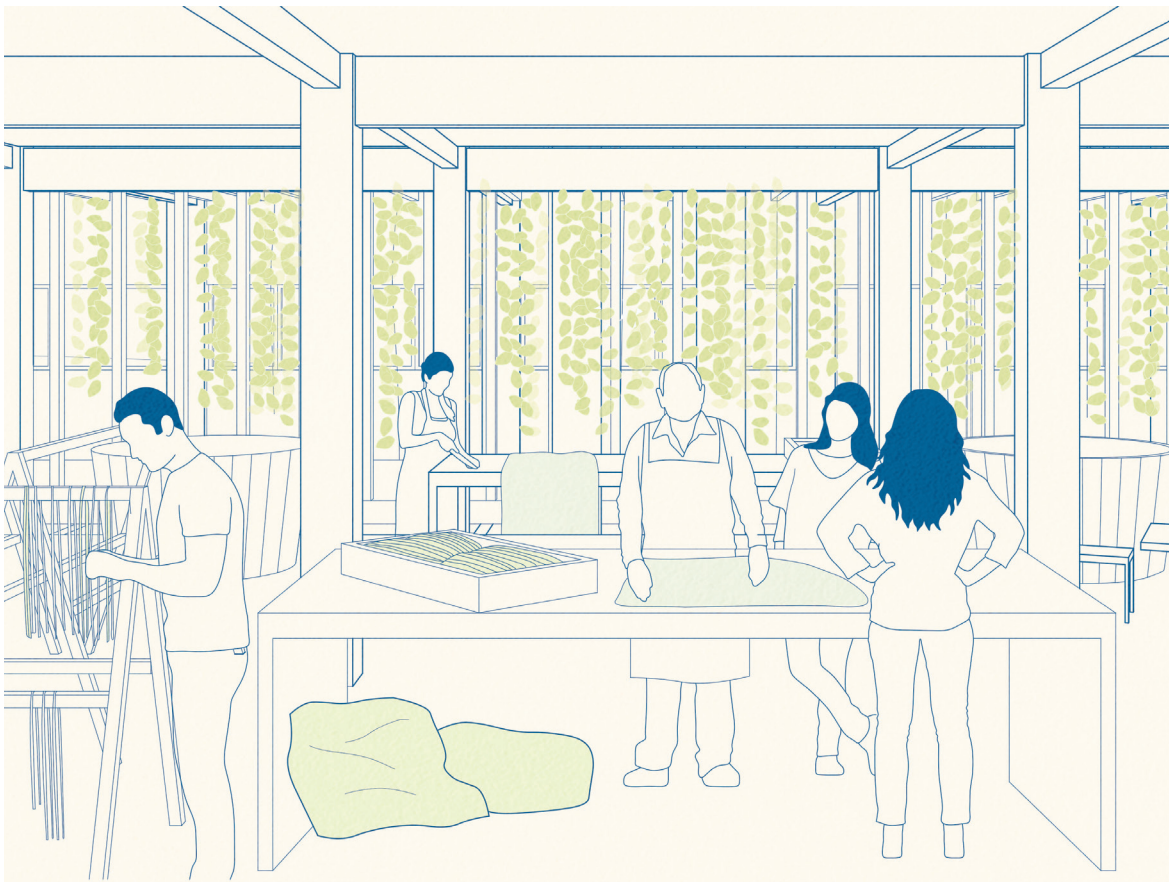




*Figure 4.42: Perspective of the approach to the school building, and greenery emerging from the interior*

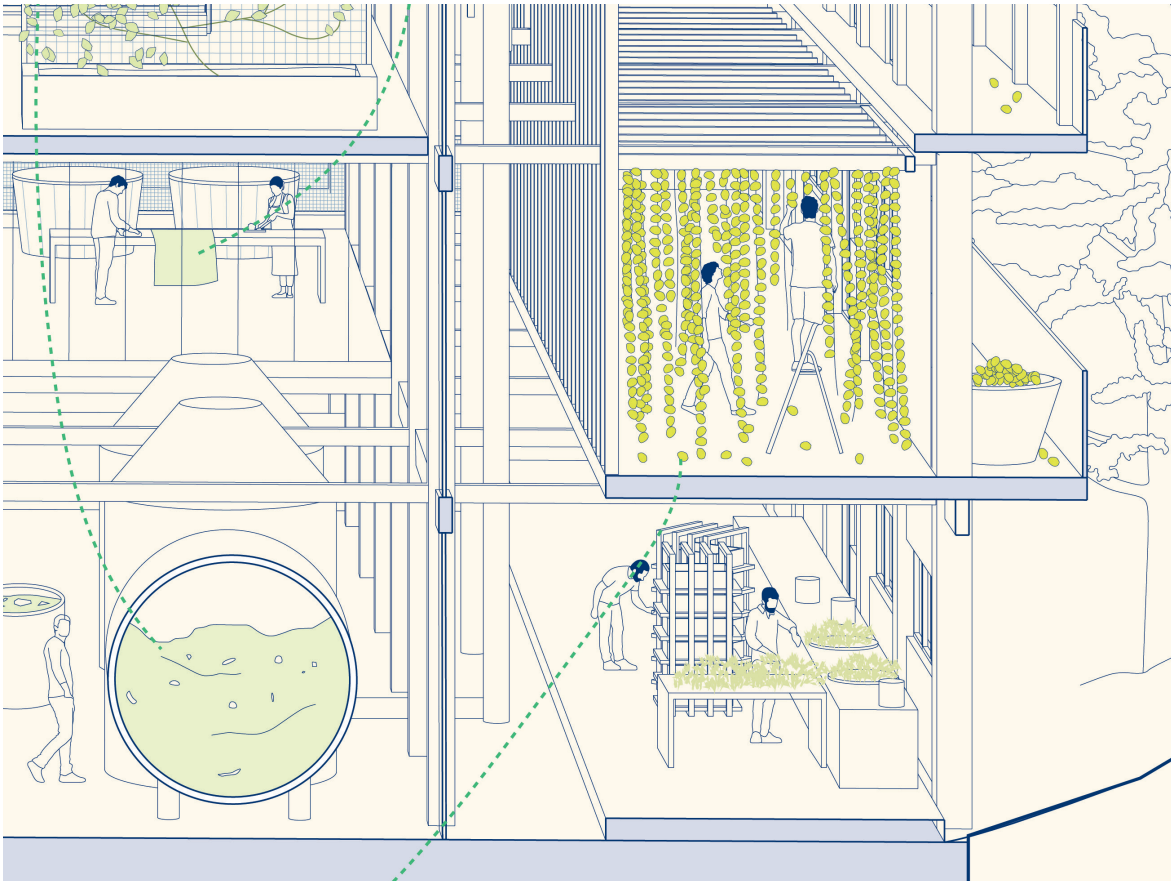


*Figure 4.43: Perspective of the experimental greenhouse*



*Figure 4.44.: Perspective of a soba-making workshop taking place in the learning kitchen*





*Figure 4.45: Enlarged sectional perspective, highlighting programmatic adjacencies*



**CHAPTER 5**  
**Conclusion**



## 5. Conclusion

The architectures of this thesis imagine spaces that use local knowledge and materials to cultivate social connections to place. It is proposed that by fostering these kinds of relationships and knowledge, the quality of life of residents in depopulated communities would be improved, and the out-migration rate of the younger generation reduced. In addition, the thesis suggests that the impact of these projects could extend to urban areas, promoting migration to the countryside. If urban dwellers were to relocate to this new context, synthesizing the opportunities and qualities of rural living with the city, Japan's current marginal rural areas could function as a test bed for a new "post-urban" life. Further research might study how vernacular villages might involve with newcomers in their architecture and spatial relationships. While a re-inhabited school may function as a new type of public and cultural space within a community, what further design opportunities lie within the village fabric? Additionally, what opportunities lie in cross-cultural analysis for architecture embracing degrowth? A number of countries in Europe and Asia (Italy, Germany and South Korea as examples) are facing similar demographic trends of ageing and urban migration, with unique social repercussions in each. What opportunities lie in building re-use and the sustainability of local knowledge in cultures outside of Japan?

Through conversations with Japanese architects navigating the future of building and living with degrowth, it became evident that successful architecture in this context—architecture that is well-used by local residents, creates new social overlaps and initiates discussion within communities – is a product of long-term, dedicated relationships between architects and the public. Hiroto Kobayashi's research and design work, for example, has involved incremental design interventions over ten years, with a majority of the work dedicated towards conversations. Toshikatsu Ienari's project evolved from many weeks of living in Shodoshima, spending time with the future users of the building in informal ways. While the site visits of this thesis were approximately one week in each place and involved conversations with a variety of individuals, additional time and focused discussions with the residents would have to occur for the design projects to move past a conceptual phase.

Although the context research and design proposals focus specifically on the cultures and landscapes of particular places, the methods of working of this thesis are applicable to other communities experiencing degrowth. The design of three projects in three very different contexts allowed for an exploration in different proportions of industrial, social and public programming, demonstrating that a number of different combinations and organizations of activities have the potential to be fruitful. While many communities are unlikely to respond to change or welcome newcomers from cities<sup>56</sup>, there are many places in Japan that would want to sustain their local histories even if that leads to re-thinking how they live.

The project aims to redirect the current focus that architects and planners have on improving urban life to the opportunities that exist in the countryside. Involving the community's opinions and stories in the development of a built project is a growing objective for design practices, but the scale of city communities often muddles the process. Focusing on smaller, rural communities will allow for more collective design work.

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56 Peter C. D. Matanle, *Japan's Shrinking Regions in the 21st Century* (Amherst, N.Y.: Cambria Press, 2011).

Gathering stories from Sado Island, Kamocho and Kamiyama also led to many larger questions about the world we live in. As the world becomes increasingly globalized, what changes face us if we choose to embrace degrowth?

I recall the misted forests and lakes of Gunma that the train tracks cut through on my way to Sado. It is hidden from everyday life in Tokyo that the water coming out of the taps traces back to that distant landscape. A tremendous disconnect from context allows for the many conveniences we've grown accustomed to in our urban lives. Ultimately, the questions of this thesis are directed at how architecture might re-orient our universalized attention. In Japan, collective identities are deeply rooted in places that have been forgotten. Re-inhabiting the haikō allows us to imagine how and why we might want to remember those places.

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## Films

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