



Urban Habitat: Designing a Wellness Hub for Construction Workers

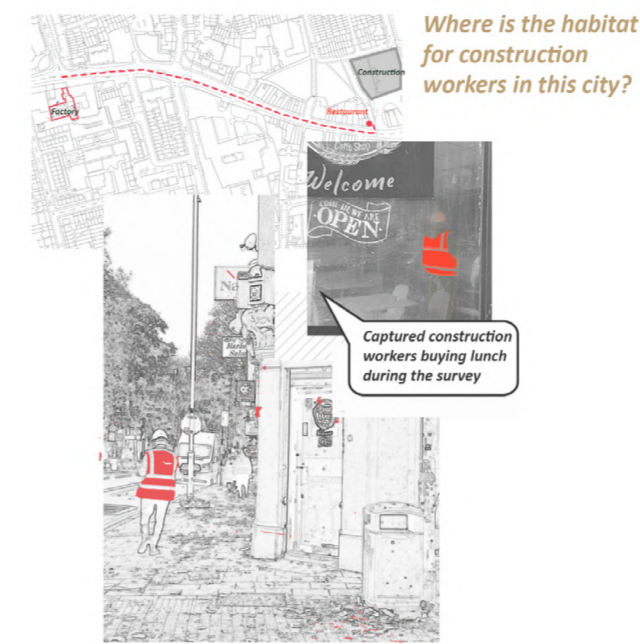
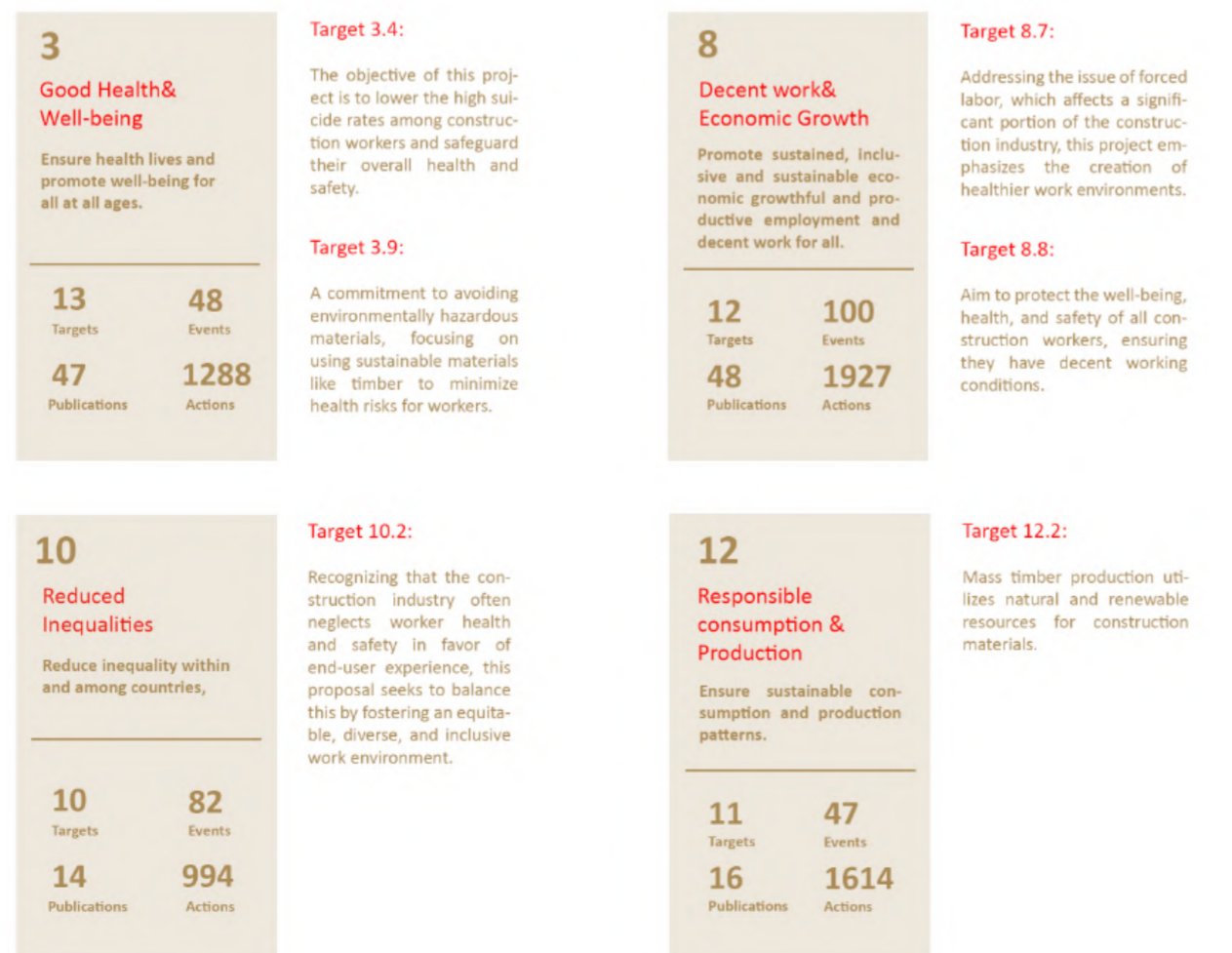
Labour Exploitation, Modern Slavery, Health, Safety and Well-being, Modular Construction, Social Sustainability

Wa Xia

I designed a wellness hub in the former Kennedy's Sausage Factory for construction workers and the local community, focusing on relaxation, health, and safety through interaction with nature. Due to the high risk of exploitation faced by construction workers, the construction industry is facing a severe labour shortage issue. People are reluctant to enter this field, leading to unsustainable industry development. This project aims to create innovative interior architectural approaches that protect the health, safety, and well-being of construction workers to ensure the industry's sustainability.

This project incorporates modular construction methods, enabling adaptable and temporary structures through prefabrication techniques. Using a wood structure that allows rapid assembly and disassembly, lowers construction workers' health risks while making them feel more relaxed. With rich functions and spaces, workers can have their habitat in the city during their free time, relieving stress from high-pressure work environments and reducing the probability of work-related stress. Importantly, this measure demonstrates the sustainable design of the construction industry centred around workers and showcases innovation in developing a healthier working environment for a sustainable future.

Sustainable Development Goals (Diversity, equity & inclusion)

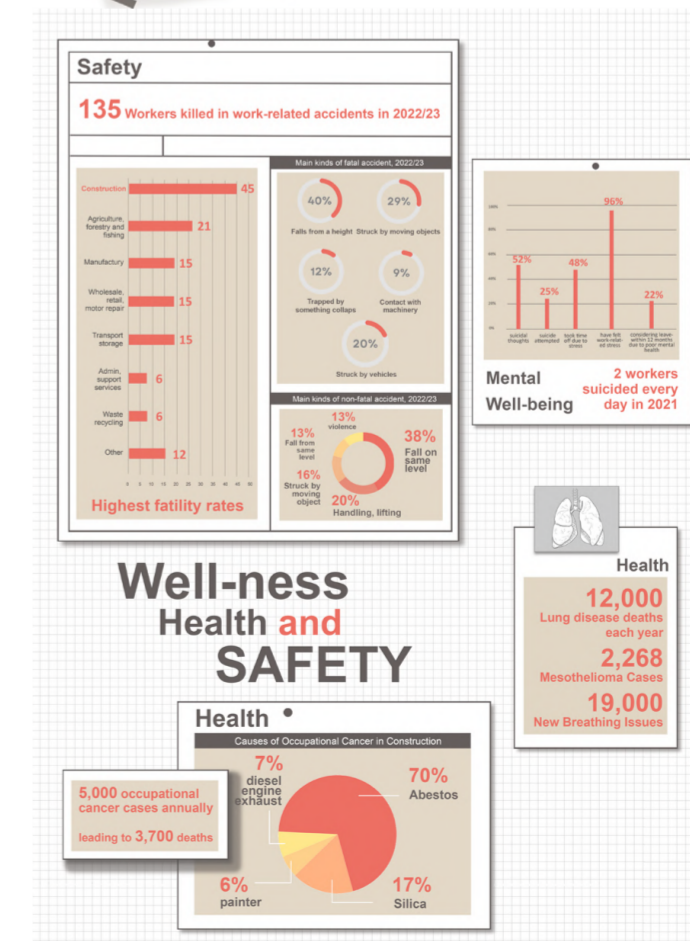
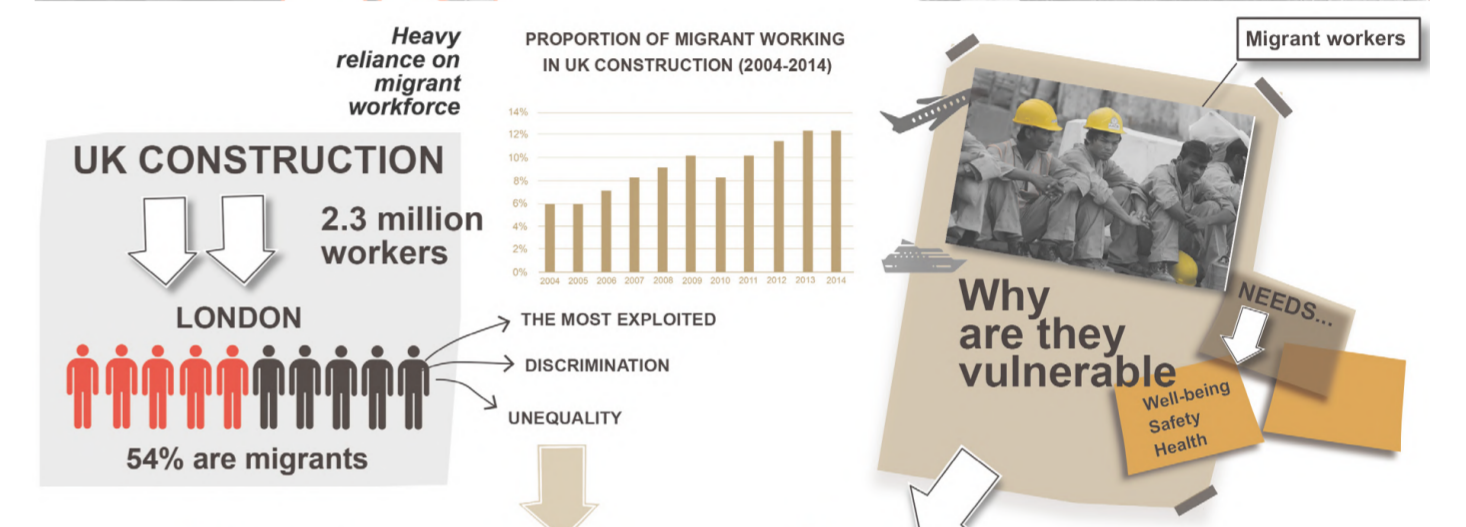


Along Peckham Road, I observed a construction site registered with the Considerate Constructors Scheme, which promises a supportive work environment. However, over the past three months, I've seen workers buying food from a nearby restaurant and eating lunch while standing at the site.



Construction workers' well-being is neglected.

When I sought permission to take pictures, a manager immediately stopped me. This irony highlights that despite the scheme's commitments, workers' well-being is neglected.



Research on modern slavery and forced labour in the construction industry shows that heavily dependent migrant workers are the most exploited group. Such exploitation is largely owed to their vulnerability, leading to labour shortages. Besides, many investigations on construction workers' welfare show the lack of attention to Health, Safety and Well-being for all construction workers within the industry, deeply affecting their physical and mental health. The findings highlight the importance of social sustainability in affecting the development of the construction industry and the urgent need to use innovative architectural approaches to protect workers' welfare.

Audience Analysis

Physiotherapy Room Needed for Timely Relaxation

Continual knee stress can cause bursitis and tendinitis, leading to inflammation and pain.

Overexposure to direct and reflected light causes eye fatigue.

Plants needed to alleviate visual fatigue.

What do construction workers need?

Safe and stable structures needed.

Prolonged exposure to hazardous work environments.

Quiet areas needed.

Excessive noise affects workers' hearing.

Resting Space for lying down needed

Gym Needed to Relieve Body and Mind

Gym On Site Enhances Health, Safety, and Teamwork in Construction

Construction workers face high suicide rates due to work stress.

Ample Entertainment and rest areas needed

No Place for Lunch in the City. Where is their habitats?

Indoor and outdoor dining areas are necessary.

Design Area

Roof
Outdoor

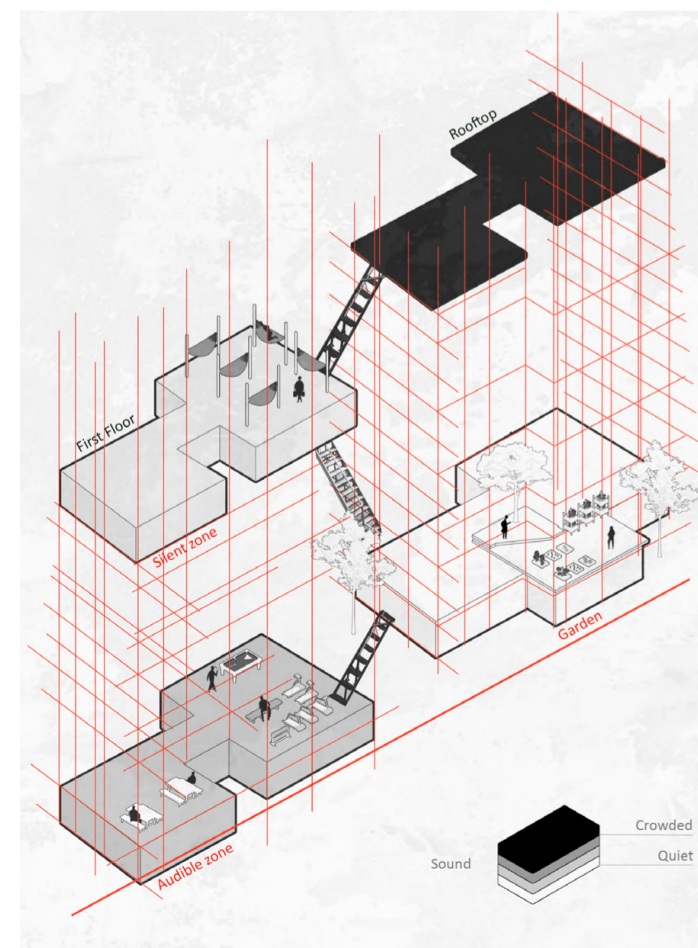
First floor

Ground floor
Outdoor garden

Chosen site
Level difference

Spatial Programme

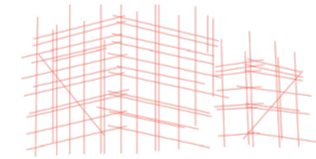
Based on the audience analysis, construction workers need spaces for recreation, rest, quiet, therapy, outdoor socializing, and greenery. Therefore, I have broadly divided my design into two main areas: a quiet zone and an audible zone.



Symbology

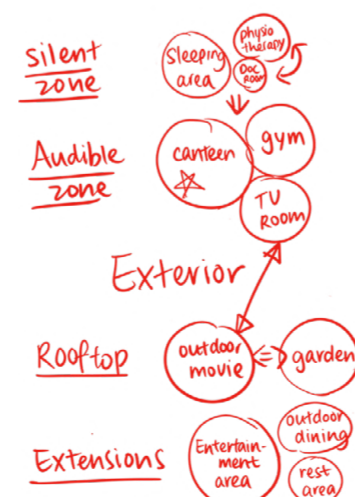


Scaffolding, in particular, is a highly representative architectural element for builders. It's temporary and extremely flexible, allowing for continuous customization to meet various needs through modular scaffolding. Designing spaces or buildings specifically for them can highlight their importance and provide a sense of belonging.



Initially, I thought that workers wouldn't want to relax in a space filled with construction symbols after leaving work. However, from another perspective, if the city lacks spaces that reflect the presence and contributions of construction workers, how can we help them feel valued?

Interior



Load-Bearing Performance

- High Strength and Durability:** Oak plywood has high strength and durability, capable of withstanding the high loads in construction.
- Stability:** Stable and resistant to deformation, providing a more stable working platform.
- Even Load Distribution:** The multi-layered structure ensures even load distribution, reducing the safety risks.

Less Chemical Treatment:

Compared to some treated woods, plywood typically undergoes less chemical treatment, reducing workers' exposure to harmful chemicals.

Stress Reduction:

Wood's natural aesthetic creates a calming environment, helping to reduce stress levels among construction workers.



HSW Benefits for Workers

Sustainability

- Renewable Resource:** Oak is a renewable resource.
- Waste Reduction:** The manufacturing process of plywood makes full use of the wood, reducing waste.
- Carbon Storage:** Wood stores carbon throughout its life cycle, helping to reduce the amount of carbon dioxide in the atmosphere.

Reduced Dust Exposure:

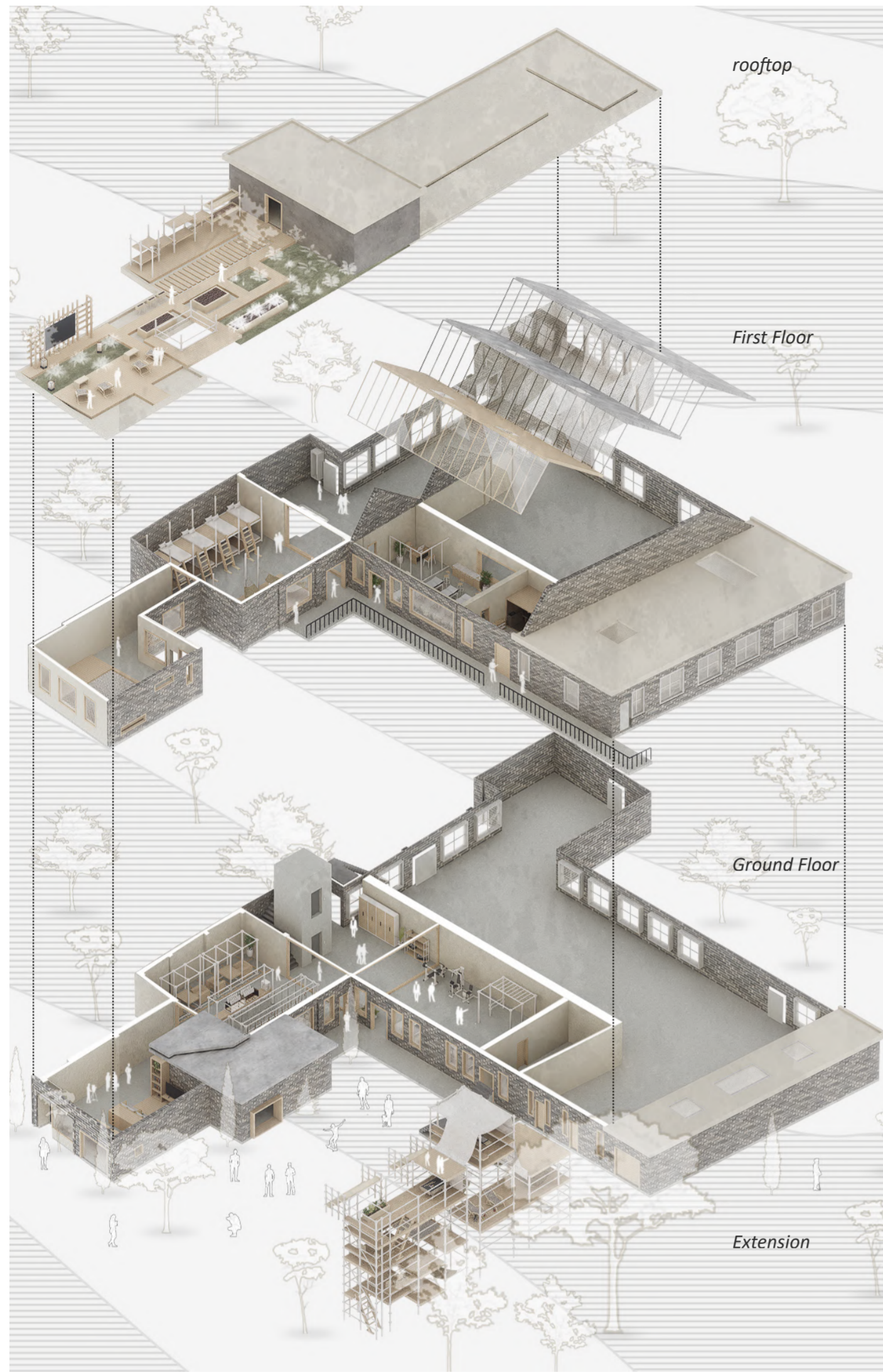
The smooth surface of plywood reduces the production of wood chips and dust during construction, lowering the risk of respiratory diseases for workers.

Safety:

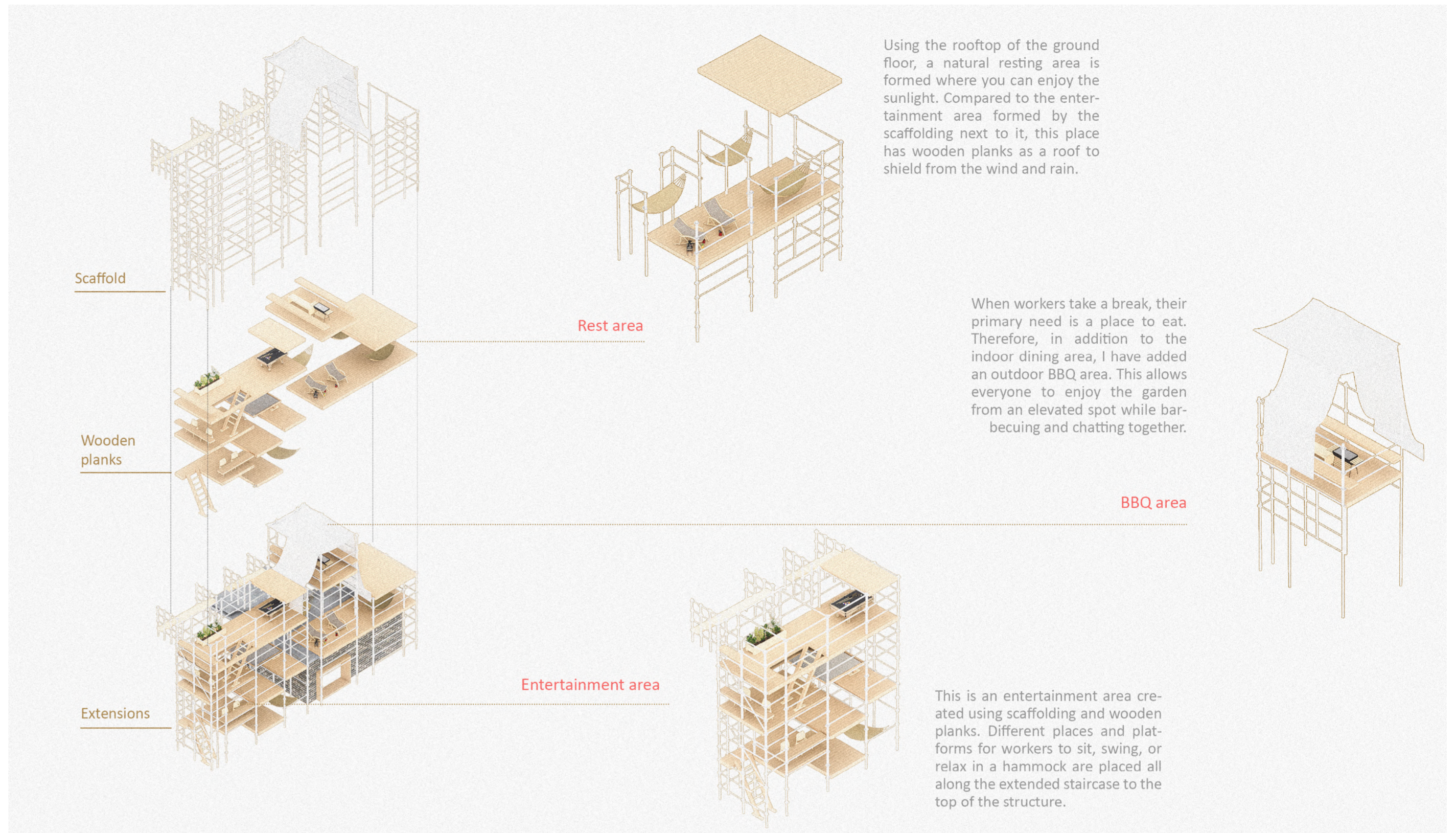
The stable structure decreases the risk of accidents caused by plank breakage or splitting.

Biophilic Connection:

Wood elements help workers feel more connected to nature, promoting relaxation and a sense of well-being.

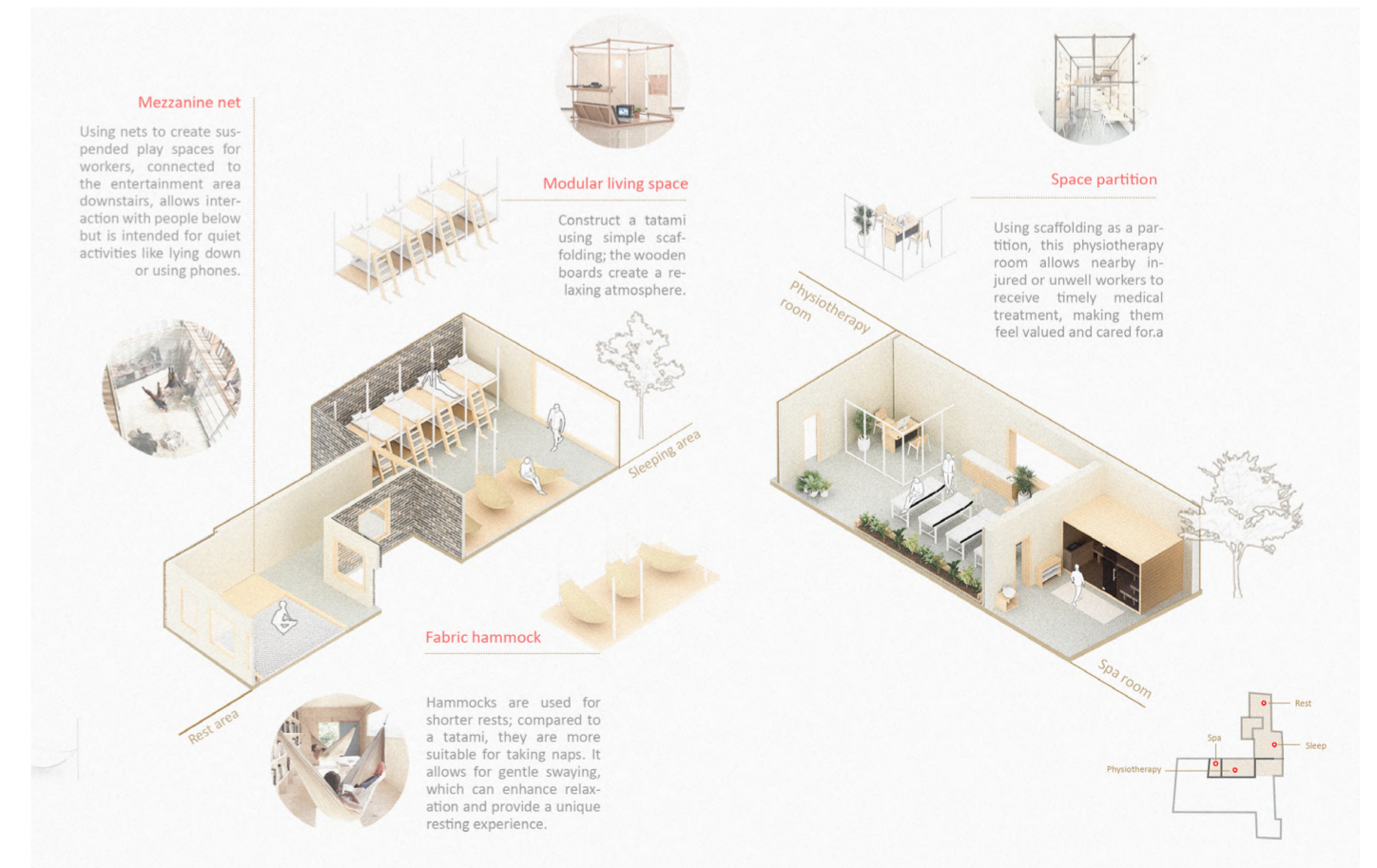
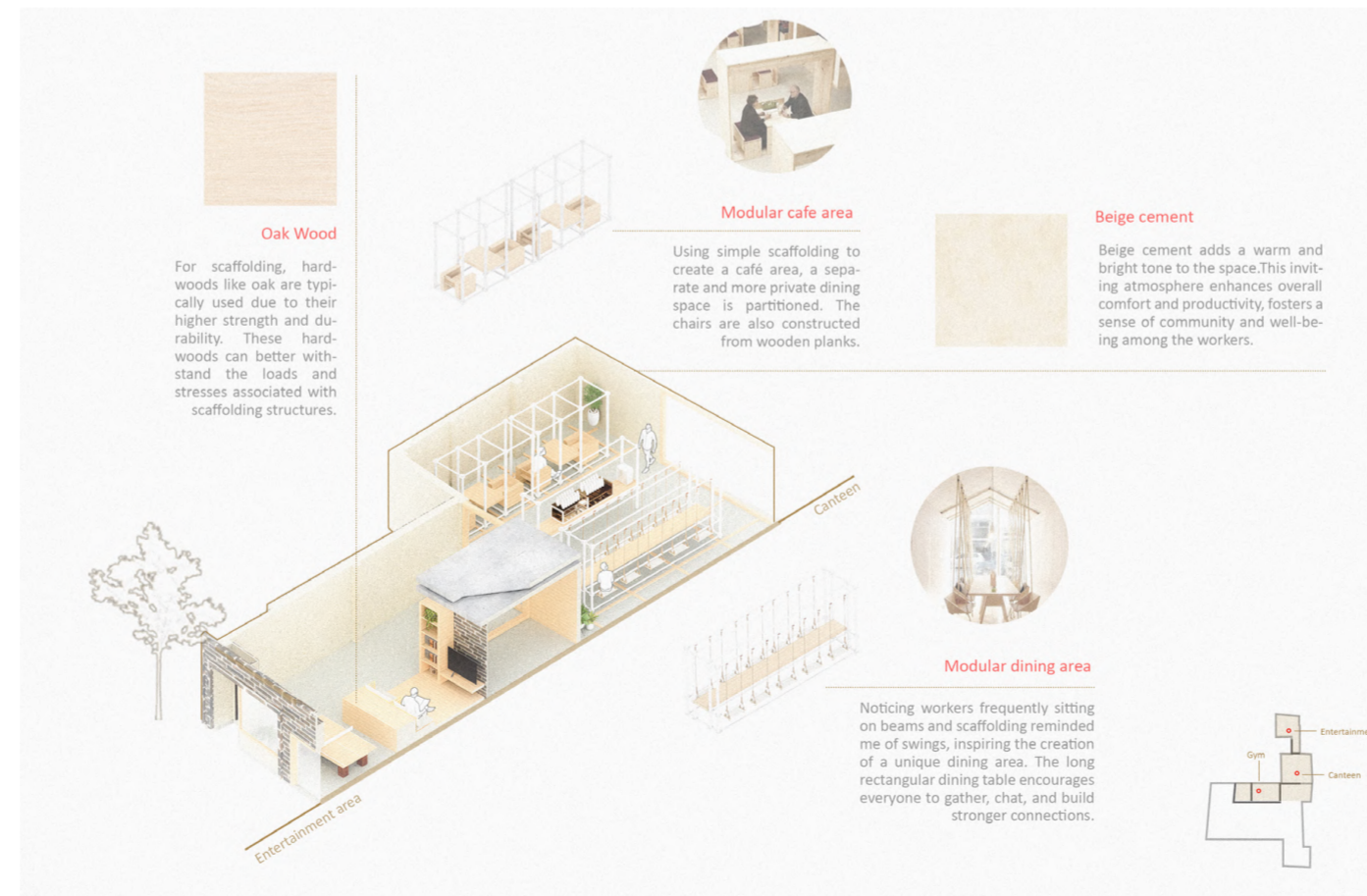


Extension



Ground Floor : Silent Zone

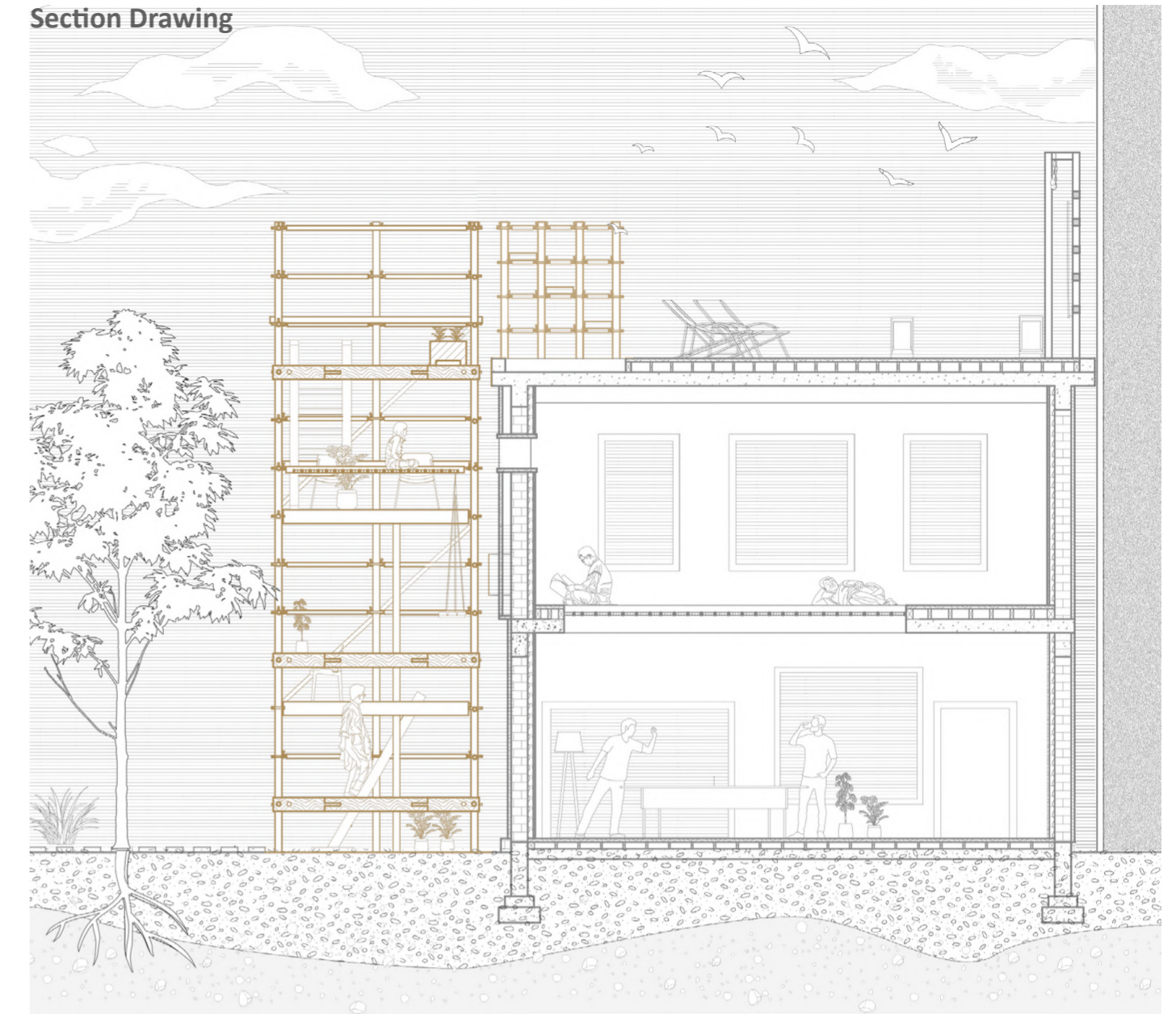
First Floor : Audible Zone



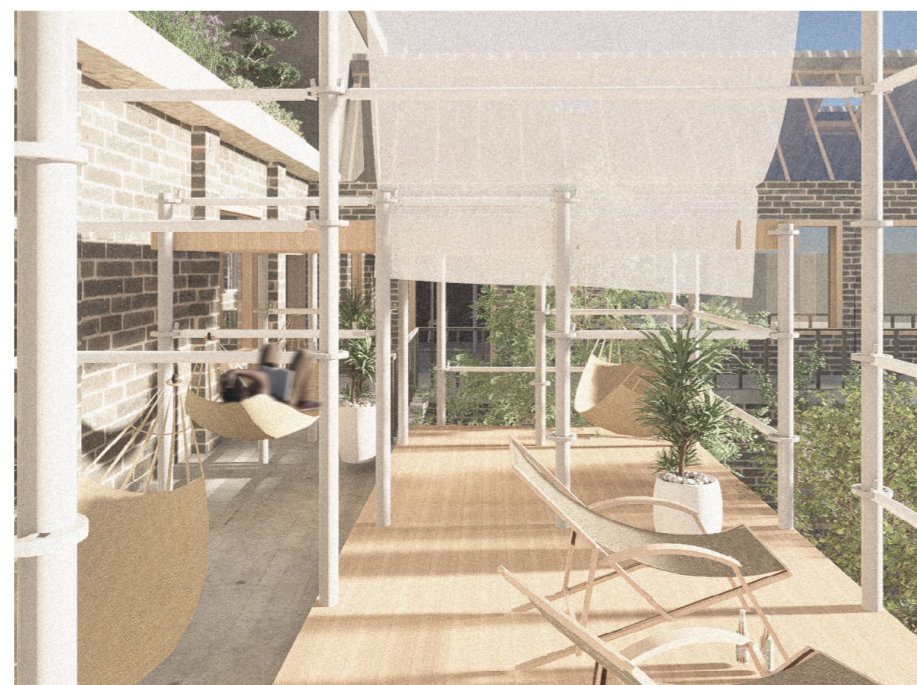
In terms of social justice, equity, diversity, and inclusion, these communal areas are designed to be accessible and welcoming to all workers, regardless of their background or role. The space promotes equal opportunities for rest and relaxation, ensuring that every worker has a place to unwind and connect with colleagues. By fostering an inclusive environment, the design encourages a sense of belonging and community, where diverse perspectives are valued and respected. This approach not only enhances worker wellbeing but also contributes to a more cohesive and equitable workplace.



Section Drawing



Incorporating greenery into spaces can greatly benefit construction workers' health and wellbeing. Plants reduce stress, improve mood, and enhance air quality by filtering pollutants. This creates a more relaxing and pleasant environment, providing a restorative break from their demanding work. Additionally, I included a garden in my design to foster interpersonal communication, team unity, and community spirit among workers, making their work more enjoyable and memorable.

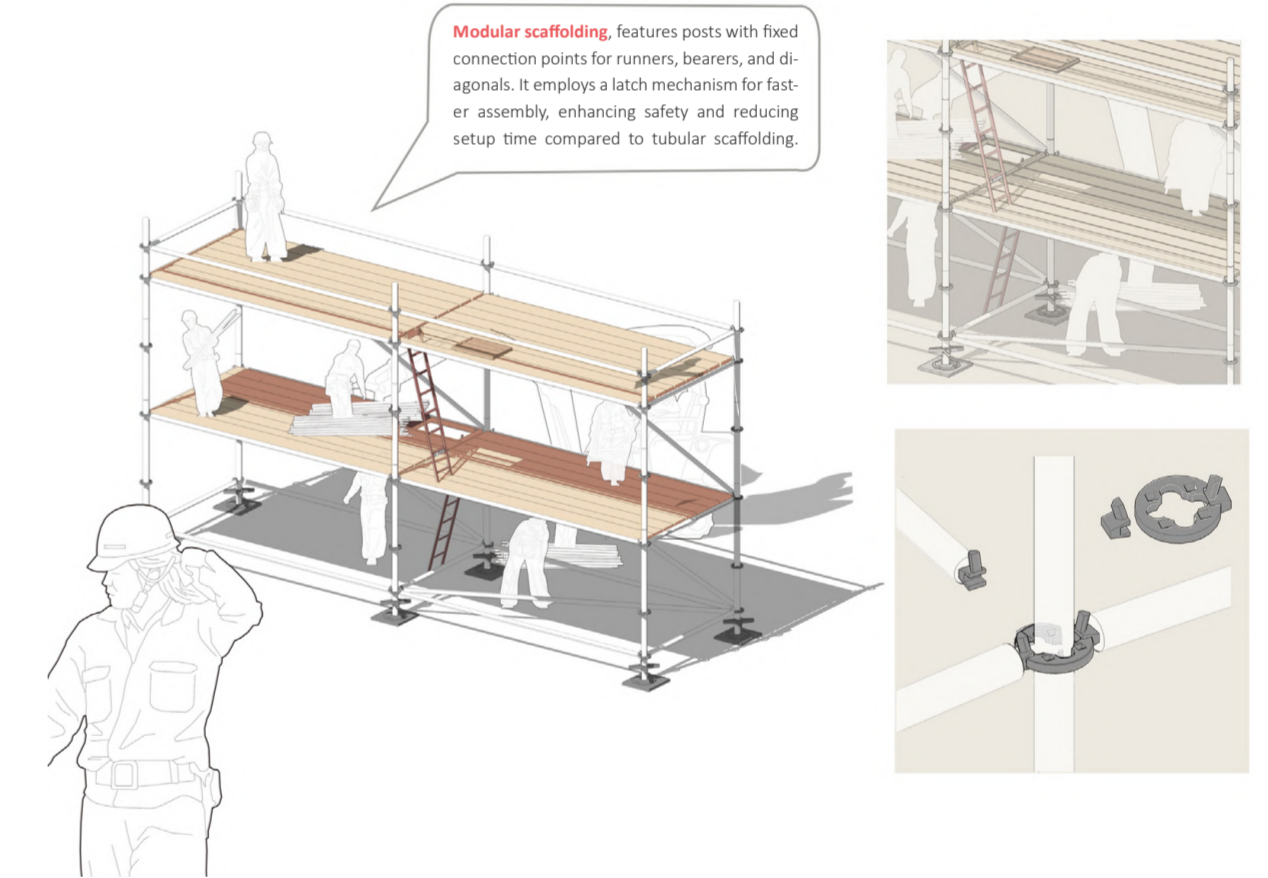
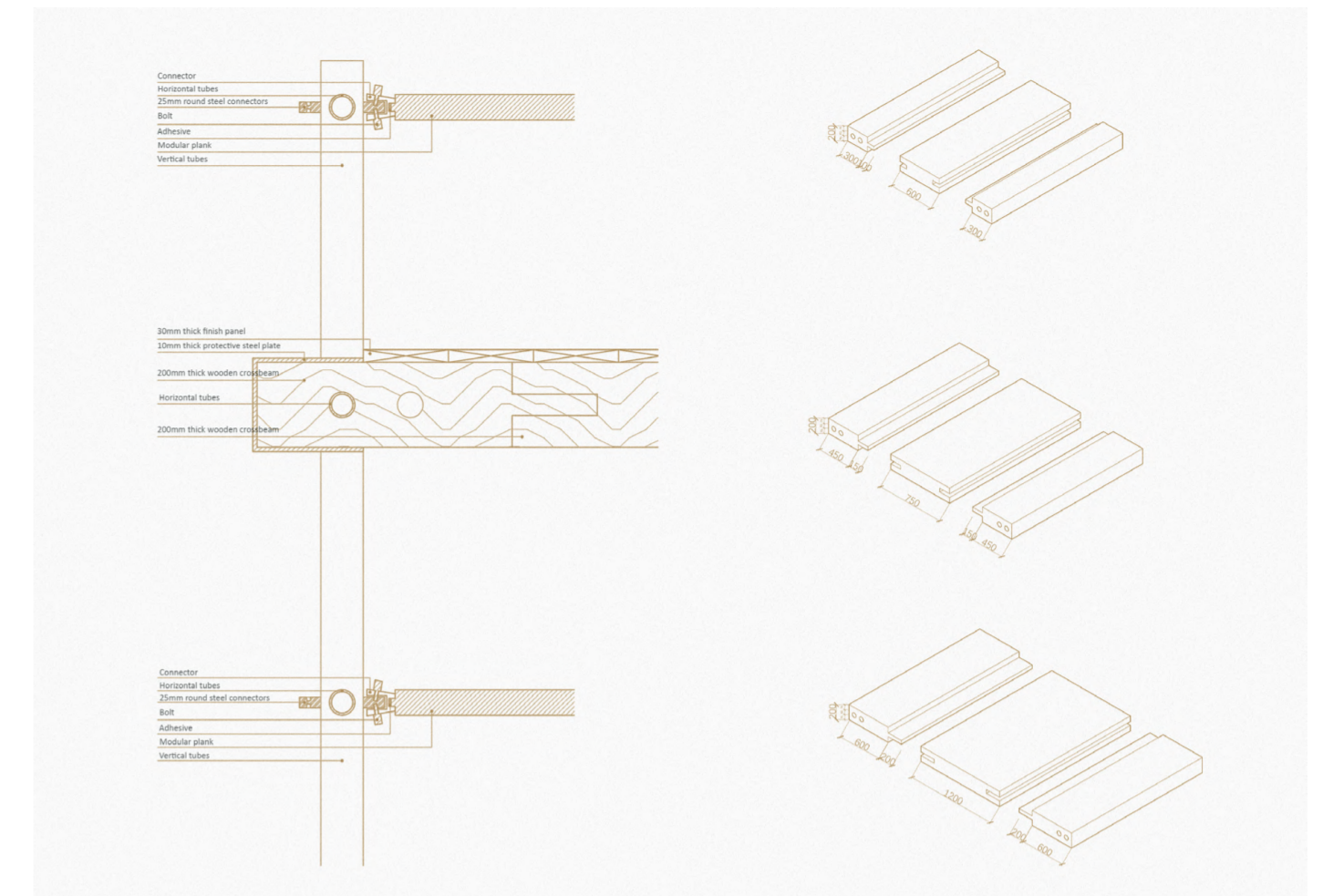


Roof plan





Construction Analysis



Extension plan

