Designed as a multifunctional center equipped with technological solutions developed before disasters, the project provides emergency shelter after disasters while also offering educational programs for **university students.** Through its interior spatial organization that integrates **shelter, education, technology, and communication,** the center ensures an accessible, flexible, and functional use.

The training programs conducted and the innovative solutions developed in the pre-disaster phase are designed to support continuous communication during and after crisis situations. **By working on uninterrupted communication systems and projects that strengthen disaster management, students actively contribute to enhancing society's preparations for emergencies.**

This center is not merely a shelter; it is an innovative solution that promotes awareness and technological development **before disasters,** offers a safe and secure environment **during emergencies,** and supports recovery and reconstruction processes **after disasters.**

Mesh Network-Based Local Communication (FireChat, Bridgefy, Briar):

Even without internet access, a local network can be set up via Wi-Fi and Bluetooth, allowing user near the center to send and receive messages and access information through their mobile phones.

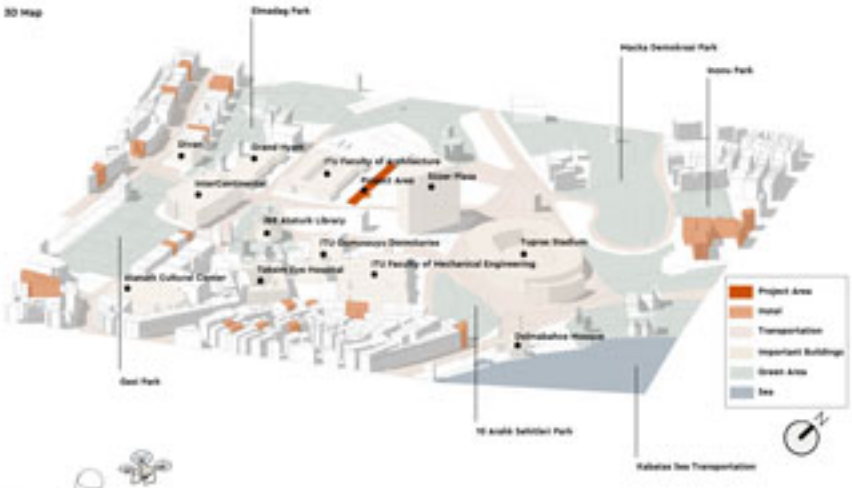
Autonomous Data Drones:

Compact, low-altitude drones that relay messages and deliver small essential items to support people in areas with disrupted communication.

Low-Power Radio Communication:

A self-sufficient radio system providing reliable communication within the center and with its surrounding areas.

3D Map



Storyboard

Through pre-disaster training, disaster awareness is developed and teaches how to communicate during a disaster.

During a hackathon organized in the technology laboratories, IoT devices are tested to develop a system that enables people to send signals to each other after an earthquake.

When an emergency occurs, the mesh network application can be used thanks to the training received from ECHO.

Communication with rescue teams is maintained via radio.

In the drone test area, drone systems are used to transport supplies to disaster-affected zones.

TEMPORARY ACCOMMODATION FACILITIES (FOR STAFF)

- School
- Hotel
- Guesthouse
- Dormitory

TEMPORARY SHELTER AREAS (FOR DISASTER VICTIMS)

- Container City
- Tent City
- School
- Gym
- Hotel

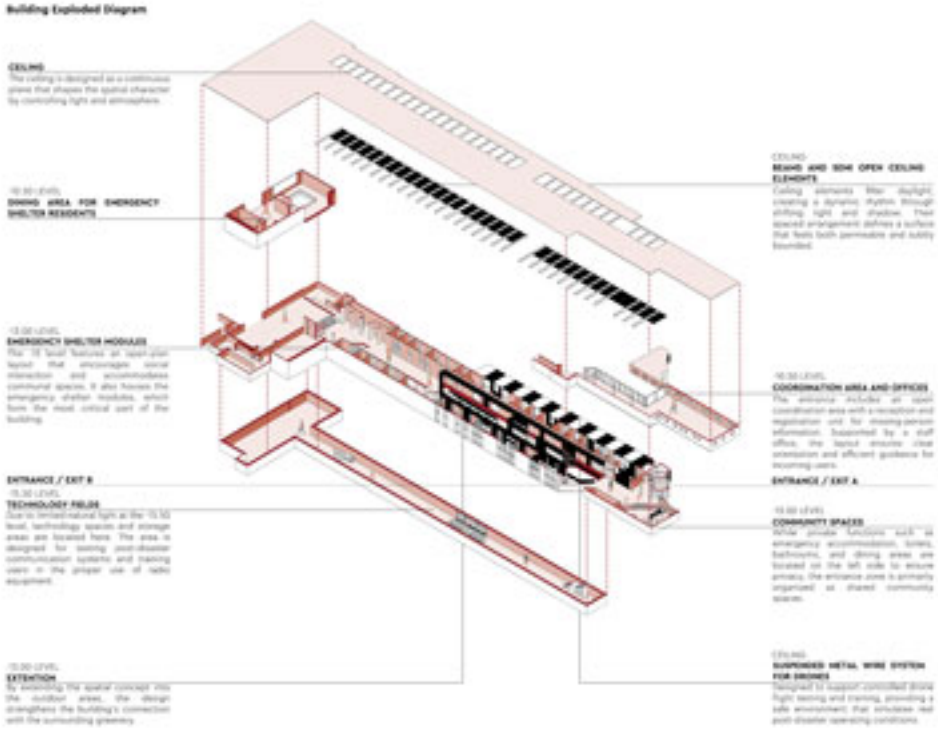
EMERGENCY SHELTER AREAS

- Covered Market Area
- Football Field
- Stadium

Site Plan

- Project area
- Important buildings
- Pedestrian path
- Building entrance/exit
- ITU Taşkışla
- Transportation
- Green area

Building Exploded Diagram



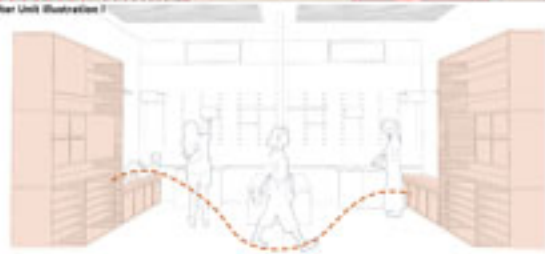
What's in ECHO?

I-I Section

Platform Seating and Workshop Area

Drone Flying Area - Digital Panels

Shelter Unit Illustration I



Designed with modular systems, this unit offers a flexible use that supports daily living activities in addition to shelter. Functions such as storage, working, and social interaction are integrated within a single, cohesive volume.

Entrance - Public and Technology Experience Area

Drone Flying Area and Drone Route

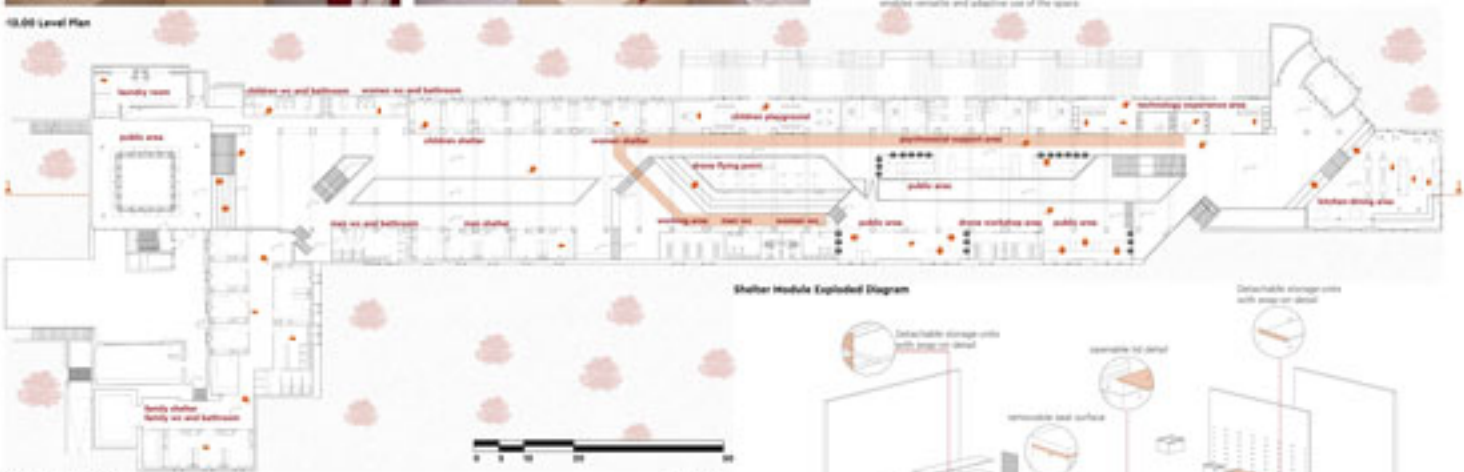
Shelter Unit Illustration II

Addressing the need for temporary shelter in the post-emergency phase, this space is supported by transformable furniture designed to meet essential requirements such as personal privacy and rest. The flexible layout, shaped by user interaction, enables versatile and adaptive use of the space.

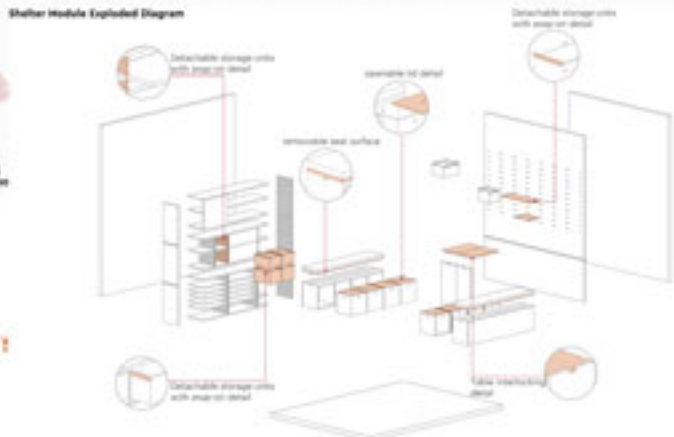
Public and Psychosocial Support Area

Drone Take-off and Equipment Area

-10.00 Level Plan



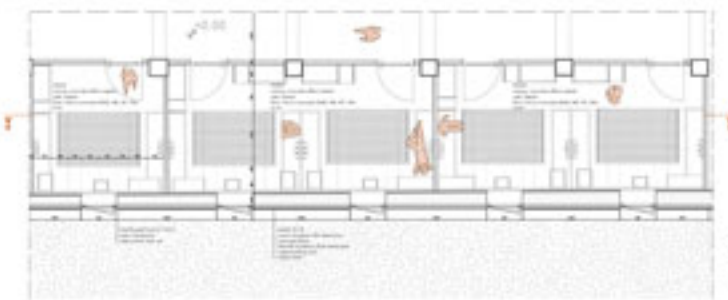
Shelter Module Exploded Diagram



Modular rooms that can be rearranged according to the number of people

-10.00 Level Partial Plan

Scale 1/20



Transformation and Usage Scenarios of Modular Systems as a Necessity in Emergency Shelter Areas

MODULE I

sitting, storing, lying down actions

The module, used as a seating unit during the day, optimizes space efficiency through its transformable use, allowing for effective space saving.

MODULE II

open and closed states of product and module storage

Storage diversity is achieved by providing both open and closed storage areas

Transformable use of storage and table

Use of storage units in different sizes through a snap-in and removable system

Cube storage units can be stored here or used by attaching them to modules 1

Storage units that function as shelves when attached, creating surfaces for additional uses

Attachment of cube and shelf units

Attachable table system designed for use when needed

0-0 Section

Scale 1/20