

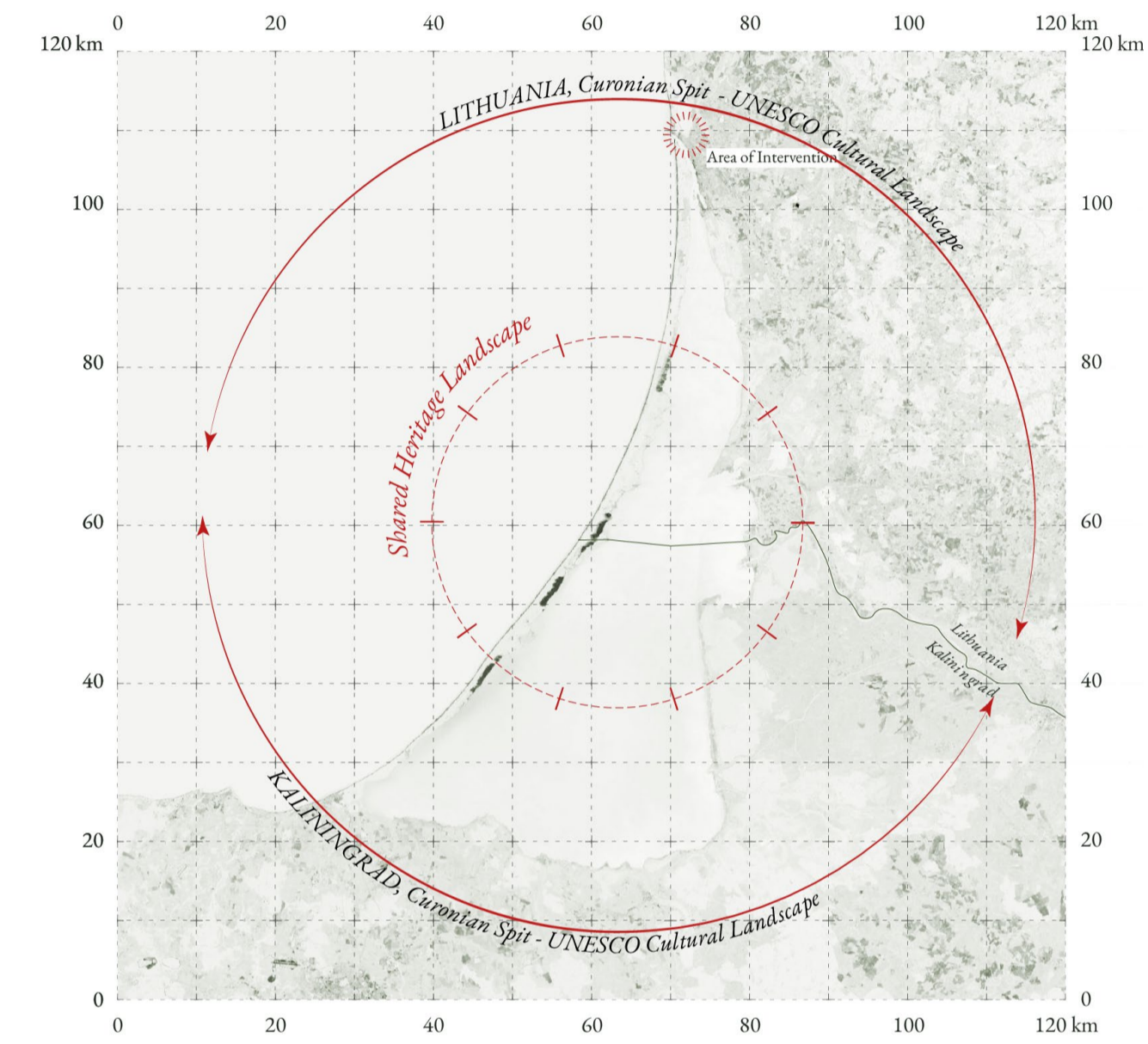
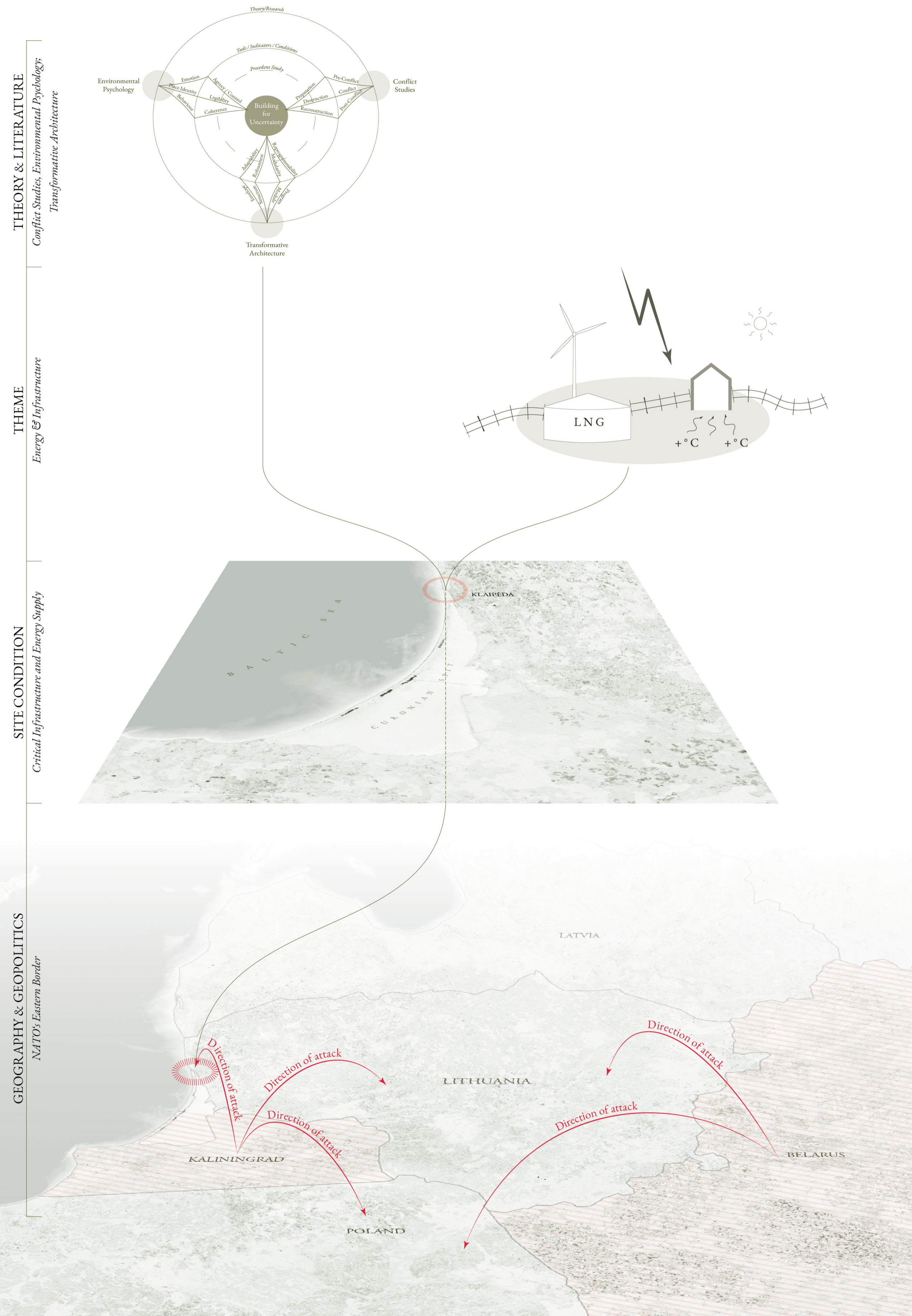
# Adaptive Permanence: a structural response to energetic vulnerability

## Theoretical Framework

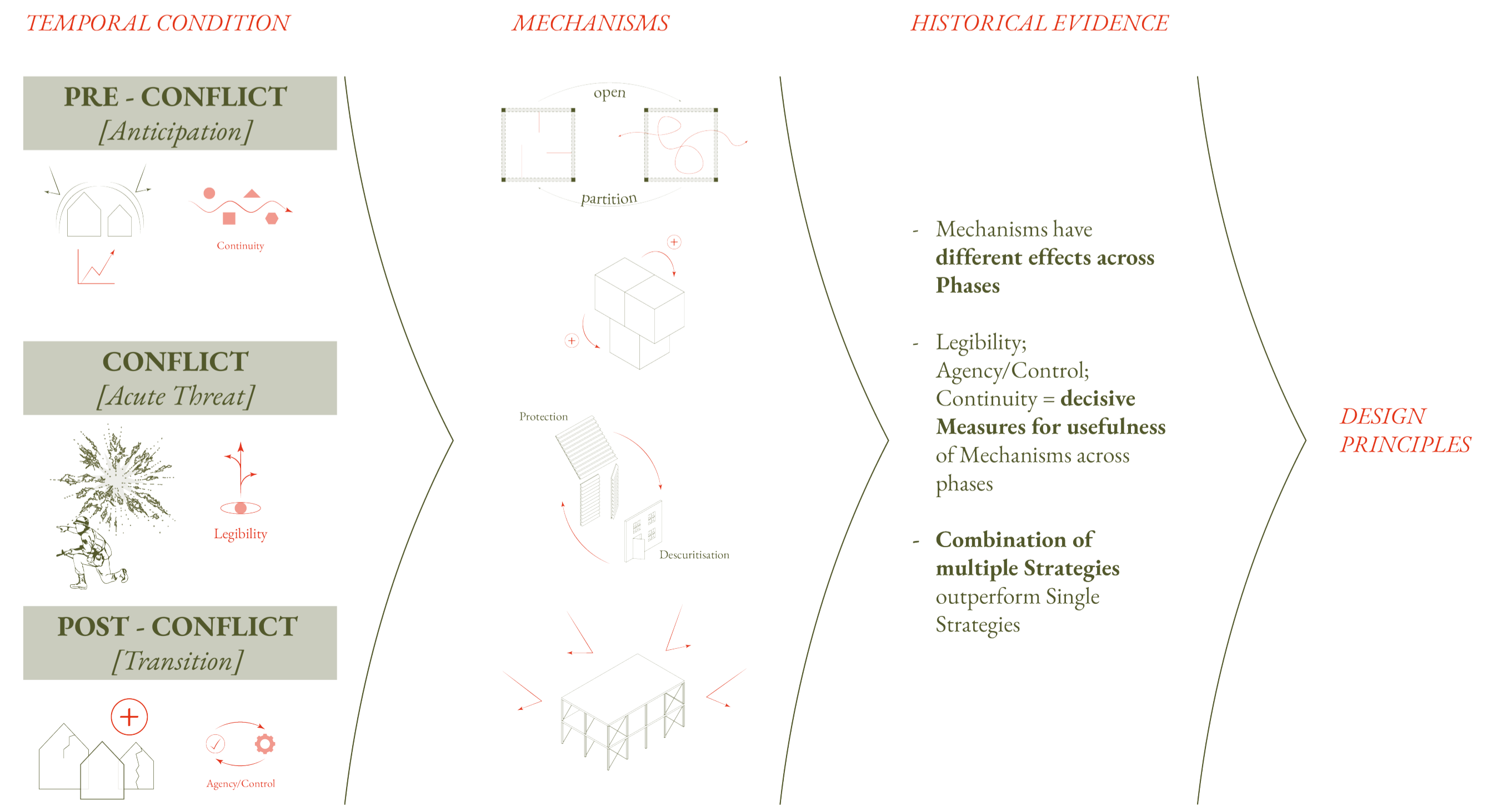
By Sophia Idalies Birgit Scheive (6303161)  
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Prof. Dr.-Ing Ulrich Knaack  
Course Title: EXTREME Graduation Studio  
Academic Year: 2025-2026  
Delft University of Technology

### Research Question

How can transformative architecture integrate energy generation and spatial adaptability to enhance civilian resilience across shifting conditions of anticipation, conflict, and reconstruction?



The Design must be phase-responsive and is most successful when multiple architectural strategies are combined:



# Site Analysis Port of Klaipeda



Infrastructural Context  
Railway, Highway, Sea, Paths



Vapor Cloud Explosion-Risk  
zones around the port of Klaipeda



Energy Potentials  
Wind, Geothermal Energy,  
Biomass, Solar Energy



Pine Forest of



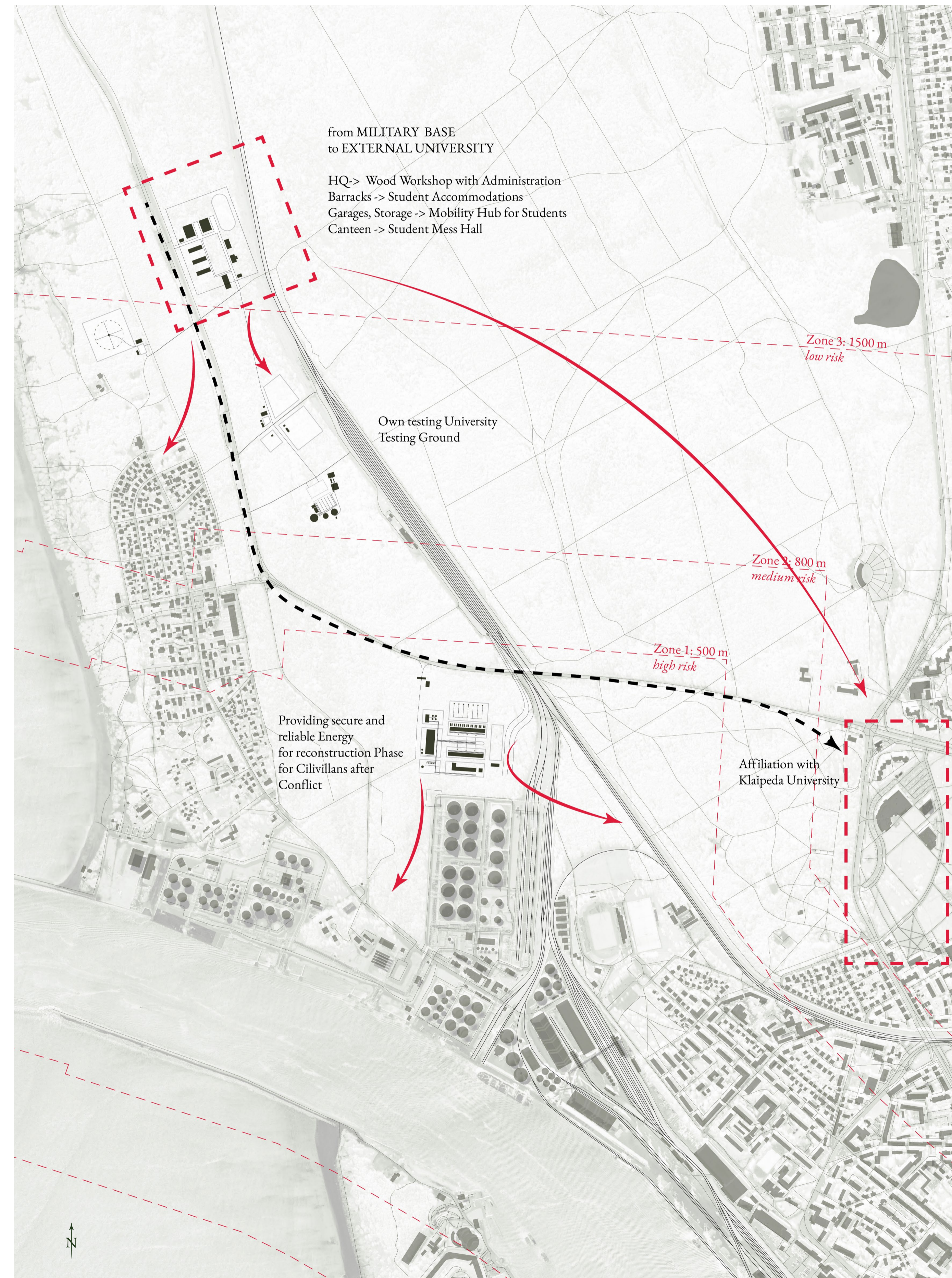
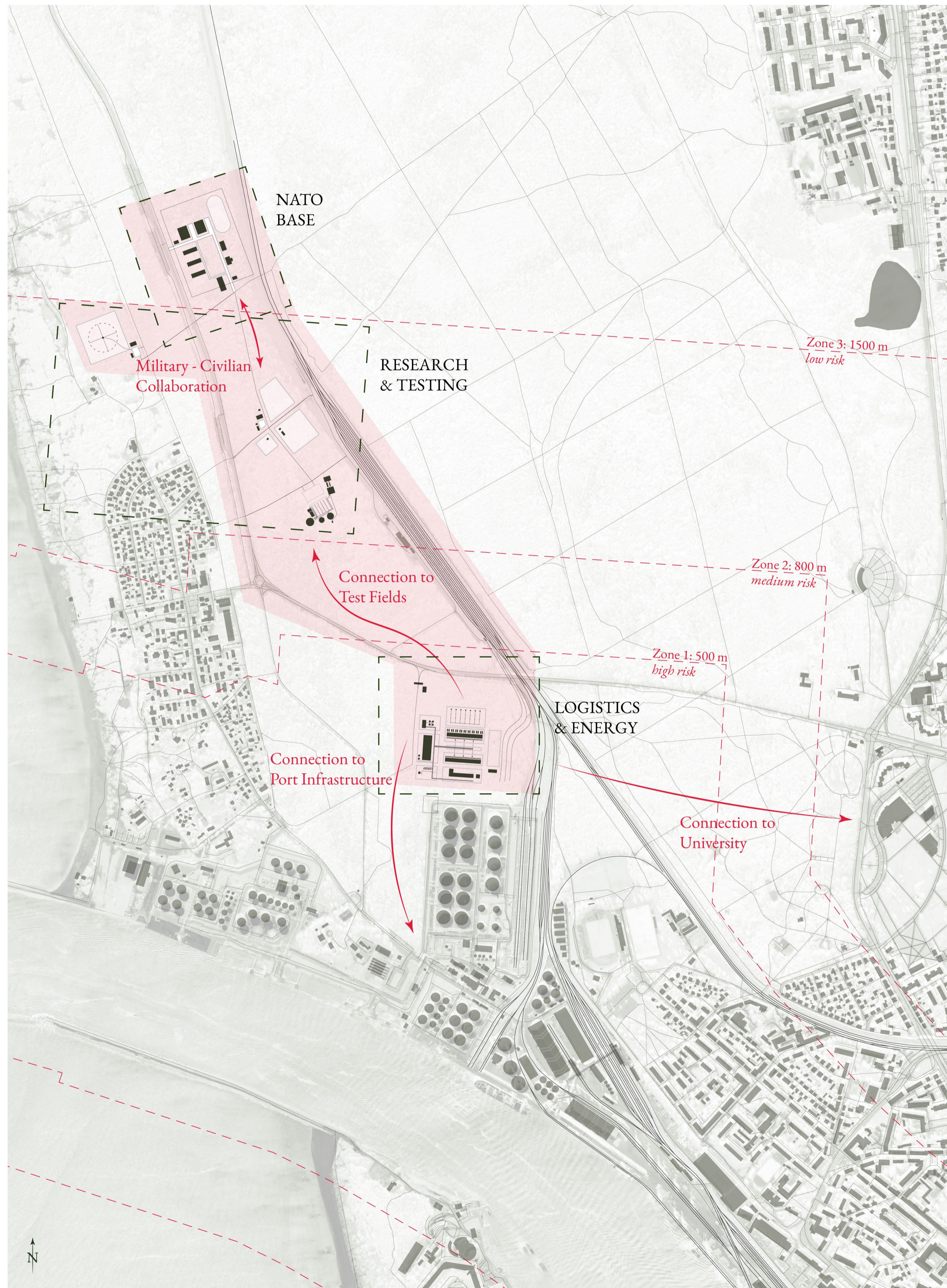
Sea, Lagoon, harsh Weather



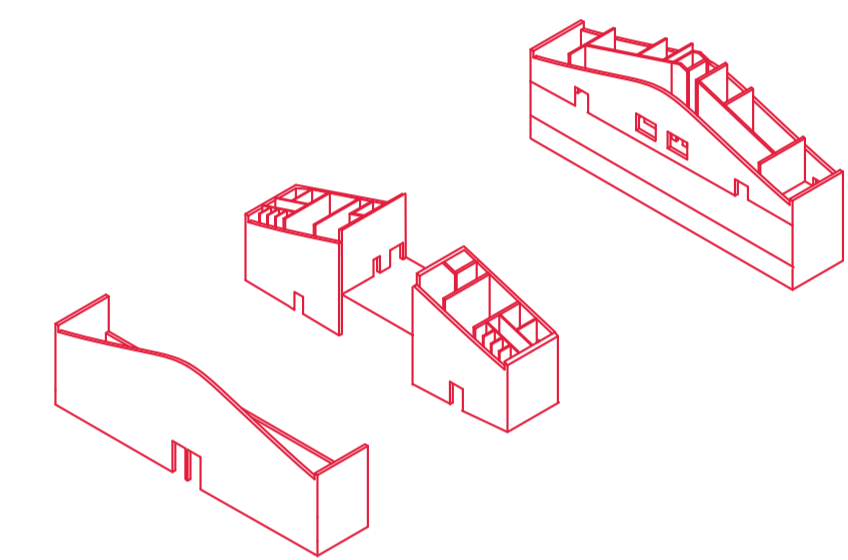
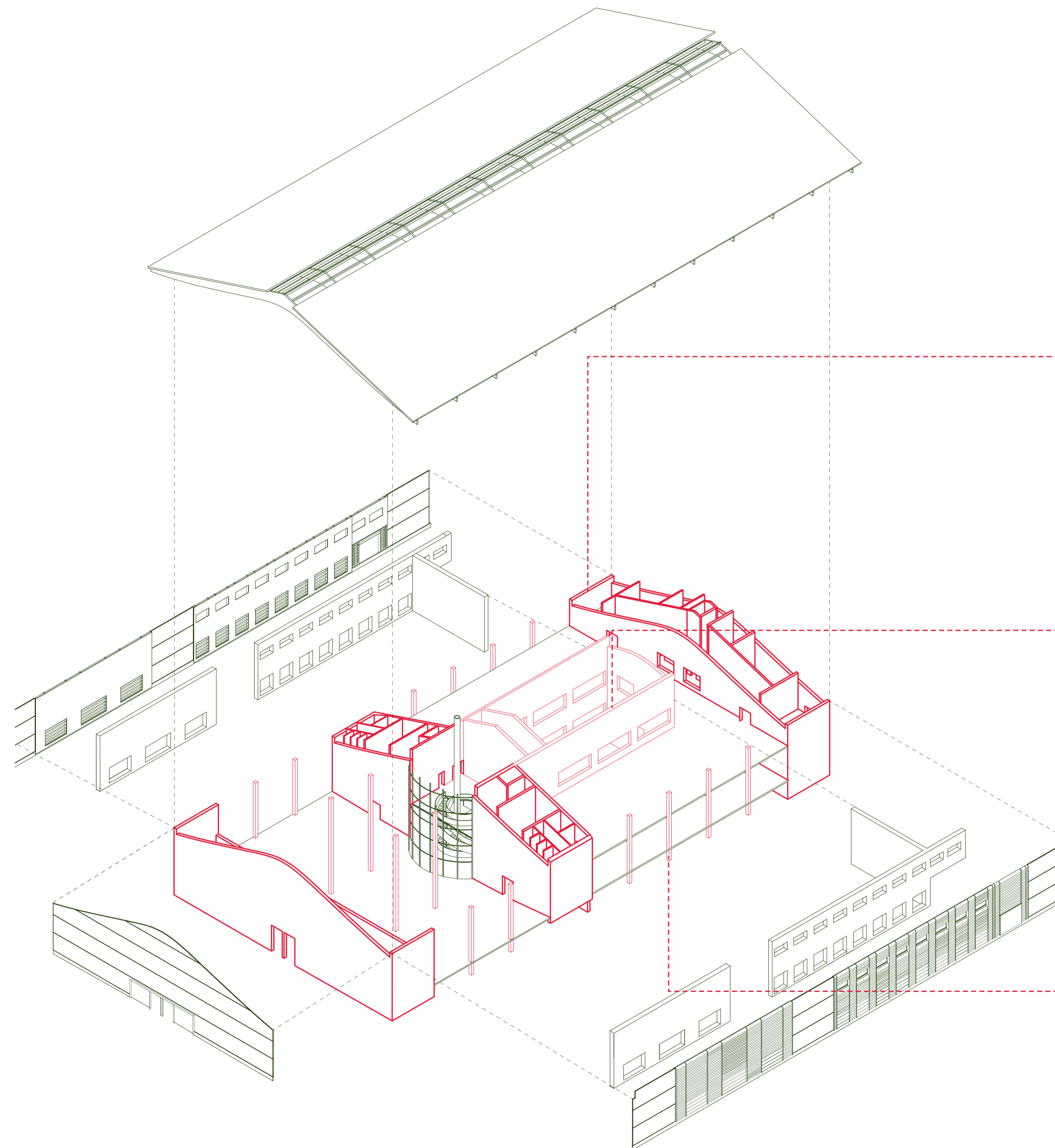
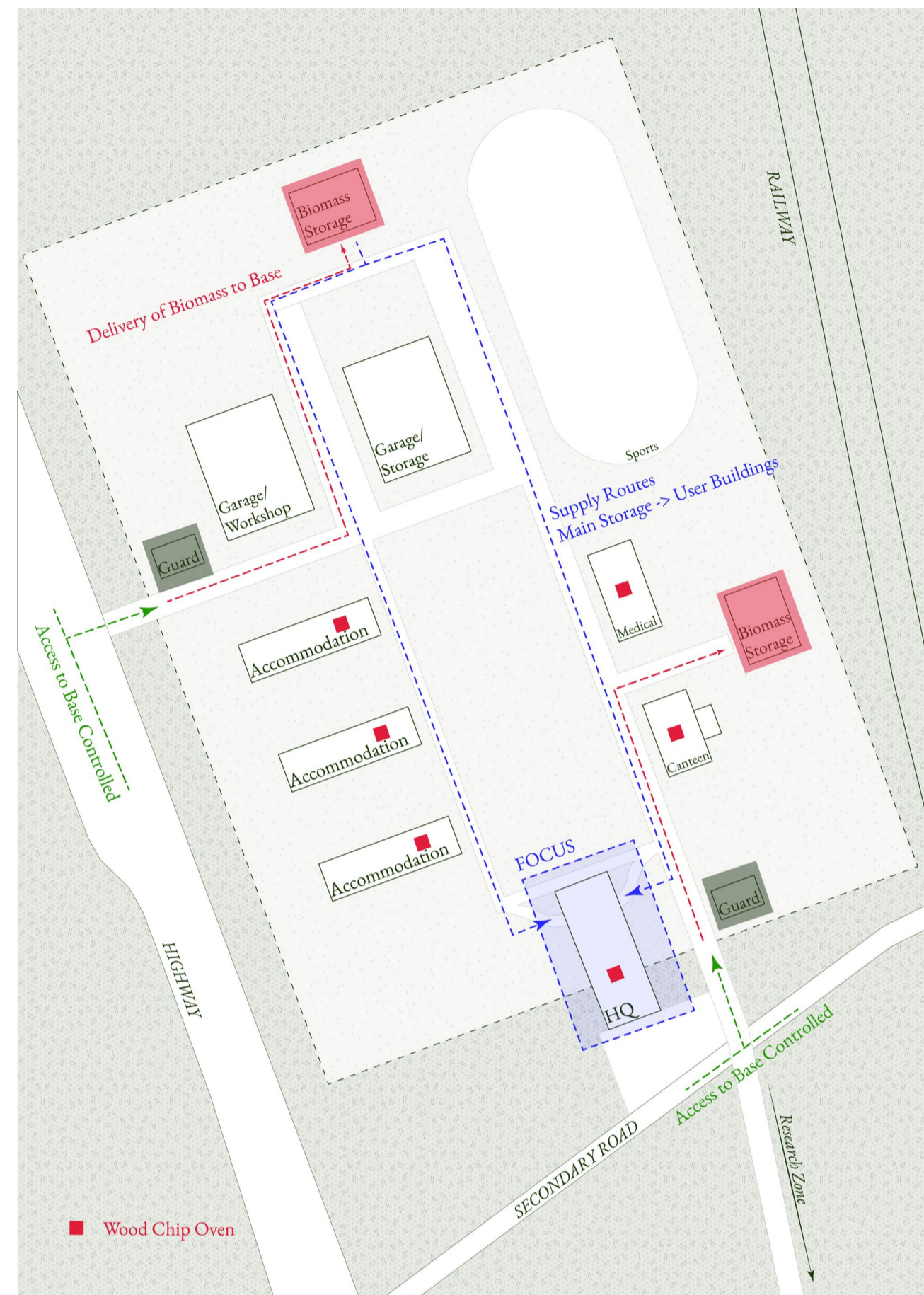
LNG - Terminal

# Master Plan

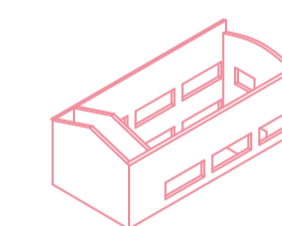
## Anticipation and Post-Conflict Relevance



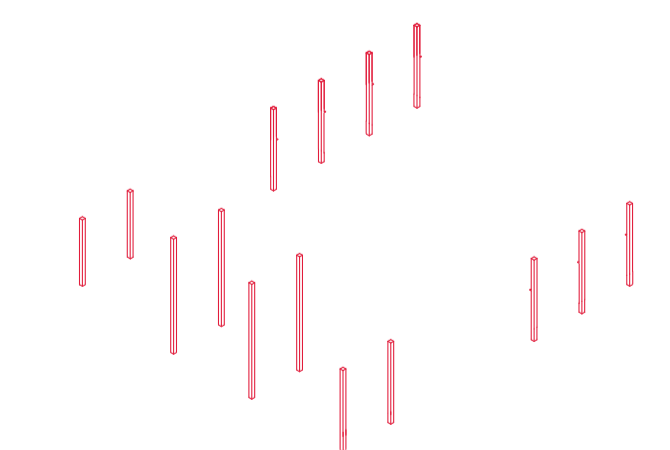
# Headquarters Building Energy Circulation on Site, Structural Components, Material Choices



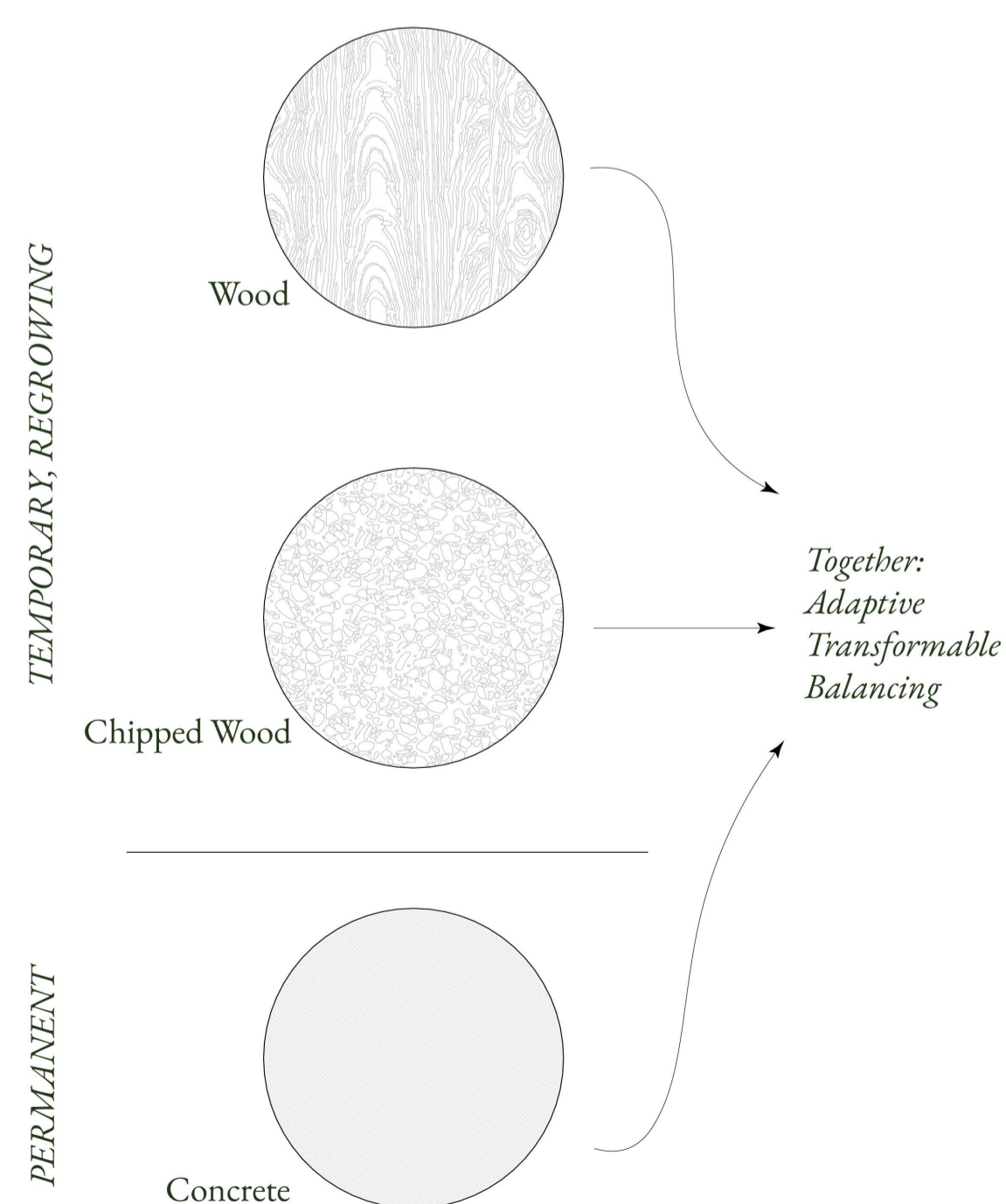
**Filter & Control**  
three linear cores facilitate checkpoints for controlled access and serve as anchors to fulfill technical and sanitary demands.



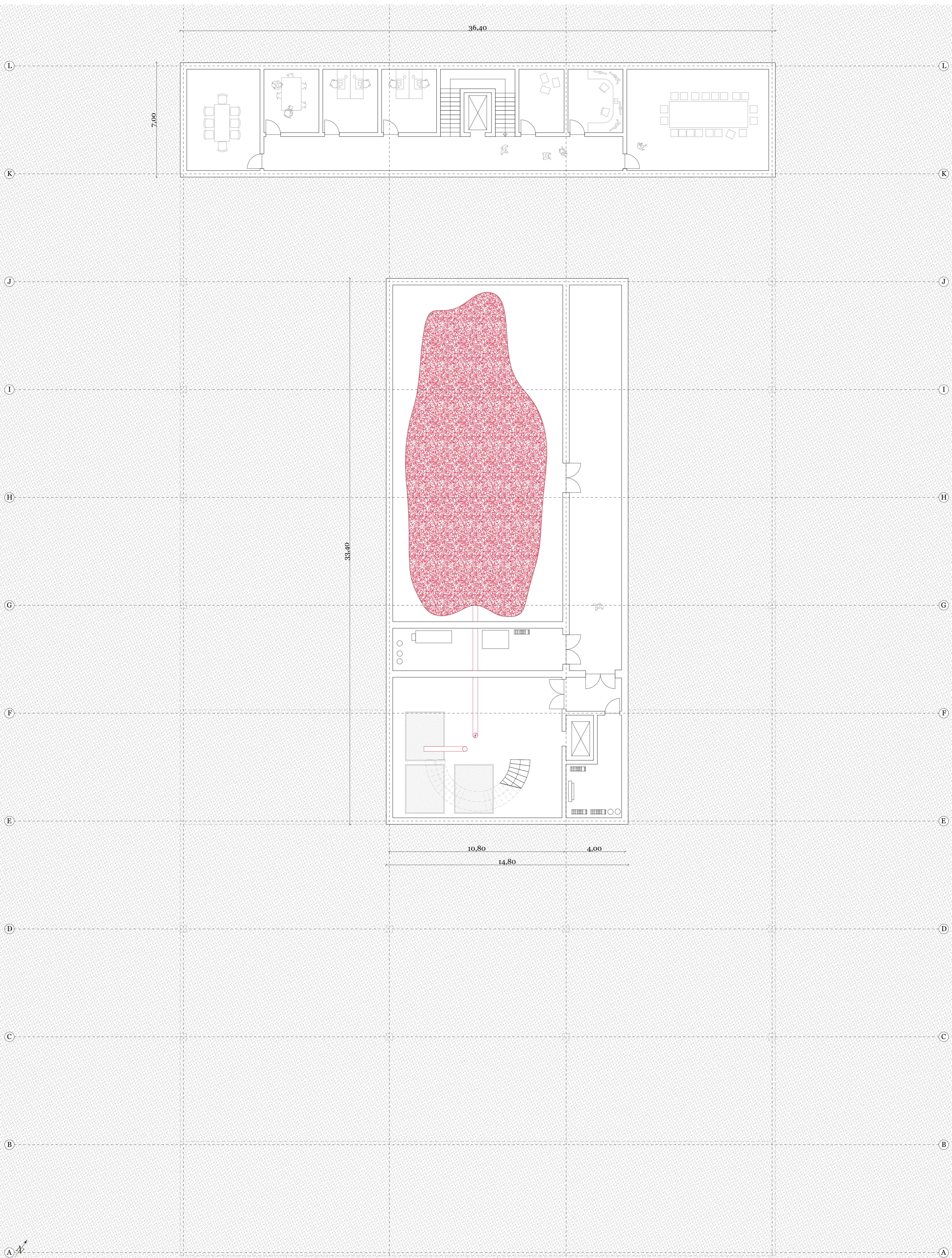
**Storage & Safety**  
an atrium exposes the main biomass storage, creating both proximity and distance to provide a safe environment that revolves around critical infrastructure.



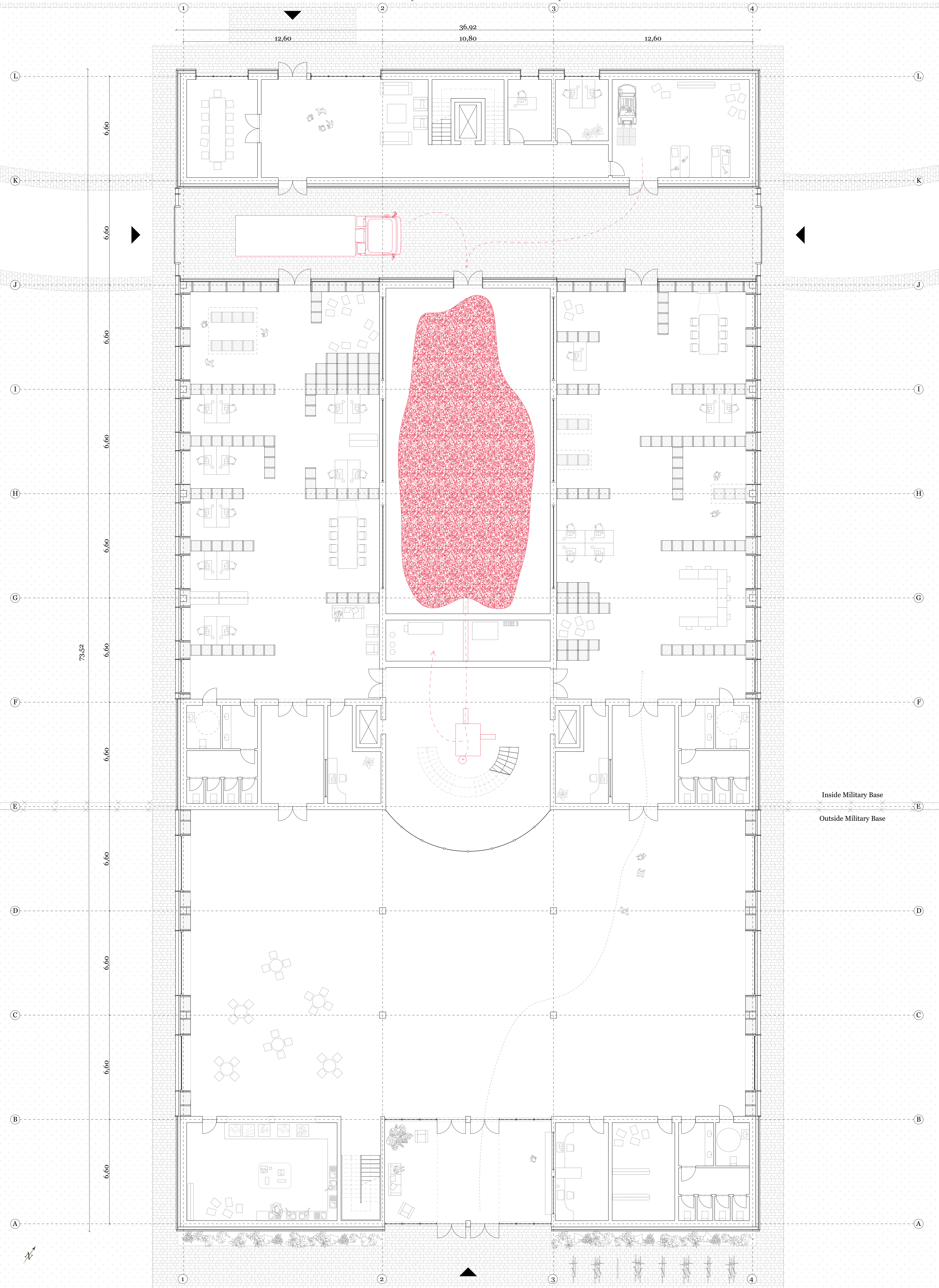
**Flexibility & Openness**  
While relying on the same material structurally, it is reduced to a minimum, focussing on biomass-based infills that translate critical infrastructure into the space as a work environment.



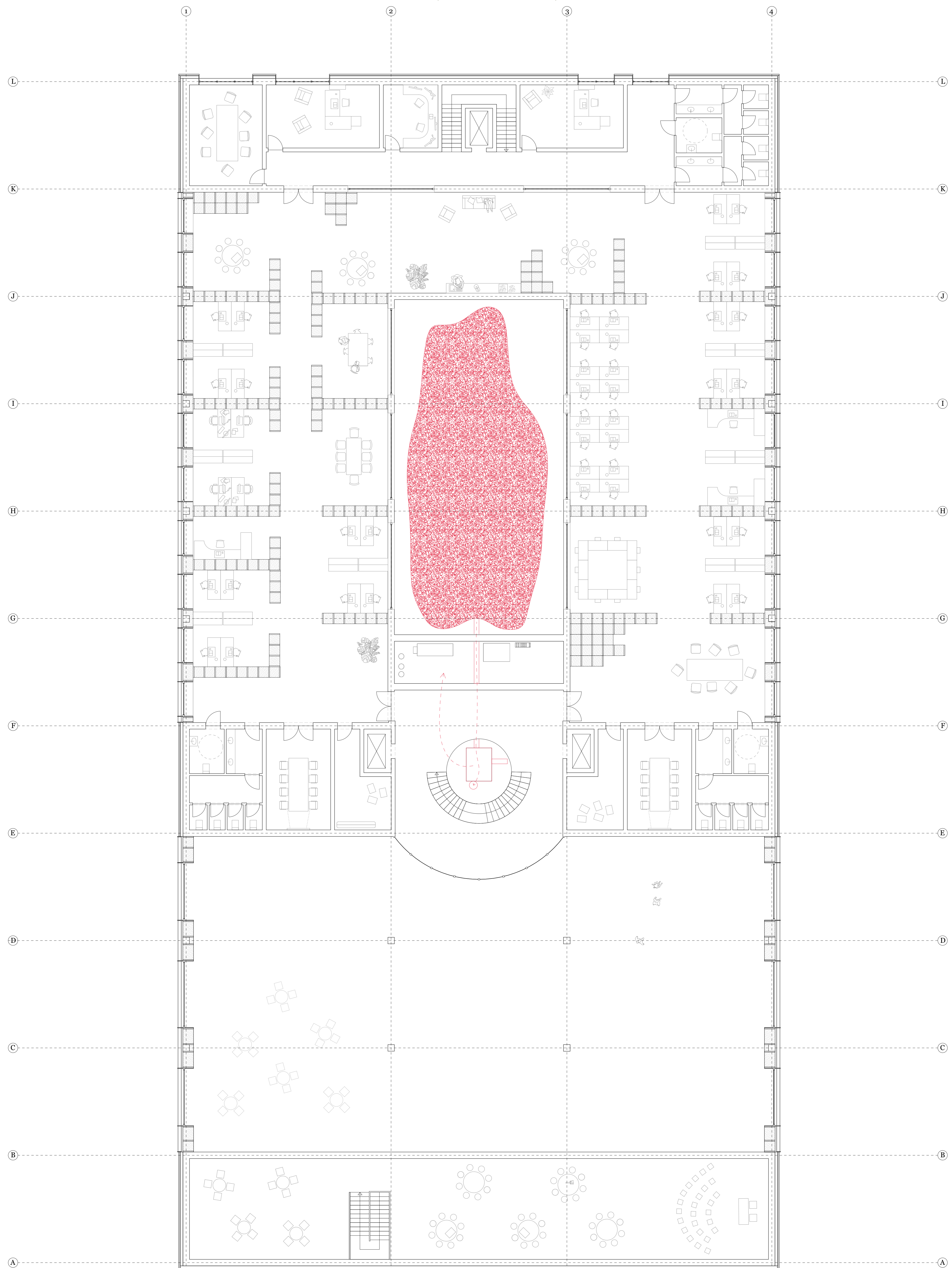
*Floor Plan, Basement, 1:100*



# Floor Plan, Ground Floor, 1:100



# Floor Plan, First Floor, 1:100



*Logistical Access*



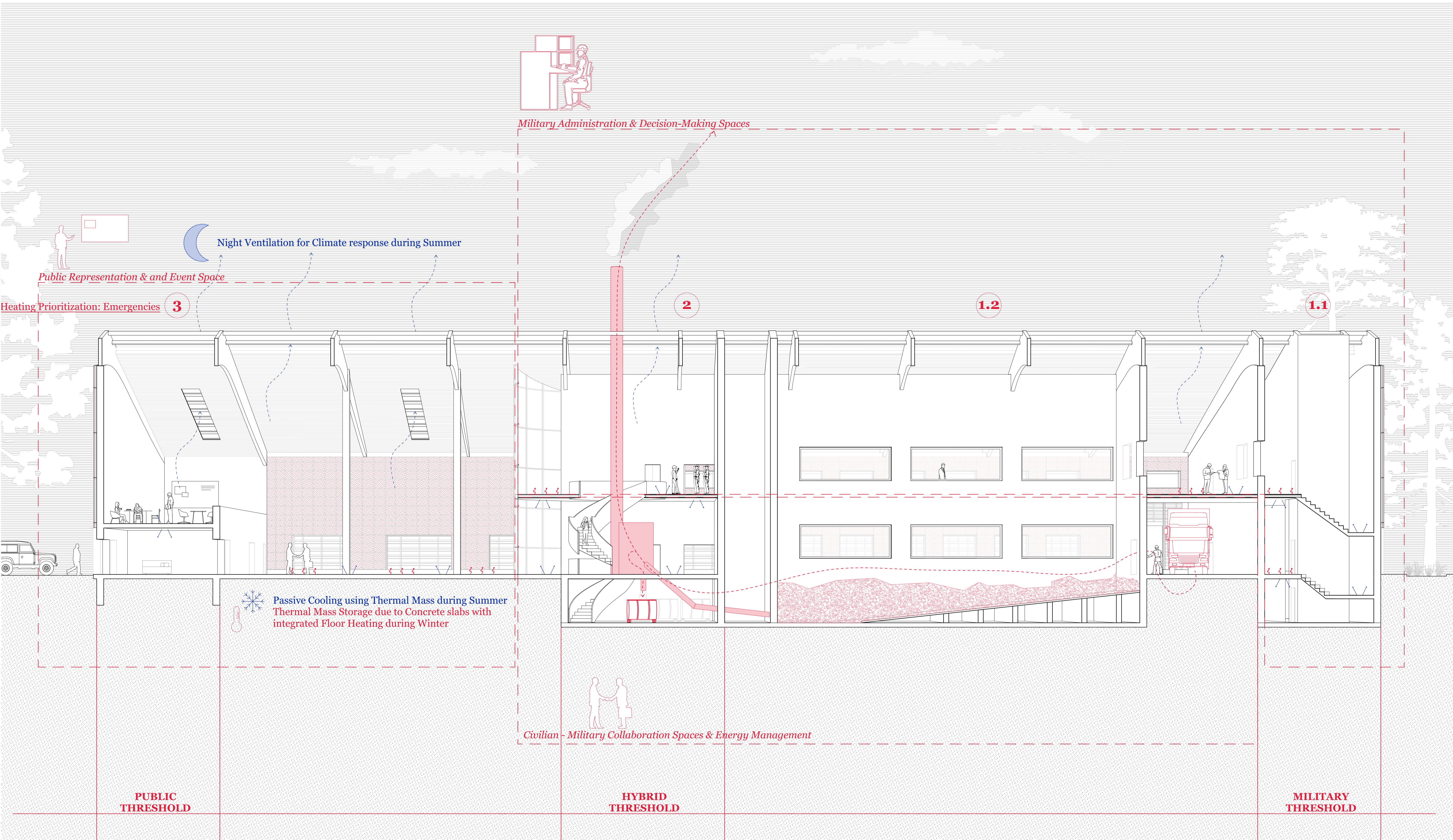
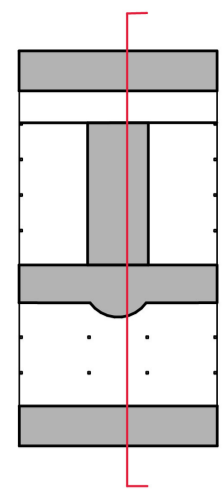
*Workspace*



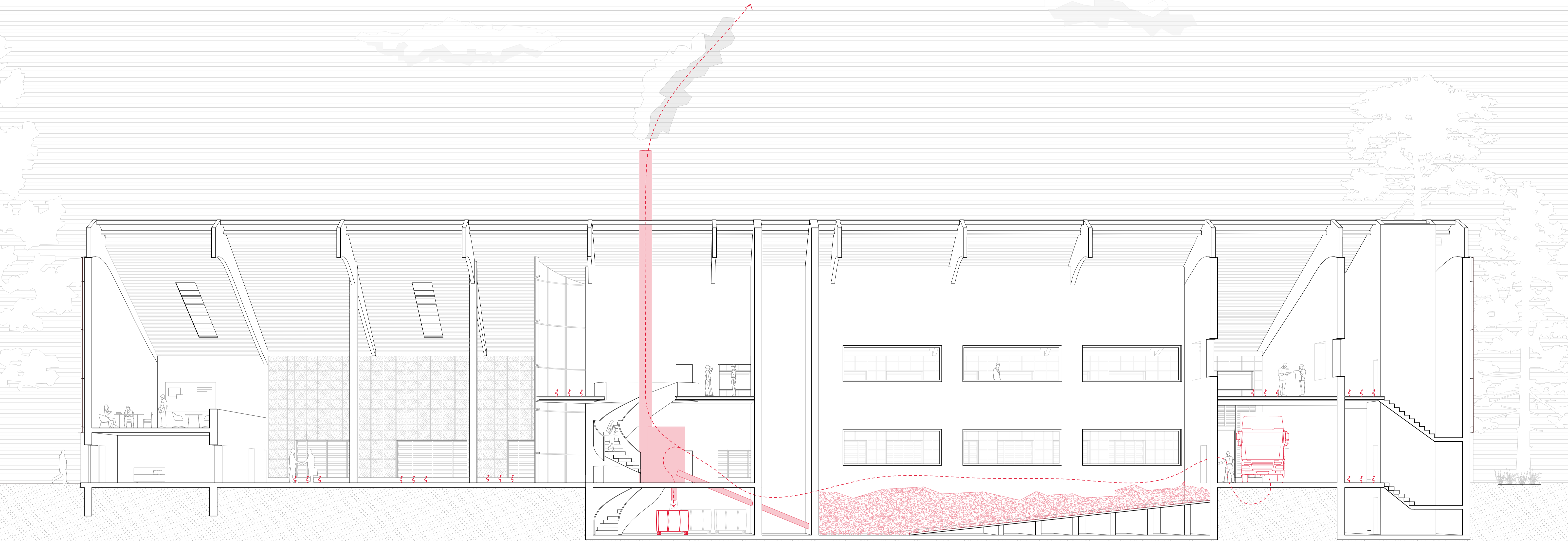
*Adaptability of the Foyer*



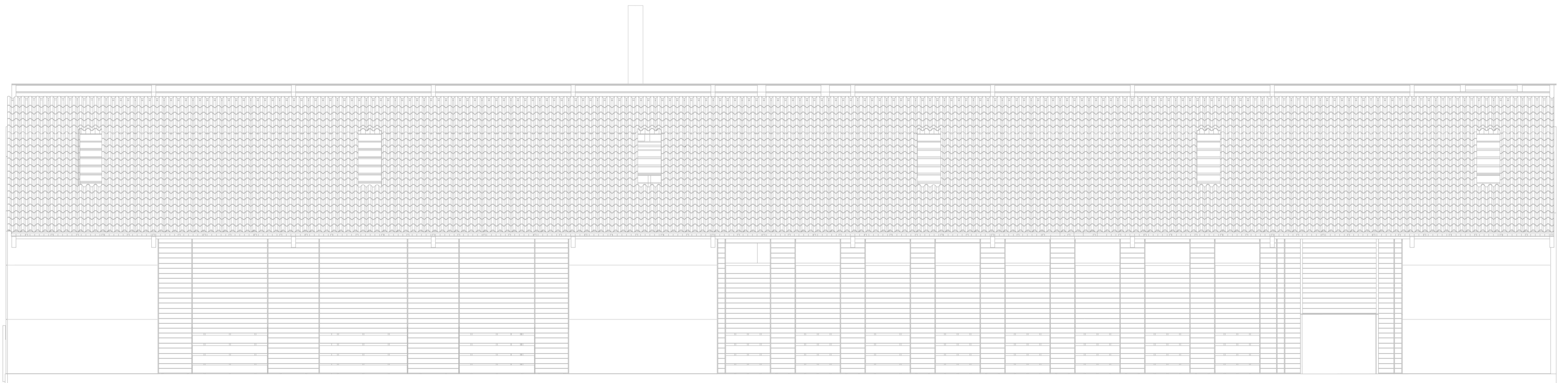
# Longitudinal Section, 1:100



*Headquarters Building  
as Energy Storage and Generator*

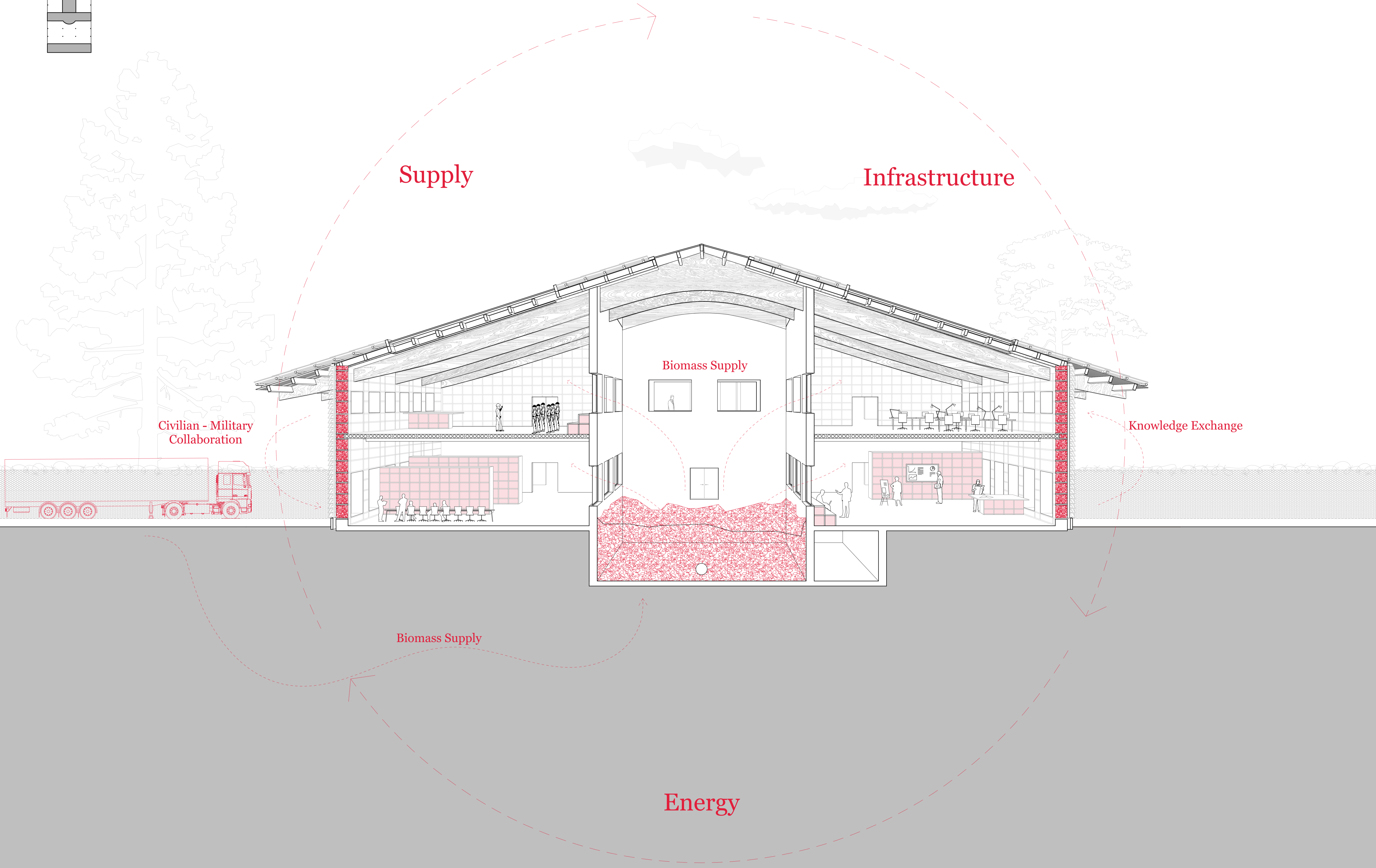
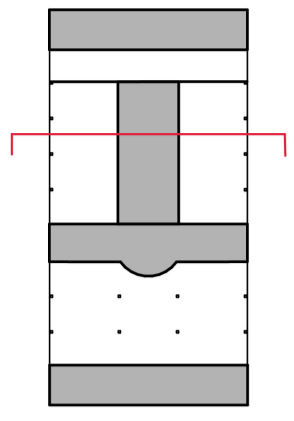


Logitudinal Section with Energy System, 1:100

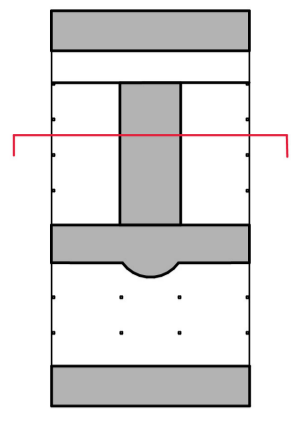


Logitudinal Elevation, 1:100

*Phase Adaptation Pre-Conflict, 1:100*



# Phase Adaptation Conflict, 1:100



Protection

Self-Sufficiency

Authorized Personell  
only

Military Spaces  
prioritized

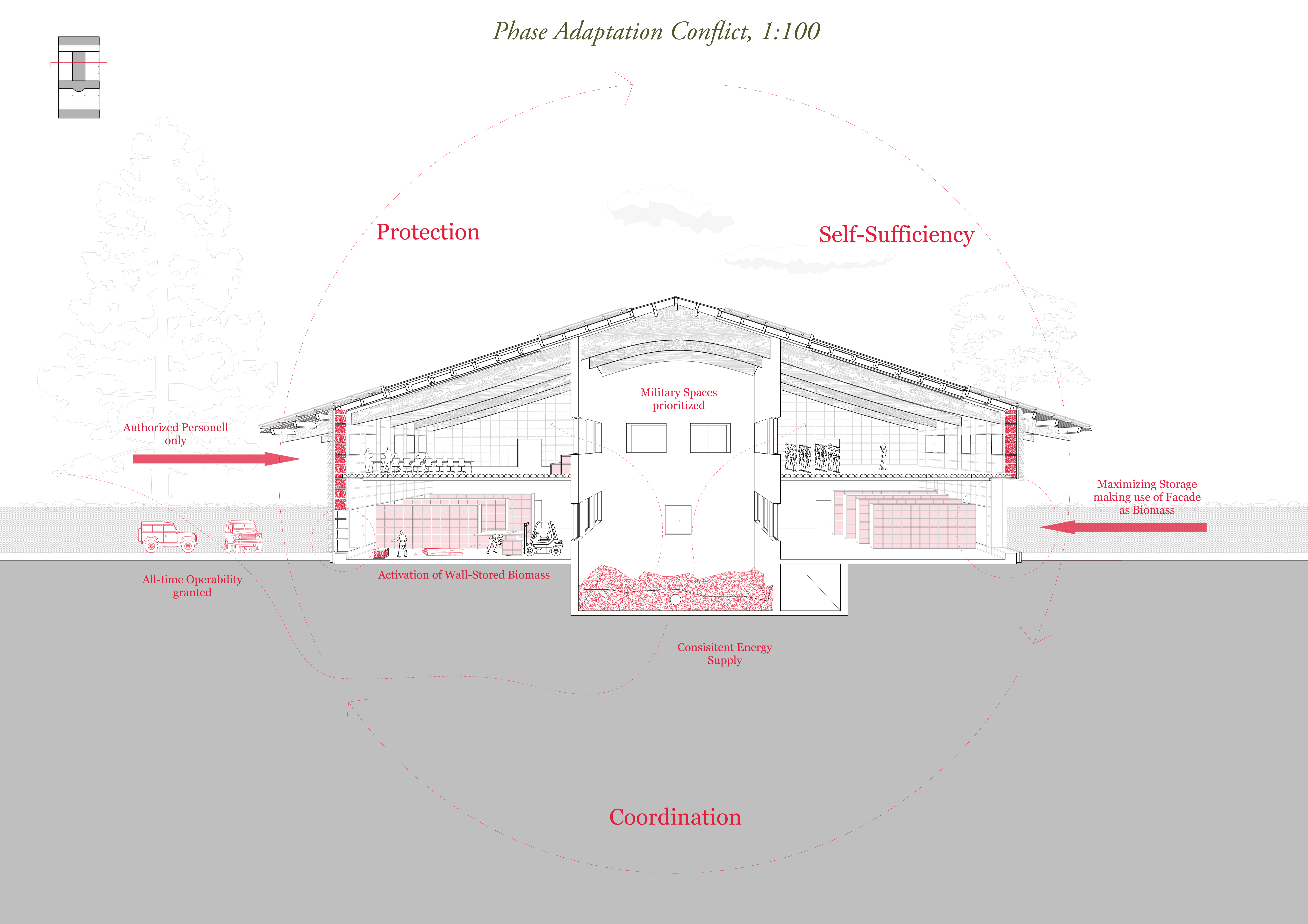
Maximizing Storage  
making use of Facade  
as Biomass

All-time Operability  
granted

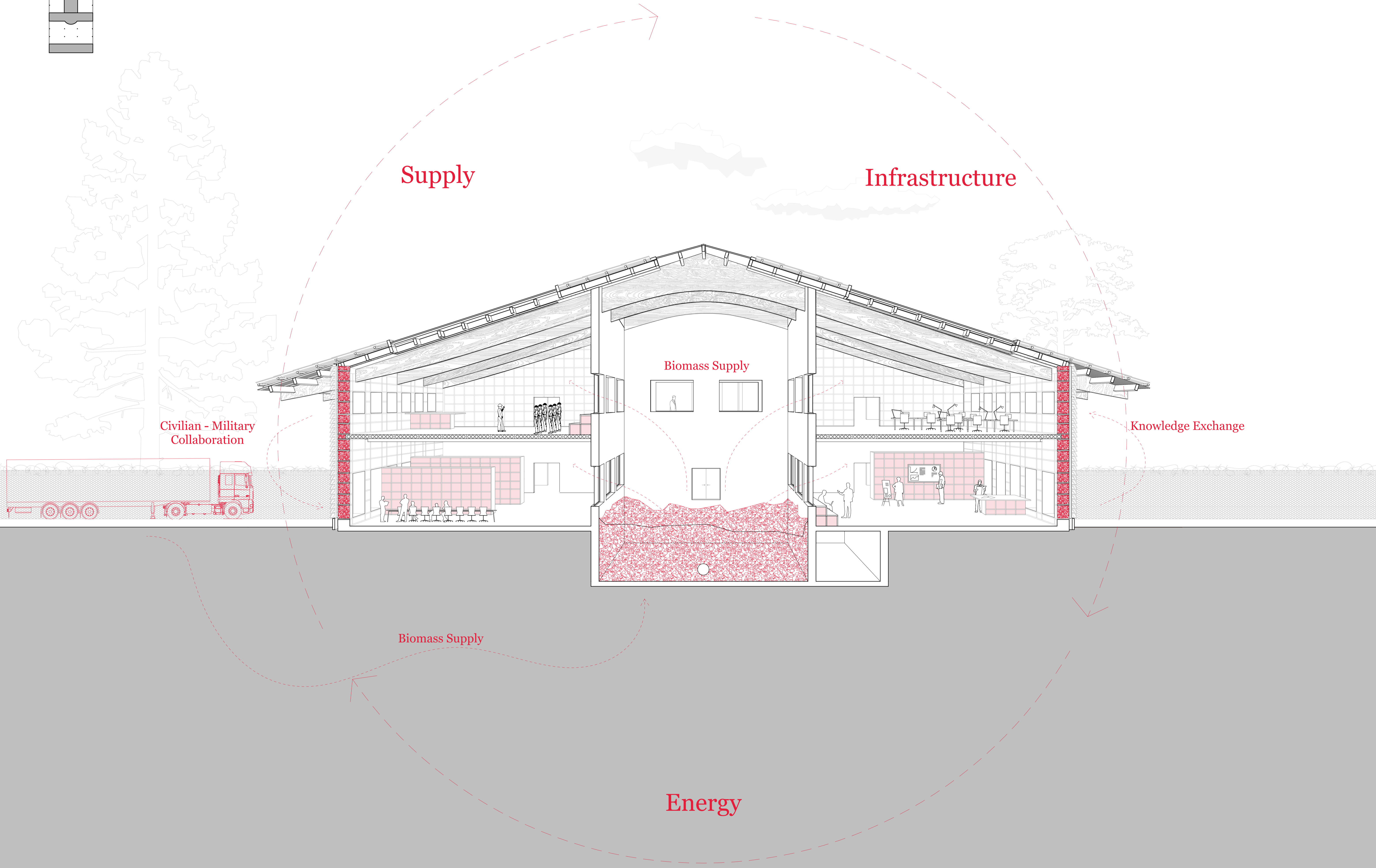
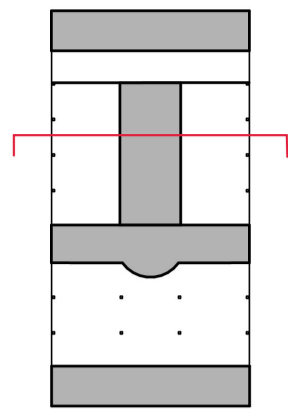
Activation of Wall-Stored Biomass

Consistent Energy  
Supply

Coordination



*Phase Adaptation Post-Conflict, 1:100*





*Materiality and Construction, 1:5*

