01 | THE LIBRARY IN CRISIS

A TIMELINE OF DECLINE AND UNCERTAIN FUTURES

2010

BIRMINGHAM CENTRAL LIBRARY

A central library demolished due to maintenance costs and replaced with a cost efficient library wtith reduced services

Significant budget cuts and austerity measures that impacted libraries causing closures

Uk governments implementation of the spending review 2010,following the 2008 financial crash, outlined cuts across various public sectors.

2020

TORONTO PUBLIC LIBRARY

Adapted its function by increasing its digital lending but took on community initiatives such as providing food hampers for those in need

Pandemic crisis emphasised the libraries role as a safe space for vulnerable communities

Libraries worldwide were forced to close due to the pandemic, this accelerated the digital shift but revealed stark digital access inequalities

A space that embodies this transion this transition prioritising open flexible spaces and digital access

SEATTLE PUBLIC LIBRARY

2000's

Funding shifted away from book centered spaces and towards technology driven, multi use spaces

The internet and digital medias such as e-books were beginning to develop and become more accessible, reducing the need for

Originially council run and handed to volunteers to prevent closures , losing proffesional staff but remaining a pivotol community hub

FAIR OAK LIBRARY

2016

Continued cuts lead to libraries transitioning to volunteer led management

Without government support, libraries were kept running through community support,

Bristol Council proposed cutting their local libraries budget by half , this led to public outrage. Community advocates protesting led to a pause in these cuts

BRISTOL LIBRARY

2024

Community advocacy against budget cuts

Ongoing financial pressures on public libraries with little justification for existence and greater concern on long term sustainability.

2035

SCENARIO ONE

BIBLIOTHECA ALEXANDRINA

DIGITAL DOMINATION

Libraries exist primarily as a digital platform in a totally reformed idea of public space

Access to knowledge risks becoming total virtual archives causing the risk of exclusive digital hubs that further the digital divide.

SCENARIO TWO

SENDAI MEDIATHEQUE

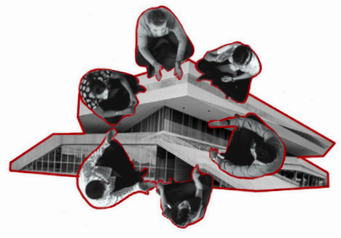
CRITICAL INFASTRUCTURE

Libraries evolve into public infastructures becoming community resilience centers

Impending future issues such as climate change could see the library transform into multi functional spaces, such as emergency shelter

SCENARIO THREE

DOKK1



COMMUNITY HUB REBIRTH

Libraries fully embrace their role of supporting social engagement within the community

Sharing of knowledge is not limited to book lending but thrives as cultural and education centers .

SCENARIO FOUR

HUNTSVILLE PUBLIC LIBRARY

PRIVATISATION AND INEQUALITY

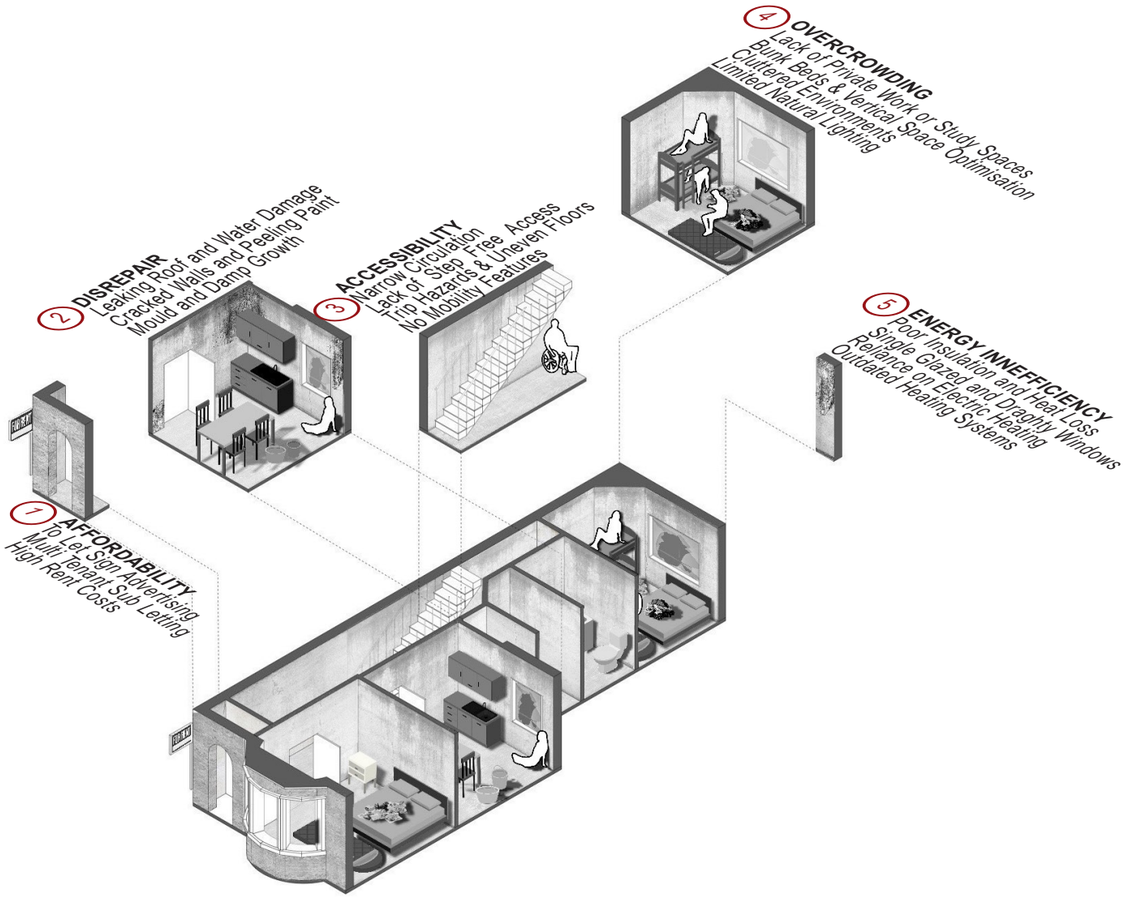
Libraries undergo privatisation deepening social inequalities, limiting public access to knowledge

The decline of funding leads to libraries becoming paid membership based spaces, restricting opportunity for lower income communities.

01 FRAGMENTED LIVING IN CAMDEN

ANALYSING RENTING LIVING CONDITIONS IN CAMDEN

THE ANALYSIS OF RENTING IN CAMDEN HIGHLIGHTS CHALLENGES OF AFFORDABILITY, SPATIAL CONSTRAINTS, SUBSTANDARD MAINTENCANCE AND THE COMMODOFICATION OF HOUSING, FORCING RENTERS INTO PRECARIOUS LIVING CONDITIONS



EXPLODED AXONOMETRIC MODEL OF CONVERTED VICTORIAN TERRACE HOUSE'S GROUND FLOOR FLAT

1

'IN CAMDEN, HOUSING AFFORDABILITY IS AMONG THE LOWEST IN THE UK, WITH MONTHLY RENTS BEING THE THIRD HIGHEST IN THE COUNTRY'

2

'WITHIN CAMDEN, 10% OF PRIVATELY RENTED PROPERTIES HAVE AT LEAST ONE CATEGORY 1 HAZARD'

3

'ONLY 3% OF NEW HOMES APPROVED IN LONDON MEET ACCESSIBILITY STANDARDS WITH JUST 0.8% DESIGN FOR WHEELCHAIR USERS'

4

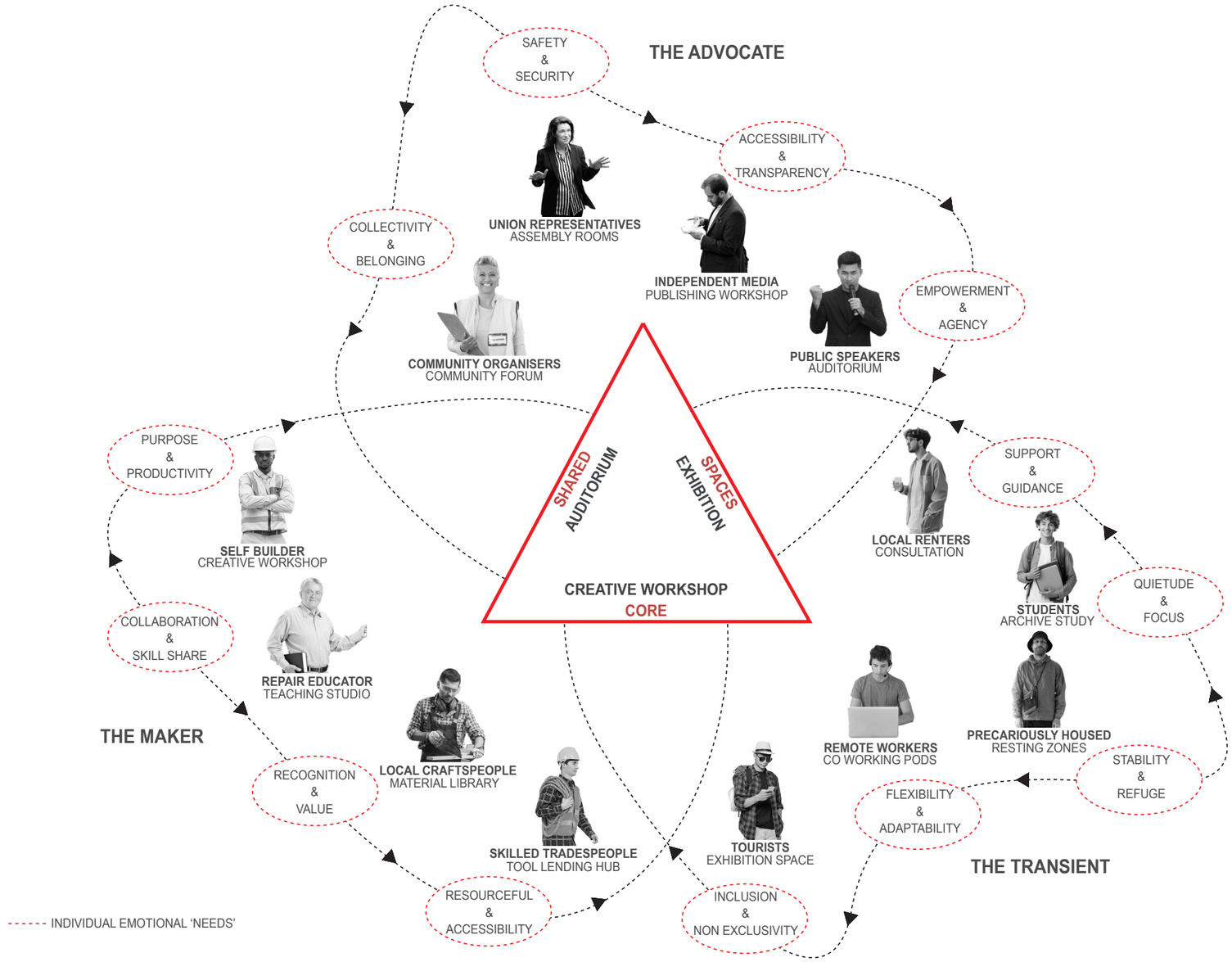
'IN CAMDEN APPROXIMATELY 21.6% OF HOUSEHOLDS EXPERIENCE OVERCROWDING'

5

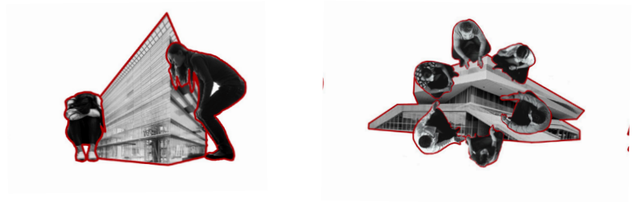
'NEARLY HALF OF HOMES IN CAMDEN SUFFER POOR ENERGY EFFICIENCY'

01 | PROJECT FRAMEWORK

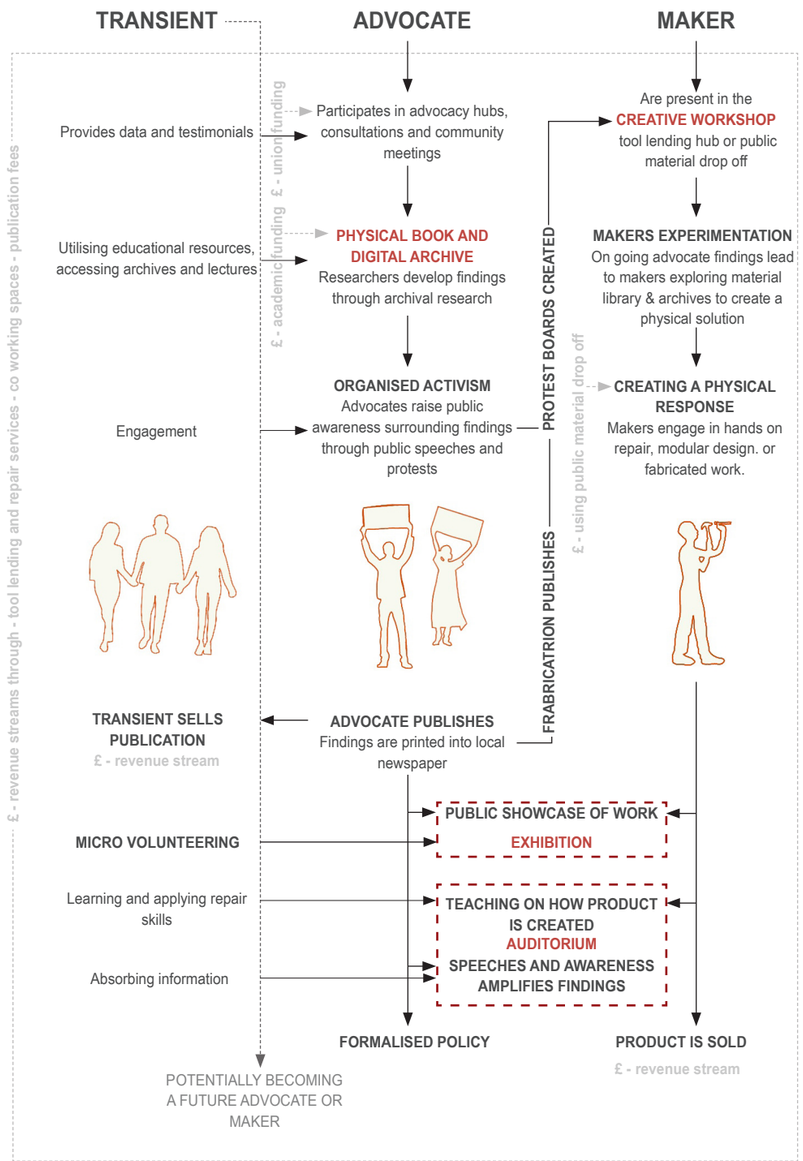
HOW USERS EMOTIONAL AND SPATIAL NEEDS INTERSECT



The Rebuilt Home prioritises the library becoming a civic hub and critical infrastructure within Camden

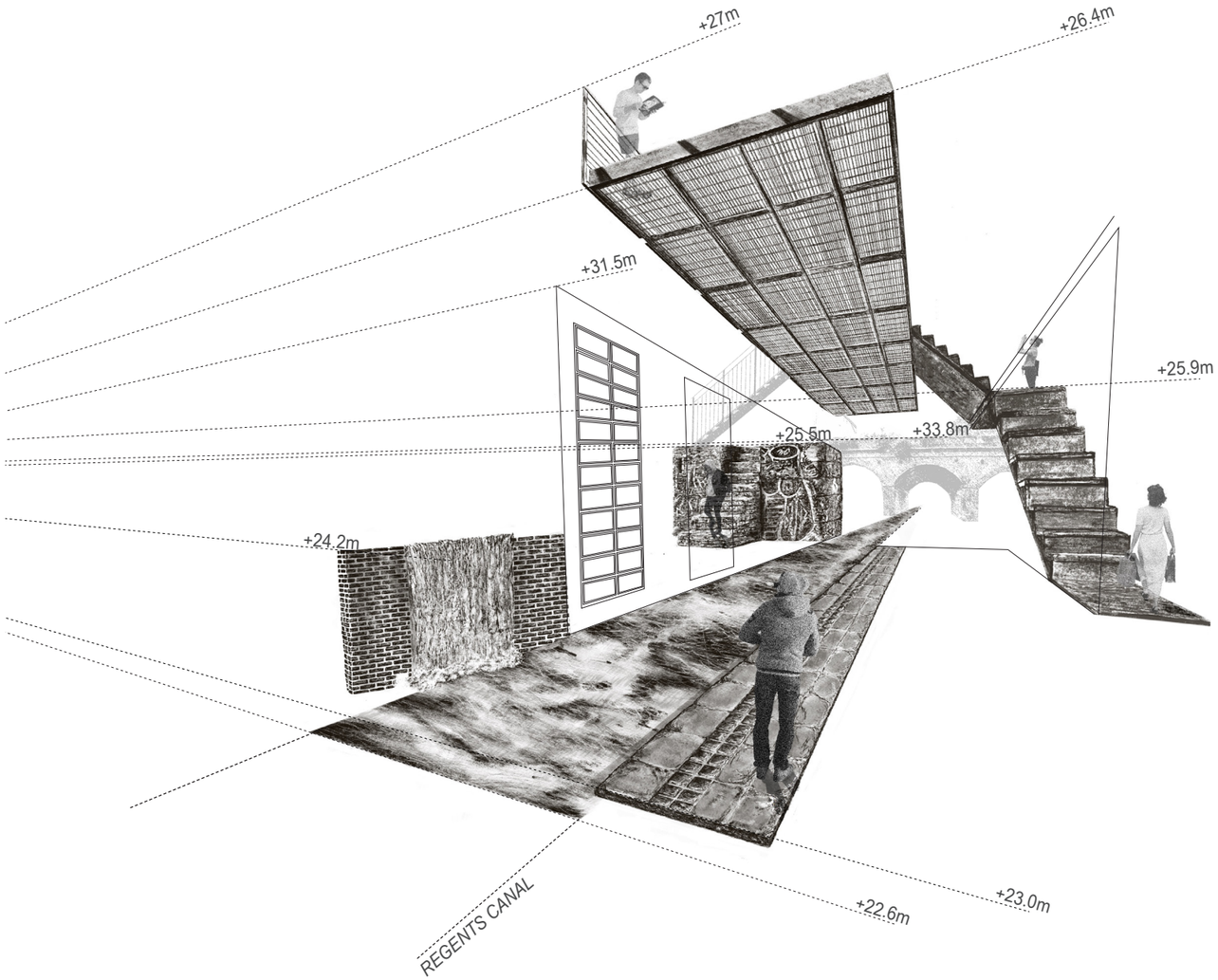


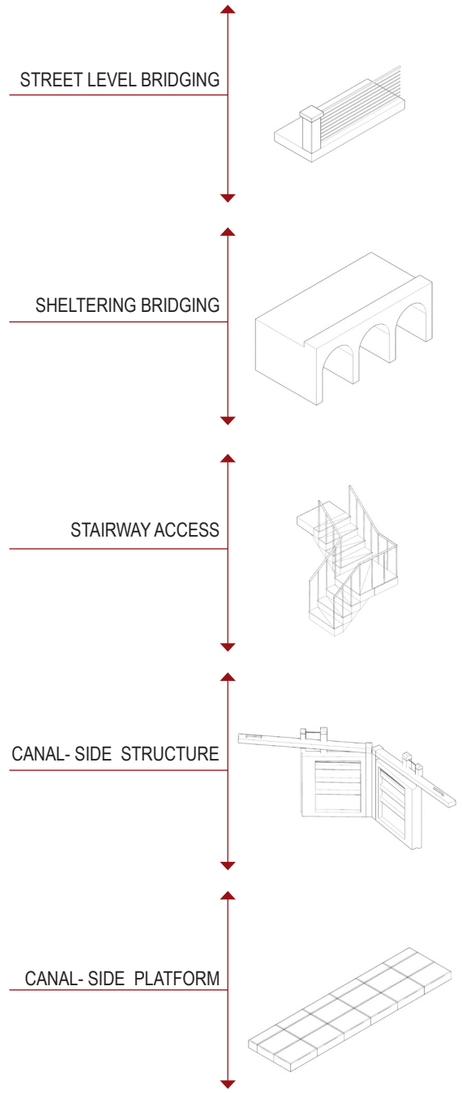
Programme Flow Diagram



02 | SITE REACHES
A STUDY OF VERTICALITY

THIS STUDY SHOWS THE LAYERING OF SPACE AND MOVEMENT WITHIN THE SITE THAT CREATE OPPORTUNITIES FOR INTERACTION BETWEEN LAND, WATER AND BUILT STRUCTURES.





SITE PHOTOS

0.0 : Ordnance Datum Newlyn , defined as Mean Sea Level

This site analysis explores the varying elevations across the site, with datum measurements indicating the heights of key features relative to a reference point, the drawing of surrounding site architrectural features captures the spatial relationships and transittions between levels, emphasising how the site's topography and structures influence the users movements and interactions. The vertical layering highlights the opportunities for multi-level programming and spatial heirarchy within the design.

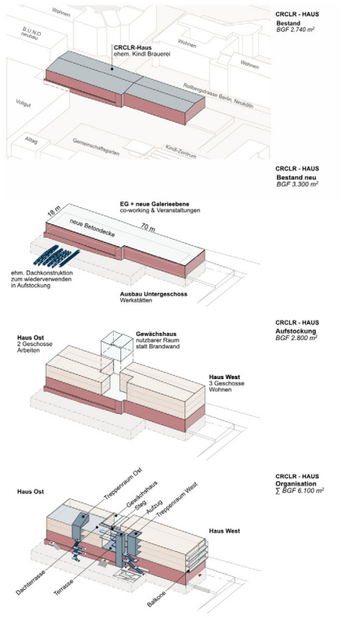
02 | DEALING WITH THE EXISTING BUILDING

FORM, CONSTRAINTS AND CONTEXT

Due to the nature of the site including an existing site building that shares a masonry party wall with the adjacent Grade II listed building, dealing with this in the design process was crucial. The strategies can be resolved to the construction process of retaining aspects of the existing building more specifically the perimeter masonry shell. I have exhibited a precedenct construction process used in the CRCLR House Berlin, where the original building was stripped to the shell. A vertical extension of this shell took place maximising the re use of of materials on site and then extended with only renewable materials like glulam. This inspired me to create a renewable column that could sustain a new build whilst respecting the original shell (Glulam Arm Column).

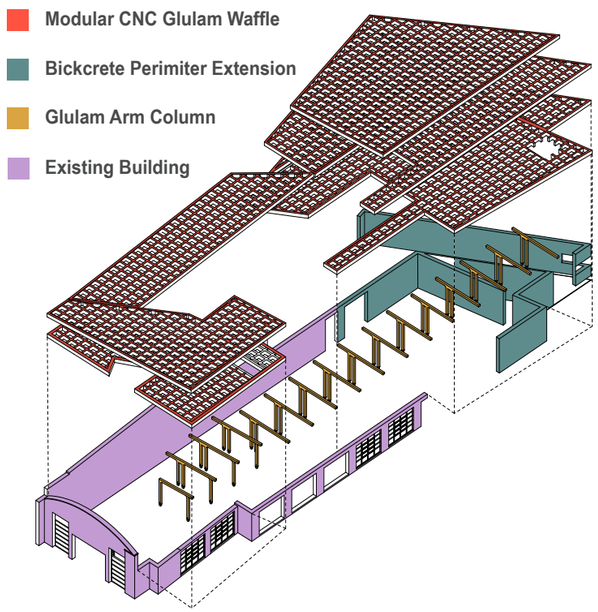
The shared party wall with a retrofit design meant activating a Party Wall Award to alter the shared wall. The alteration involved insulating the adjacent buildings wall boundary to allow for the program of The Rebuilt Home design to be able to have an exposed brick aesthetic as it aligned with the ethos of the project users.

CRCLR House Berlin Construction Process



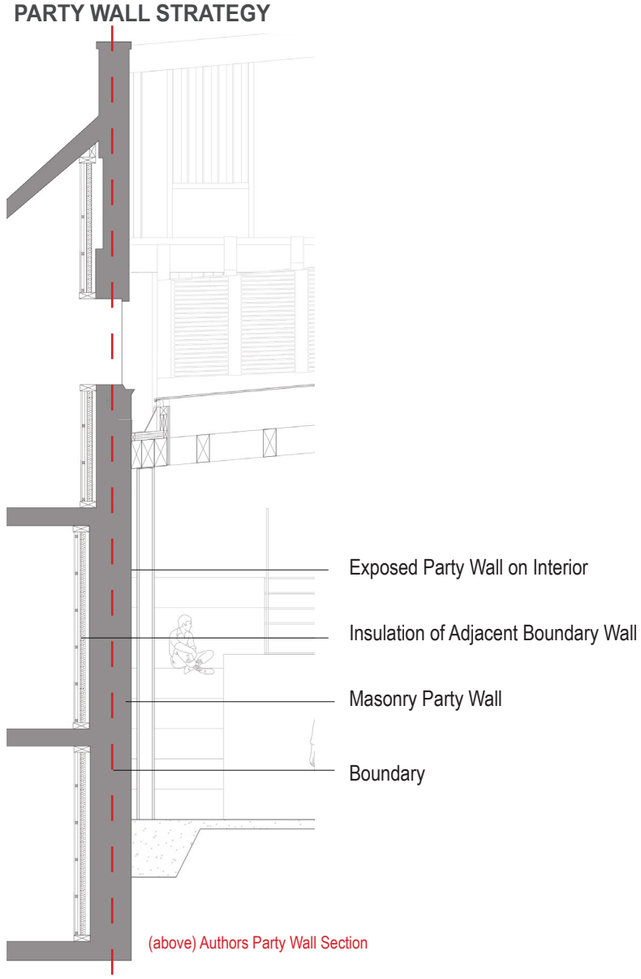
(above) Zrs.berlin (2020)

RECLAIMING THE EXISTING



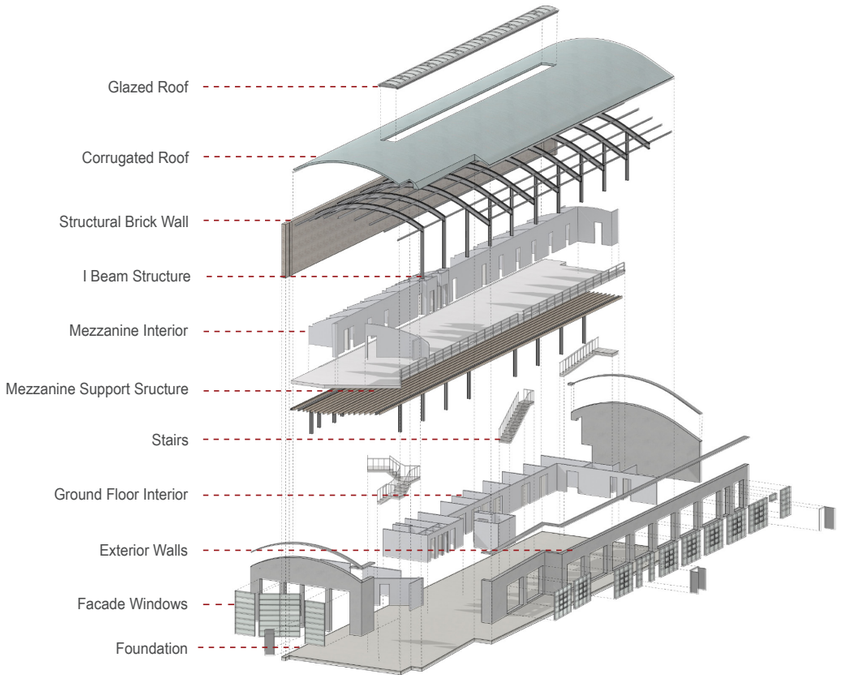
Retains and repurpose the existing building shell, layering new spatial functions within the original fabric to minimise waste and preserve local character.

PARTY WALL STRATEGY



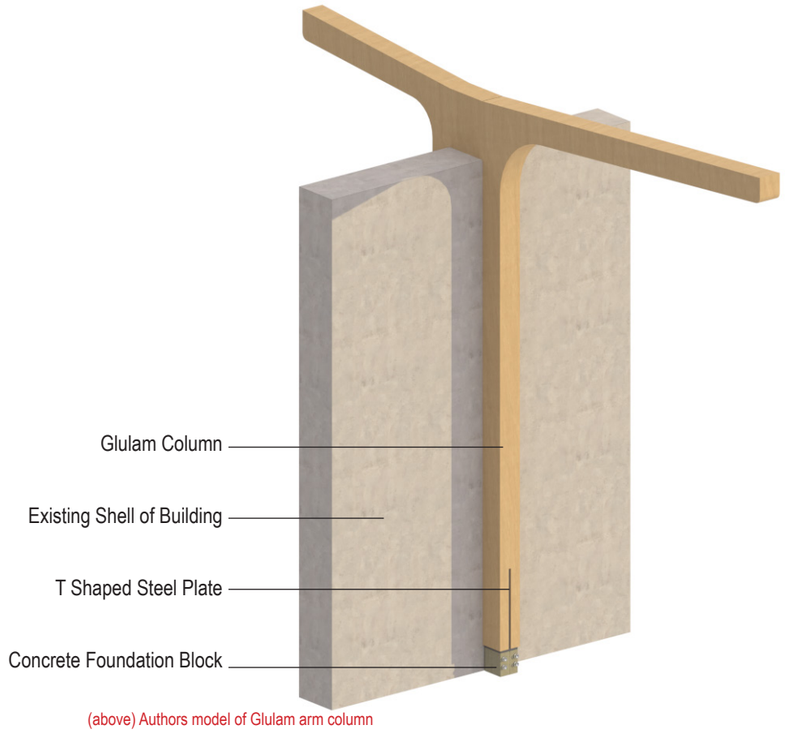
(above) Authors Party Wall Section

Existing Building Exploded Axonometric



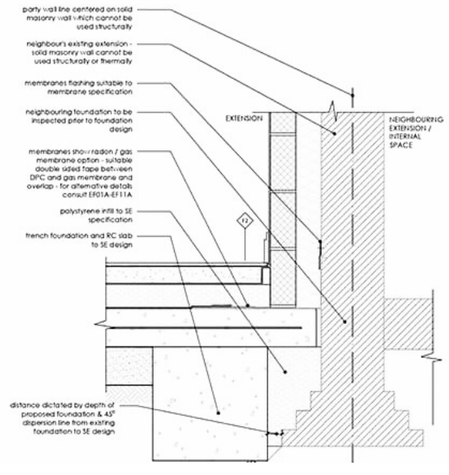
(above) Authors axonometric of existing building on site make up

Glulam Arm Column



(above) Authors model of Glulam arm column

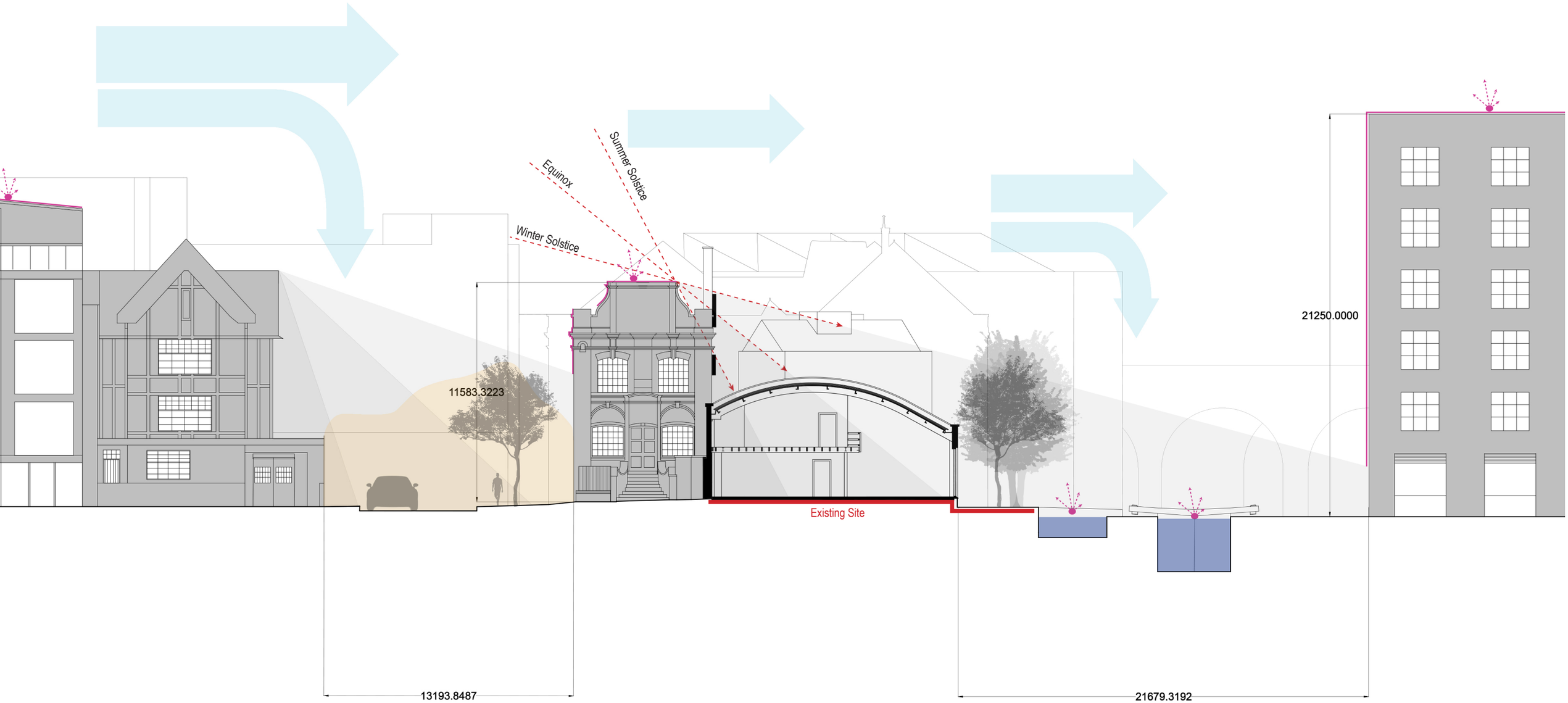
Design Foundation Abutting Existing Party Wall Detail



(above) Trench Foundation abutting existing masonry wall (n.d)

02 SOLAR ANALYSIS OF EXISTING SITE

ANALYSING SUN PATH AND SHAODW STUDY IDENTIFYING MOULD PRONE AREAS



Key

Localised Emissions

Solar Access at the surface all year

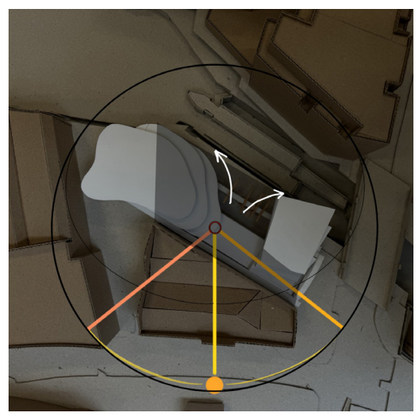
Air Flow

Reflected Solar Radiation

Level of Shading

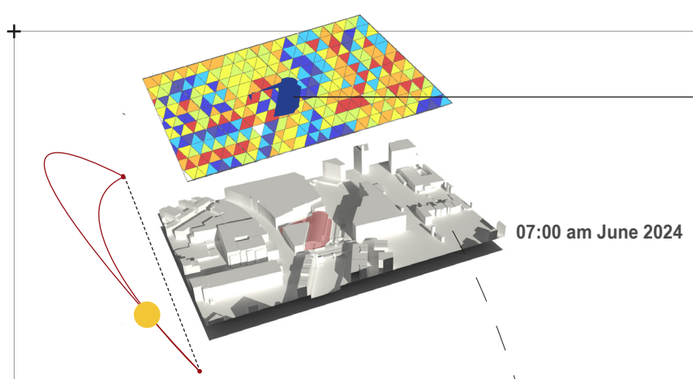
The adjacent building sharing a party wall with the existing site structure has been illustrated in elevation to make the neighbouring buildings scale and solar impact more legible

Conceptual model exploring site specific sunlight conditions, using angled forms to extend daylight hours and re direct direct sunlight deeper into the building

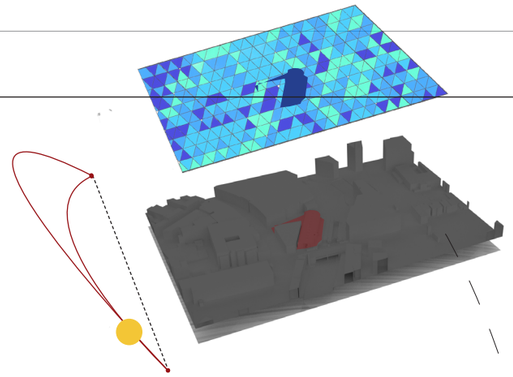


02 SUNLIGHT DEFICIENCY AND MOULD RISK

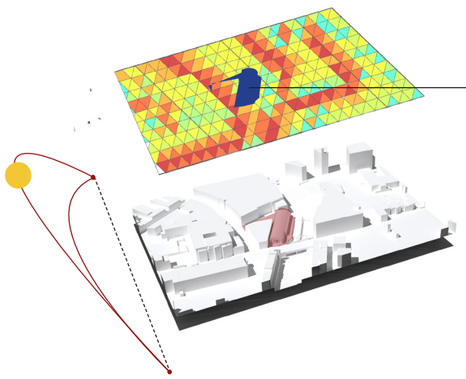
ANALYSING SUN PATH AND SHAODW STUDY IDENTIFYING MOULD PRONE AREAS



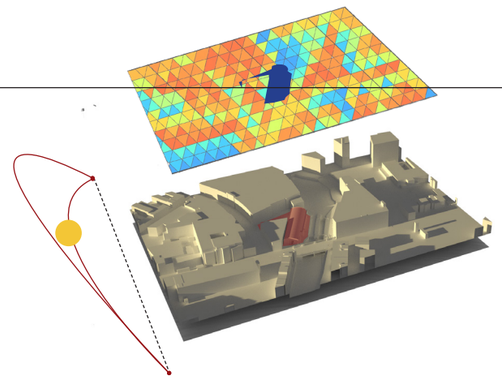
07:00 am June 2024



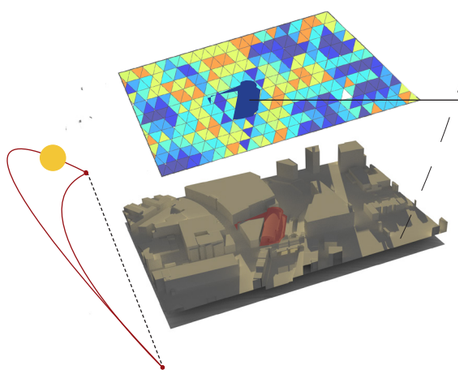
07:00 am December 2024



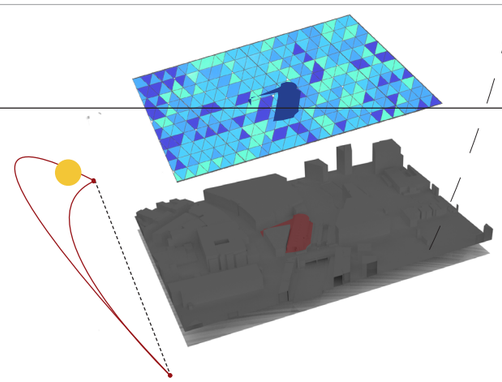
12:00 pm June 2024



12:00 pm December 2024



19:00 pm June 2024

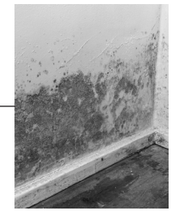


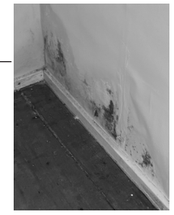
19:00 pm December 2024

The site remains **shaded for long periods all year round**

High risk areas: North Facing facades, Ground level spaces, and enclosed areas

Surrounding buildings block direct sunlight





Primary evidence of mould within buildings in camden

Prolonged indirect sunlight and blocked direct sunlight leads to increased mould and dampness risk.

HEAT MAPPING SPECTRUM

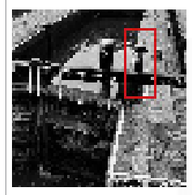
SITE BOUNDARY

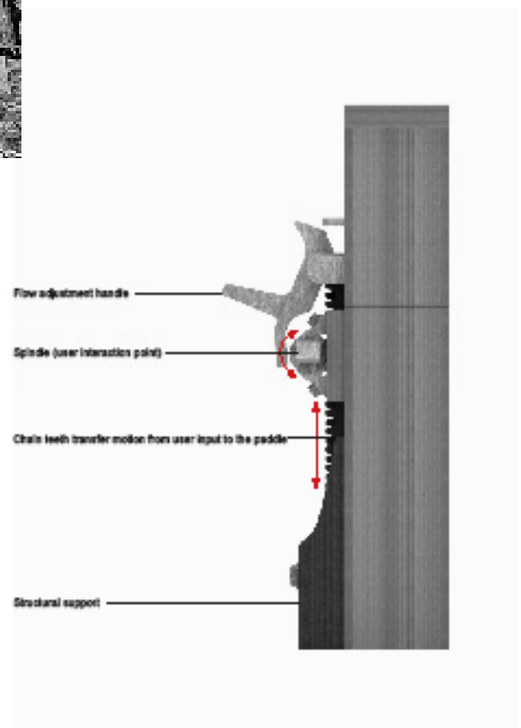
03 THE MAKER PHILOSOPHY
ADAPTIVE SYSTEMS IN DESIGN

THIS LOCK-TO-CHAIR-TO-DOOR EXPERIMENTATION MIRRORS THE MAKER PHILOSOPHY OF PROTOTYPING, MODULARITY, HUMAN ENGAGEMENT, AND REUSE THAT BECOMES THE DESIGN LANGUAGE OF THE REBUILT HOME

CANAL LOCK GATE WINDLASS
HUMAN INTERACTION KEY TO LOCK, CHAIR AND DOOR

THE CANAL LOCK MECHANISM

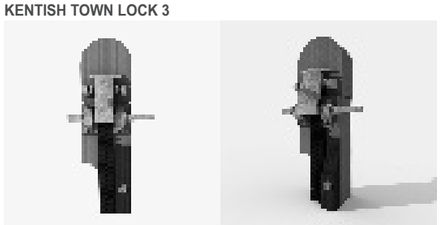




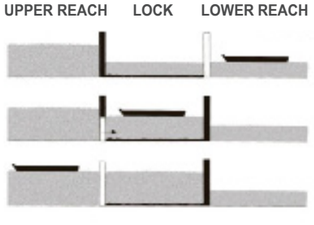
LOCK SEAT

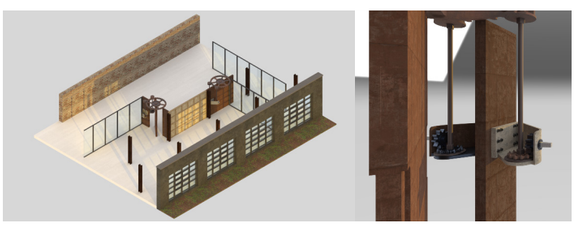
FLOW GATE

KENTISH TOWN LOCK 3



UPPER REACH LOCK LOWER REACH





Through investigating the logic of the mechanical canal lock, which can be located on the tow path of the canal it can be observed that a rack and pinion system is in place. The effect of the lock itself is to control movement of barge boats that pass through but ultimately is the control of water.

The lock seat uses the mechanical principles investigated in the canal lock mechanism. The kinetic design fosters adaptability and introduces the control of movement in a different architectural application.The lock seat allows for adjustability on a personal scale.

The evolution from the lock mechanism to architecture culminates in the flow gate. The pivotal door is designed for controlled access, it reuses the mechanical rack and pinion system using mechincal gears primarily all within a complex scale.

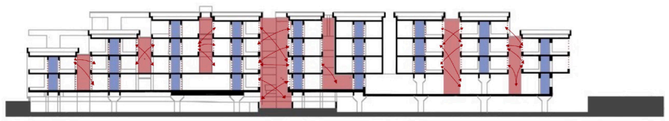
03 INTERCONNECTING ENCOUNTERS

SPATIAL ANALYSIS OF CENTRAAL BEHEER OFFICE BY HERMAN HERTZBERGER

THIS STUDY SHOWS INFORMAL ENCOUNTERS PROVOKED BY THE ARCHITECTURE THROUGH SPATIAL TRANSPARENCY, CIRCULATION AND TRANSITIONAL SPACES

VISUAL TRANSPARENCY ANALYSIS

These diagrams analyses the section of the office and how Hertzberger uses visual permeability, elevated walkways, voids, and semi-transparent boundaries to foster passive social awareness across levels.



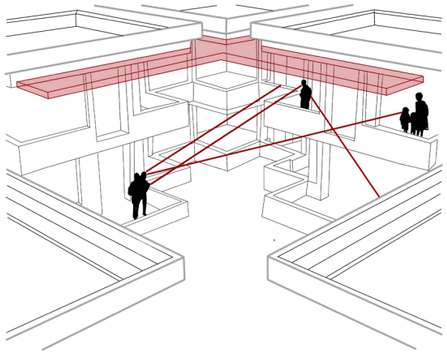
Section of Central Beheer Office

Walkways

Void / Atrium

Eyeline

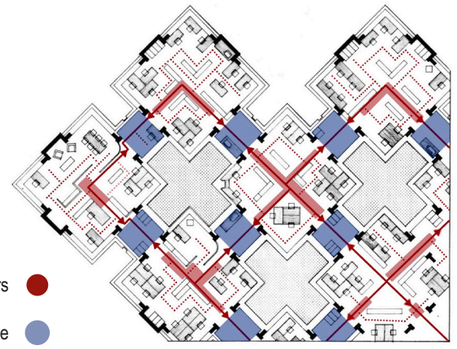
Semi Transparent Barriers



Authors illustrative void analysis

CIRCULATION AND INFORMAL MEETING POINTS

Through enabled circulation routes and transitional spaces, the plan supports spontaneous interactions and informal gathering points such as narrowing corridors embedded within movement from space to space.



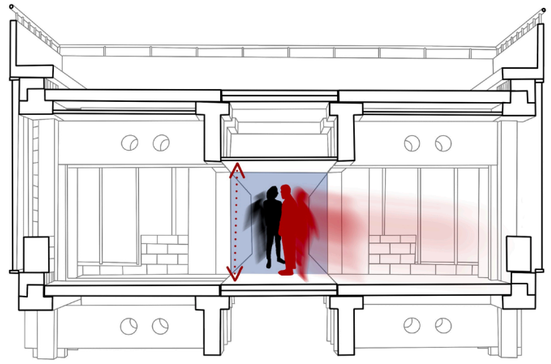
Segment of Central Beheer Office plan

Informal Encounters

Transitional Space

Primary Circulation

Secondary Circulation



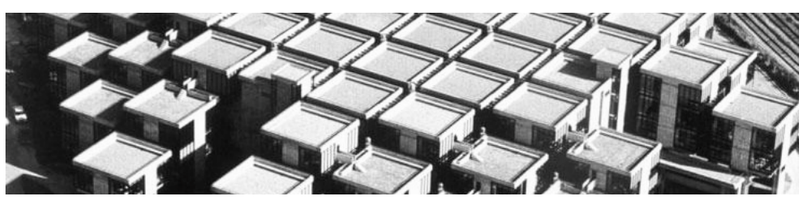
Authors illustrative Corridor analysis

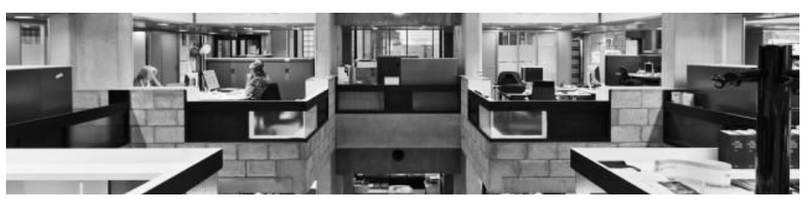
MY CONCEPTUAL RESPONSE

Inspired by Hertzberger's spatial ethos, this conceptual structure reinterprets open platforms and staggered levels through a singular void to choreograph collective presence and encounters.

Authors Conceptual Model

CENTRAAL BEHEER OFFICE BY HERMAN HERTZBERGER





04 | AGGEREGATE EXPERIMENT

ALTERNATIVE MATERIAL TESTS

AGGEREGATE INFILL EXPERIMENTS AIM TO AVOID TRHE USE OF SAND BY TESTING MORE SUSTAINABLE LOCALLY AVAILABLE SUBSTITUES

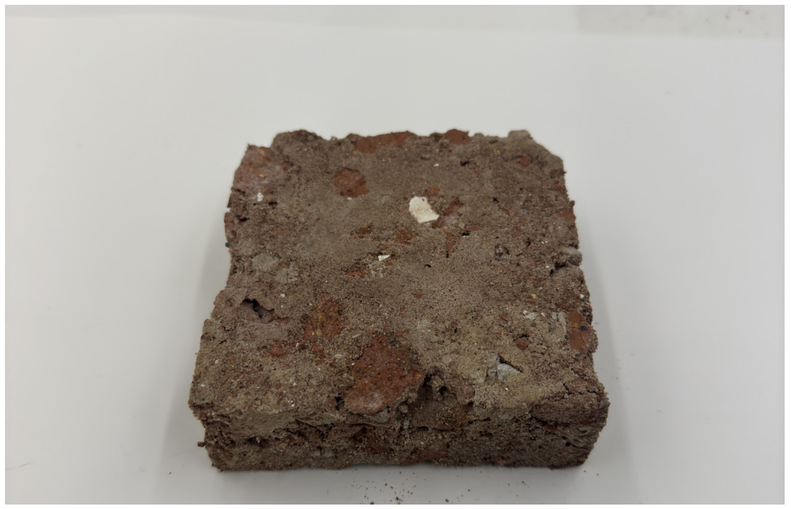
Pure Concrete

3 : Conventional aggregate, sand and small stones

2: Water

1: Cement mix

BrickCrete



Ratio

5 : Granulated brick

2: Water

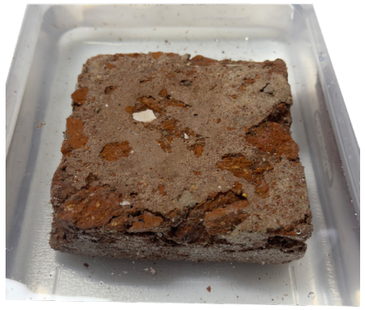
1: Cement mix

Brickcrete is a sustainable composite material made by combining crushed waste bricks with a cement or concrete binder. It offers a textured, often reddish or earthy finish due to the recycled brick content, making it visually distinctive and environmentally conscious. Brickcrete will be typically used for infill panels, walls, or paving, and is a low embodied carbon, reuse of demolition waste, and ability to blend modern construction with a reclaimed aesthetic. It's would suit the programs use of circular design and material reuse.

2 Hour Water Absorption Test

Observations:

The material retained its integrity with minimal change in form. Slight darkening was observed, however the granularbrickaggeregate resisted water absorption effectively.



Initial Mass - 620g
Final Mass After 2 Hours - 640g

TimberCrete

4: Sawdust and crunched timber mixture

1: Water

1: Cement mix

Timbercrete is a sustainable composite material made from sawdust, cement and water. Due to the use of wood within the material it creates thermally efficient product. The block was leight weight and sustainable in process using re used waste materials from a workshop space. Concerns include cost and availabiltiy on a larger scale, and a risk of moisture-sensitive, requiring a sealant to prevent degradation. Possible further experimentation could be held to measure the durability of the experiments in different environments.

Observations:

Swelling and bubbling occured shortly after submersio, indicating water penetration and air intake within the timber particles. The lightweight nature of the wood aggeregate increased porosity, making the aggeregate more prone to instability due to swelling.

Initial Mass - 560g
Final Mass After 2 Hours - 600g

BioCrete

3: Compost and dirt

2: Grass shavings

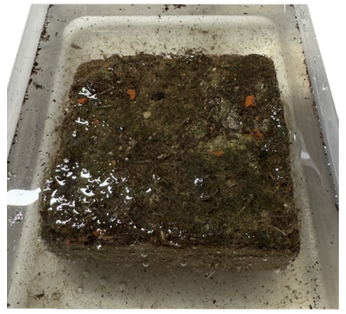
1: Water

1: Cement mix

BioCrete is an eco-friendly composite material made from a selection of bio-degradable materials such as compsot and dirt as well as grass shavings. The material is a much more sustainable option as its properties absorb CO2. It provides high thermal performance as well as acoustic insulation. However, BioCrete has lower structural strength and it is not a load-bearing material, its durability is also significantly less than than the previous experiments.

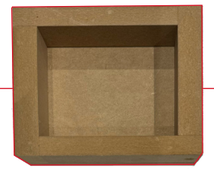
Observations:

The surface began to break down as watewr dissolved the loosley bound organic aggeregates. High moisture sensitivity of the grass and compost content resulted in visible disentegration.



Initial Mass - 500g
Final Mass After 2 Hours - 590g

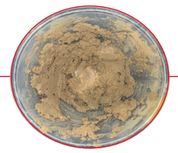
PROCESS



CREATING MOLD

LUBRICATING MOLD

MIXING DRY COMPONENTS



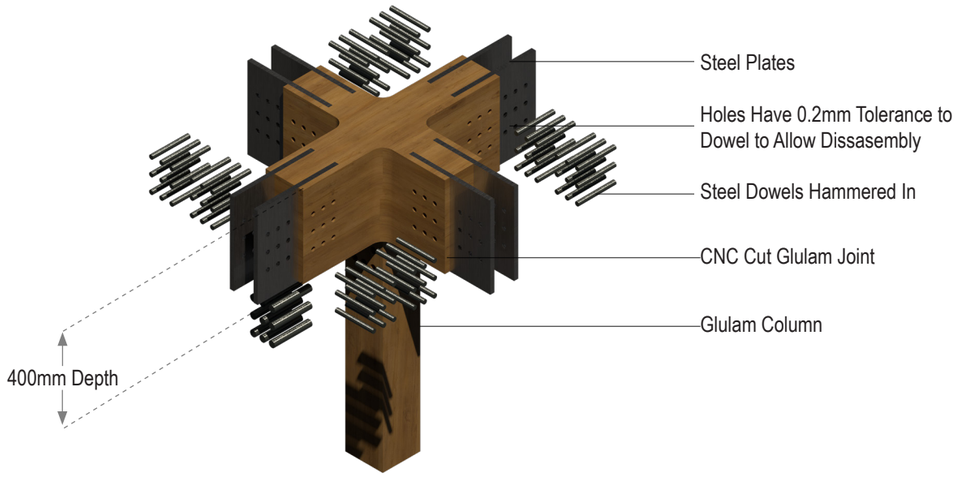
ADDING WATER

MIXING

POUR INTO CAST

04 | DESIGN FOR ASSEMBLY/DISASSEMBLY
STRUCTURE DESIGN AND MATERIALS

MODULAR GLULAM JOINT ASSEMBLED/DISASSEMBLED ON SITE

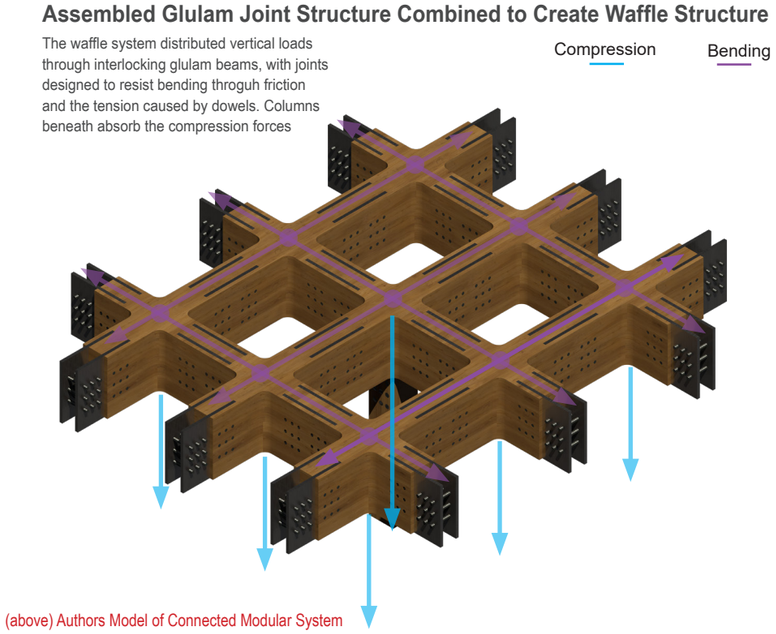


The modular waffle ceiling is constructed from CNC-cut glulam units joined with steel plates abd dry dowels enabling easy dissembly, transport and reuse

(above) Authors Exploded Model of Waffle Joint

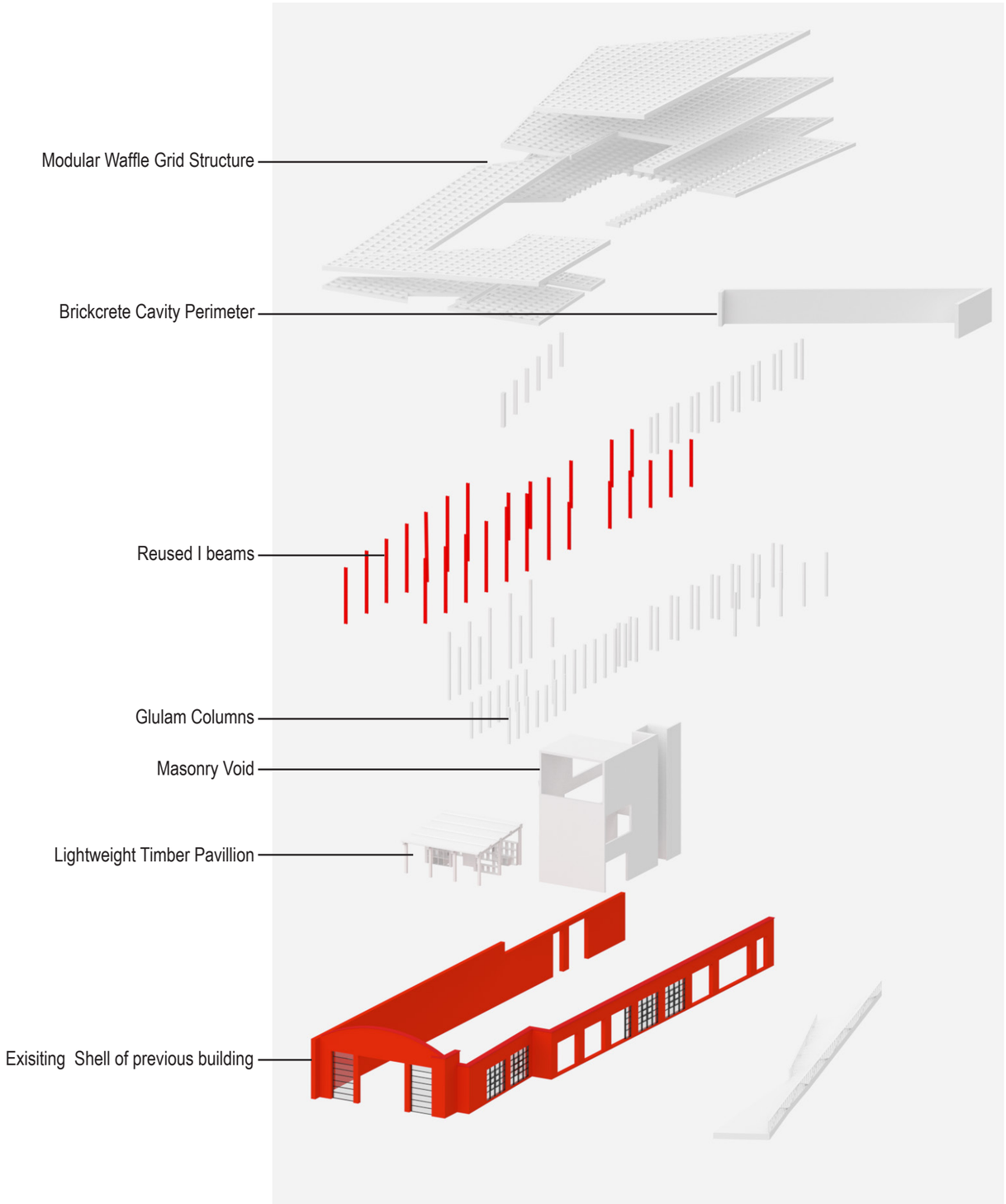
Assembled Glulam Joint Structure Combined to Create Waffle Structure

The waffle system distributed vertical loads through interlocking glulam beams, with joints designed to resist bending throguh friction and the tension caused by dowels. Columns beneath absorb the compression forces



(above) Authors Model of Connected Modular System

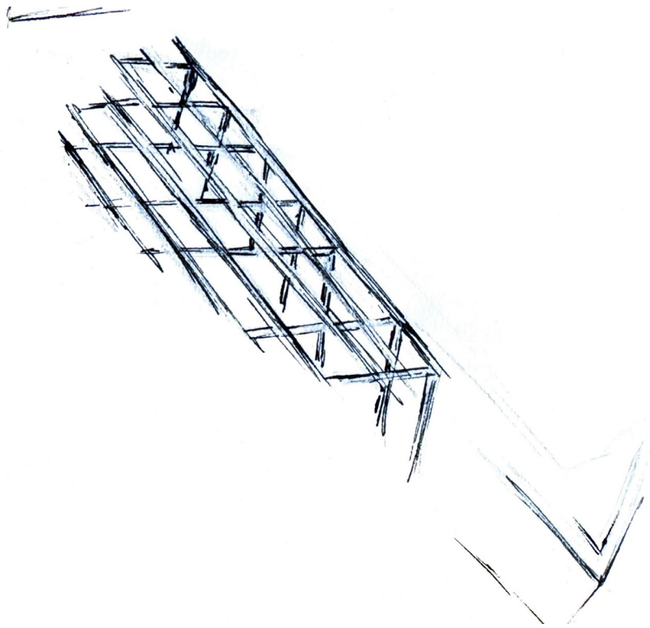
STRUCTURAL EXPLODED AXONOMETRIC

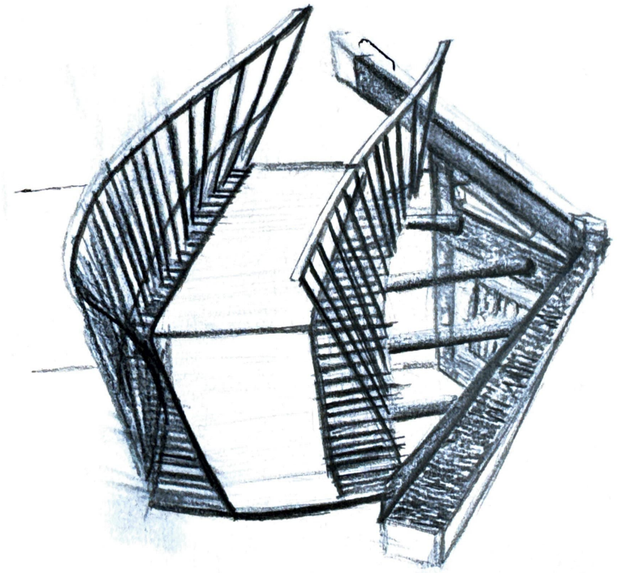


(above) Authors axonometric of design structure

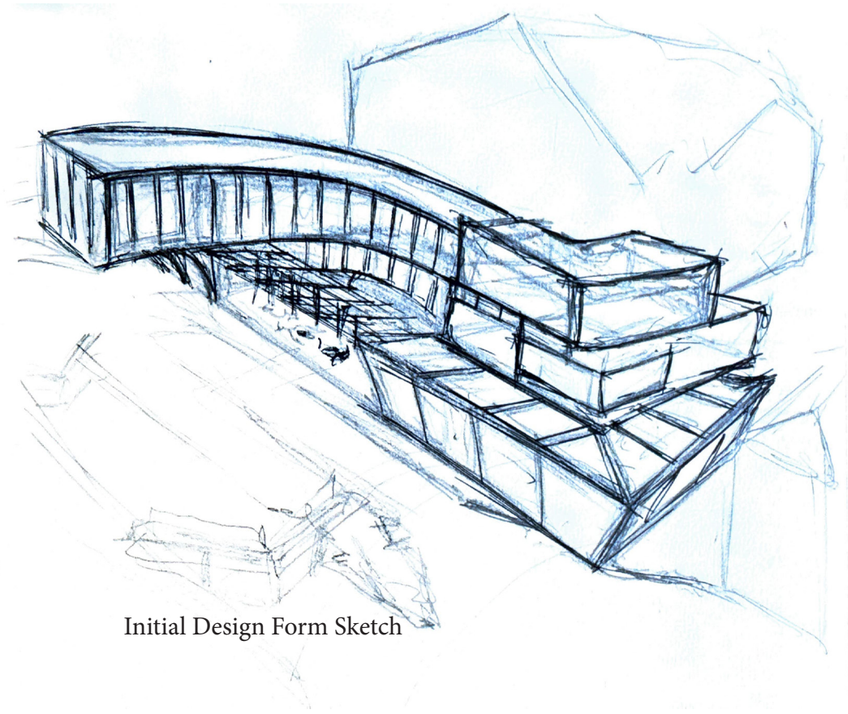
04 | SKETCHING INTENTIONS

Process studies

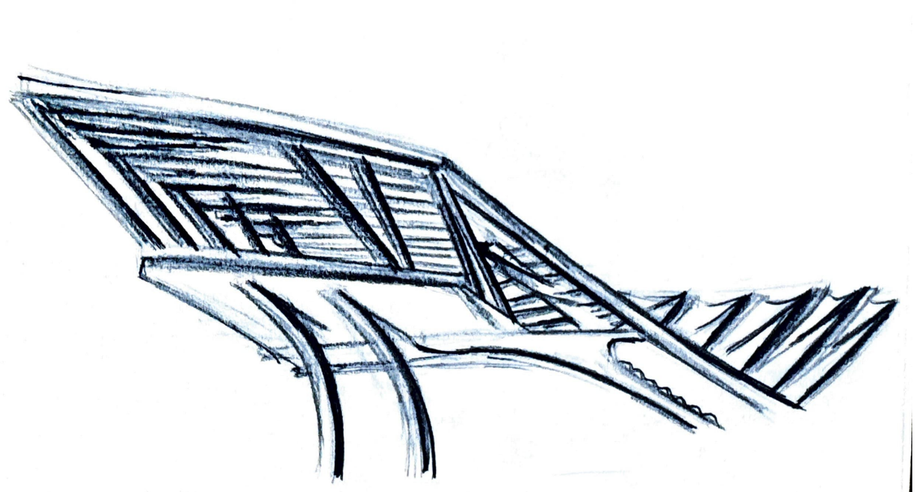


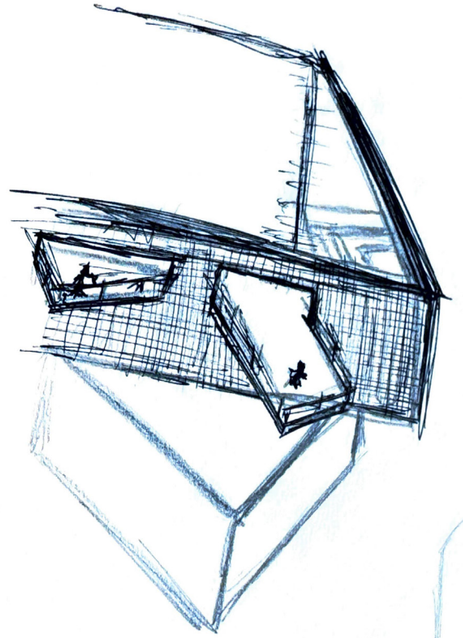


This Sketch explores the project's interaction with the canal through a pavilion space featuring a pergola shelter, offering a welcoming stop for canal boat users and forming a new axis of access that links the building directly to the waterside. The accompanying conceptual sketch proposes a pedestrianised canal bridge that enhances connectivity and encourages public interaction across the site.

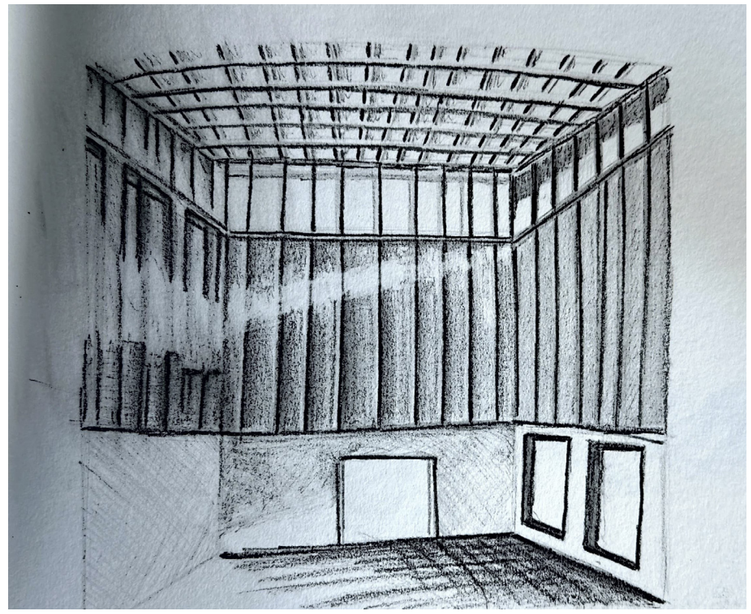


Initial Design Form Sketch





These sketches explore dynamic, outreaching fragments within the design that project toward the canal, breaking free from the constraints of the existing site building to create expressive overhangs and expanded spatial experiences.

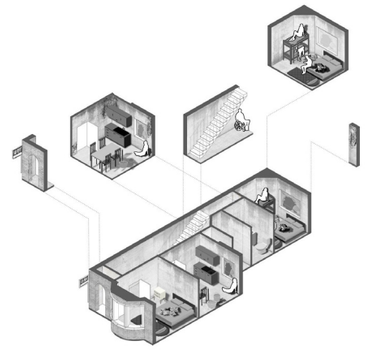


Auditorium Space Initial Sketch

04 | REPAIRING THROUGH DESIGN

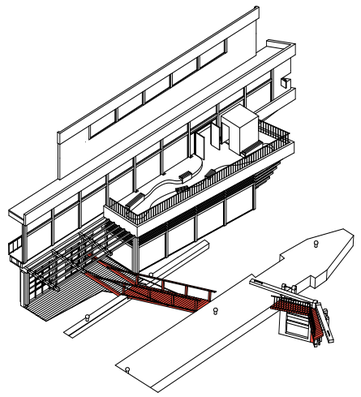
STRATEGIC RESPONSES TO HOUSING INEQUALITY

THIS PAGE RESPONDS DIRECTLY TO THE SPATIAL AND SOCIAL CHALLENGES IDENTIFIED EARLIER IN THE PROJECT
EACH DESIGN STRATEGY BELOW HAS BEEN DEVELOPED AS A TARGETED ARCHITECTURAL RESPONSE



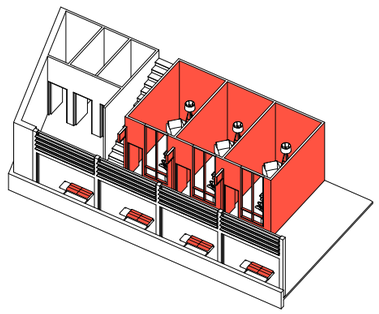
- ACCESSIBILITY
- ENERGY EFFICIENCY
- AFFORDABILITY
- DISREPAIR
- OVERCROWDING

CANAL FRONT ACCESS



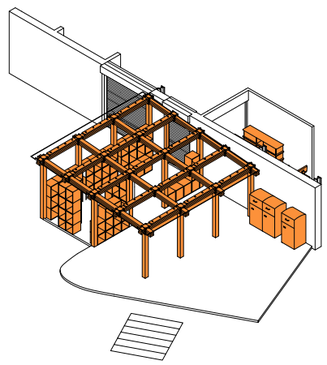
New Infrastructure introduces a new public threshold along the canal edgfe, enhancing accessibility and reconnecting the site.

CHARITY COUNCELLING SPACES



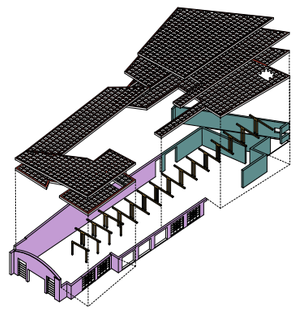
A protectivee advocate space providing discrete accessible rooms for support services, embedding mental health and housing advocacy within the everyday of the building.

MATERIAL DROP PAVILLION



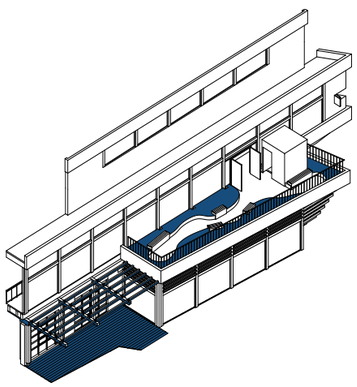
A community led exchange point for salvaged materials encouraging repair cultures and local recourse sharing as well as preventative for fly tipping

RECLAIMING THE EXISTING



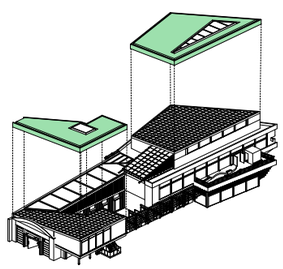
Retains and repurpose the existing building shell, layering new spatial functions within the original fabric to minimise waste and preserve local character.

NEW LAYERED PUBLIC GROUND



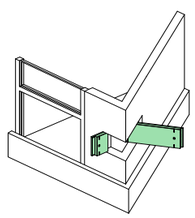
Introduces stepped terraces that transform underused ground into accessible shared space.

VENTILATED GREEN ROOFSCAPE



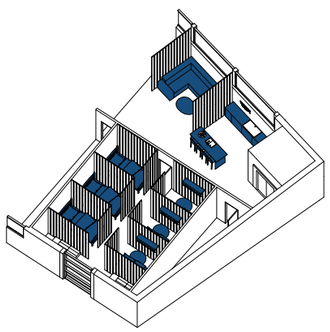
Integration of a brown roof system to improve insulation and enable passive ventilation in response to the damp site conditions

USER CONTROLLED ARCHITECTURE



Enables users to manually adjust elements of the building encouraging a sense of ownership of their environment.

THIRD PLACE SHLETER

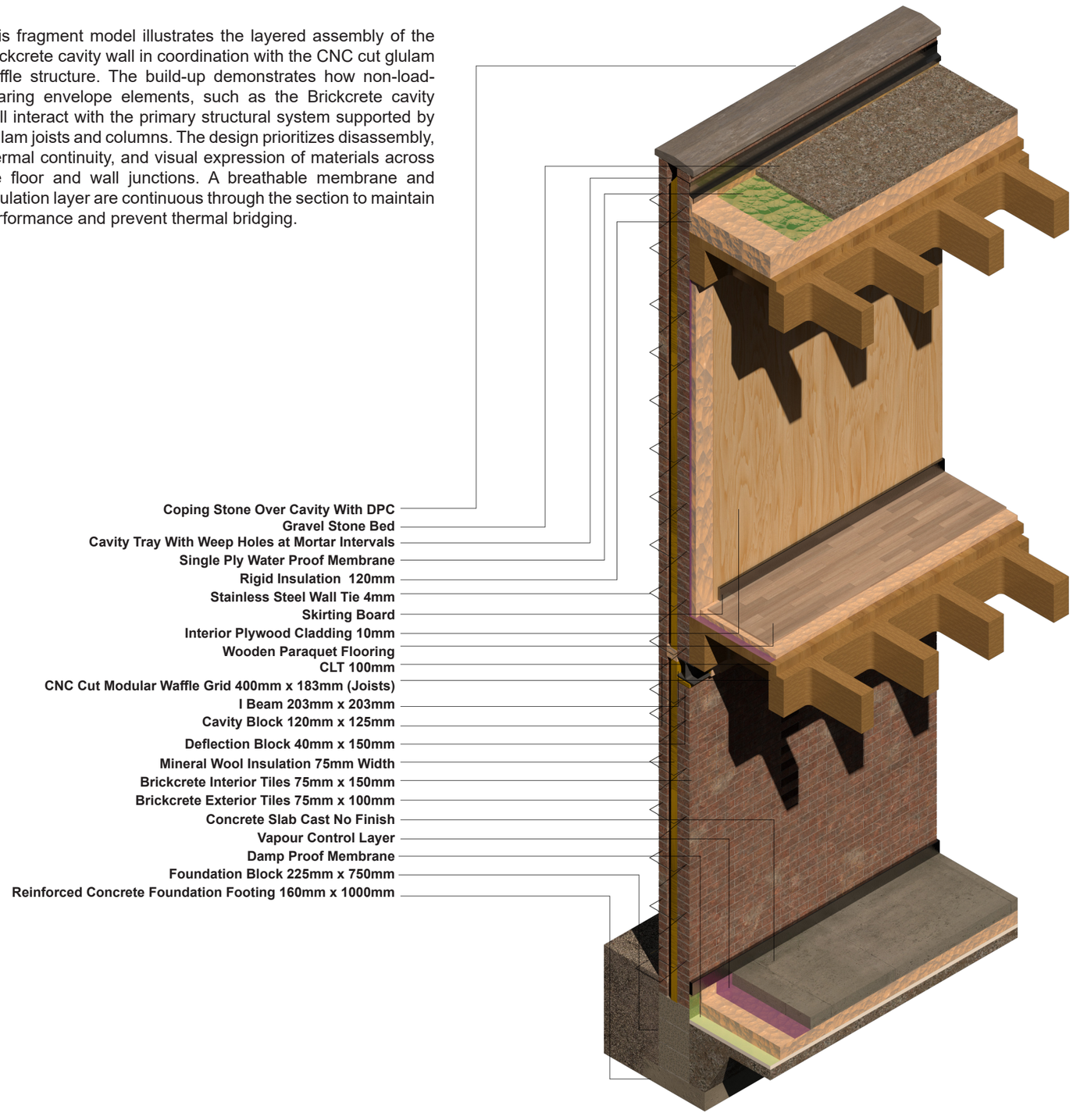


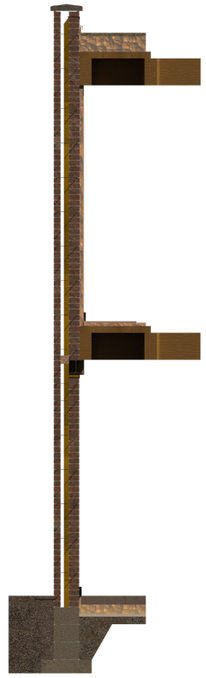
Offers temporary dignified sleeping spaces for those in housing precarity creating a safe in bbetween refuge.

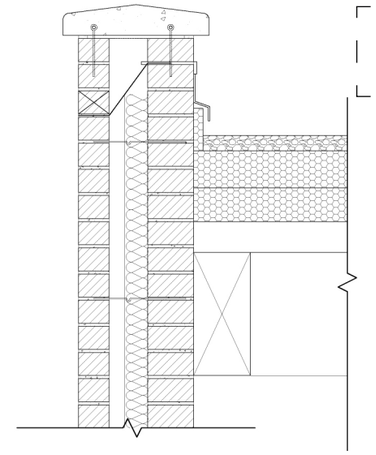
05 | BRICKCRETE CAVITY WALL

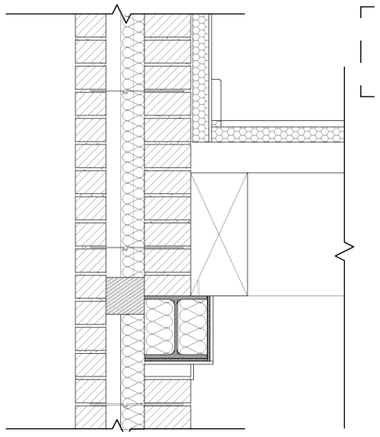
FRAGMENT MODEL

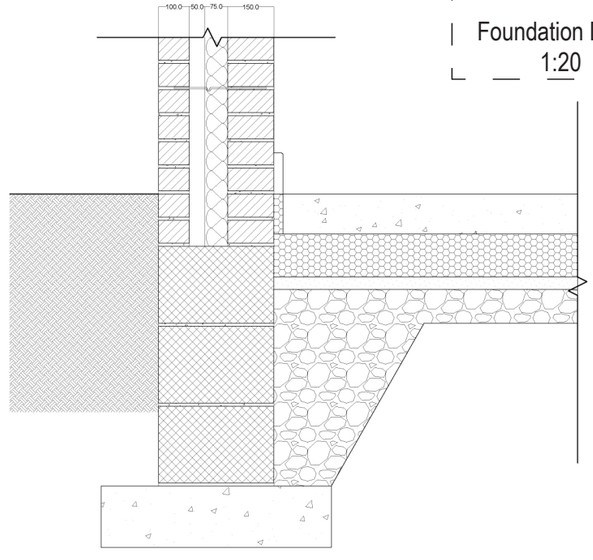
This fragment model illustrates the layered assembly of the Brickcrete cavity wall in coordination with the CNC cut glulam waffle structure. The build-up demonstrates how non-load-bearing envelope elements, such as the Brickcrete cavity wall interact with the primary structural system supported by glulam joists and columns. The design prioritizes disassembly, thermal continuity, and visual expression of materials across the floor and wall junctions. A breathable membrane and insulation layer are continuous through the section to maintain performance and prevent thermal bridging.











(above) Authors Model