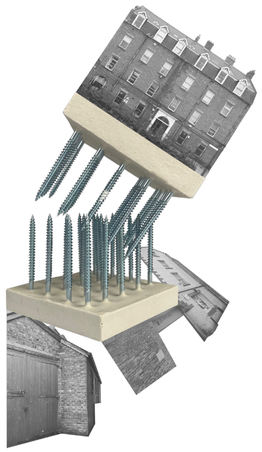
EXHALE.

SUSTAINABLE COMMUNITY LIVING.

Reimagining a listed building in Newcastle City Centre to accommodate unconventional households of displaced individuals, this project harmonises heritage with modern social needs. It proposes a serene, community-focused environment for refugees, offering both living space and employment through an on-site stereo café. The design integrates autonomous features that enhance spatial functionality, creating a dynamic atmosphere that feels alive, almost as if the space itself is breathing. This 'breathing' allows for a duality of use maximising functionality whilst housing stimulating environments. The scheme is constructed using existing and salvaged materials, consciously sourced from local manufacturers in response to the environmental emergency. 'EXHALE' is a furniture-scale insertion, fully demountable and reconfigurable without fixings to the existing structure. The original fabric remains untouched, allowing for full reversibility and future adaptation. The process is simple and minimal enabling varied configurations tailored to the evolving needs of occupants.



Building Response Model - Based off existing materiality and dysfunction of spaces caused by a lack of material cohesion.

Dysfunction of materiality in the existing building.

EXISTING MATERIALITY.

Looking into the existing building fabric and observing its unique charm, its borderline derelict state and rich material palette, Charlotte Square tells a visual story to its occupants. The main house, constructed in the Georgian era with later Victorian additions, communicates through its materials, junctions, and colours, all of which reveal its layered history. The significance of the existing materials lies not only in their historic value but also in their ability to speak for themselves. This diverse palette offers a stimulating backdrop for a contemporary intervention, minimising both structural work and costs. The original building is celebrated and incorporated, not concealed.

Joinery left exposed manifesting thenbuildings segregation.

The attempt of salvage.

Existing paraphernalia.

Additional frameworks to ensure unity.

PROPOSED MATERIALITY.

Locally sourced, pre-loved sustainable material.

MANUFACTURER:
PRODUCT:
MATERIAL: Existing masonry
DIMENSIONS:
COLOUR: Red
PERFORMANCE:
LOCATION: All over
PURPOSE: Backdrop for insertions

MANUFACTURER: Newcatle Wood Recycling
PRODUCT: Varies on supply
MATERIAL: Plywood
DIMENSIONS: 1220 x 2440 mm
COLOUR: Stains and textures will vary with salvage material.
PERFORMANCE: Bending Strength (MOR): ~30–50 MPa, Modulus of Elasticity (MOE): ~6000–9000 MPa
LOCATION: All over
PURPOSE: Construct all insertions - sheet material

MANUFACTURER: Newcatle Wood Recycling
PRODUCT: Varies on supply
MATERIAL: Blockboard
DIMENSIONS: 1220 x 2440 mm
COLOUR: Stains and textures will vary with salvage material.
PERFORMANCE: Bending Strength (MOR): ~30–45 MPa and Modulus of Elasticity (MOE): ~4000–7000 MPa
LOCATION: All over
PURPOSE: Smaller panels where strength over distence matters

MANUFACTURER: Newcatle Wood Recycling
PRODUCT: Varies on supply
MATERIAL: Pine
DIMENSIONS: 50 x 100 x 3000mm
COLOUR: Stains and textures will vary with salvage material.
PERFORMANCE: Modulus of elasticity (MOE) 6,000–9,000 MPa
LOCATION: All over
PURPOSE: Construct all insertion - beams and joists

MANUFACTURER: Newcatle Wood Recycling
PRODUCT: Varies on supply
MATERIAL: Douglas Fir
DIMENSIONS: 50 x 100 x 3000mm
COLOUR: Stains and textures will vary with salvage material.
PERFORMANCE: Modulus of Elasticity (MOE) 9,000–12,000 MPa
LOCATION: All over
PURPOSE: Construct all insertion - beams and joists

1:20 Detail Annotation - Repose/Kitchen

(width x depth x height)

1 - Existing walls: Solid masonry (560mm thick)
2 - Windows: Existing in background, with a mirrored set infront (double glazing), timber frame with silicone sealent.
3 - Floors: Existing floor joists (50mm x 5660mm x 175mm)for this section) , Existing timber floor panels (150mm x 1800mm x 25mm), new floor beams (50mm x 3060mm x 175mm) + (50 mm x 2260mm x 175mm), new timber floor panels (150mm x 1800mm x 25mm) and a clear matt ronseal diamond hard floor varnish.

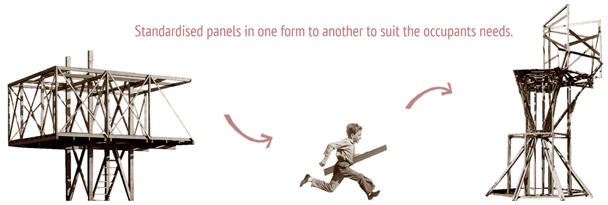
- ALL NEW SHEET/JOIST/BEAM MATERIAL IS RECLAIMED
- Reclaimed timber sheet - Plywood or Blockboard
- Reclaimed timber joists/beams - Pine or Douglas Fir
  (Most likely materials based on UK salvage supply)

4 - Wall A/repose: Timber sheet (1220mm x 25mm x 2440mm), internal joists (40mm x 90mm), galvanised steel butt hinges (90° angle), and a clear matt ronseal diamond hard wood varnish.
5 - Wall B/repose + circulation: Timber sheet (1220mm x 25mm x 2440mm), external joists (40mm x 90mm x 2800mm), under seat beams (50mm x 175mm x 2960), internal joists (40mm x 90mm) and a clear matt ronseal diamond hard wood varnish.
6 -Wall C and G/Repose: Wall G/Dining + Repose: Timber sheet (1220mm x 25mm x 2440mm) with a polyurethane varnish, timber beams (40mm x 90mm x 2495mm), stainless steel offset pivot hinges (270° angle), wide throw butt hinge (180° angle) and a timber support beam (50mm x 2300mm x 50mm).
7 - Wall D and E/Kitchen: Timber sheet (1220mm x 25mm x 2440mm), timber beams (100mm x 100mm x 2920mm) and a double layered timber sheet counter top (2x (1220mm x 25mm x 2440mm) with a Polyurethane varnish.
8 - Wall F/Storage: Timber sheet (1220mm x 25mm x 2440mm) with a polyurethane varnish, external timber beams (40mm x 90mm x 2970mm), anodize treated aluminium sheet (1.2mm thick)
9 - Rail system: Timber sheet (1220mm x 25mm x 2440mm) attached to existing floor joists (50mm x 5660mm x 175mm) for this section), air gap (5mm), carbon steel screws (4.2 x 75mm and 5.5 x 125mm), compression spring (40mm diamater), nut and bolt hook system, and a trolley rail system.

DECONSTUCTION/RECONSTRUCTION.

'EXHALE' is a furniture-scale insertion, fully demountable and reconfigurable without fixings to the existing structure. The original fabric remains untouched, allowing for full reversibility and future adaptation. The process is simple and minimal enabling varied configurations tailored to the evolving needs of occupants.

Standardised panels in one form to another to suit the occupants needs.



DECONSTRUCTION

RECONSTRUCTION

DECONSTRUCTED

CONSTRUCTED

DECONSTRUCTED

Mechanical fixings allow the deconstruction/reconstruction of accommodation units to be simple and fast.

Left - Social areas - Kichen/Dining/Games
Middle - Transitional areas/Information on local events
Right - Public Culinary Kitchen/Accommodation Units/Communal Games

INSERTIONS.

Insertions reuse the existing structures, reducing material waste, and avoiding demolition. It will use recycled and locally sourced materials in order to improve the building performance passively. Their adaptability extends a building's life, supports circular design, and lowers environmental impact through minimal intervention.

All insertions are made from second-hand standardised timber sheets and beams. This imporoves air quality in the space, provides a contempory look and does not produce any harmful gasses. This is a sustainable approach using a sustainable material.

An accommodation insertion - Pre-fabricated materials assembled to maximise social interaction. Insertions are based on user choice and become communicative tools and become an expression of body language. Above is an extroverted individual inviting interaction.

DUALITY OF SPACE.

The design integrates autonomous features that enhance spatial functionality, creating a dynamic atmosphere that feels alive, almost as if the space itself is breathing. This 'breathing' allows for a duality of use maximising functionality whilst housing stimulating environments.

ACCOMMODATION UNITS.

INTROVERTED - NIGHT

INHALING

CLOSED - FOLDED IN - TURNED IN

UNWELCOMING - Reflection of occupants preferences.

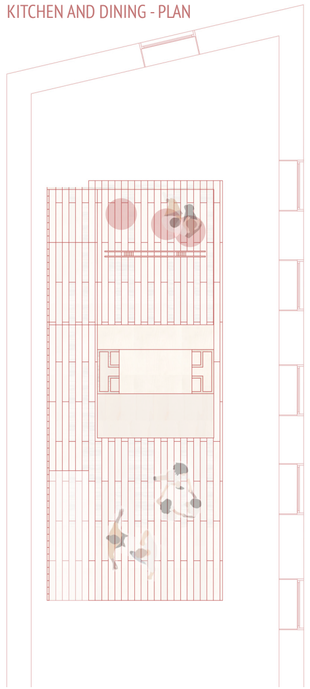
EXTROVERTED - DAY

EXHALING

OPEN - UNFOLDED - TURNED OUT

WELCOMING - Reflection of occupants preferences.

KITCHEN AND DINING - PLAN

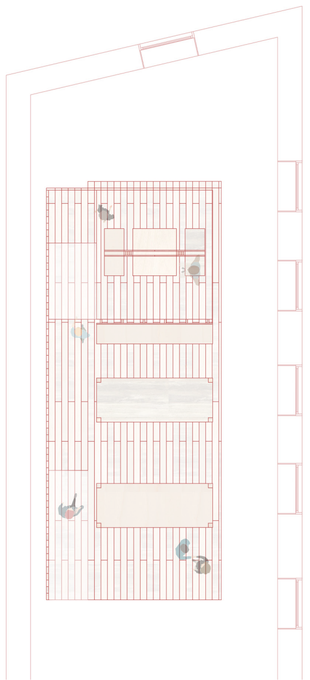


NIGHT

INHALING

CLOSED - FOLDED IN - TURNED IN

Opportunity for one set of functions.



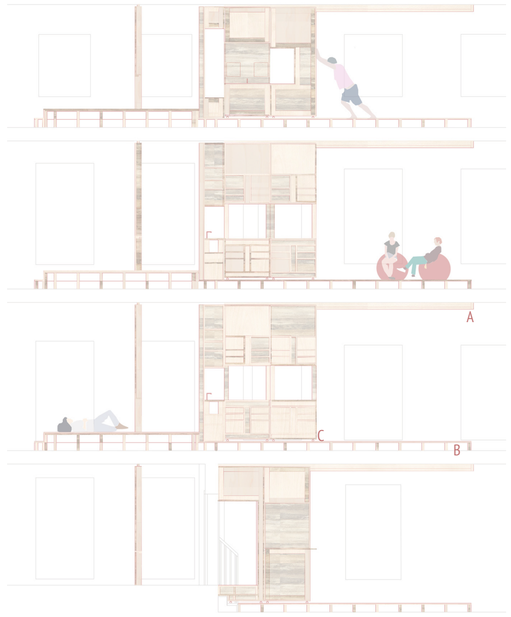
DAY

EXHALING

OPEN - UNFOLDED - TURNED OUT

Opportunity for another set of functions.

KITCHEN AND DINING - SECTION



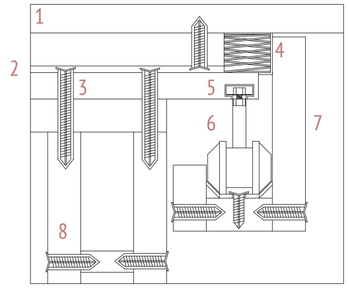
Functional Examples:

Movies
Reading
Dancing
Repose - isolated/group

Functional Examples:

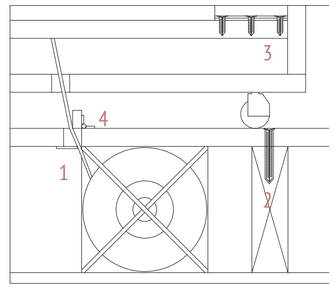
Cooking
Dining
Repose - isolated/group

DETAIL FROM KITCHEN - AUTONOMY



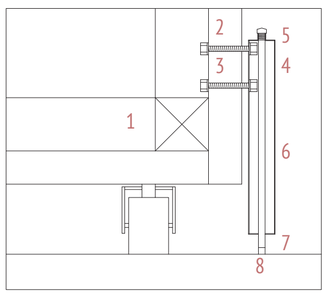
1:5 DETAIL 'A' - TRACK

1- Existing Floor Joist.
2- 5mm Air Gap.
3- 76mm Wood Screws - Mechanical Fixings - Build for Deconstruction.
4- 40mm Diamater Fixed Compression Srping.
5- Nut and Bolt Hook System - Protects Mechanism from Falling.
6- Trolley Rail System.
7- 25mm Plwood.
8- 38mm Wood Screws - Mechanical Fixings - Build for Deconstruction.



1:10 DETAIL 'B" - ELECTRICAN DISTRIBUTION UNDER FLOOR

1- Retractable Power Cord System.
2- 76mm Wood Screws - Mechanical Fixings - Build for Deconstruction.
3- 60mm Hatch - Access to Plug and Play System.
4- 40mm Hatch - Plug storage.



1:10 DETAIL 'C" - MANUAL STOPPER

1- 40mm x 90mm Douglas Fir Beams.
2- 25mm Plywood.
3- 30mm Nut and Bolt.
4- 5mm Aluminium Plate.
5- 6mm Compression Spring
6- 1mm Aluminium Shell.
7- 5mm Diamater Aluminium Rod.
8- 5mm Rubber Edge - Low Slip.

USER CONTROL

Occupant control/preference of space creates unique sets of the interior. The intervention becomes performative as a physical representation of its occupants. Almost as a physical representation of an individuals body language.

-Accom Unit in the day (Extroverted)

-Accom Unit at night (Introverted)

-Public Culnary Kitchen

1:20 Sectional Model

-Accom Unit in the day (Extroverted)
-Accom Unit at night (Introverted)
-Public Culnary Kitchen

SUSTAINABLE COMMUNITY RELATIONS.

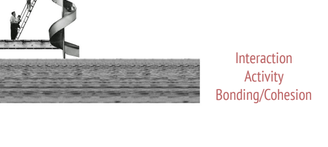
Sustainable communities are inclusive places that meet the needs of all residents regardless of background, age, or ability. They promote fair access to opportunities, support local economies, and enhance quality of life through safe and healthy environments. These communities help protect the planet while ensuring prosperity and equity for all.

Architects

Creative but ultimatly financial agenda

Leather Workshop

Creative but ultimatly financial agenda



Refugee Centre

Social agenda

Supports the brief/won't have to displace a current organisation!

Increased functionality of space provides a safe and comforting environment.

BASED ON EXISTING FUNCTIONS

Isolated groups
Financial gain
Lack of social interaction
between buissinesses

Interaction
Activity
Bonding/Cohesion

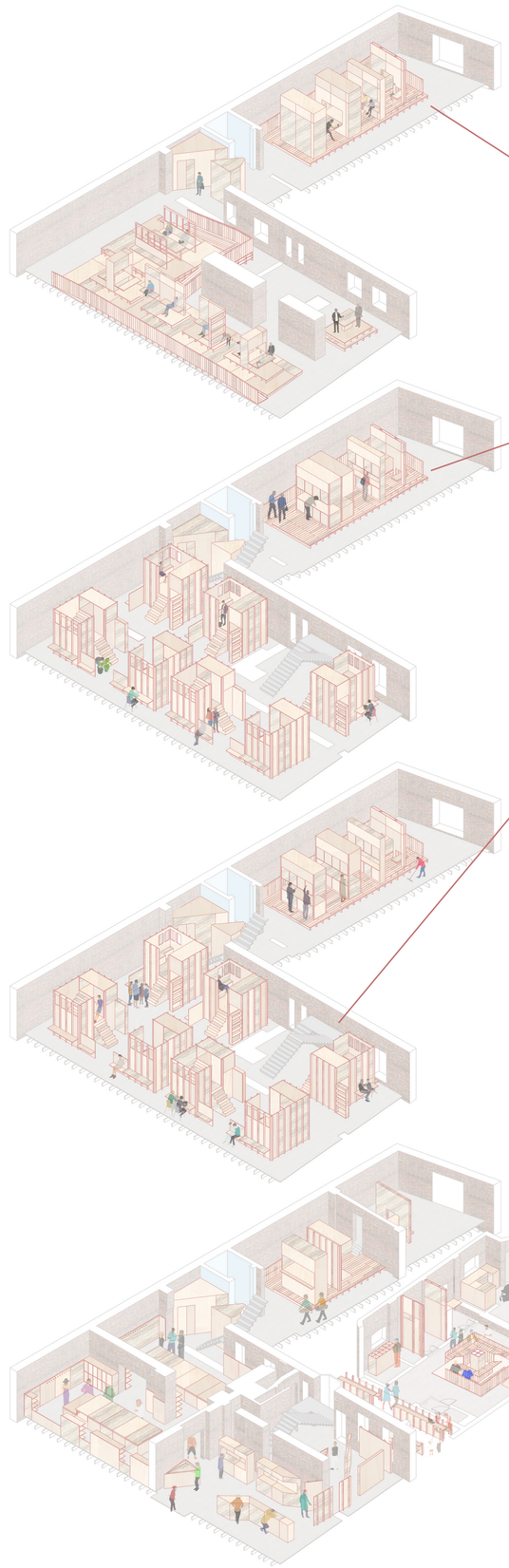
A space that is enjoyed appeals on an ongoing basis, making it a sustainable project.

People learn valuble skills to use outside of the housing scheme which will boost the local economy and promote opportunity for residents.

Accommodation Units promote social interaction and community.

Communal Kitchens encourage teamwork and a sense of accomplishment.

Public Culinary Kitchens encourage teamwork and a sense of accomplishment.



Communal areas to play games and relax bring a notion of excitement between occupants, a place to share experiences and emotions.

Communal kitchens promote teamwork and social bonding through the mutual connection that food brings.

Community living encourages social bonding and rapport between residents, increasing the feeling of safety and happiness within the environment.

Residents can work at the on-site stereo café to acclimatise to a Western working environment, helping to build confidence, gain experience, and open up further opportunities once they are able to support themselves.