

# THE LOOP

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The Loop at MEA House is a zero-carbon interior intervention that operates a local circular economy, transforming community plastic waste into structural architecture. It achieves total material and environmental resolution by constructing 100% of its interior fabric from modular partitions to bespoke furniture entirely from recycled plastics. Spanning from public recycling hubs to primary and higher education labs the design utilises a transparent central plastic column to expose the material's vertical lifecycle. The project proves that interior design can actively intercept global microplastic pollution, turning a listed building into an active ecological asset

## What is the loop?

The Loop, a transformative project dedicated to the circular economy of recycled plastics. Based in MEA House, the project's narrative is physically embodied by the building's exterior ramp, symbolising the continuous cycle of reuse. MEA House serves as a multi generational learning centre designed to combat the crisis of microplastics in our water systems.

## The Ground Floor Collection & Awareness:

This is the entry point for domestic waste, where community donated plastics are cleaned and sorted. A monumental water installation, shaped like the chemical bonds of a plastic polymer, serves as a visceral reminder of microplastic pollution, while a public shop and café showcase the beauty of reclaimed plastic products.

## The First Floor Creation & Youth Education:

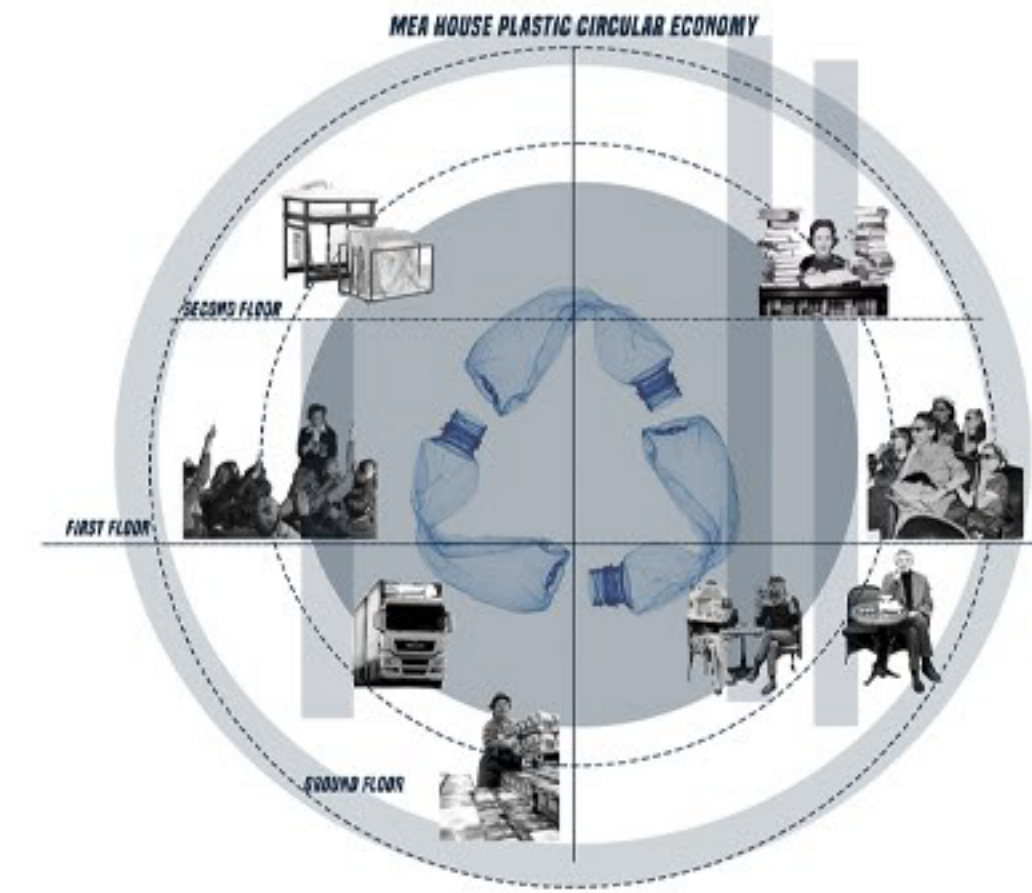
Designed for primary education, this level turns plastic from a pollutant into a tool for creativity. Here, children learn the value of long life objects by transforming waste into personal keepsakes, supported by a cinema dedicated to environmental storytelling.

## The Second Floor Innovation & Industry:

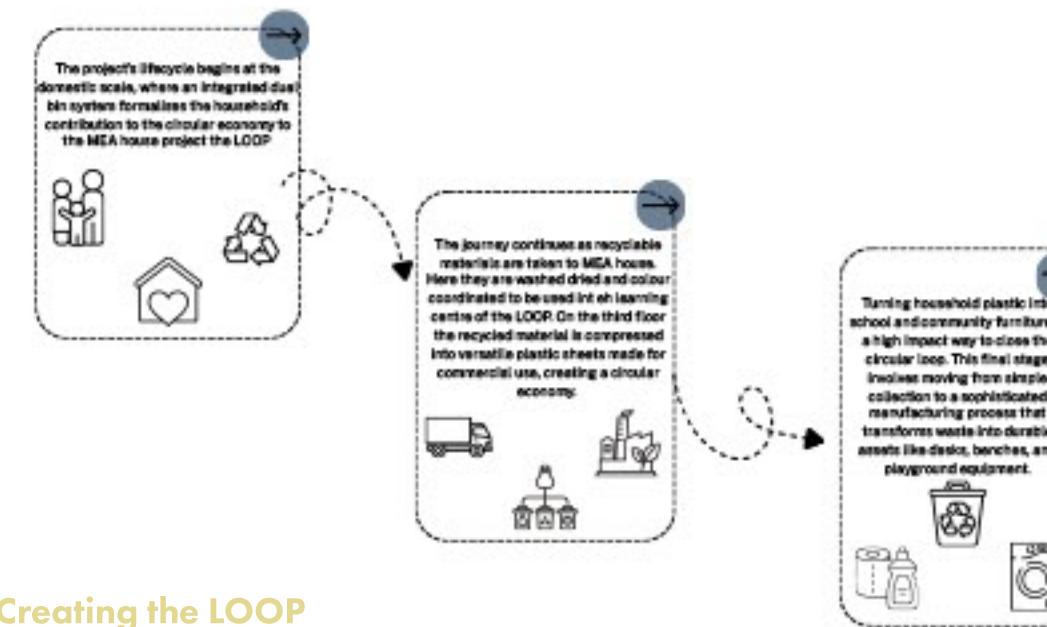
The journey culminates in a high level lab for higher education and chemical research. This floor explores the molecular potential of plastic, converting community waste into high strength commercial sheets for use in modern architecture and design.



Site location



The concept diagram



Creating the LOOP



Strategic diagram



# MATERIALITY

This design decision turns The Loop into a living prototype and the ultimate proof of concept for the circular economy. By ensuring that 100% of the interior interventions from partition walls and furniture to the exhibition structure are made entirely from recycled plastic or repurposed materials. This transparent material strategy accomplishes several project goals:

## Manifesting the Narrative:

Visitors do not just read about the circular economy on a plaque; they sit on it, walk through it, and interact with it. It validates the architectural proposal by showing that community waste has immediate value.

## The Ultimate Showroom:

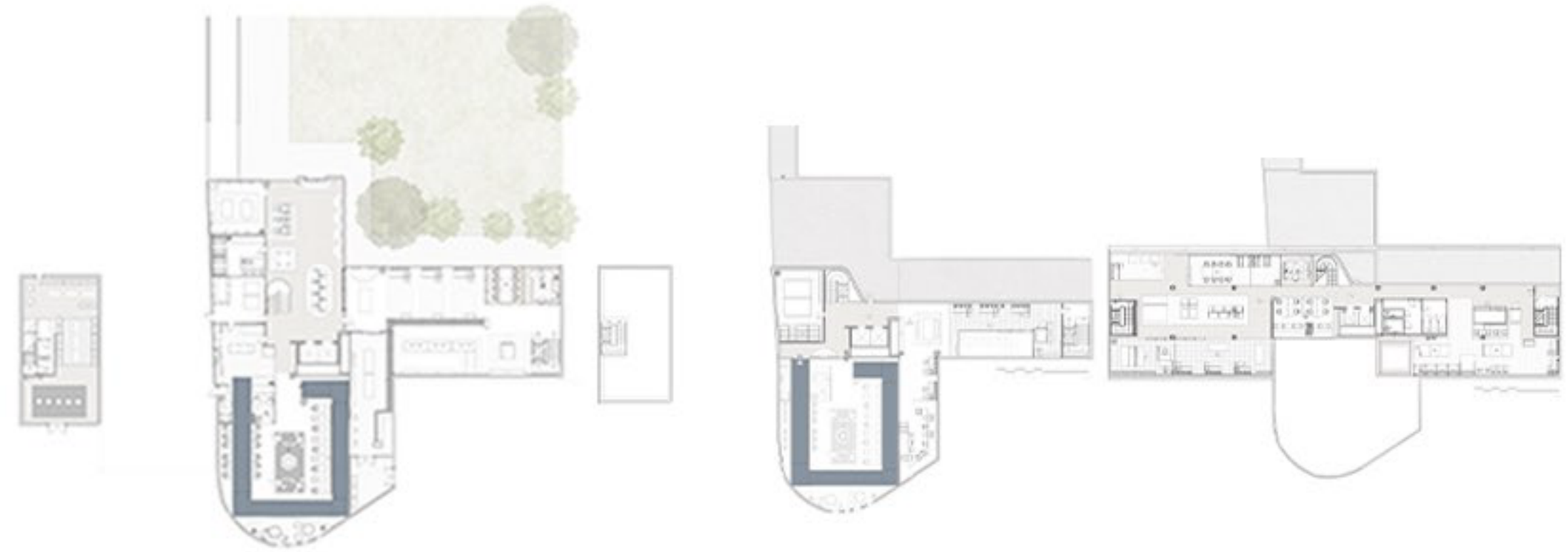
The commercial sheet plastic manufactured on the second floor is actively demonstrated on the ground and first floors. Architects, interior designers and the public can see how these recycled panels perform as real world walls, counters, and fixtures, driving commercial demand for the material.

## Eliminating Virgin Materials:

By refusing to use traditional, carbon heavy materials like virgin steel studs, or timber veneer, the project dramatically reduces its fit out carbon footprint and prevents further industrial waste.

## A Reversible Architecture:

Using modular, recycled plastic panels allows the entire interior to be designed for deconstruction. If the building's function changes in the future, these interventions can be unbolted, taken down, and re-melted into new items without ever seeing a landfill perfectly closing the loop.



Ground floor plan

First floor plan

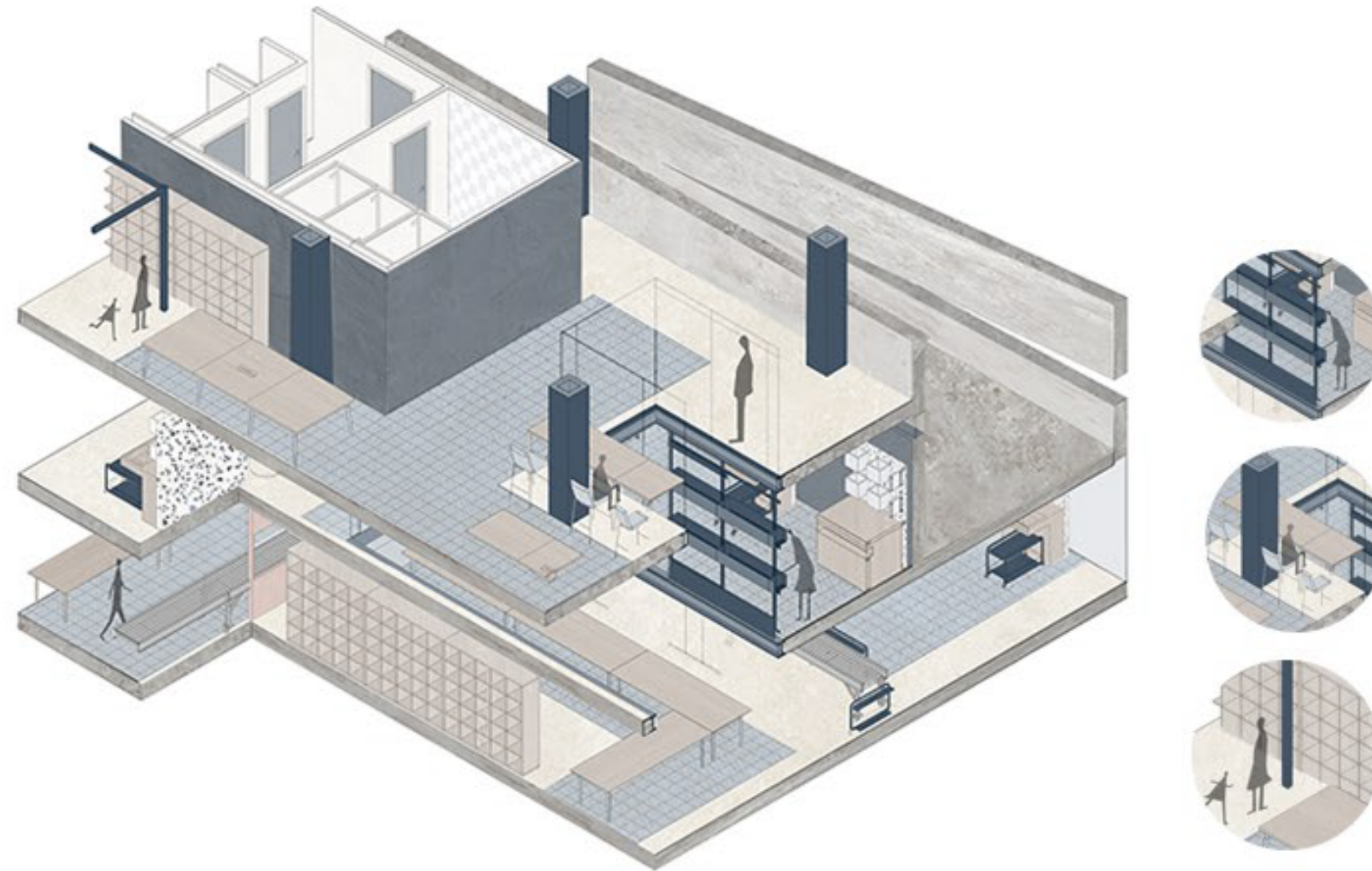
Second floor plan



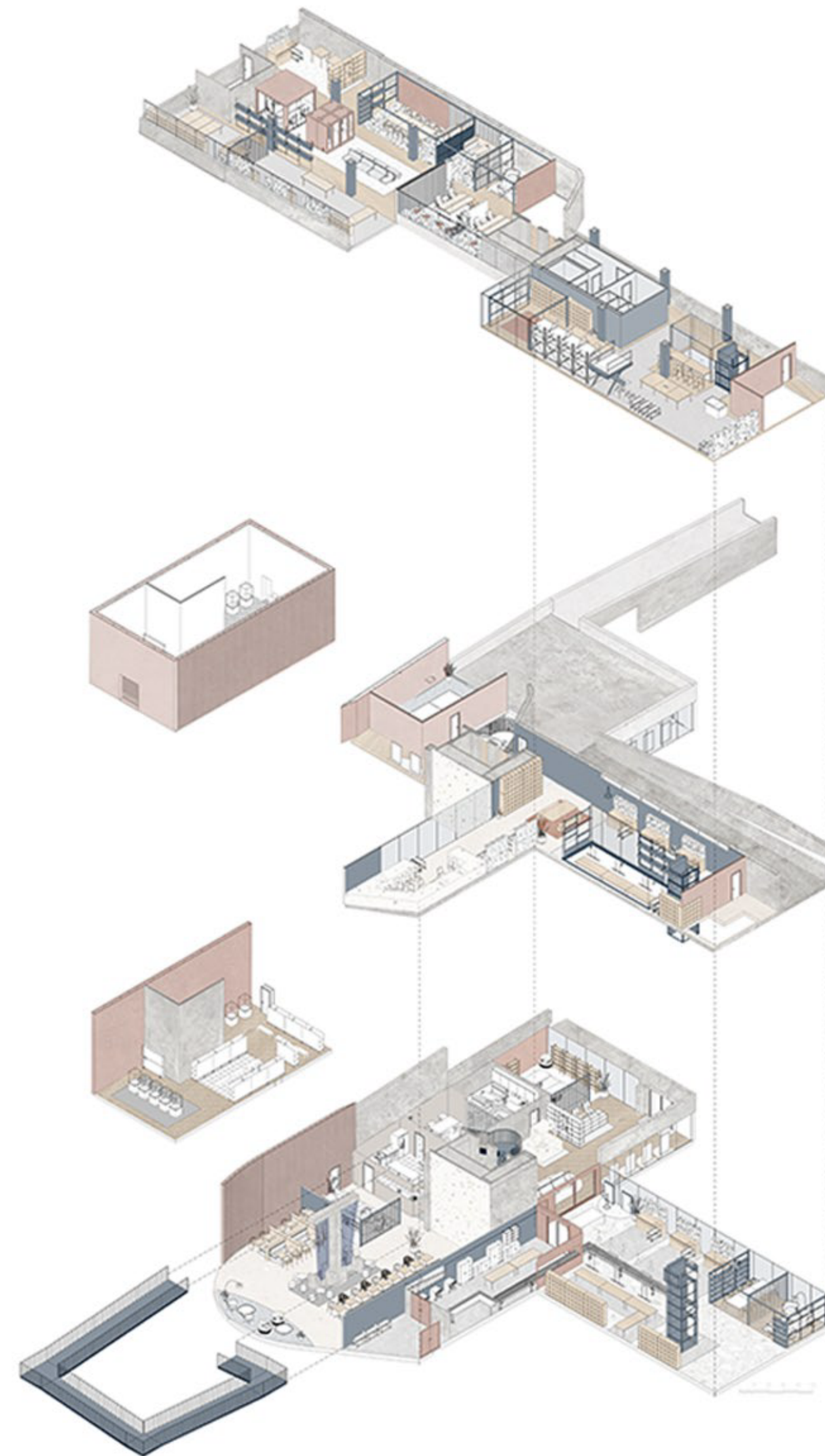
Long section



In this 1:20 axonometric section, the vertical mechanics of the circular economy are revealed. On the ground floor, the technical sorting core is visible, highlighting the industrial washing and drying stations positioned directly adjacent to bespoke recycled plastic workbenches designed specifically for material categorisation. Moving vertically through the structural envelope, the first floor unveils the primary education centre, a dedicated space constructed entirely from the project's own repurposed plastic interventions.



This 1:20 axonometric section exposes the vertical mechanics of the circular economy within the building's structural fabric. Running continuously through the heart of the active working zones is a vertical glass and plastic column, a transparent service and narrative spine that visually connects all three levels. This structural element allows visitors and researchers to track the vertical movement of materials and energy running through the loop.



# CIRCULAR ECONOMY

## Closing the Material Loop

**Zero Waste:** In a linear economy, plastic is made from fossil fuels used once and discarded into landfills or oceans. The Loop breaks this chain by trapping plastic in a continuous cycle.

**The Inflow:** The community delivers "waste" plastic to the ground floor loading bay [User Content].  
**The Transformation:** This waste is cleaned, sorted, and sent upstairs to be processed into consumer goods (first floor) or commercial sheet materials.

**The Outflow:** These new products are sold right back to the community via the ground-floor shop, replacing the need for virgin plastic imports.

**The Re-Loop:** Because the building's own interior interventions are modular and made from its own recycled sheets, they can be dismantled, re-melted, and remade in the future without losing material quality.

**Localising the Supply:** Traditional recycling is highly inefficient, often involving shipping plastic waste across global borders, which generates massive shipping emissions. The Loop operates entirely under one roof at MEA House.

**Manufacturing:** Transport emissions are virtually eliminated because the sorting, washing, shredding, melting, manufacturing, and retail sales all happen within the same building.

**Community Integration:** The public acts as both the supplier (dropping off plastic) and the consumer (buying the recycled goods). This creates a local economic micro-system that keeps financial and material value within Newcastle.

**Education with Industry:** A circular economy cannot survive without changing human behaviour. The Loop solves this by using its economic profits to fund education. The ground floor commercial cafe and shop fund the educational programmes on the first and second floors. By teaching primary school children and higher education students how to manipulate and respect the material, the project ensures a future workforce and community that will permanently sustain the circular loop

Ground floor:  
workshop perspective



Ground floor:  
exhibition cafe perspective



First floor:  
Learning center perspective

