

Material Echoes

Project Statement

Inspired by the layered history of Somerset House, Material Echoes is a concept that emphasises how materials can carry stories, functions, and histories into the present through re use and repurposing. Grounded in a philosophy of sustainability and circularity, the re use of materials creates a dialogue between past and present, preserving these ‘echoes’ while reimagining their future purpose.

This project reimagines Somerset House as a material bank, a transformative architectural intervention that prioritises sustainability, reuse, and education. Situated within the historic and cultural heart of London, the project addresses the pressing need for circular practices in the museum sector by recovering, processing, and storing leftover materials and resources from the buildings existing artist studios, galleries and exhibitions. This initial stage in the programme will be expanded outside the site, into the wide network of art and culture institutions around London, harnessing beneficial links and processes across the city.

The project celebrates the potential of reclaimed materials to tell stories, reduce waste, and orientate architecture towards a culture of sufficiency and maintenance. The material repository will embody a living archive of creativity, acting as a preservation of Somerset House’s artistic and cultural legacy, while offering a path to a more resource-efficient materials economy, understanding architecture as a system that orchestrates the flow of materials and resources.

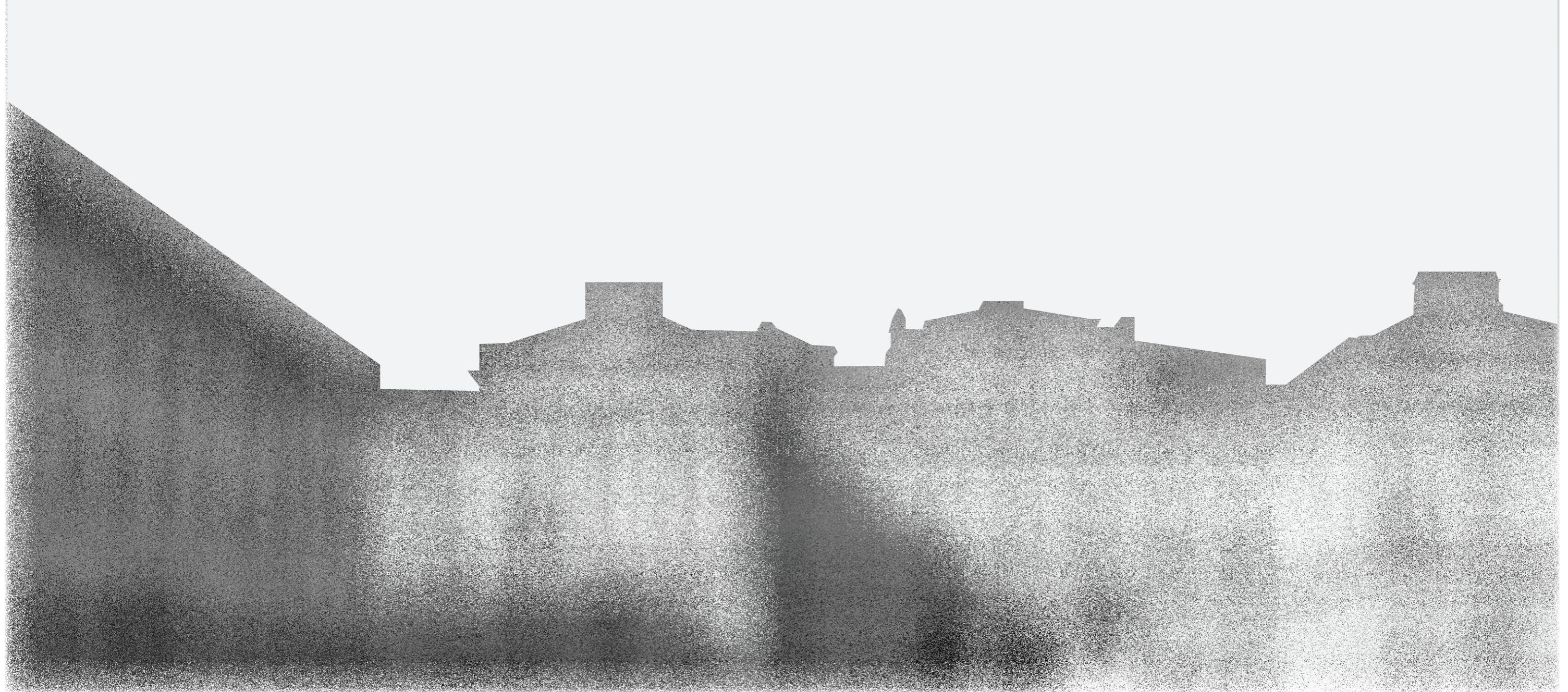
The programme incorporates an educational dimension, empowering people to take an active role in repairing and adapting their built environments. Through workshops, demonstrations, and public programmes, the space will inspire individuals, artists, architects, and community members to engage with material recovery and maintenance. As well as educating, the project will enable and facilitate new forms of collaboration between architects, craftspeople, engineers, artists, and researchers in an attempt to further consider the way in which the world is made, constructed and inhabited.

Project Aims

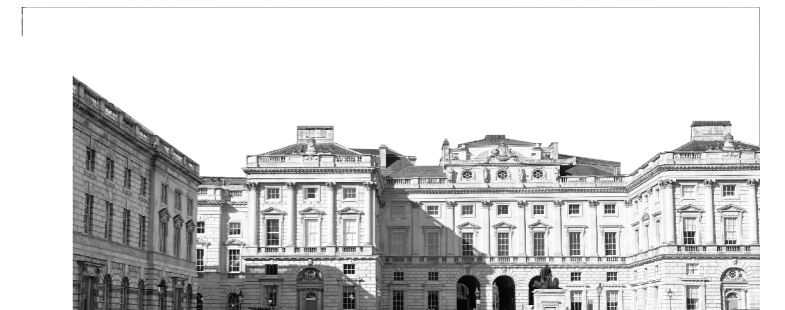
- 1** To consider the ways in which the world is made, constructed, and inhabited
- 2** Explore the notion of transformation within architecture, looking into positions of temporality in the past, present and future
- 3** To advocate circular processes in the architecture and building industry, proposing a new way of thinking about architecture as a part of a process
- 4** The transformation of materials, objects, or tools into new innovative solutions to address new aesthetics and functions
- 5** Design a house of residency for custodians, artists and craftsmen within Somerset house, through an extension, renovation or transformation of the existing condition

Somerset House

Situating the project



“As the home of **cultural innovators**, Somerset House **connects creativity and the arts with wider society**. It brings worlds and minds together to intensify creativity and multiply opportunity, **driving artistic and social innovation at once**. The platform for its work is a neoclassical building **at the heart of London** with a **long history of influence, ideas and counter-perspective**. Today, as host to the **UK’s largest creative community** working globally across **art, technology, business and social enterprise**, it continually draws in fresh ideas and new talent. It enables surprising alliances, convergences and chance encounters, which move people and disciplines outside of themselves. This constant sideways take is also felt in its **public programming** which brings **subjects and methods together in experimental forms**. It celebrates differences and apparent incompatibilities with surprising, often magical results. Somerset House’s most iconic experiences, staged in its courtyard, cannot be created elsewhere. They mix the **unusual, the transgressive and the joyful in the most original and memorable ways**.”

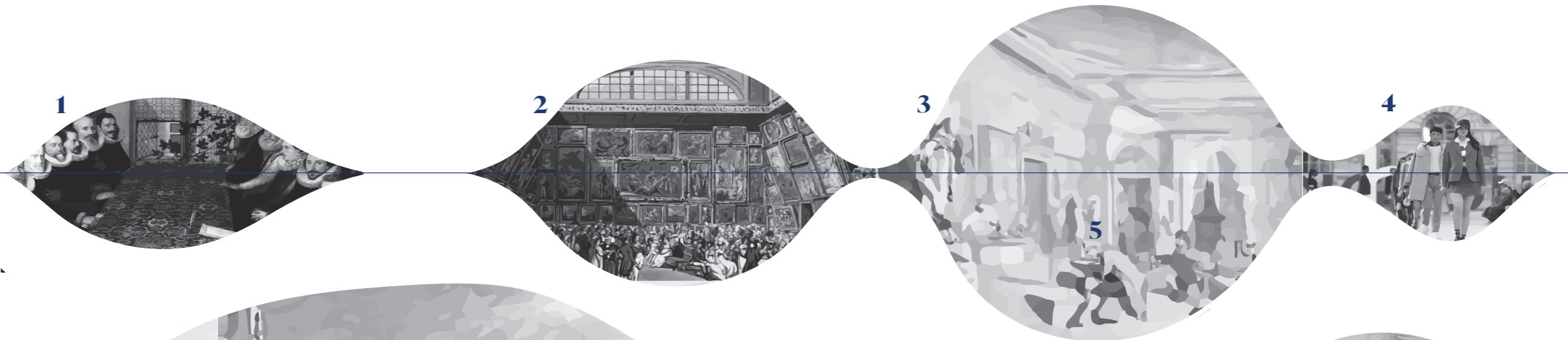


History of the House

OCCUPIERS



FUNCTION



ARCHITECTURE



OCCUPIERS

1. Edward Seymour, Duke of Somerset (built as his residence), 1547
2. Queen Anne of Denmark, 17th C
3. Henrietta Maria (wife of King Charles I), 17th C
4. became a hub for government offices, 18th C
5. Cultural space housing artist studios and galleries, present

FUNCTION

1. Initially used as a residence by Tudors and royals
2. Government department offices including the Navy Board
3. Home to influential societies like the Royal Academy of Arts, 19th C
4. Public space including music events and Fashion week, present

ARCHITECTURE

1. A lavish private palace in the form of Tudor Renaissance
2. Courtyard and river terrace added in a Neoclassical style
3. Modifications made to enable the new societies to inhabit the space
4. Restoration and maintenance of interiors and the river terrace.

Locating Transformation

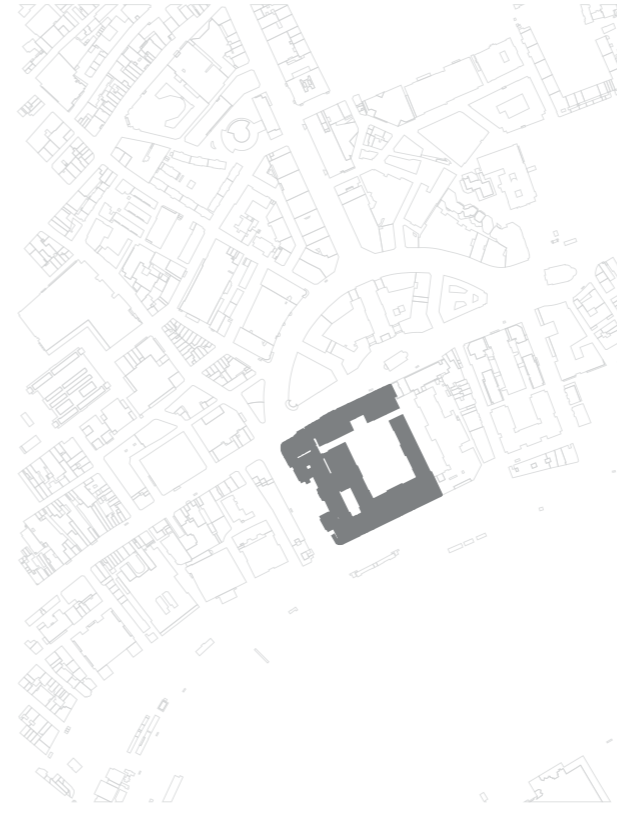
The site, Somerset House, is a historic building located within the city of London. It is situated on the south side of the Strand in the city of Westminster, overlooking the River Thames, just east of Waterloo Bridge. This central location has been the scene of hundreds of years of change, transformation and innovation. My project aims to continue this legacy and add a new layer to this transformation through a re thinking of building practices and processes. The mapping of the site will introduce conditions, connections and networks which will inform my programme and proposal.



London, United Kingdom



City of Westminster



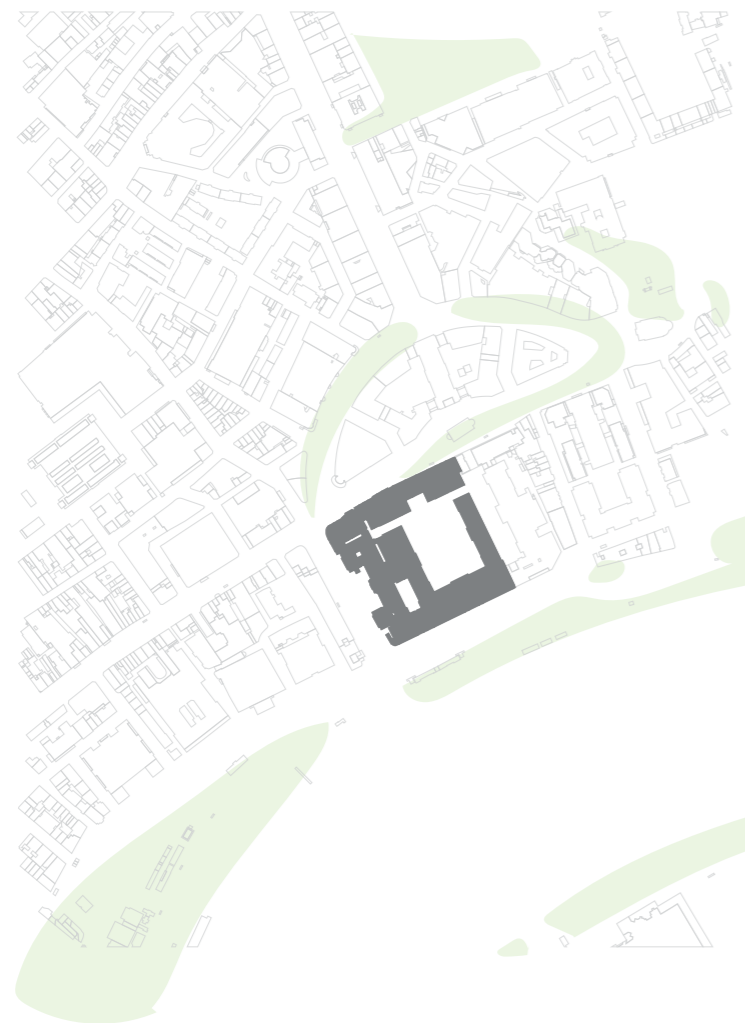
Strand



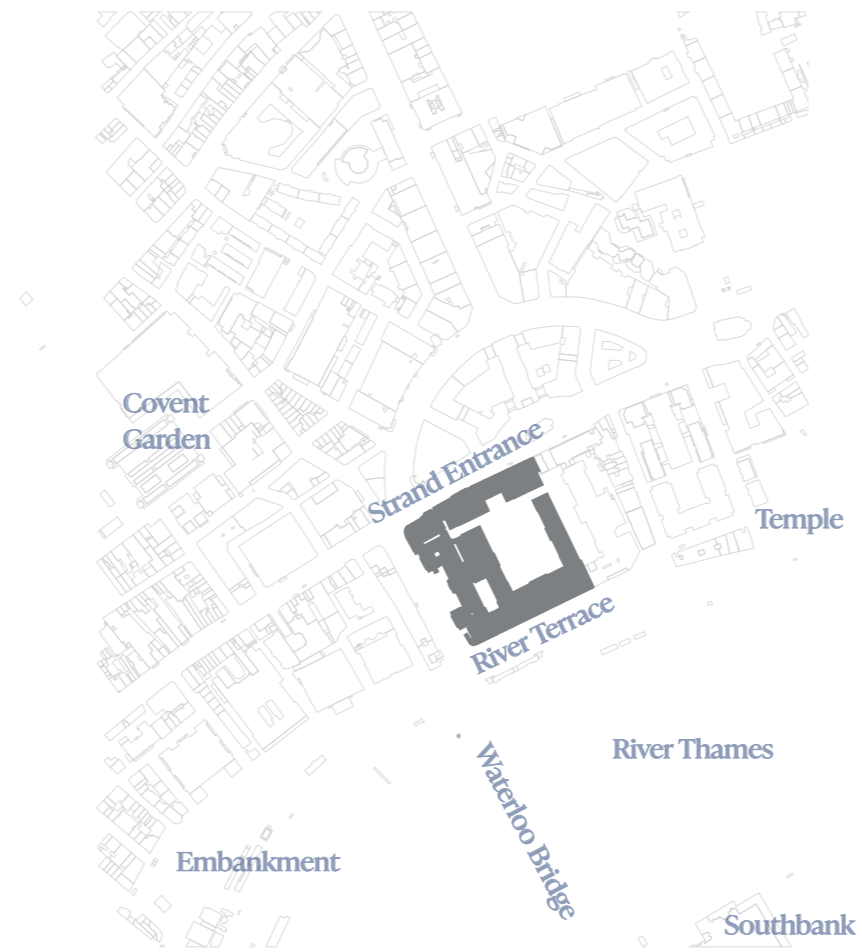
Somerset House

Environment as Found

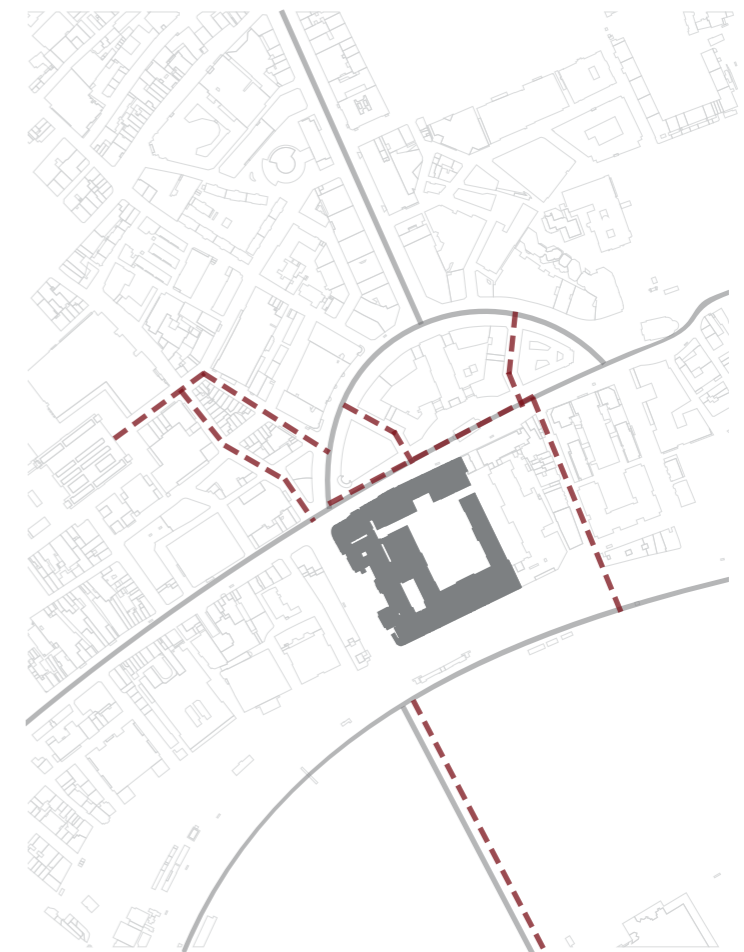
Somerset House, as a location, provides an interesting site for an architecture project. An institution that houses multiple organisations and programmes, it almost feels like external conditions are unable to penetrate its historic walls. However, an analysis of the environment and context within which it sits shows a range of opportunities. Green space within Somerset House is sparse, but large green spaces can be found all around the site. It's central position is advantageous, with easy access to some of London's most visited landmarks, accessible by both foot, vehicle, and tube. Its proximity to the river also highlights an opportunity, with Waterloo Bridge proving invaluable access to South London.



Green Space



Points of Interest

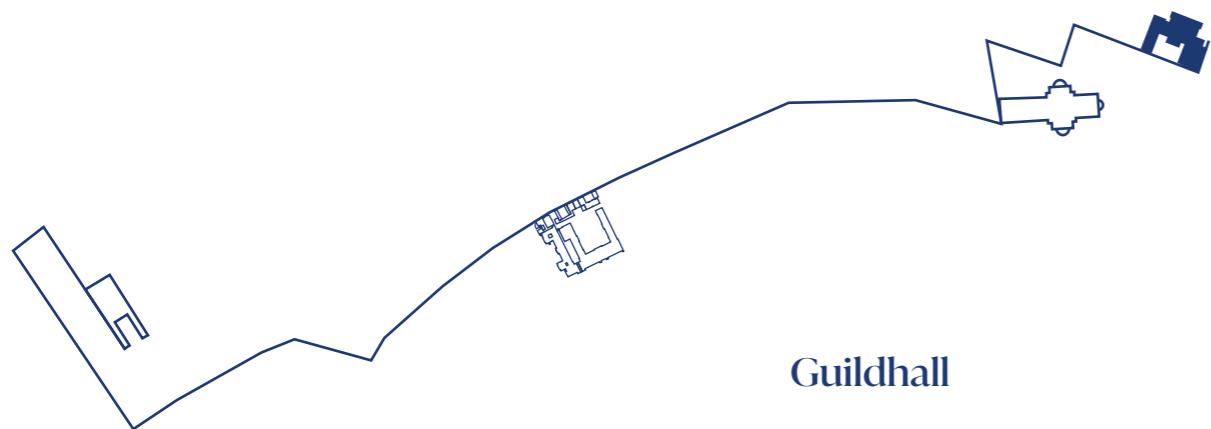
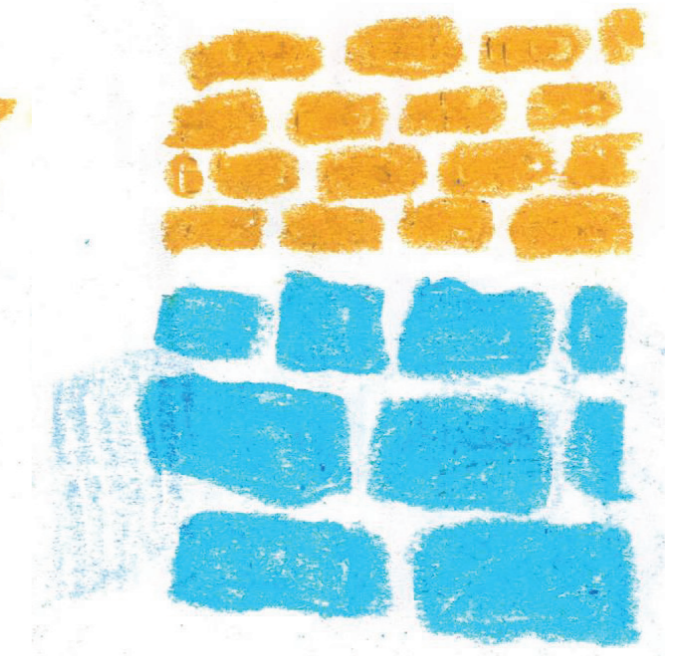
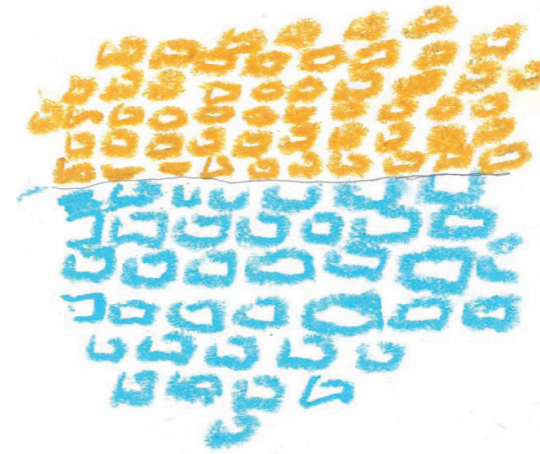
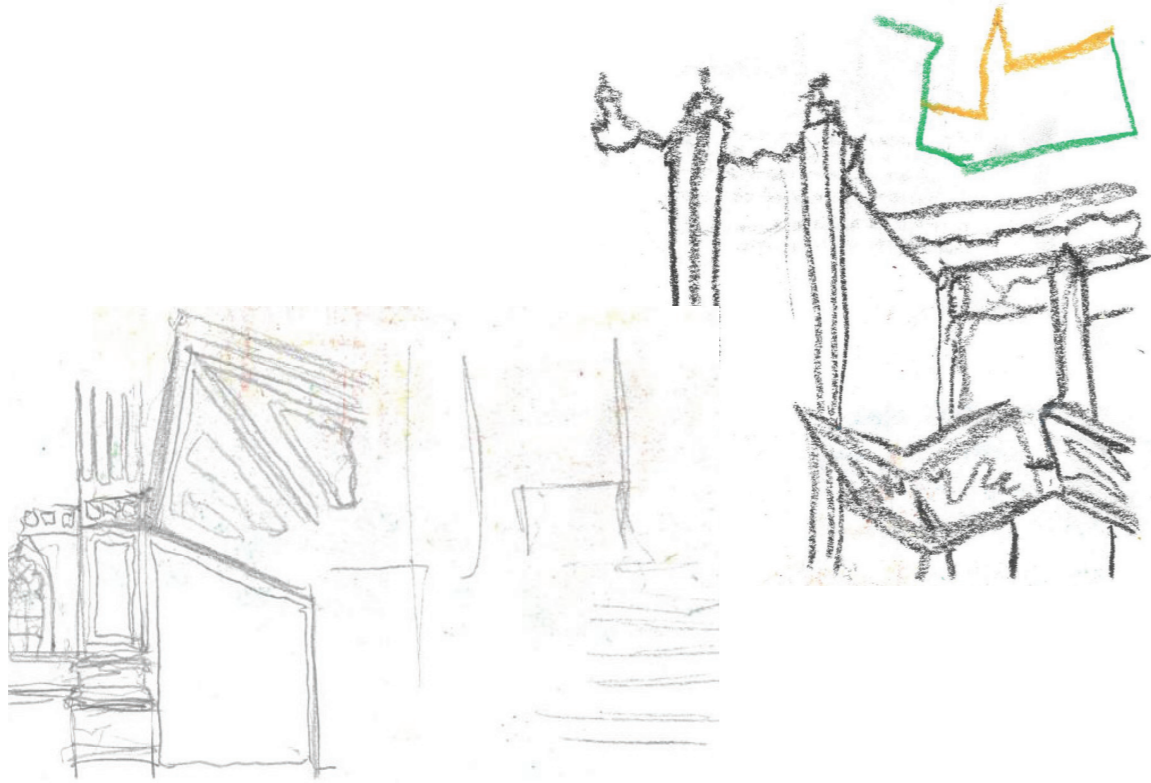


Main Roads

Pedestrian Routes

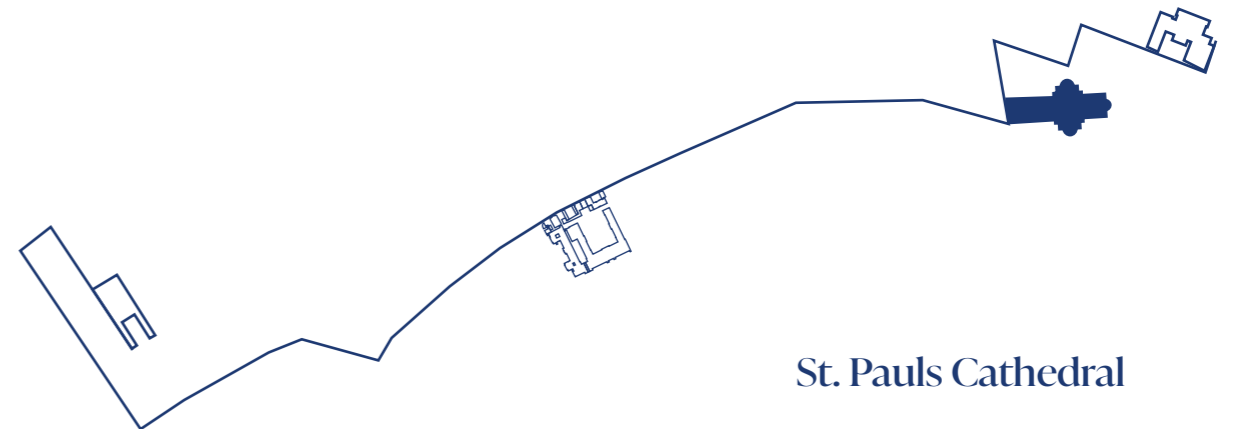
Ground of the City

A walk through the city, visiting, responding, and recording key buildings, analysing the way in which they intersect with the built environment and the ground that they are situated on. The route includes Guildhall, St. Pauls Cathedral, Somerset House and The Royal Academy of Arts.



Guildhall

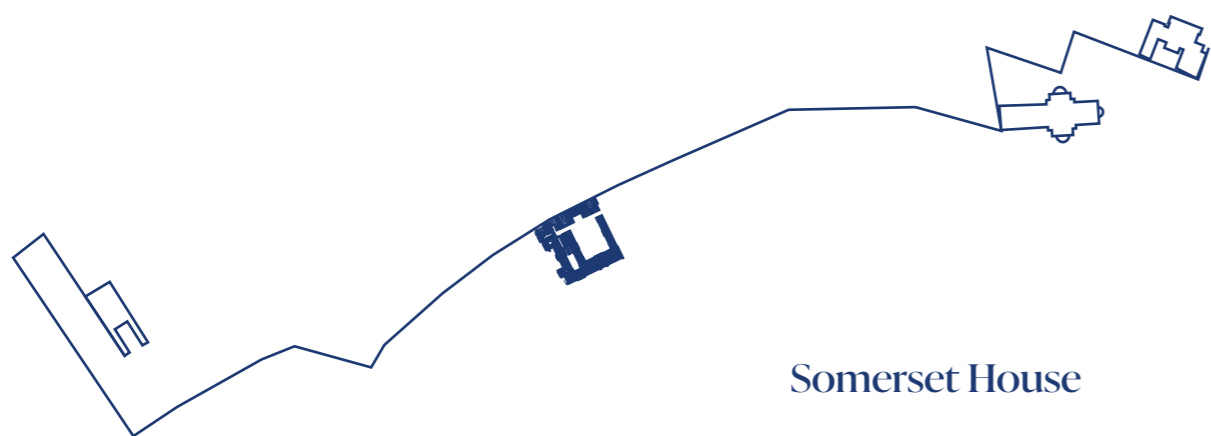
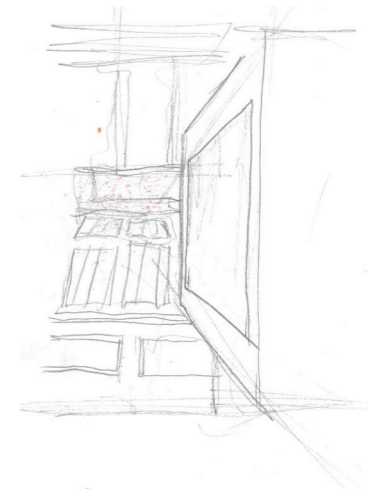
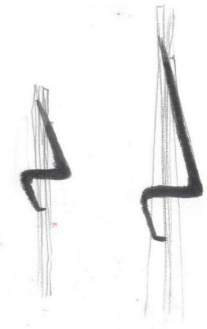
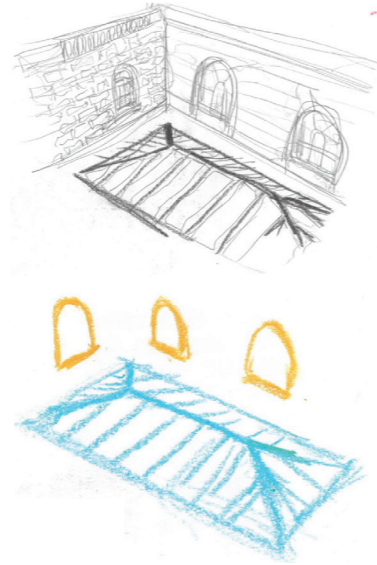
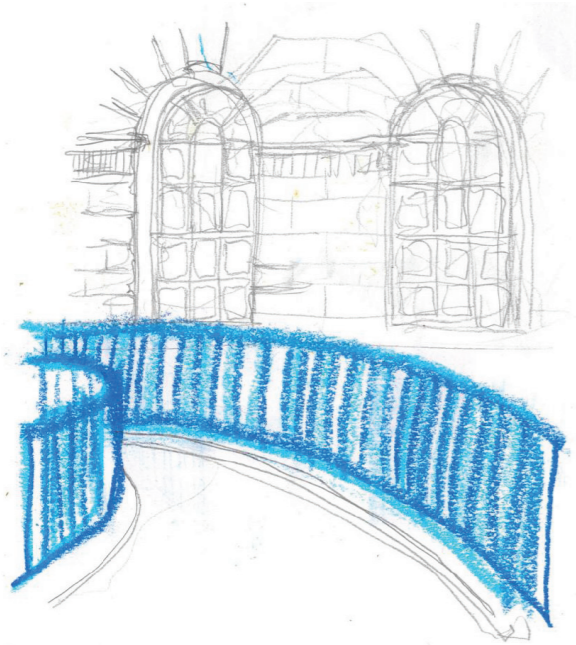
Exploration into how old and new meet, through material choices as well as form, the imitation of the old is evidenced in the new.



St. Pauls Cathedral

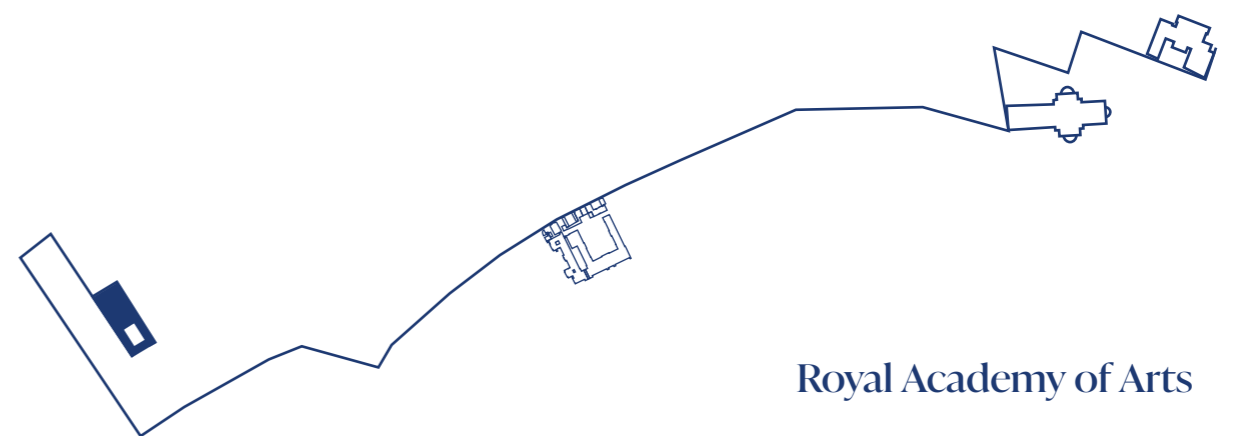
A brief visit to St. Pauls showed an evolution of the ground condition on which it sits on

Ground of the City



Somerset House

The intersection between old and new is clear to see. Modern additions seek to address access and mobility issues. A growing typology of windows emerge.



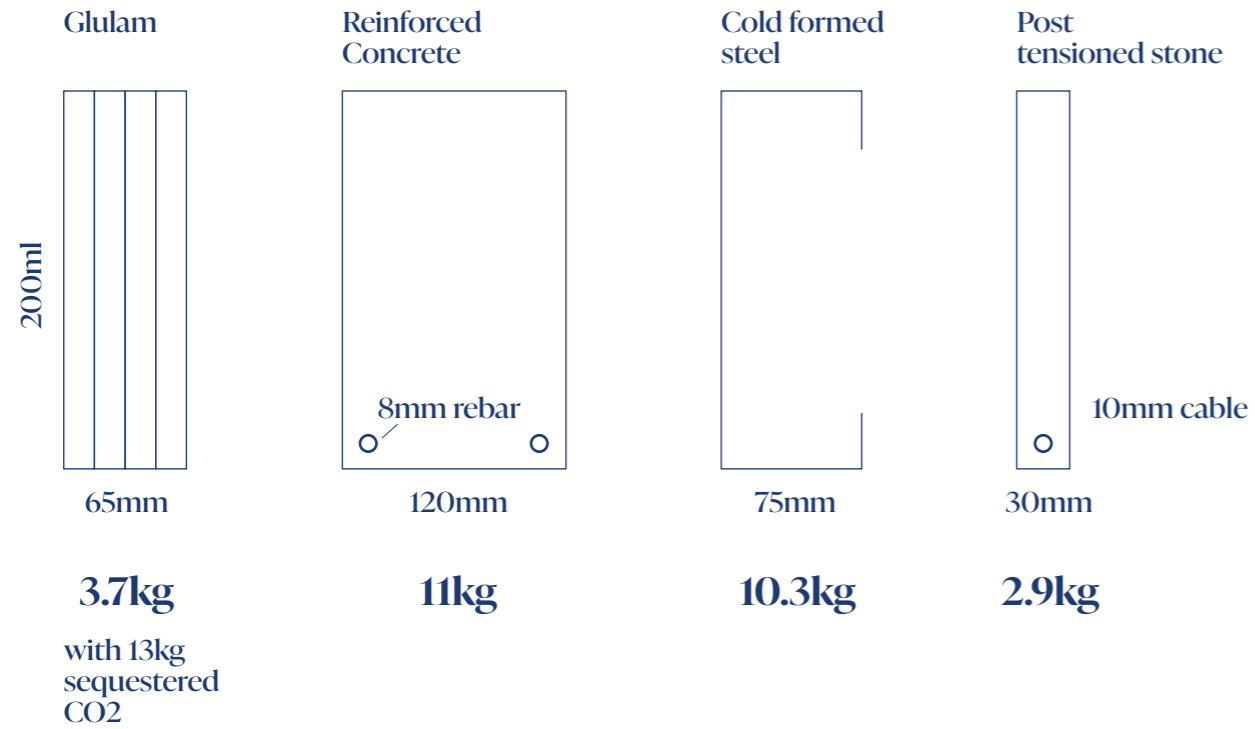
Royal Academy of Arts

A development in social programme and an enhancement of user experience drives the connection between the existing and newer additions

Aesthetics Over Time

Exploration into time and ageing, using facade aesthetics to measure new and old, preservation and neglect. Mapping the effects of damage and erosion on stone

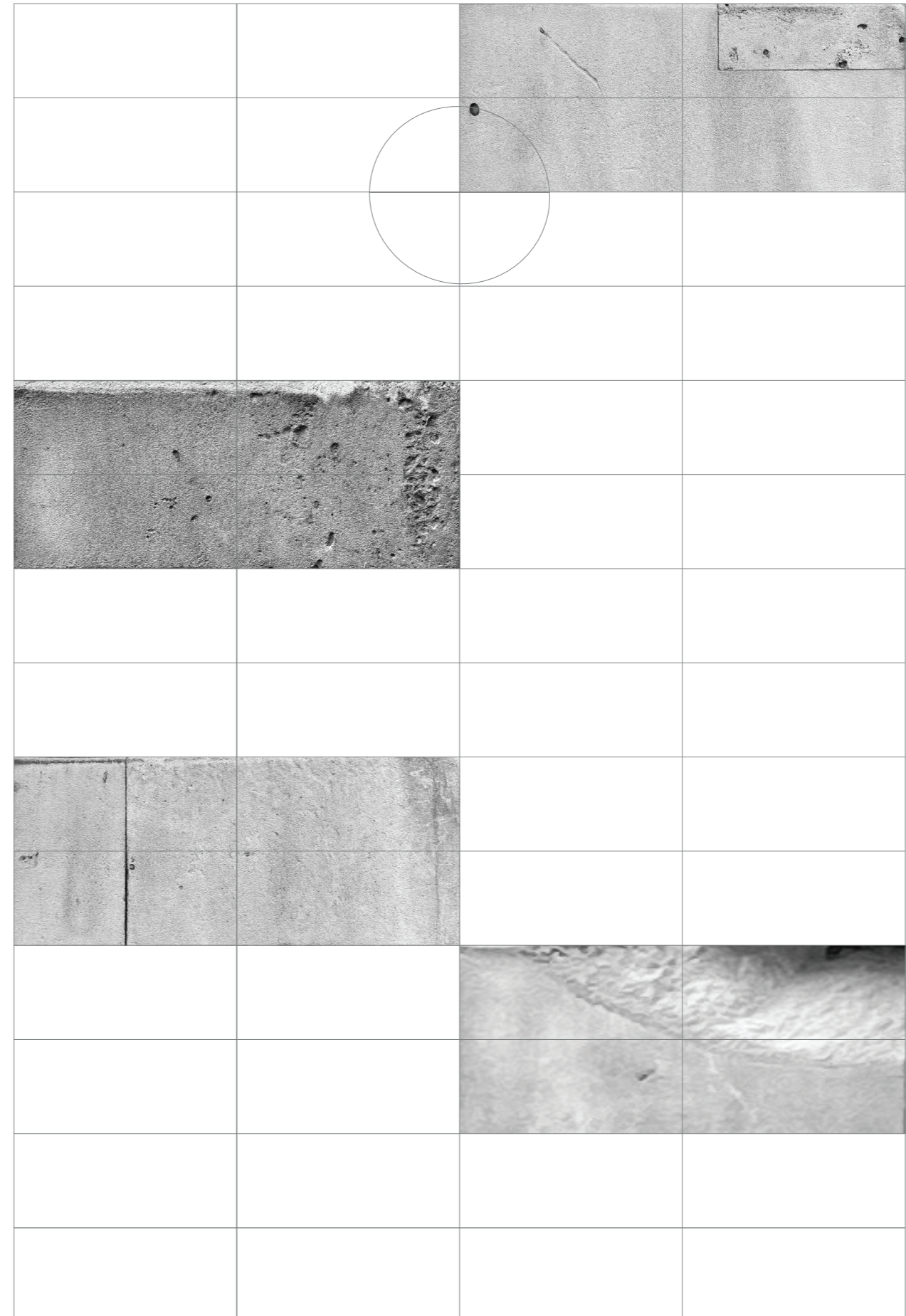
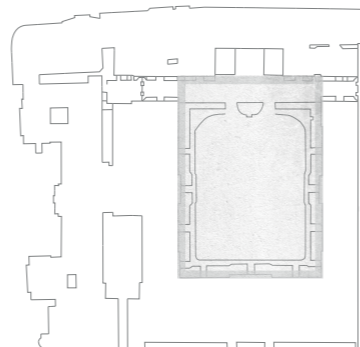
Carbon cost of structural members in different materials



Stone has been used for generations as a robust material building homes and towns across the UK. The use of stone for construction has declined following the emergence of reinforced concrete and steel in the 19th Century.

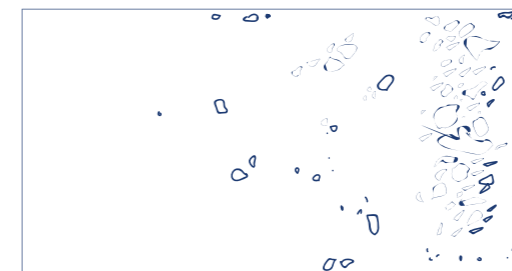
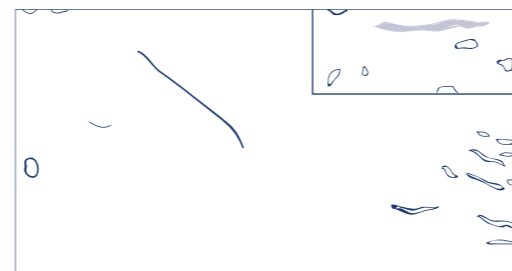
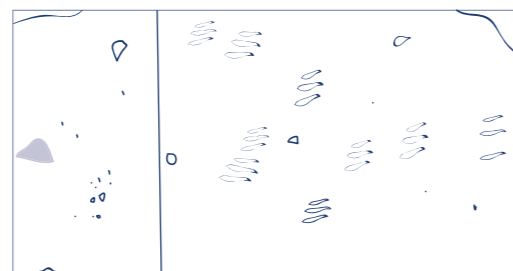
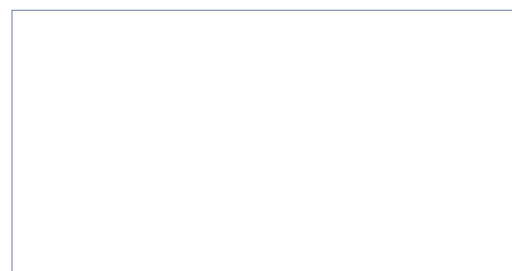
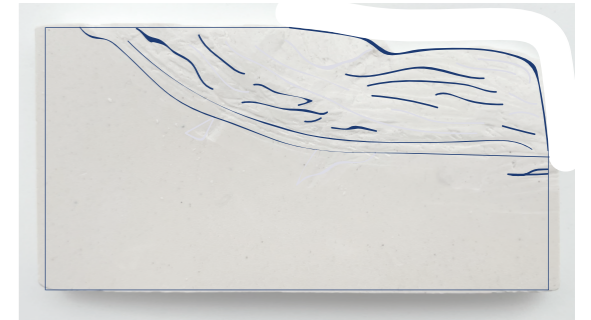
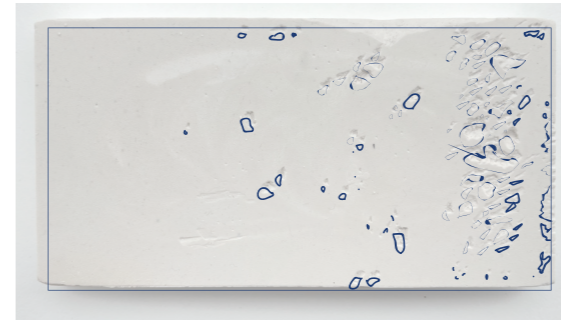
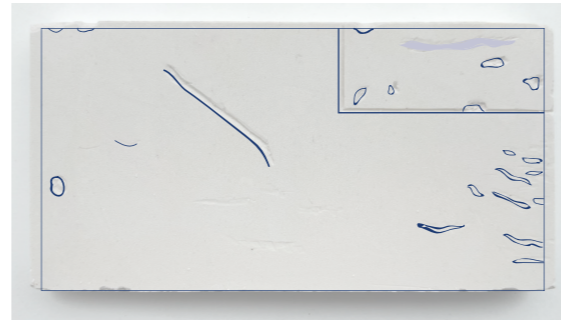
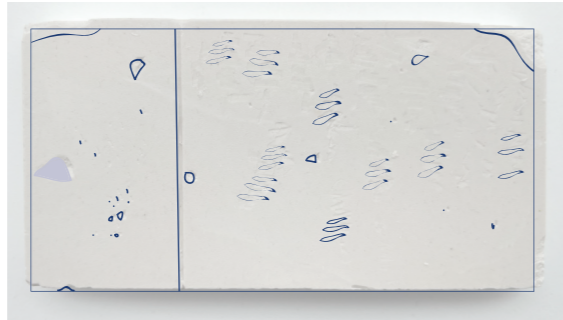
Yet, stone can be three times stronger than concrete and requires much less energy to produce. The revival of stone as a construction material has been explored, with practices like Groupwork along with engineers Webb Yates pioneering its return through projects and research outlining its design and low carbon qualities.

The exploration into aesthetics over time is a celebratory focus on the resilient nature of stone, and the beauty of its erosion and transformations



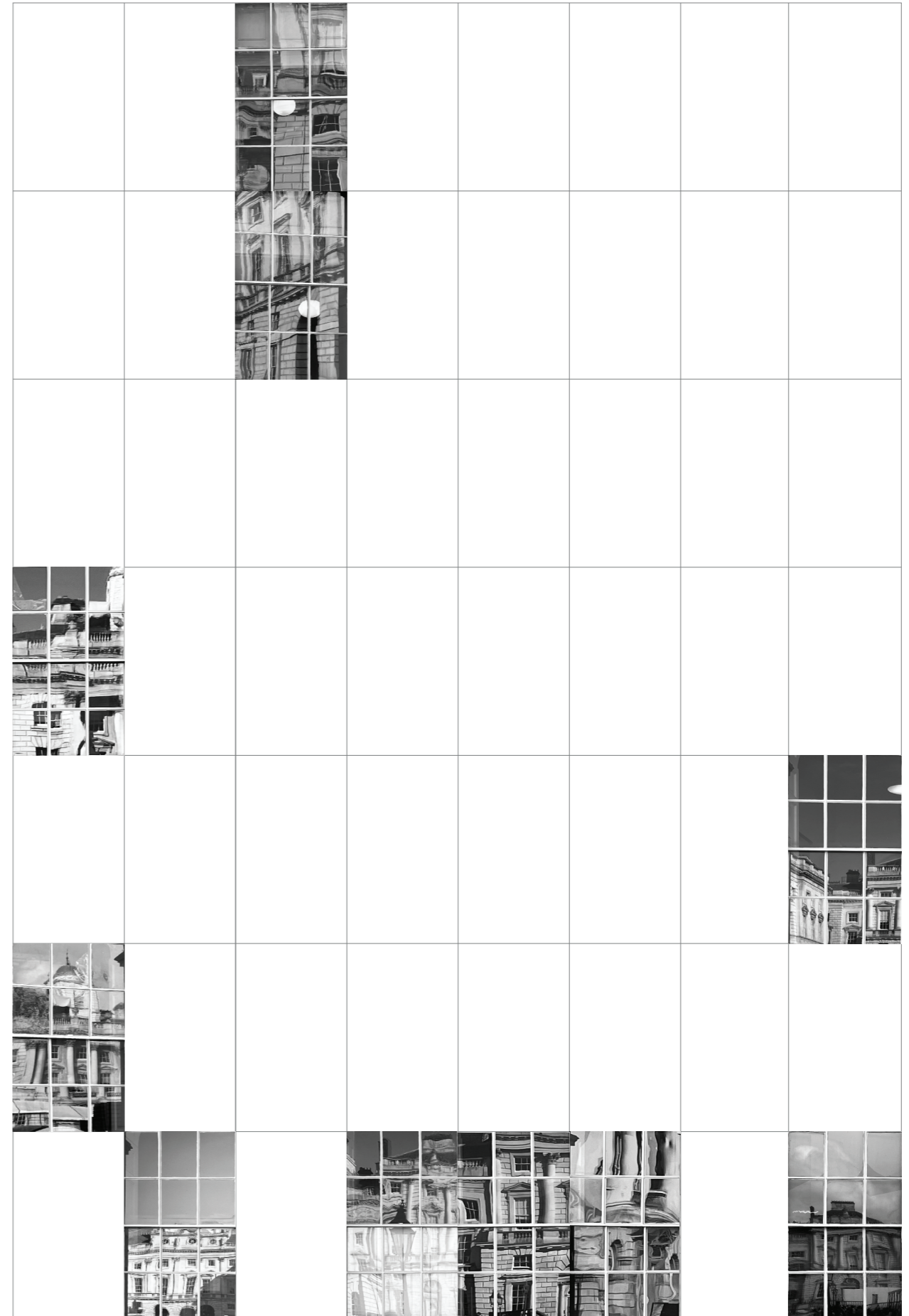
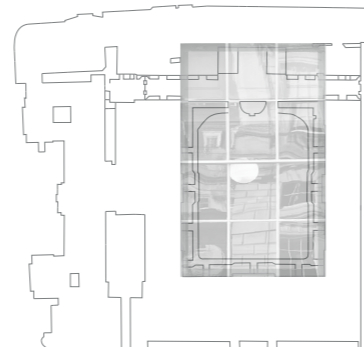
Aesthetics Over Time

Exploration into time and ageing, using facade aesthetics to measure new and old, preservation and neglect.
Mapping the effects of damage and erosion on stone. Stone replicas from existing slabs found at Somerset House, cast in plaster and eroded using hand tools

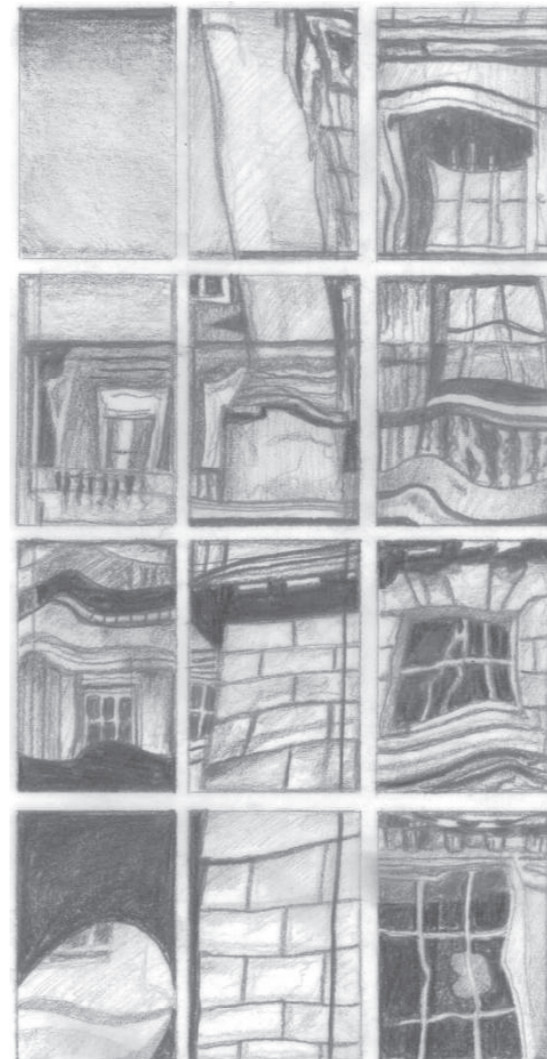
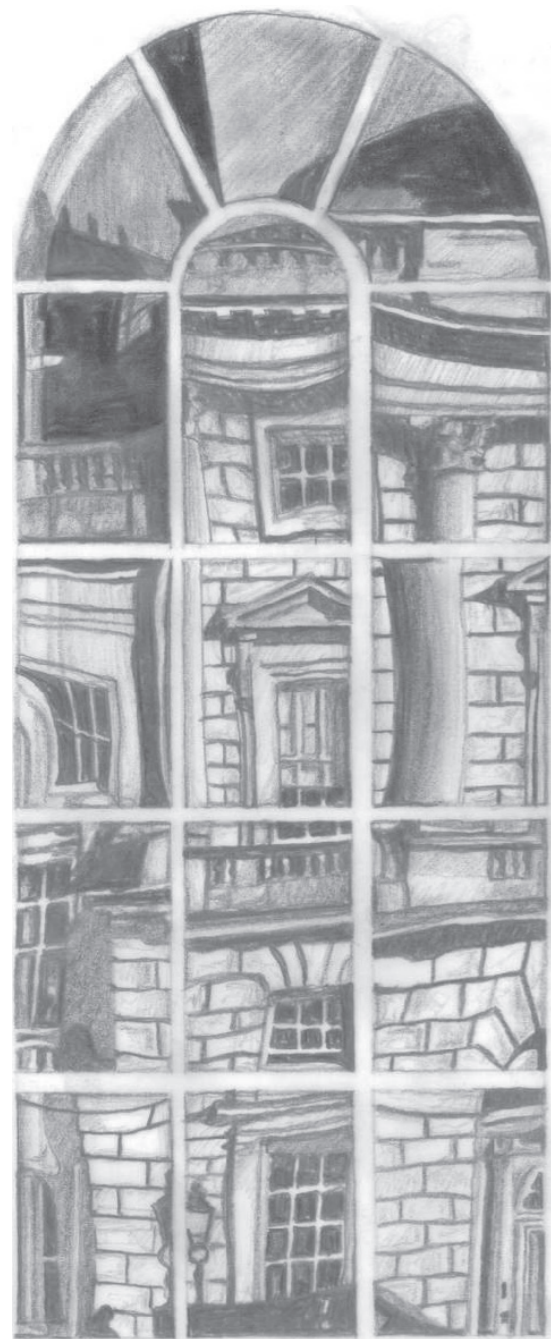


Distorting Reality

Investigation into distortion and manipulation, using window reflections to alternatively survey the site. Discovering new forms, highlighting typologies and seeing the existing reality in a contemporary way. The second stage of surveying the site, follows on from the analysis of ageing materials and looks at the equally important element of Somerset House facades: The window.

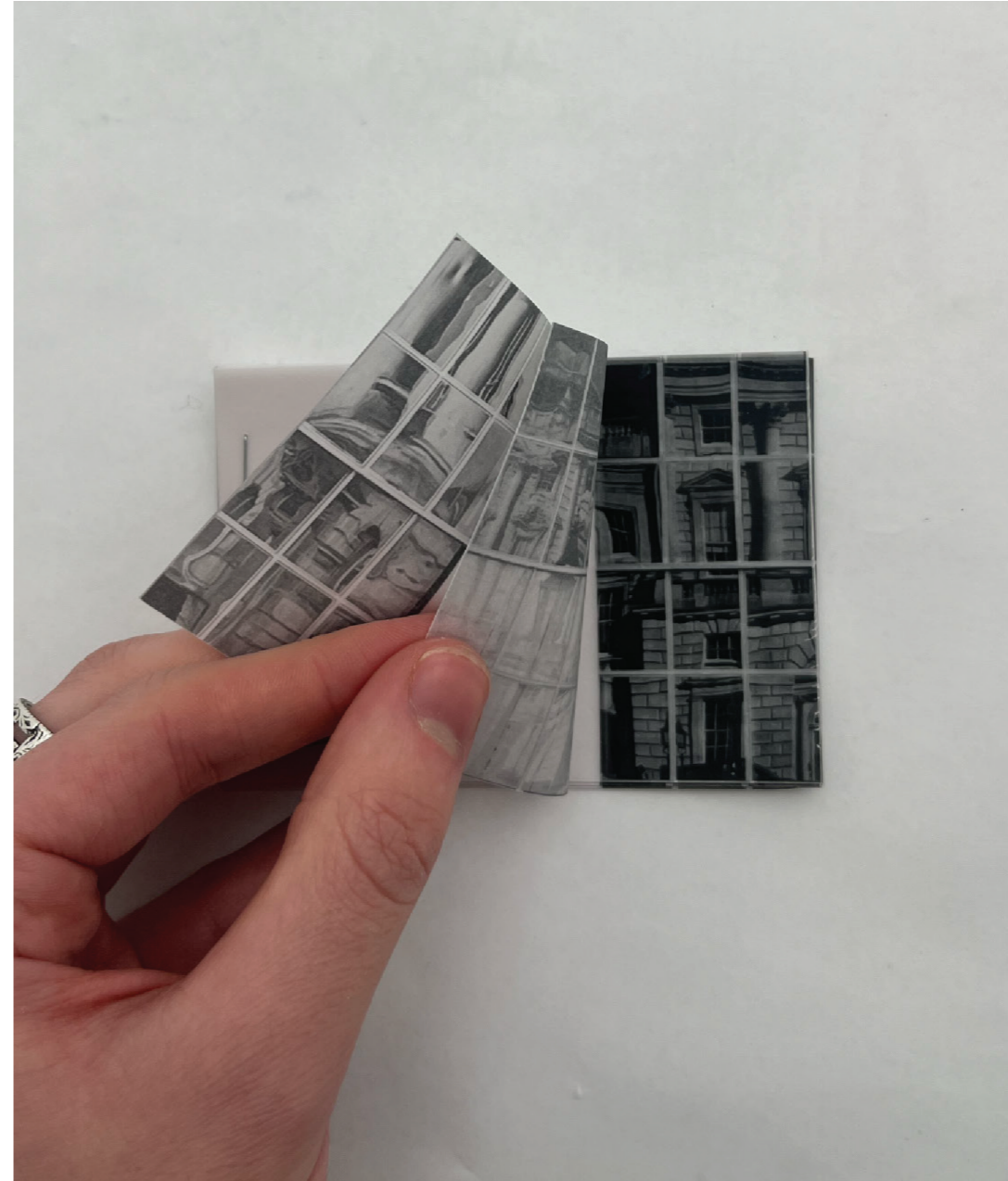
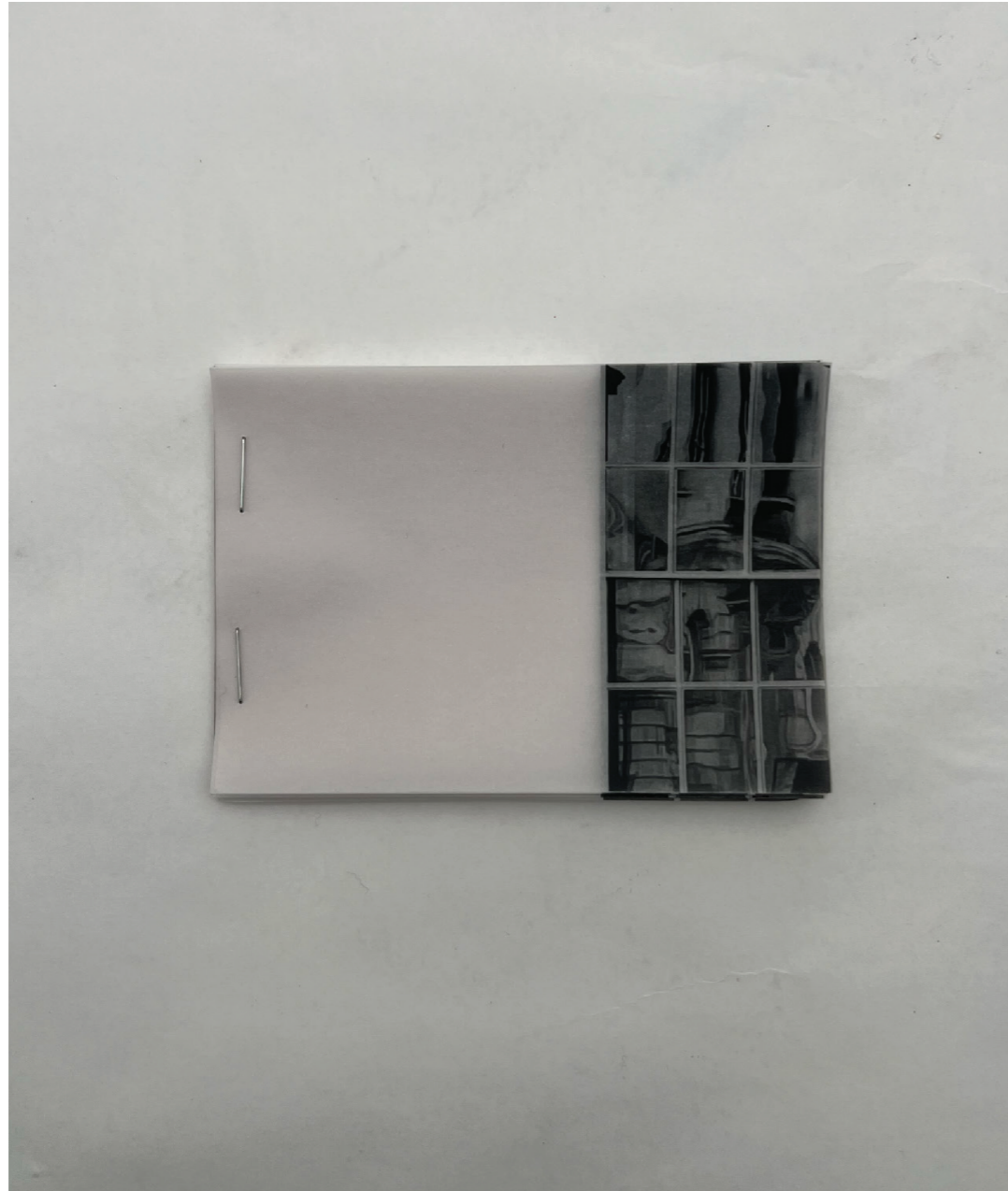


Distorting Reality



Somerset House Reflection Studies, pencil

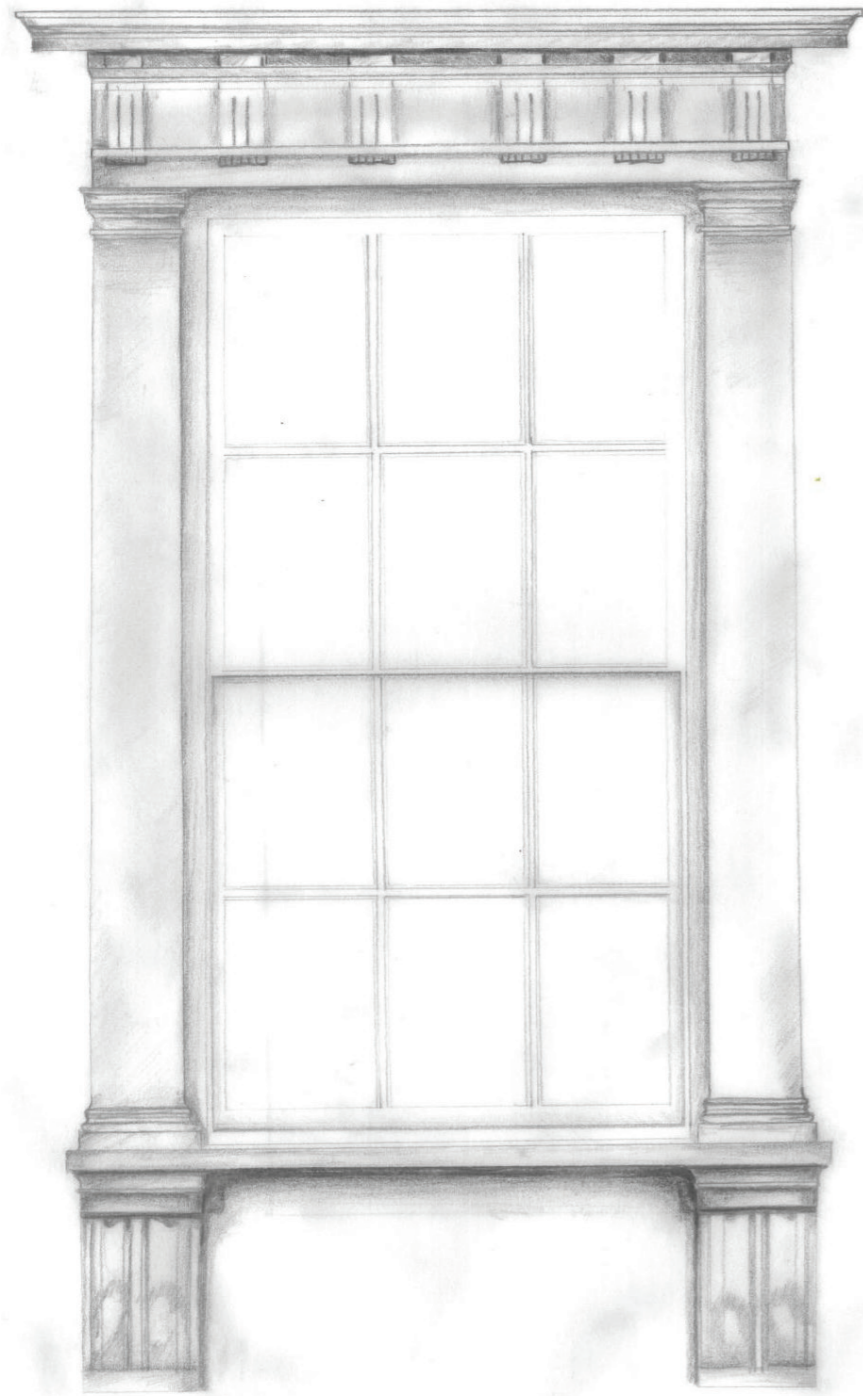
Distorting Reality



Somerset House reflection catalogue, tracing paper

A Window into the Interior

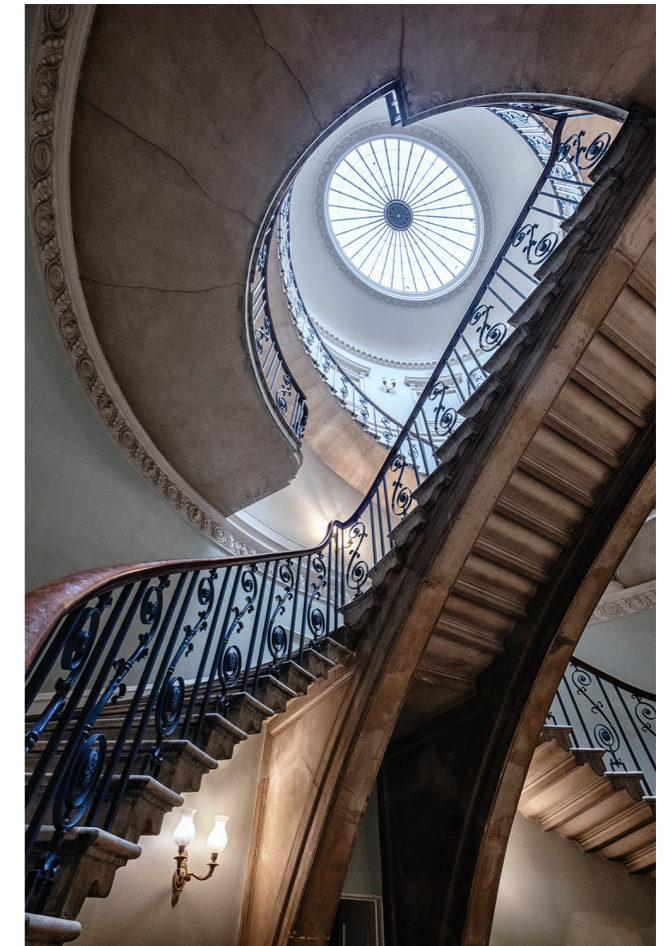
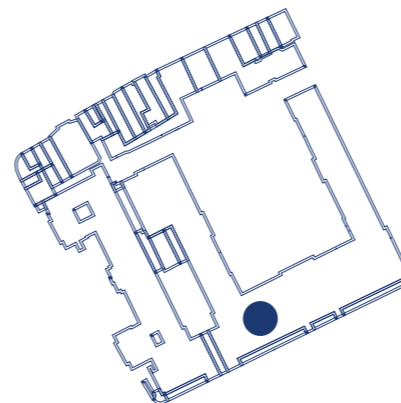
Moving from exterior to interior. After surveying the windows and reflections that line the Somerset House facades, an investigation into the other side of the walls, through an imaginative view of a room historically used by the navy board. Somerset House served as the headquarters of the navy board from 1789 to 1832 and provided the administrative functions.



Room Window elevation



Room Perspective view



Nelson stairs at Somerset House

Within the room, a painting of Nelson hangs proudly on the wall, stating the grandeur and importance of the space. The Nelson Stair soars from the basement to the Navy Board Rooms and beyond, signifying the specific impact of the navy and maritime Britain on Somerset House. Today, the navy board rooms can be hired for events and filming.

A Window into the Interior

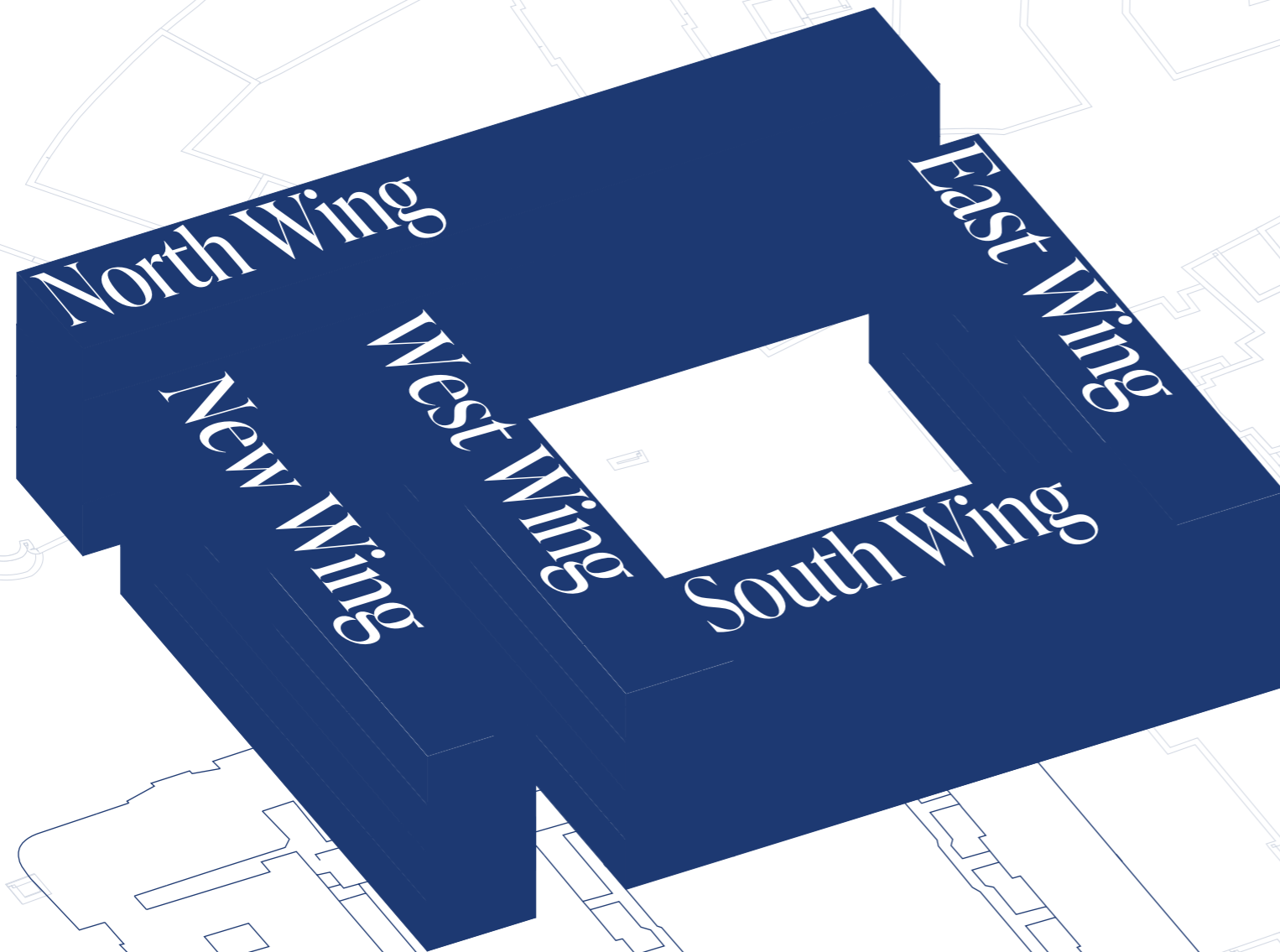
Exploring the history of Somerset House through interior and exterior. A model of my imaginative room occupied previously by the navy board. Maritime elements which I have predicted would've been present during the navy board administration inhabit the room, highlighting the rich history of Somerset House and how the building almost transcends time.



1:20 Room model, card and wood, (25cmx25cm)

Existing Spaces

Somerset House is an artistic and cultural hub that has become a centre for creativity and innovation. We are inhabiting a site that already succeeds in providing a mix of private and public space, with their programme events adding to this experience. Existing spaces within Somerset House include restaurants, bars, bookshops, rooms available to hire and screening rooms. Furthering this, the wide selection of galleries and the studio spaces with up to 70 artists in residence will be most crucial to my project. The cross disciplinary projects and exhibitions will form the basis for my proposal and programme, with the aim of Sourcing leftover materials from these spaces to introduce circular processes within Somerset House.



North Wing

- *The Courtauld Institute of Art*
- *The Courtauld Gallery*
- *The Courtauld Gallery Cafe and shop*

South Wing

- *Embankment Galleries*
- *Lightwells and deadhouse*
- *Navy Board Rooms*
- *Portico Rooms*
- *Screening Room*
- *Terrace Rooms*
- *Restaurant and bar*

East Wing

- *East Wing galleries*
- *Cafe and bar*
- *Bookshop*

West Wing

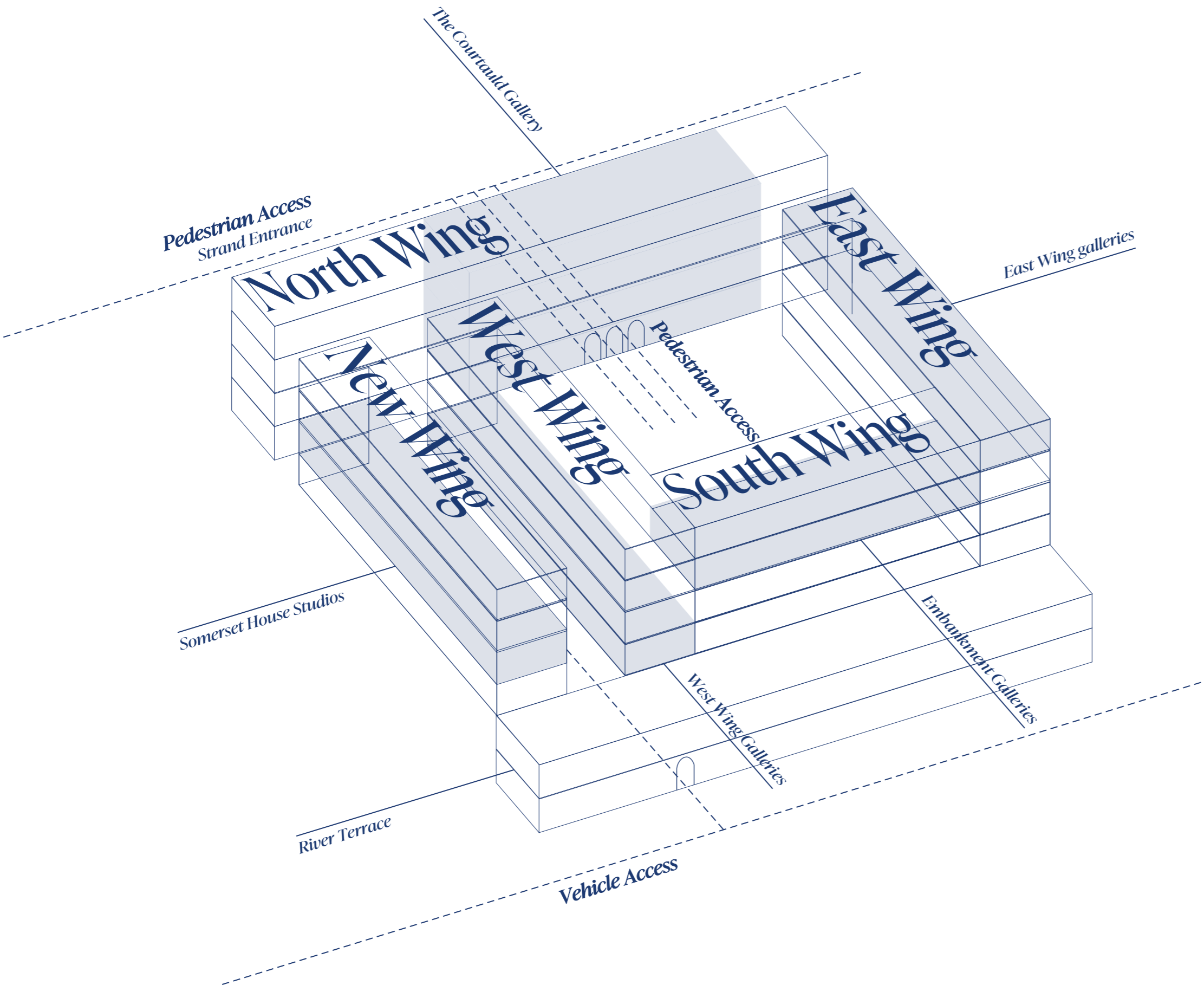
- *West Wing Galleries*

New Wing

- *Lancaster Rooms*
- *Restaurant and cafe*
- *River rooms*
- *Somerset House Studios*

Existing Spaces

An anatomical diagram of Somerset House, mapping out the locations of key institutions and programmes within the site. The galleries and exhibition spaces that will be crucial to my proposal have been identified in order to locate and inform a decision of where to place my design. In addition, access routes, both pedestrian and vehicle have been added to further analyse the composition of Somerset House.



North Wing

- *The Courtauld Institute of Art*
- *The Courtauld Gallery*
- *The Courtauld Gallery Cafe and shop*

South Wing

- *Embankment Galleries*
- *Lightwells and deadhouse*
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East Wing

- *East Wing galleries*
- *Cafe and bar*
- *Bookshop*

West Wing

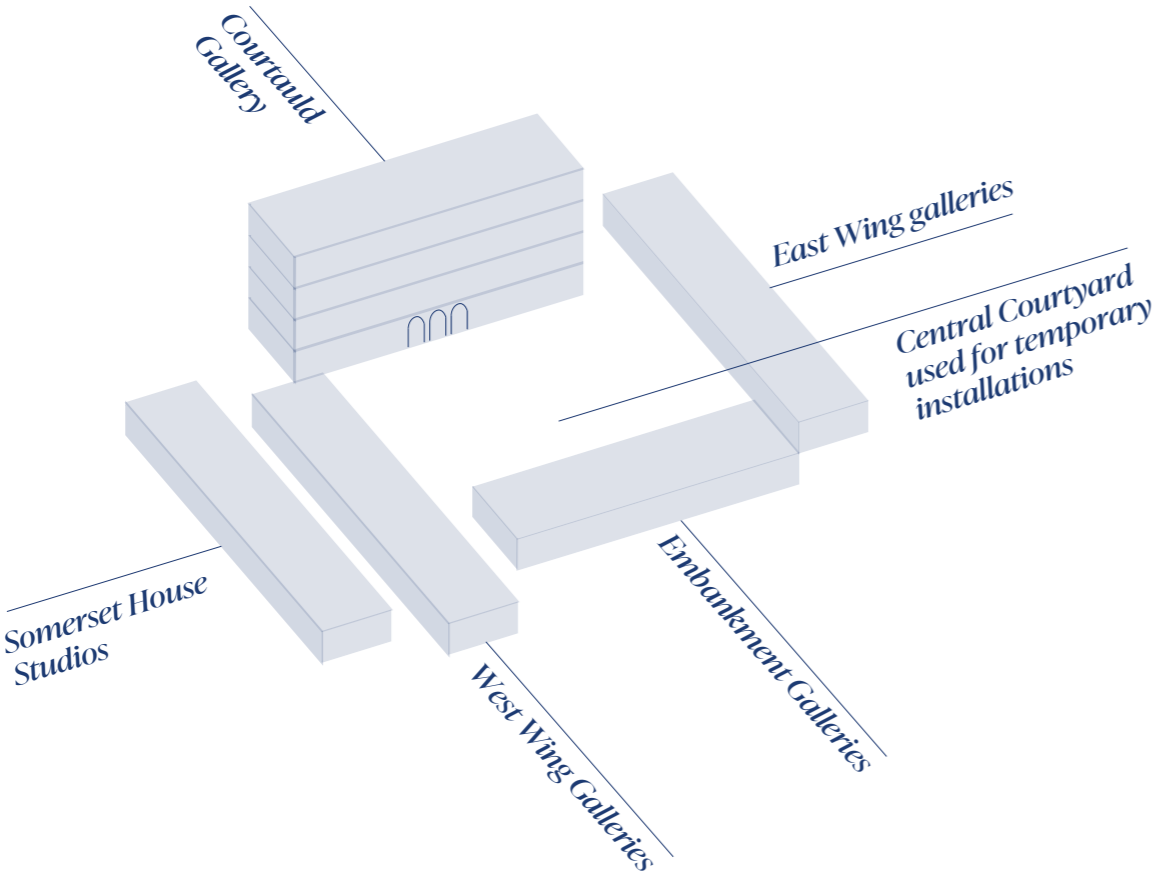
- *West Wing Galleries*

New Wing

- *Lancaster Rooms*
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The Art of Zero Waste

An introduction to the impact of temporary exhibitions on waste and how to utilise material banks to tackle this



The museum sector has a lot of work to do to minimise the environmental impacts of their exhibitions, particularly those that are temporary.

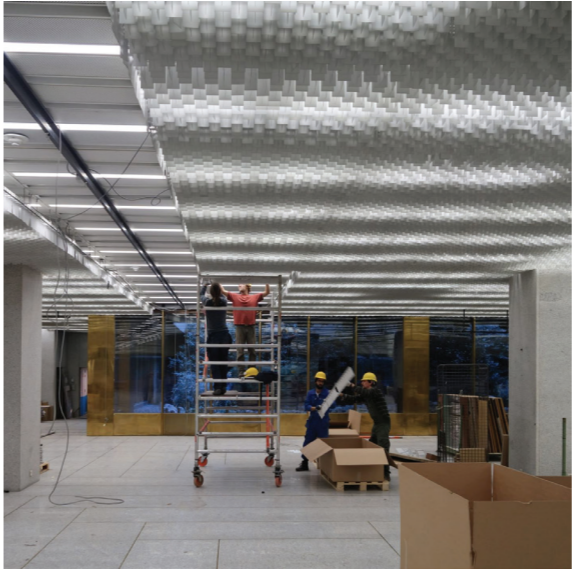
The museum sector accounts for almost

25% of CO2 emissions

of all Arts Council England NPO's, more than theatre, dance, libraries and other institutions. This arises from practices such as disposing of virgin materials from temporary exhibitions to landfill after the exhibition has closed.

As the host of the UK's largest creative community, and home to several galleries, museums and art institutions, Somerset House is a part of this and also contributes to the waste problem. In addition to these galleries, the varied programme of events within Somerset House also includes many temporary structures and installations built in the central courtyard.

This amount of potential contributors to the waste problem within my site has prompted me to think of ways in which to reduce the impact of Somerset Houses' existing programmes and institutions, with an addition of a material bank to store materials for reuse an exciting proposal.



Rotor

Rotor is a cooperative design practice that investigates the organisation of the material environment.

They organise the reuse of construction materials. Rotor dismantle, process and trade salvaged building components.

Rotor DC's work is carried out by four dedicated teams.

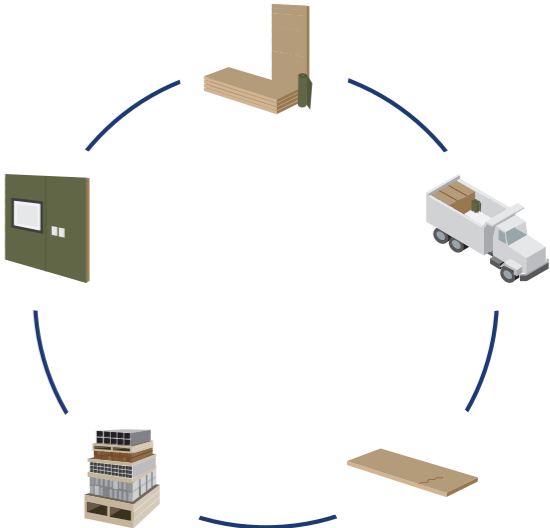
Acquisition team focuses on sourcing sustainable materials and establishing partnerships.

Process team handles the materials physically on site (restores, refurbishes and describes them with attention to quality and organization).

Shop team handles marketing, customer service, storage, and delivery.

Support team manages accounting, HR, IT, and subsidies.

Engaged in promoting and facilitating the reuse of building components as a strategy on the path towards a more resource-efficient materials economy, Rotor and Rotor DC can act as a framework for my own proposal and programme focusing on temporary exhibitions and installations.



A new materials economy proposal inspired by Rotor

Waste in Practice

Exploring the existing challenges of minimising temporary exhibition and installation waste, using the 'Design Museum's Exhibition Impact Guide' as a framework,

Emerged out of Waste Age: What can design do? exhibition which took place from October 2021 to February 2022 and highlighted a change in the culture of design.

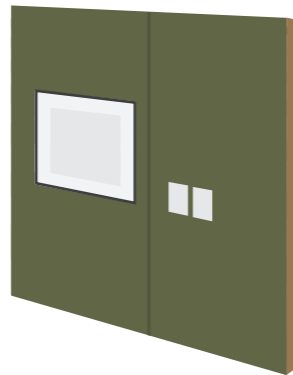
The project team commissioned consultancy URGE Collective to conduct a life cycle assessment of the exhibition and used the results to help make **more informed decisions in the future, identify areas that needed focus, and share lessons with colleagues**

The guide also advises on how to embed the consideration of impact reduction in the museum's design process and how to work with commissioned designers, contractors and suppliers

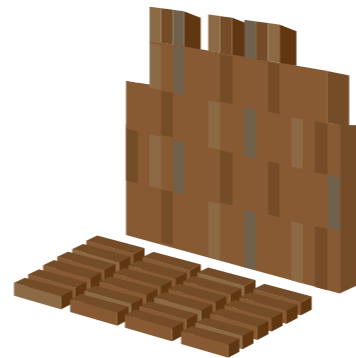
The Museum's Exhibition Design Guide examines the opportunities for reducing impact across areas including:



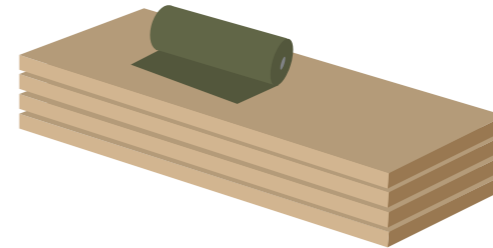
Shipping and Transport



Programming



Design and Construction



Materials



Energy Use

Despite the growing emphasis on sustainability and the push towards net-zero goals,

minimising waste in temporary exhibitions and installations remains a complex challenge for the museum sector,

with numerous obstacles hindering progress towards truly sustainable practices

1. **High Turnover of Materials**
2. **Limited Infrastructure for Material Recovery**
3. **Lack of Standardised Processes**
4. **Costs of Sustainable Practices**
5. **Limited Collaboration In the Sector**
6. **Awareness and Education Gaps**
7. **Displays Designed Without Reuse in Mind**

Key Findings and Lessons from the Design Museum's Audit:

Build a network for sharing resources. Recycling or donating exhibition materials to other companies and institutions can provide a way to reduce impact by prolonging the life of materials.

Choose materials for easy disassembly and consider the after-use life. Sets, walls, and displays should be designed to be easily dismantled, re-used, re-purposed, or recycled. Think first about what can be reused. Ask questions like: What will happen to the materials after?, Can we reuse existing materials?, Can a system for sharing, reusing materials with other local institutions be devised?

The findings and challenges identified have revealed a gap in existing processes. To enable truly sustainable practices and elimination of waste, there needs to be a collaboration between institutions, to coordinate exhibitions designed for disassembly that can then be dismantled, retaining materials, and providing storage,

Industry Innovation

A talk with Hikaru Nissanke, Co-founder and Director of OMMX. Their recent project to help the V&A museum eliminate waste from their temporary exhibitions programme saw a system design for the Great Mughals that could transform into an exhibition on Marie Antoinette, despite their wildly different content

How do you view the current state of the museum sector in terms of sustainability and environmental goals?

The whole cultural sector is a bit of a mess at the minute because a lot of institutions have signed up to net zero but they don't really have a roadmap, they're missing the roadmap. It's all very well saying we can do it and eliminate waste - it's all about how to get there. It's very easy to say we want this by this date, this could be for inclusion, race, gender, sexuality, or they'll do it for sustainability. There are certain structural and cultural obstacles to getting stuff done, and you have to take them on a journey towards better practice.

What are the main challenges to reducing waste from your experiences within the museum sector?

“The big one is storage. Most of these museums have struggled to store, manage, and look after the equipment and materials. The V&A were like we don't have space, we have zero space.”

The question is: Do the clients even have the resources in terms of *physical space to store this stuff or the expertise?* Their property portfolio is generally their museum, do they see value in expanding and spending £10m on an outside thing.

Liabilities and insurance too. Suddenly, if the client is taking on responsibility for storing the stuff, the client suddenly becomes culpible for the quality of that storage. All of these museums have different insurance requirements. Some will allow certain materials, others won't. One thing they can all agree on is MDF. The insurance industry doesn't really want material innovation, what they want is tried and tested data. It's a risk to them. Those are the sorts of forces that you try and balance.

In your recent project with the V&A, what was the brief that they provided and how did it look to address their sustainability goals?

Our commission with the V&A was, to look in a lot of detail, how they can get from A to B in one exhibition. Because every time they try to reuse stuff, they've only managed to get up to about 10% reuse because of the way things are fixed together, it's just like impossible. So they wanted a designer who was fluent in exhibitions basically, and we've done a lot to really understand it.



Our brief was that they don't have space to store anything. It has to mutate on site basically, from one into the other. They didn't know what the show on Marie Antoinette was, so we had no idea how big the objects would be, we had absolutely no idea what was coming. We had to design a system that could accommodate anything and a strategy that was not limiting.

What research guided your approach?

We involved exhibitions teams, curators, contractors, and museum directors for an off the record chat about how green the industry is. It was quite horrifying to hear what is being done.

A lot of material innovation will go all the way through the design process and before it goes to site someone will go: Has this been strength tested? do we have numerical data? For insurance purposes, the environment has to be fireproof and walling has to be strength tested. And basically what they've been doing is building a sub structure, so they'll build the same MDF construction, underneath the innovative material and just attach the innovative material. They're actually doubling up on construction. They're actually increasing the embodied energy in order to be seen to be green.

Can you explain your design process? How did the knowledge of current practices within the industry shape your proposal?

Initially we thought the exhibition has to be modular, but we began to realise that if you're modular, they cram these shows so you can't get the hangs.



“What if we think modularly but we actually allow the system to really be taken apart down to nuts and bolts so everything can be reused.”

We tackled the wall. It's very simple. A CNC'd vertical profile, which you can thread your cabling, like speakers or lighting. *Normally all of that gets wasted*, so when it comes to taking it apart, *you can salvage all the cabling*, you don't have to cut it to length. For the next show you have a 20m length. It also enabled scaffold poles to be threaded, so again *the pole can be reused*. We're transferring all the loads invisibly within the wall. If something gets damaged, they can replace individual panels rather than the whole wall. The principle is pretty straightforward.

Are there any other elements within your project that look to increase the sustainability of the exhibition?



We did an audit of their other shows and figured out how much material we can reuse. Our system re-uses their stock of lighting and cases so we're not buying in anything new like that. We used sustainable paints made from algae, but the V&A has decided not to use them because they're twice as expensive, it just comes down to budgets and priority. Even the mirror we're reusing from other shows.

Really crucially, we've given the V&A the option to reuse this, which they like, but they said they have no where to store this, assume it will be wasted at the end of the study. This is an R&D exercise to see how much re-use we can get. They wanted to focus on versatility over longevity.

“There will be another life to all of these materials, they can definitely reuse these by taking them apart.”

Did the differing show content help with material choices?

We use specified, durable, cheap, cost effective materials like MDF and just reuse and get as much use out of it as possible. Really simply designed to enable reuse. We may have had to chop into some sheets to create bespoke cases. Every object has a slightly different dimension, it's incredibly packed. For larger parts of the set, we've chopped up the same system, taken massive chunks out of it, bended, folded it. It will be a lot of labour, but the material will be reused.

We prototyped everything off site before the assembly, testing the system, strength testing, stretching fabric, height of panels, paint colours, how secure a wall is double height. Maybe if we did a version 2 we would switch to metal. I'm not sure if we would, the timber might be more adaptable, more repairable, easier to maintain.

Brief Definition

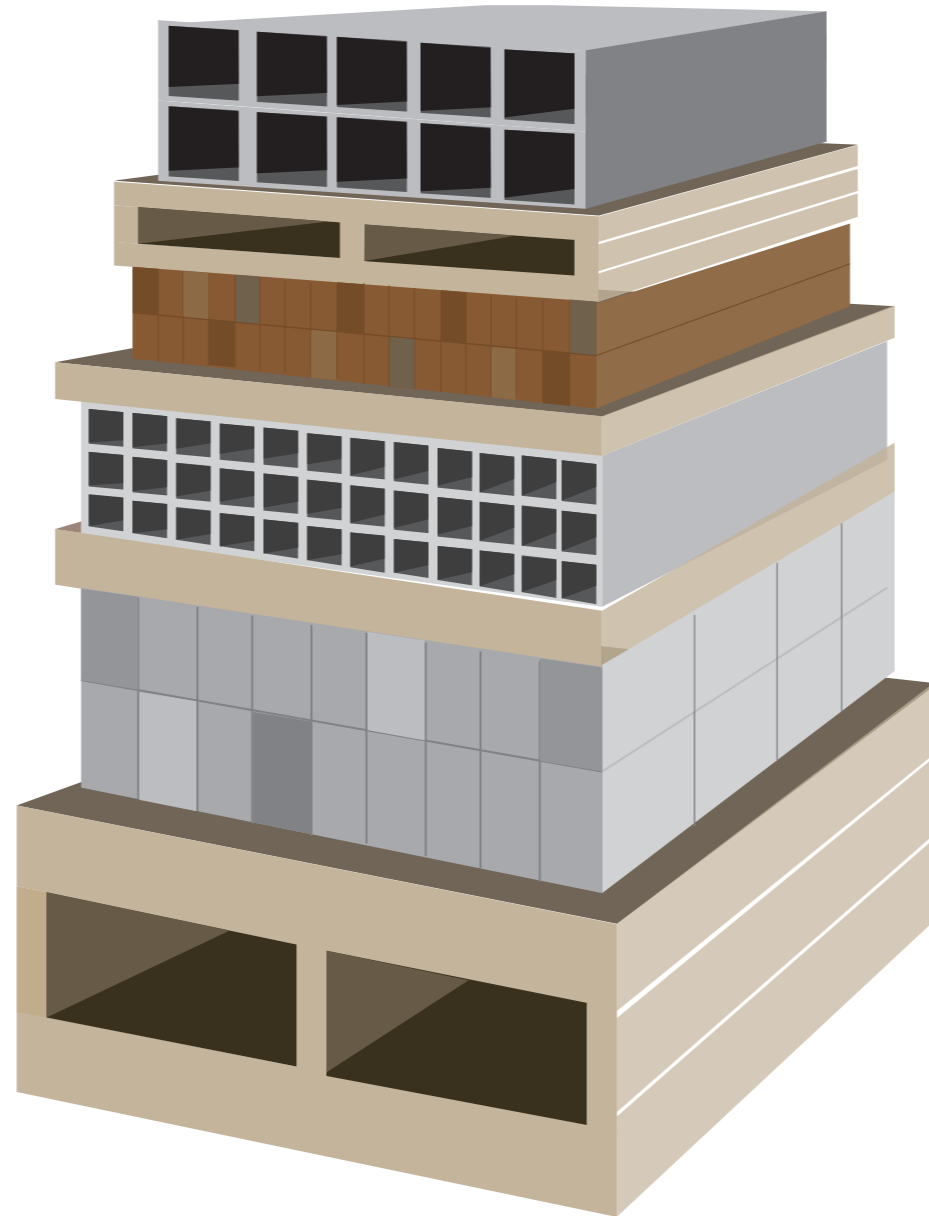
Eliminating waste from temporary exhibitions and installations, through recovery, retention, and re-use

The Museum sector faces many challenges on the path to sustainability. For exhibitions and installations, the temporary nature can make waste inevitable. This project aims to offset these obstacles, by providing the infrastructure and processes to present an alternative approach, grounded in circular principles.

A Circular economy is defined as one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste.

For the museum sector, this means creating a regenerative culture that prioritises retention and re-use over demolition and wastage. It means designing exhibitions and installations that can be adapted, reconstructed and deconstructed to extend their life and that allow components and materials to be salvaged for reuse or recycling.

Recovering and reusing materials at the end of their life can help reduce the demand for virgin materials and waste arising from the museum sector.



To create a proposal that addresses the need to rethink museum sector processes

To utilise the central London site in order to facilitate a large impact across the city.

To progress design into a culture of reuse and remake, maintaining existing materials

To expand this thinking, using education and workshops to inform a wider audience

Keep materials circulating through the economy at their highest value

Consider logistics and storing of materials as crucial to this approach

Help deploy Circular economy principles on exhibition projects throughout London

From Linear to Circular

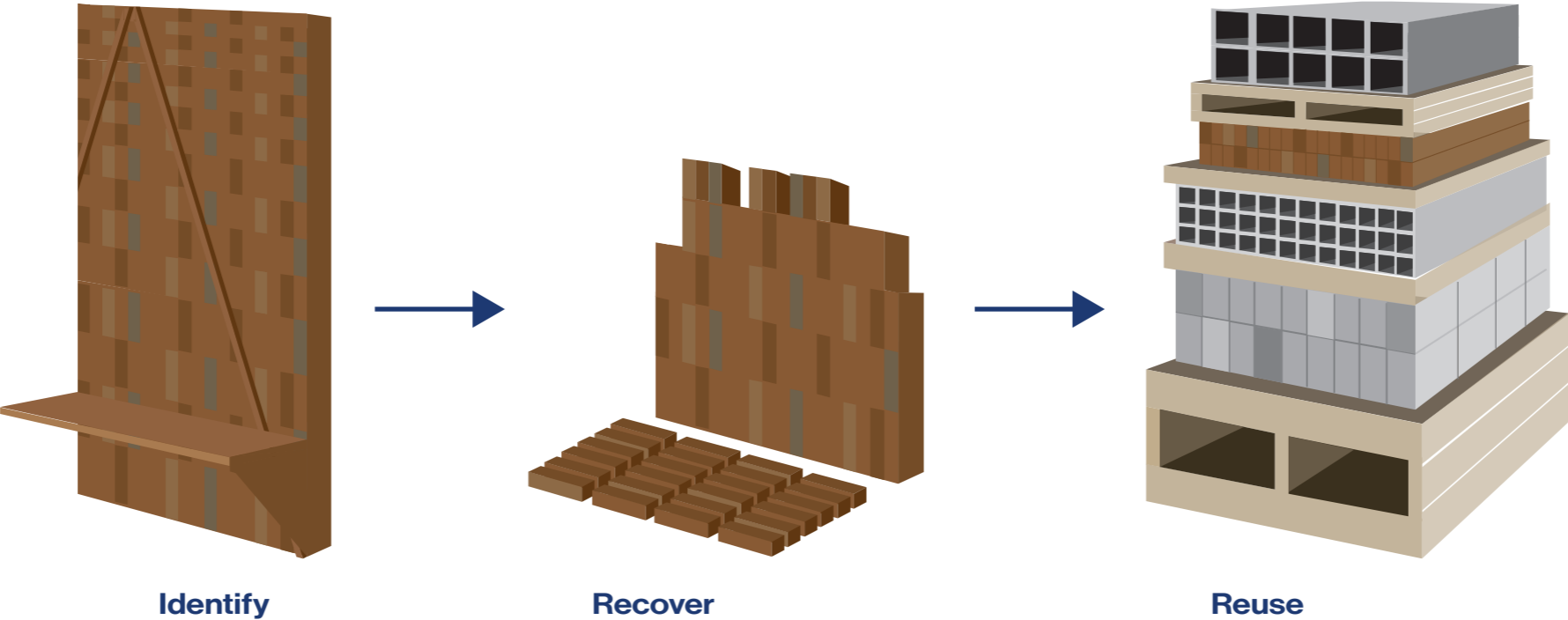
Grounding my project in the philosophy of a Circular Economy, learning from practices and processes to promote a culture of maintainance and re-use within the museum sector, specifically temporary exhibitions and installations

A circular economy keeps products and materials circulating within the economy at their highest value for as long as possible, through re-use, recycling, remanufacturing, delivering products as services and sharing.

Within exhibitions and temporary installations, this philosophy can be applied to many materials that are currently wasted at the end, through designing for re-use, using recyclable materials and using standardised sheets

Given the temporary and traditionally wasteful nature of exhibitions and installations, the musuem sector often faces obstacles in maintaining a sustainable approach, from funding and time pressures, to spatial constraints and regulations

London will benefit from the reduction of imports into the city and exported waste. Making better use of materials will help reduce vehicle movements, congestion, air and noise pollution.



Overall benefits of a circular economy on the Built Environment are:

£3 billion and £5 billion

in growth for London by 2036

It could also create as many as

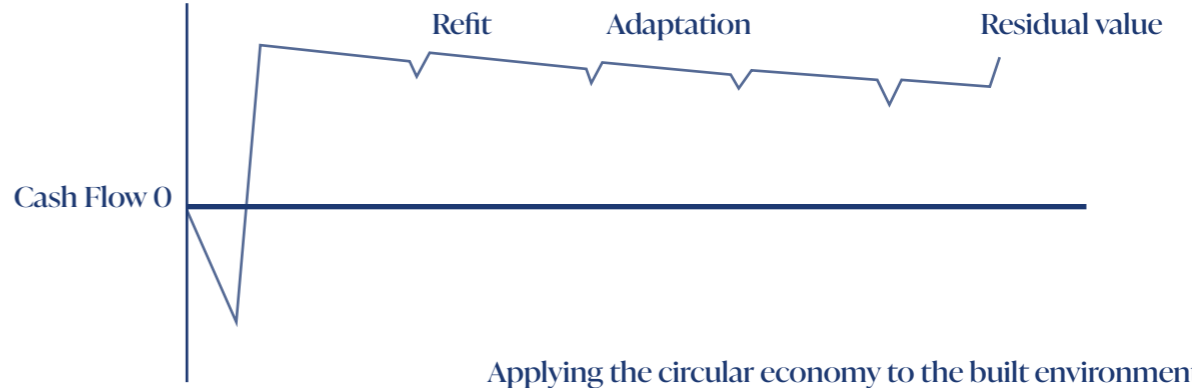
40,000

new jobs in the capital by 2036

The capital's population is predicted to reach over

11 million

by 2050, making a rethink of architectural processes crucial



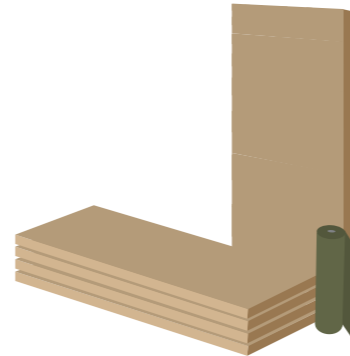
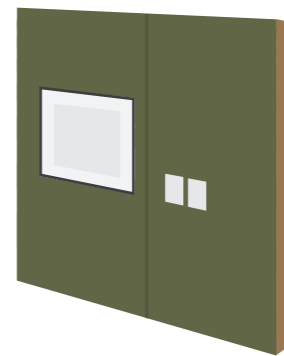
Applying the circular economy to the built environment

A New Materials Economy

Programme definition and implementation within Somerset House

1. Identification

The first stage of my programme is to identify exhibitions and installations from within the City of Westminster that have materials coming to the end of their use, but which have potential to be extended and reused. This stage helps to establish partnerships with arts and culture institutions and provides museums with an alternative to waste. Collaboration with museum directors, curators and exhibition designers is crucial.



2. Deconstruction

The second stage, after identifying suitable materials, is to carefully deconstruct them. Making sure to retain as much as possible, this process has an attention to quality and organisation. It is during this stage that usually, materials with the potential to be reused and restored, are sent to waste. Taking the care to deconstruct materials that can be reused promotes a culture of circularity in the museum sector. The deconstruction will focus on both structural and non structural materials used within exhibitions and installations.

3. Transportation

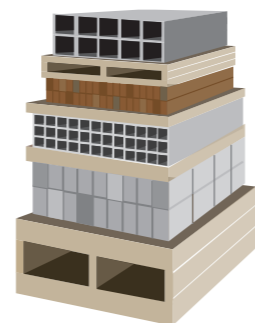
The third stage, once the materials have been deconstructed, is to transport them to my proposal within Somerset House. The materials will be transported from institutions around Westminster and will be deposited in the South of Somerset House, where the programme continues. Providing this logistical solution and practical storage will enable many more materials to be reused.



A
more
resource
efficient
materials
economy

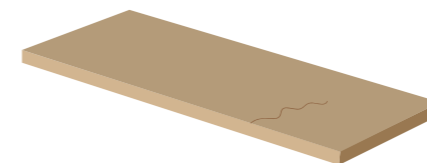
5. Storage and Re-use

Storage is central to my proposal within Somerset House, and transforming the site into a material repository is key to creating a culture of sufficiency and maintenance. It offers a path to a more resource efficient materials economy. The materials stored will become available to projects that plan to use them sustainably and be used to prototype innovative exhibition designs and systems. The materials will form an exhibition while stored, and will be coded in order to restore their histories, preserving the past, while transforming the future.

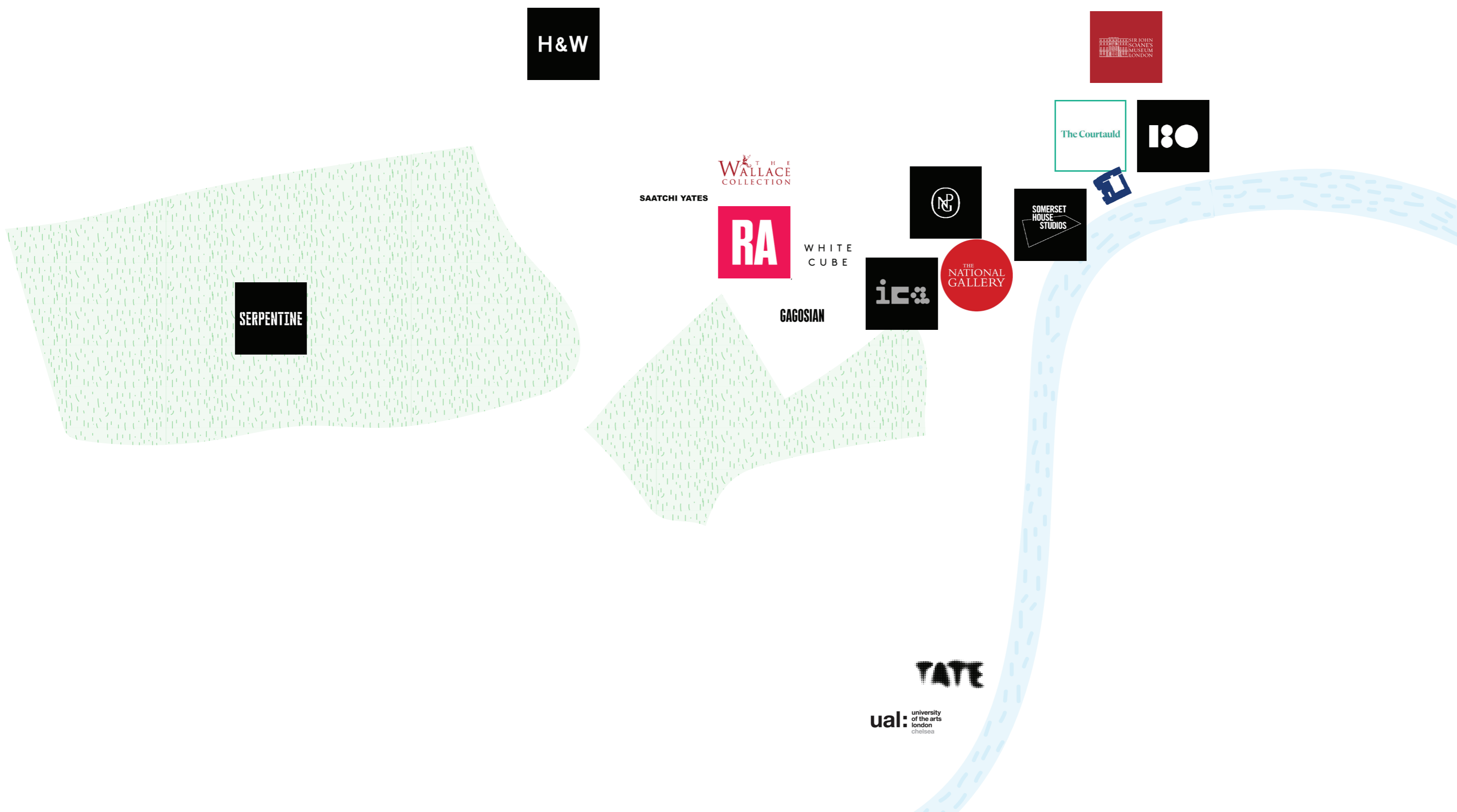


4. Repair and Restoration

The fourth stage of the programme, is to repair and restore any materials deposited which require it. Many materials coming from exhibitions and installations will not require any repairs, but expert makers and masons are in residence to maintain those that do. This is another step to reduce waste, and keep materials in use for longer. Public workshops will also be offered to educate people on the culture of maintenance and reuse.

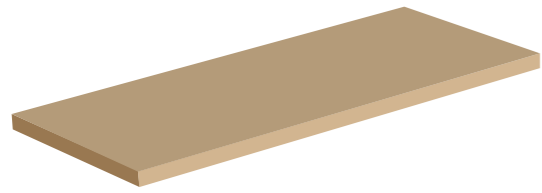


Expanding the Network

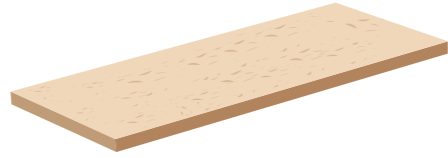


Material Bank

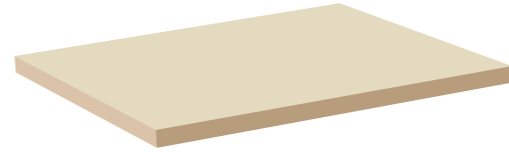
An inventory of potential materials that my proposal will identify, deconstruct, transport, repair and then store. The list includes materials considered by exhibition designers for temporary exhibitions and installations. The identification of these materials was preceded by an analysis of the Design Museum's Exhibition Impact Guide, which sets out a list of materials that should be considered when designing for a lower impact exhibition.



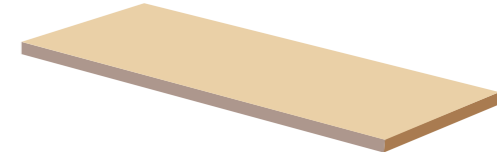
MDF



Chipboard



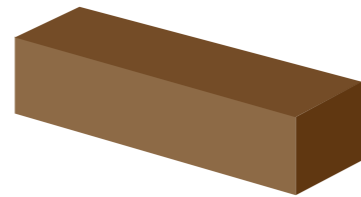
Structural ply



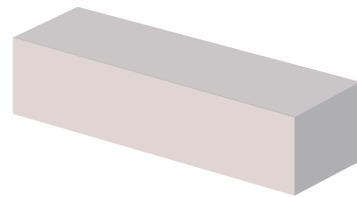
Timber



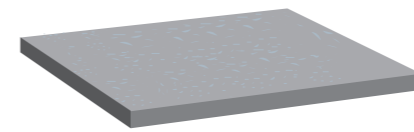
Plasterboard



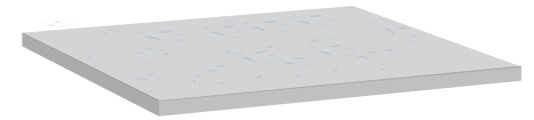
Fired Brick



Calcium Silicate Block



Steel Panel



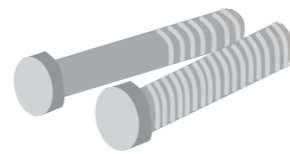
Aluminium Panel



Glass Panel



Perspex Sheet



Bolts and Screws



Lighting Track



Wall Light



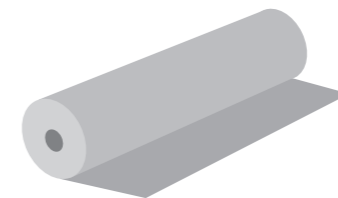
Cardboard



Paper



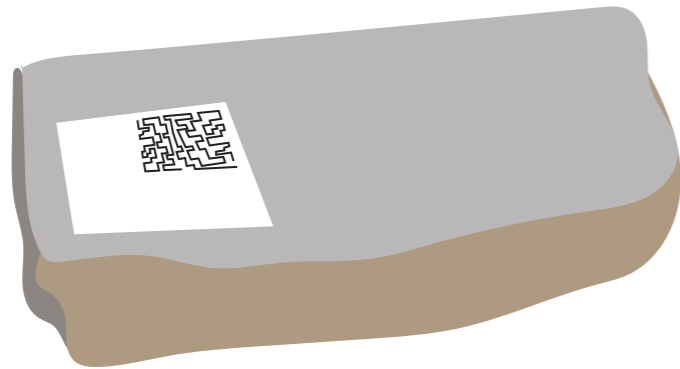
Card



Textile

Preserving Provenance

Establishing and preserving the origins and details of materials through material passports



Material Passports: the key to carbon reduction, greater component reuse and more sustainable construction. Component passports can provide a wealth of information including geometric details, fire safety and the carbon footprint.

Within my project, I am applying this research to my own programme at my proposal in Somerset House. In terms of provenance, my project will look to utilise QR codes and online databases to preserve the histories and past uses of the materials that will be stored. The labelling of the materials will come after the repair and restoration stage, and will then be ready to be stored and exhibited.

As I will be focusing on reclaiming materials from other art and culture installations, the data will strive to continue the stories of the materials, highlighting what exhibitions they formed and how they were used. I think this is an important aspect of my programme as it emphasises the importance of retaining materials. The QR codes will take visitors to a page that showcases what the material was previously used for, with images and information on artists and exhibitions.



German Pavilion Venice Biennale 2023

Titled 'Open for Maintenance', the German pavilion is an action framework for a new building culture. Transformed into a productive infrastructure, the pavilion collected leftover materials from over 40 national pavilions and installations from 2022.

Materials recovered were **collected and catalogued**, ready to be used for **repairing buildings and public spaces** around Venice.

There is also a digital component. The curators worked with a circular economy focused organisation, Concular, to **digitise the material bank** so that it can be browsed online like a retail website.

Each lot is **labelled with a QR code, providing information on the past uses and origins**, as well as access to the online database.

Makele said the aim was to encourage architects to engage more closely with the process of building and maintaining. “

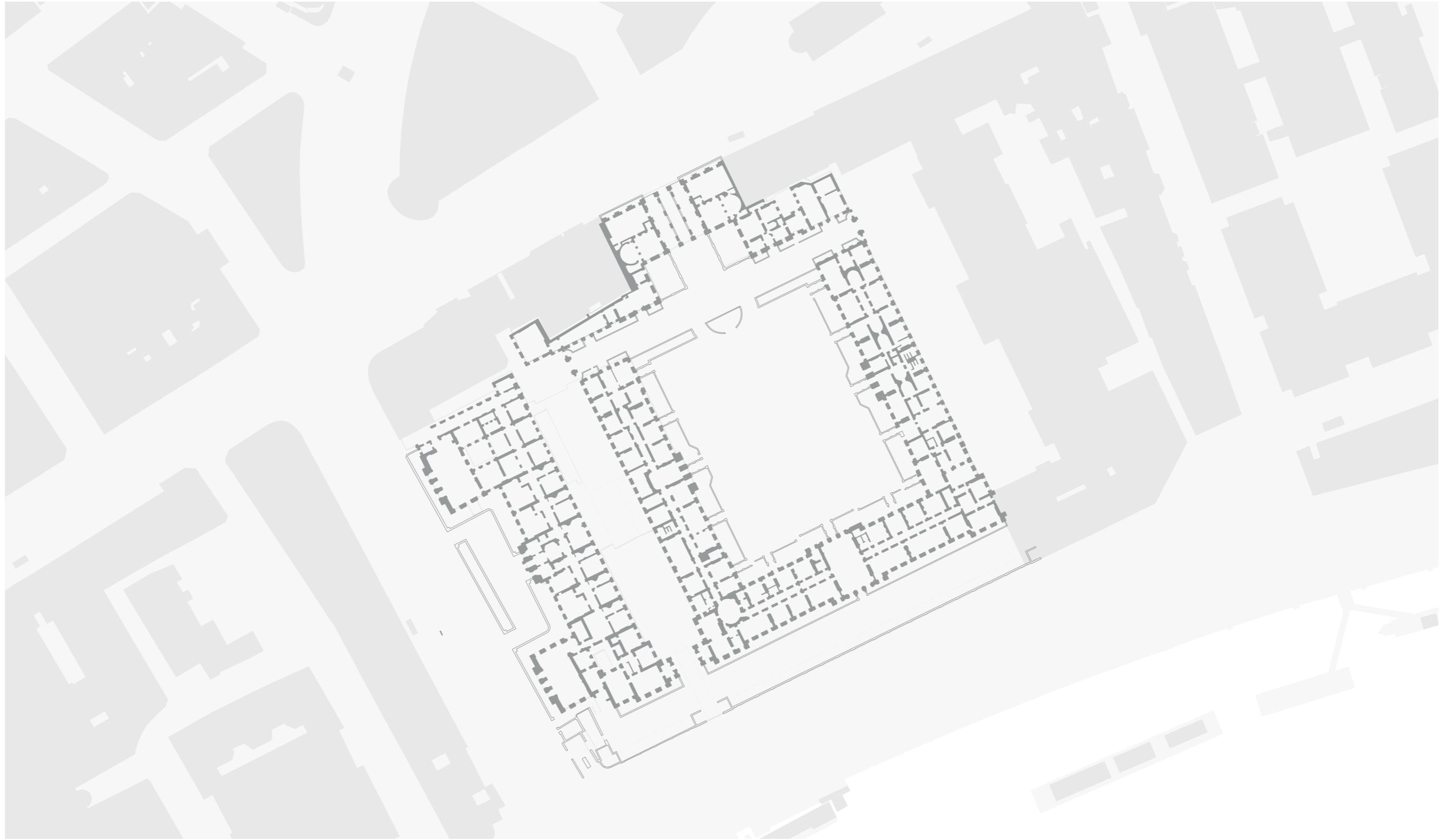
This pavilion has informed some of my decisions regarding the programme of my project and social and environmental motivations. The inclusion of public workshops to educate a wider population and the labelling of materials are admirable.



A potential material catalogue

The Current Plan

This 1:1250 plan of the site and ground floor of Somerset House illustrates the existing context and layout of the architecture that we are inhabiting and interrogating. It shows many opportunities for intervention and the current spatial layouts that will help to inform my proposal, from access points to voids and courtyards.

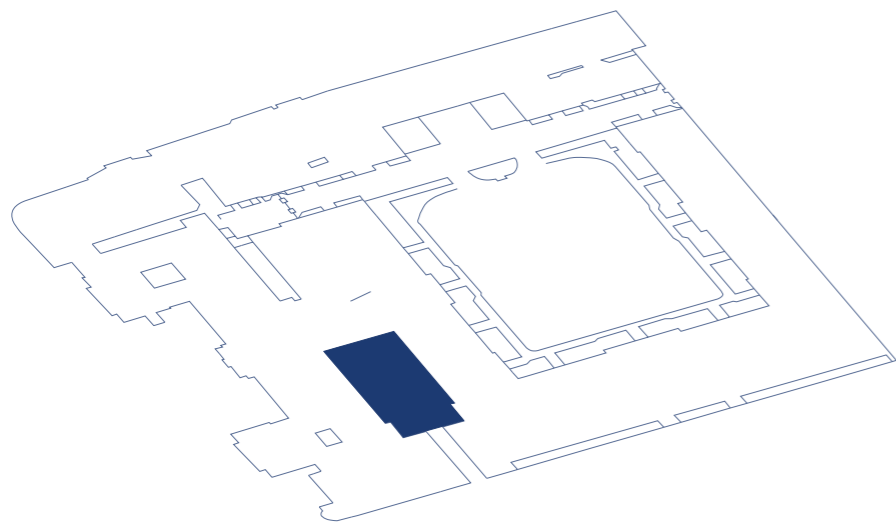
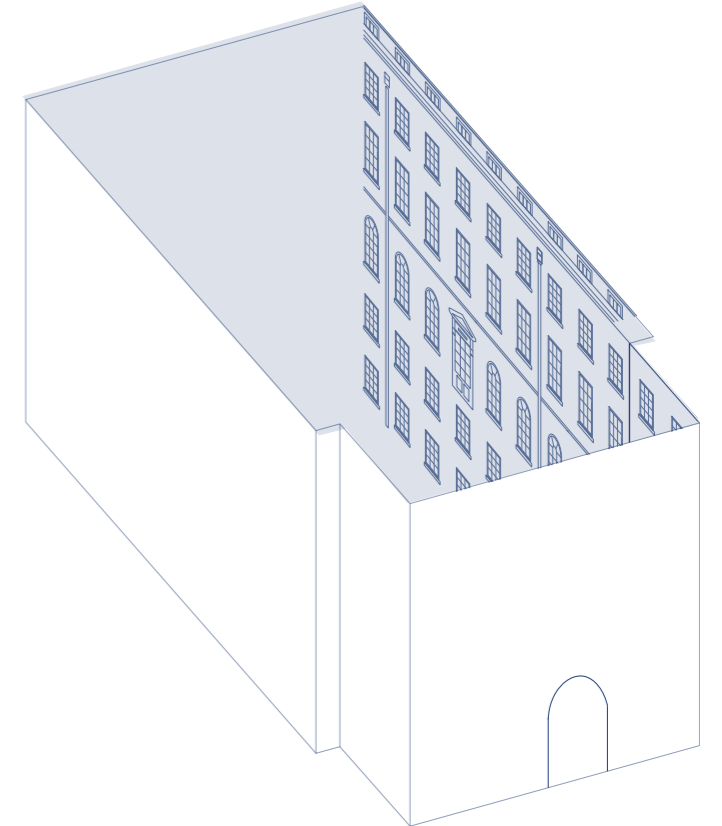
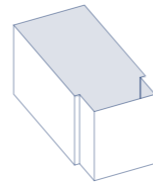
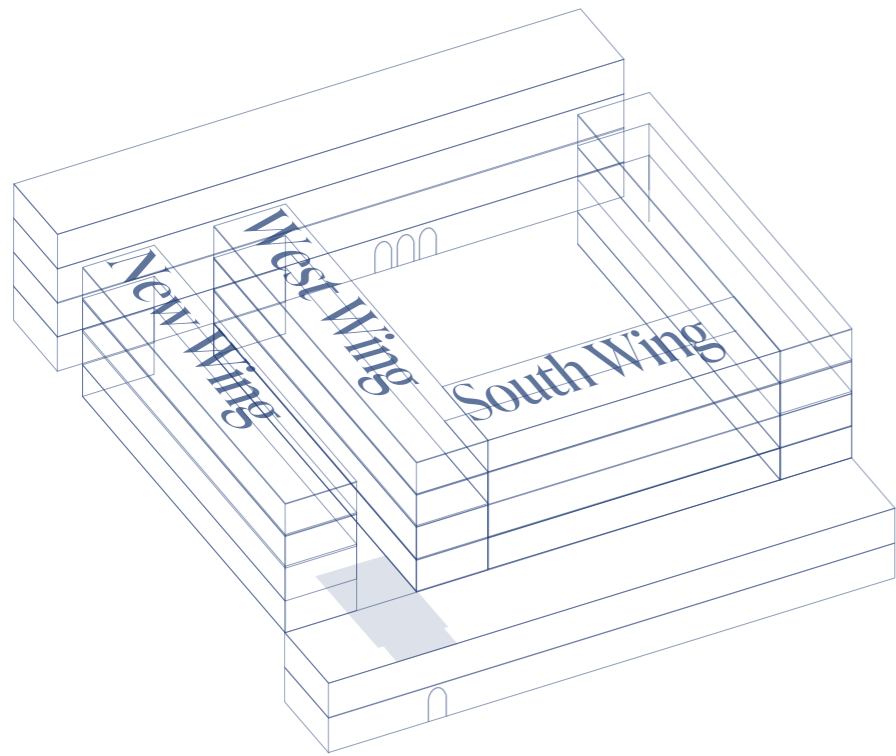


1:1250 Current Site and Ground Floor Plan

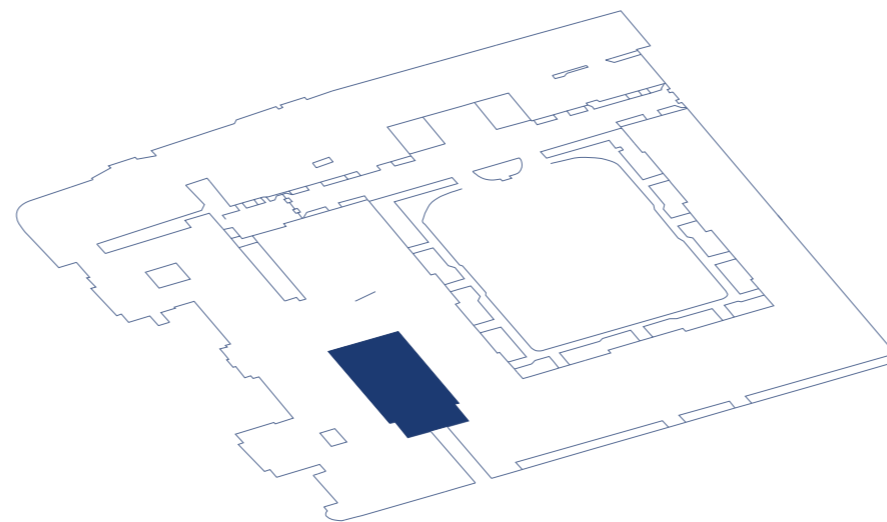


Establishing Intervention

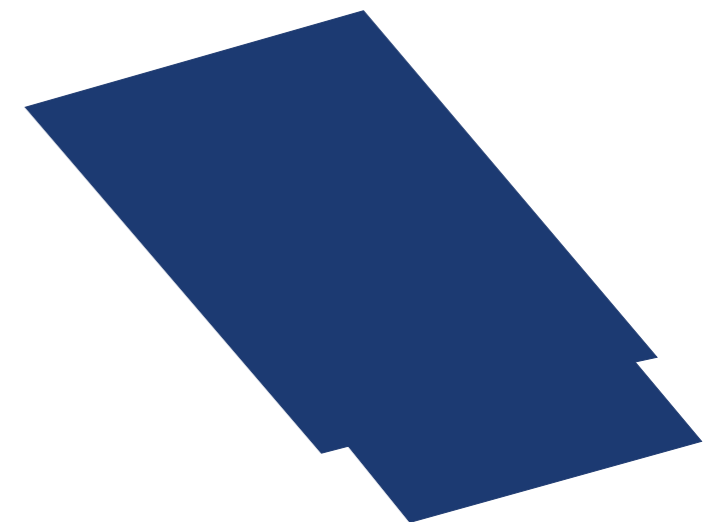
This series of diagrams shows the transition from focusing on the general site of Somerset House to the specific location of my architectural intervention, where I will intergrate my proposal. The site I am focusing on is the secondary courtyard, void space between the West wing and the New wing, with vehicle access from the South wing of Somerset House.



General Site



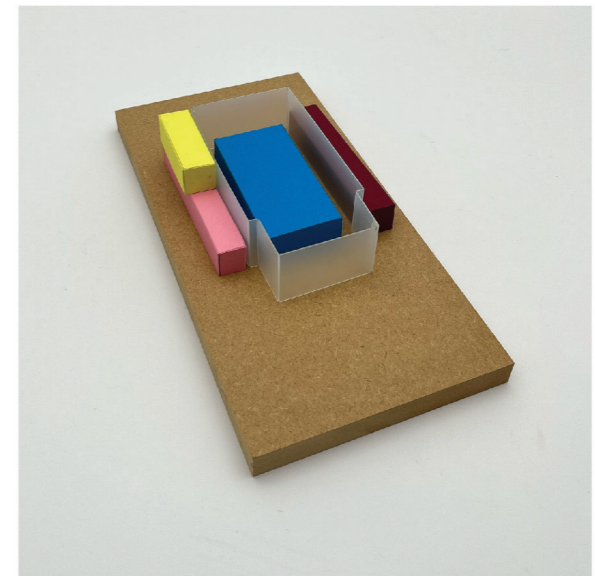
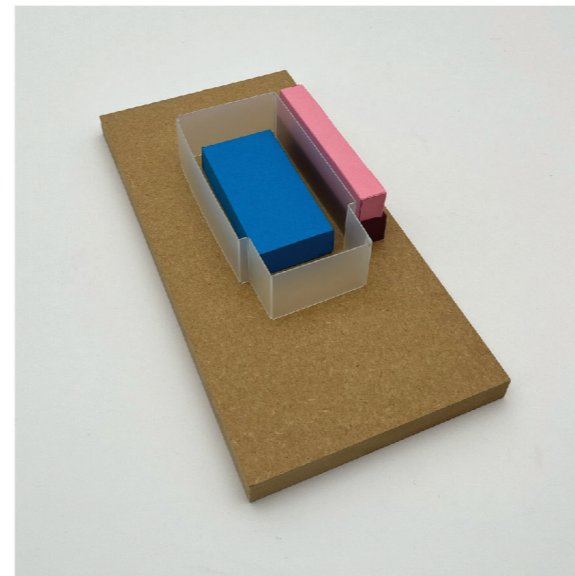
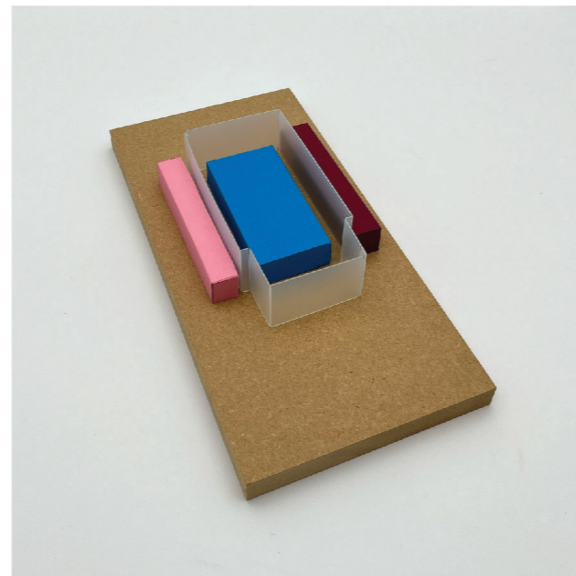
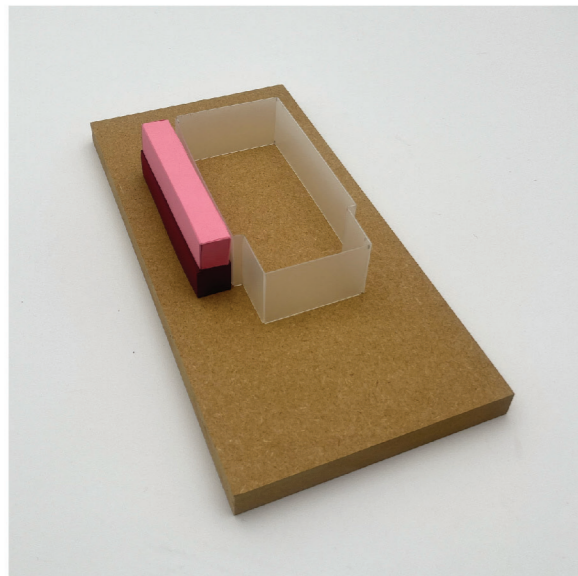
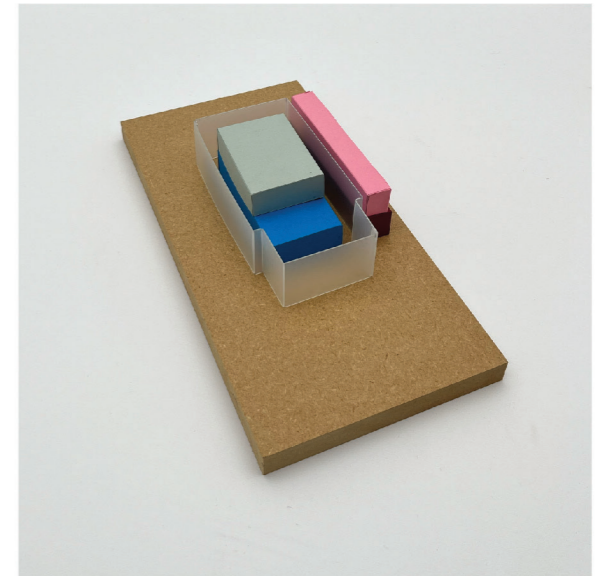
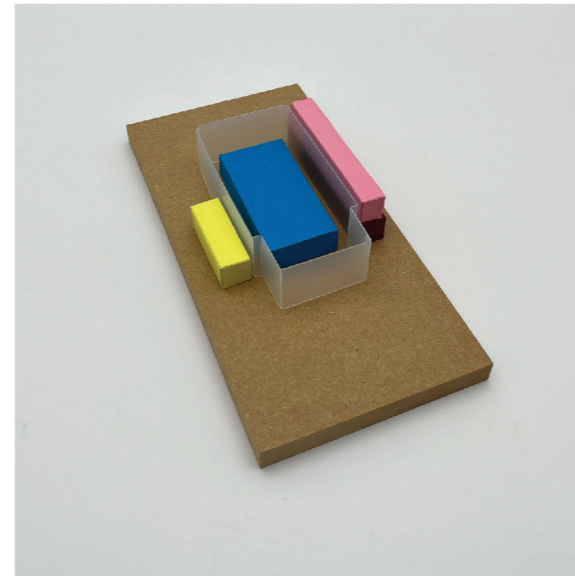
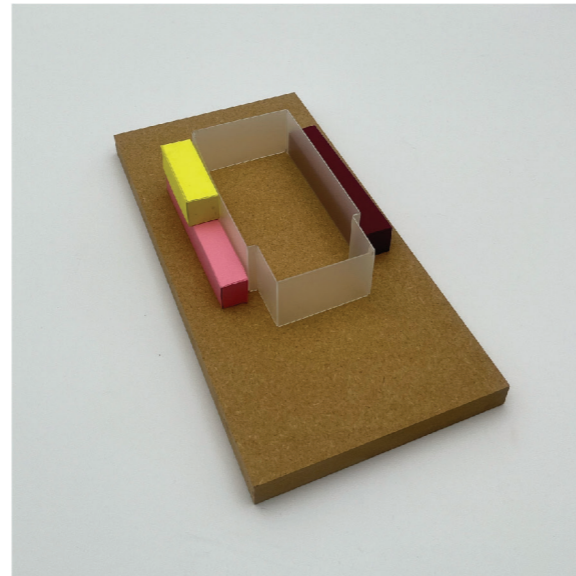
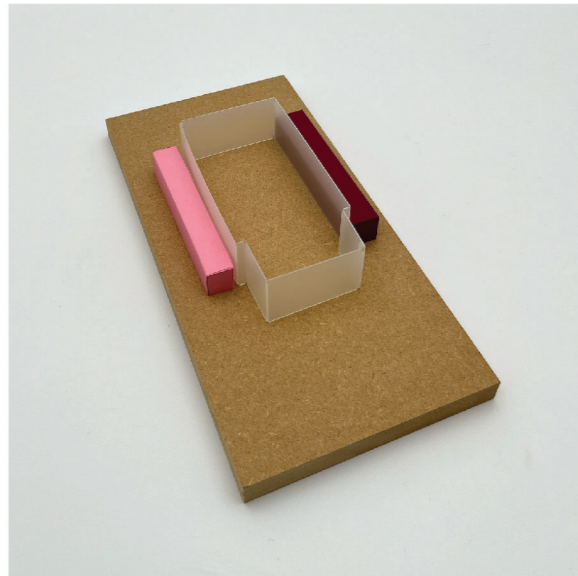
Introducing the Void



Zooming into the Void

Spatial Layouts

Using an outline model of the void that I previously identified, these spatial layouts show a range of proposals to how I could layout the integral spaces and layouts of my programme. Various options show how the courtyard could be activated or left open, how the two parallel facades can interact and how key spaces are interlinked. After this experimentation, the implementation of storage within the courtyard is an idea I would like to progress.



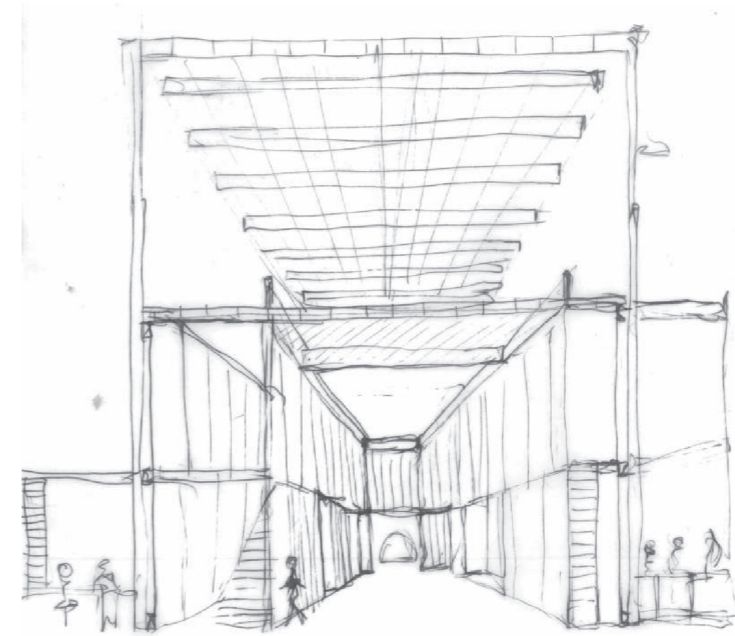
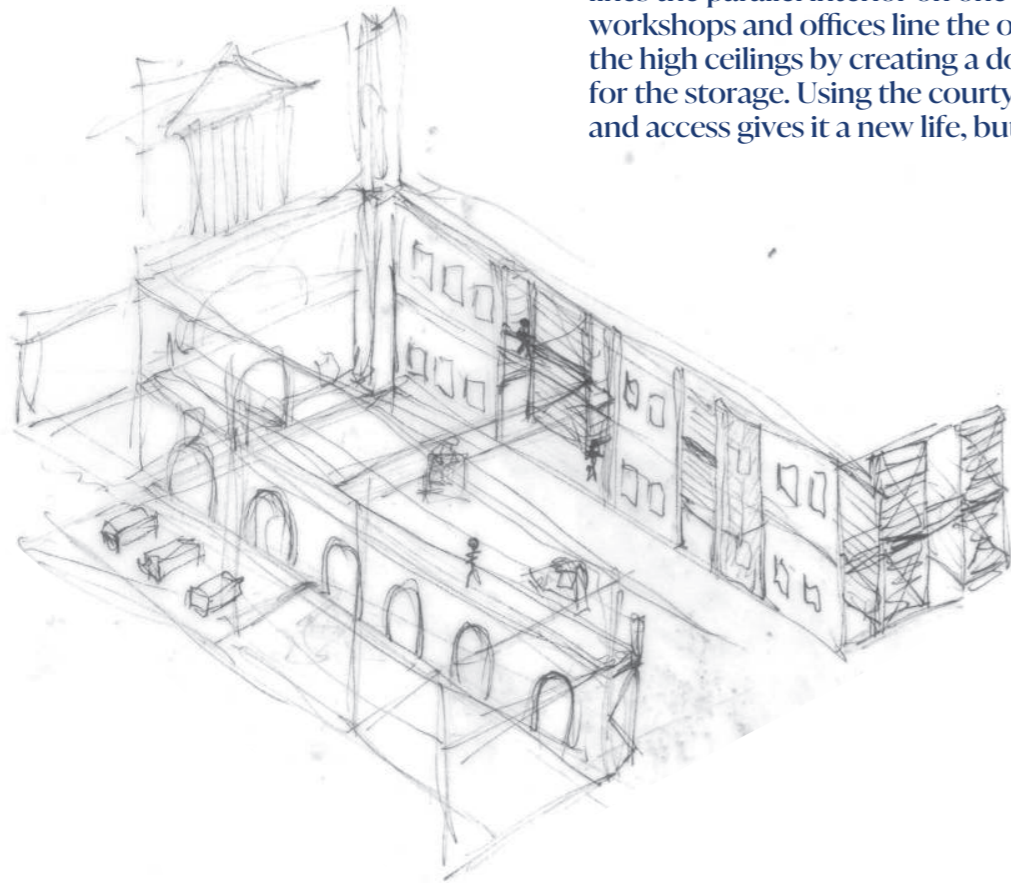
■ Storage ■ Office ■ Workshop ■ Internal storage ■ Multi use space

Developing Design

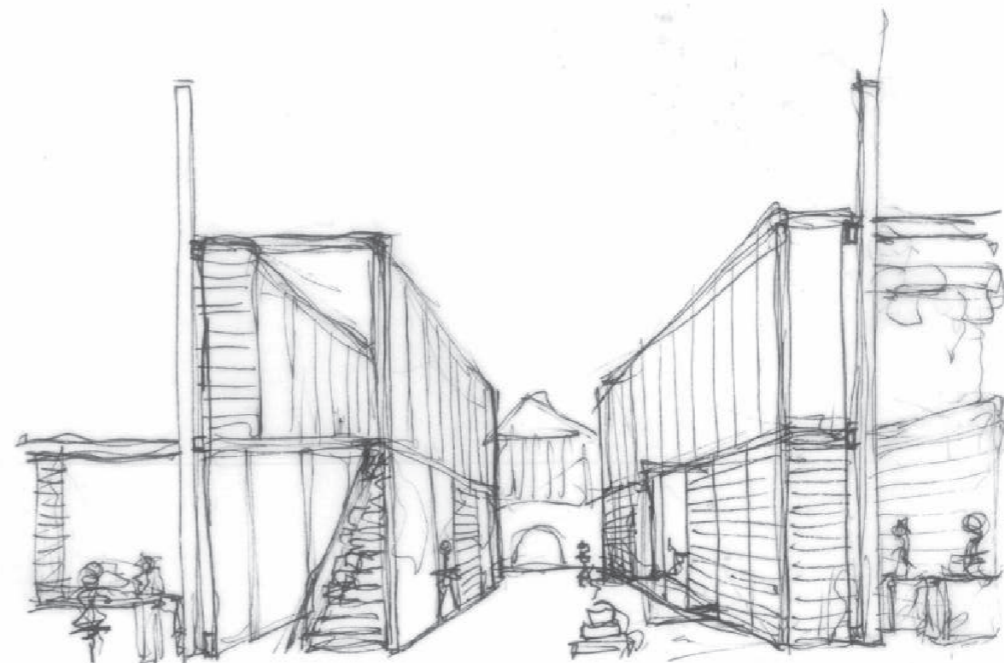
Exploration into different approaches to design. I have utilised sketches in order to evaluate how proposals work and interact. I have focused on two different strategies, one which inhabits the courtyard with a new structure, and the other that is less radical and preserves more of the existing layout.



This first approach maintains the existing layout, keeping the courtyard space clear. Material storage lines the parallel interior on one side, while workshops and offices line the other. I have utilised the high ceilings by creating a double height space for the storage. Using the courtyard for circulation and access gives it a new life, but maybe a little bare.

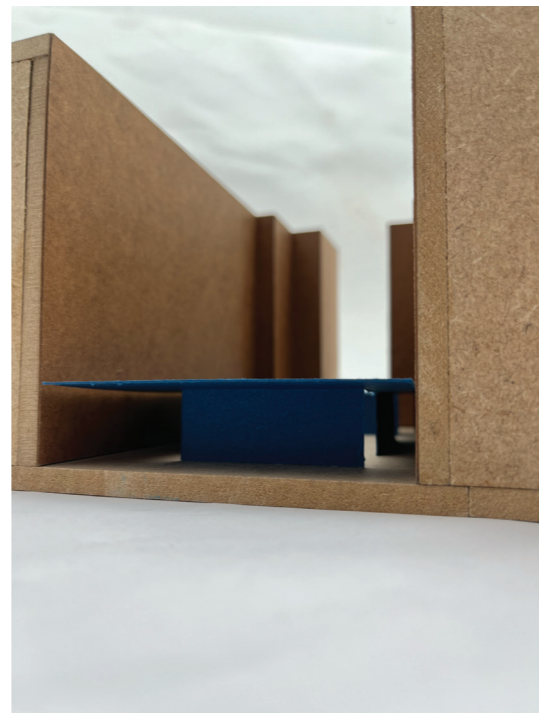
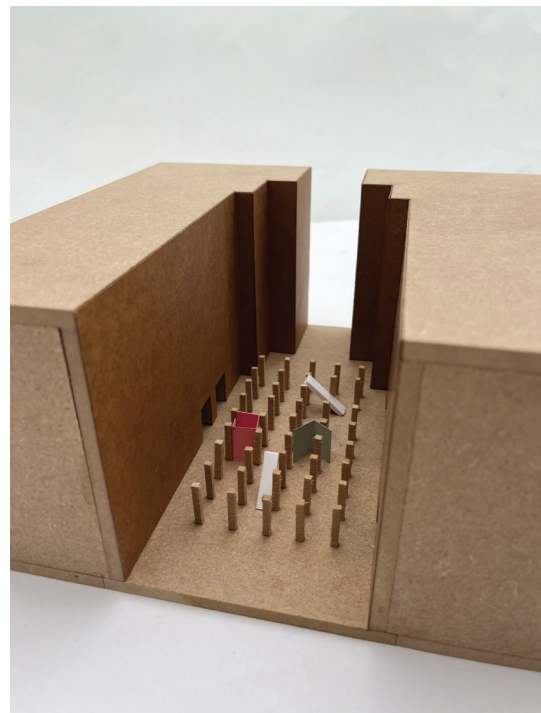
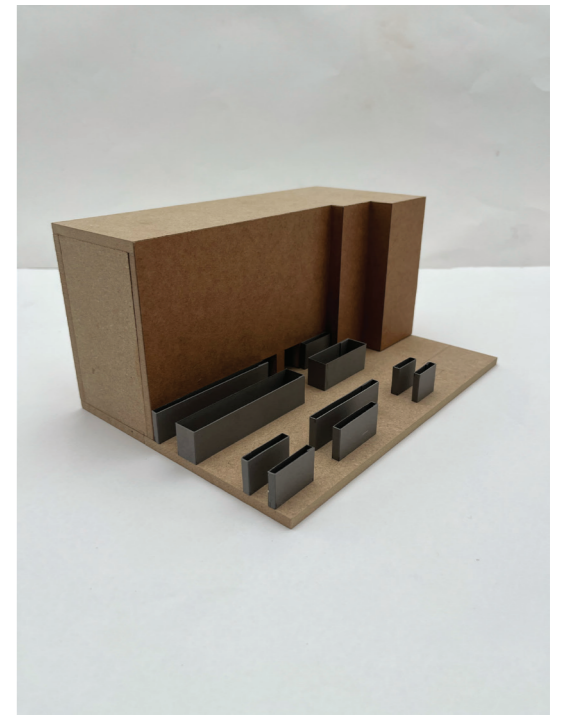
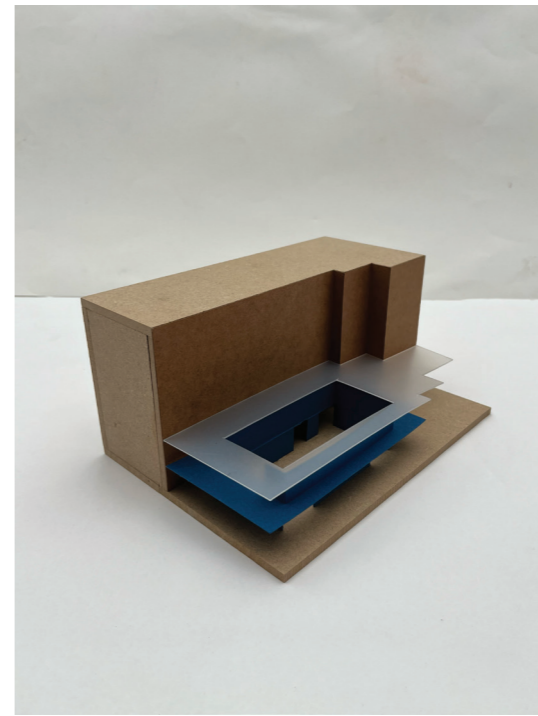
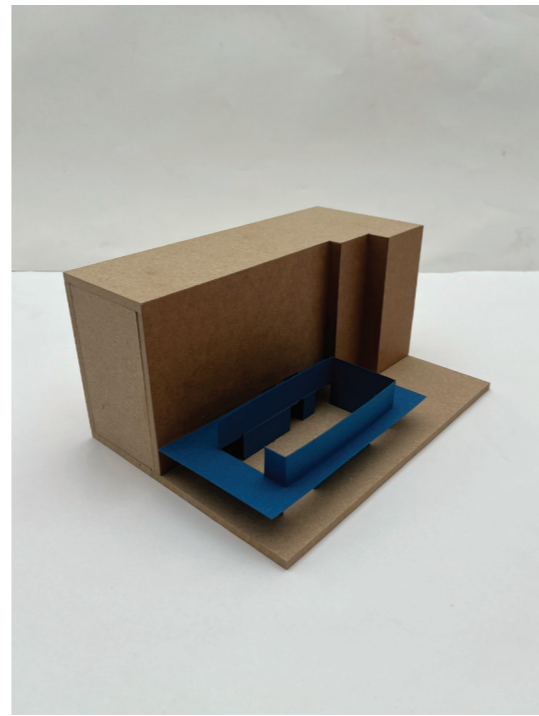
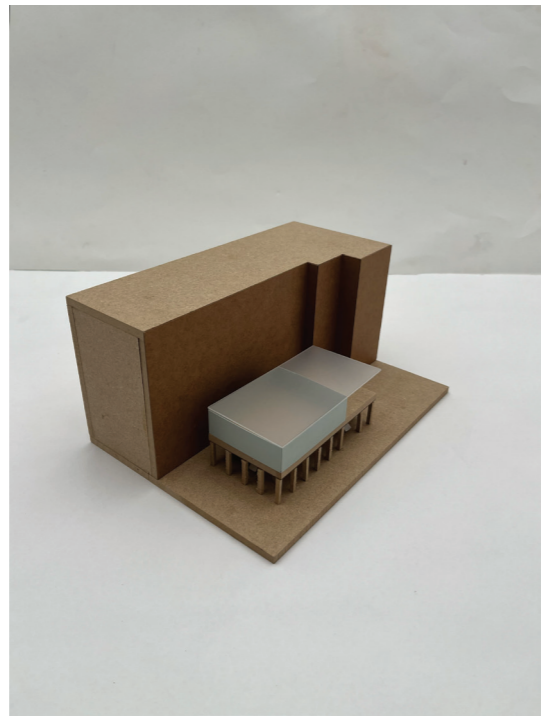
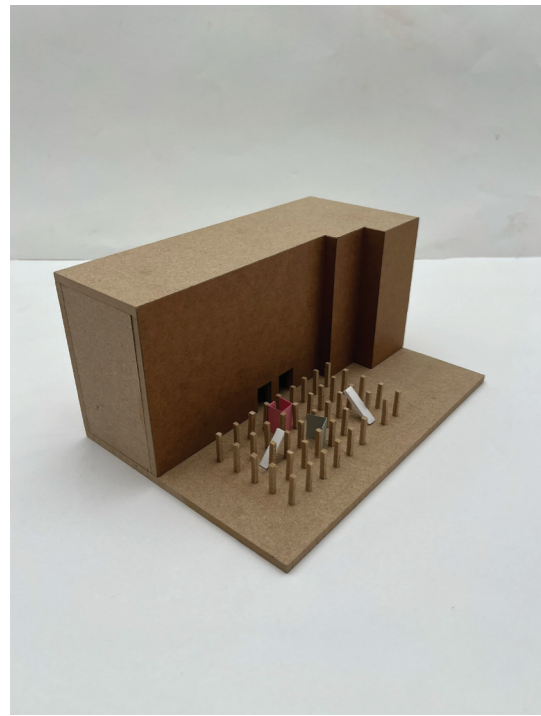


The second approach presents a more radical intervention. A new storage structure inhabits the courtyard, maintaining its open feel, while implementing spaces that are integral to my programme. I like this idea as it utilises an under used space within Somerset House. Similarly to the other proposal, my programme also extends to the interior spaces alongside the courtyard.



Modelling Iterations

Using an adjustable model of the new wing and west wing, exposing the void that I previously identified, these iteration models show a range of proposals as to how I could layout the exterior courtyard spaces. Various options show how the courtyard can be utilised to support my programme, how the two parallel facades can interact and how key spaces are interlinked. After this experimentation, the implementation of a perimeter storage structure is an idea that I would like to progress, along with expanding the south terrace, to interact with my design.



Materialising Storage

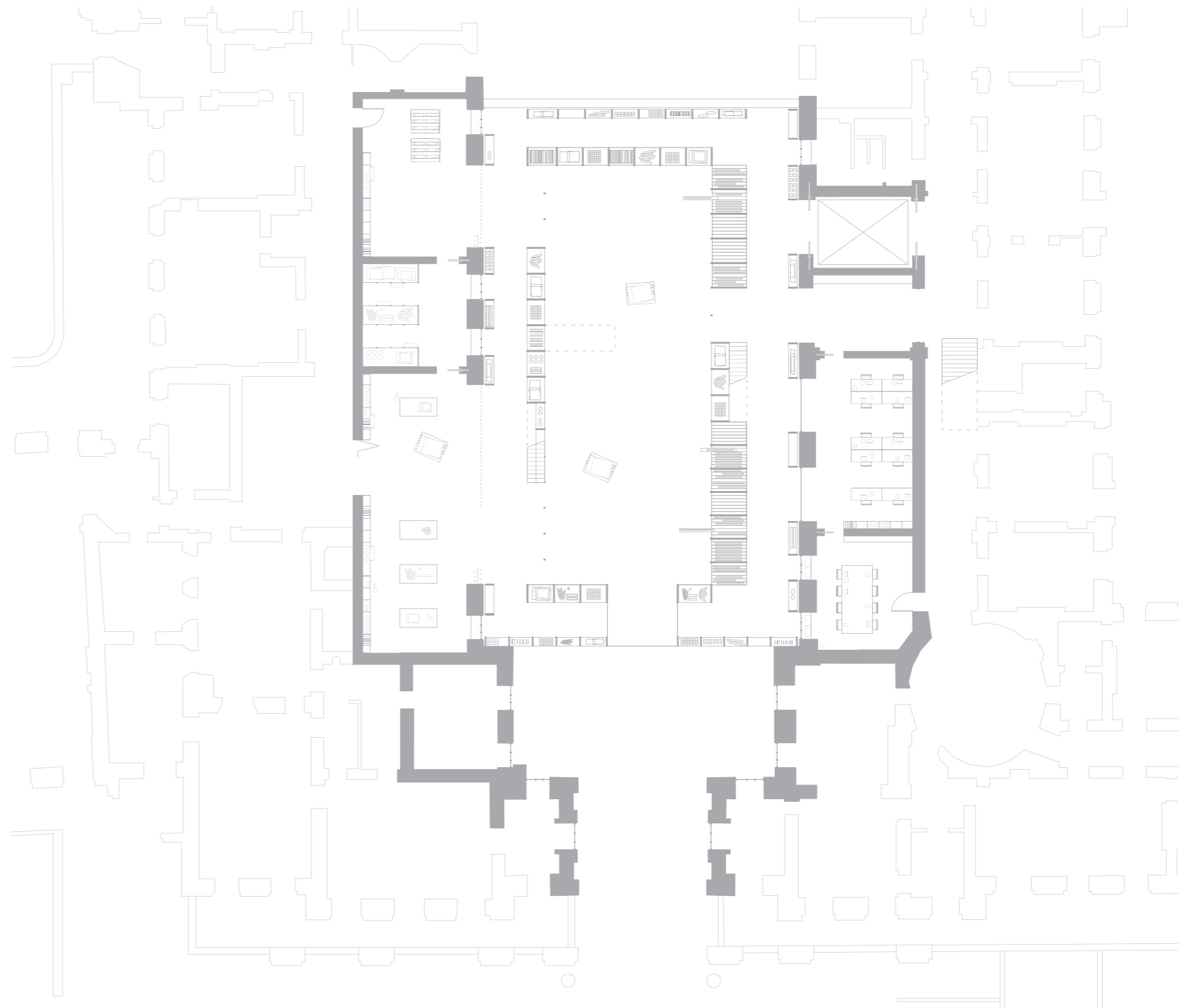
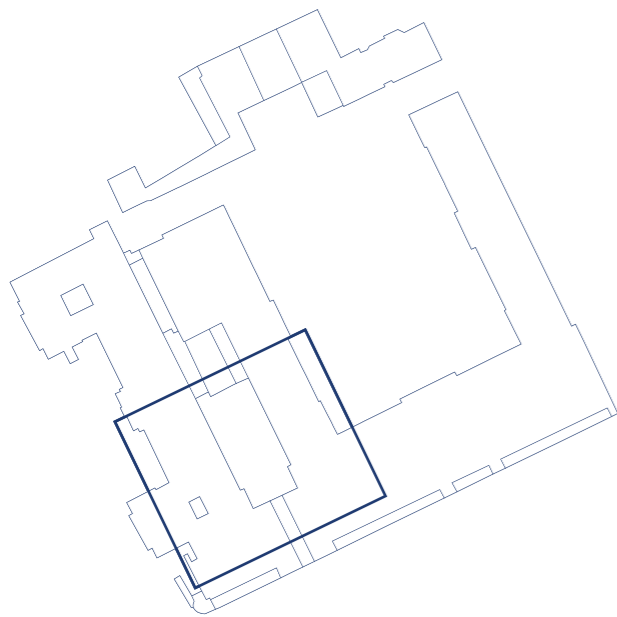
Combining my research, programme, and design development into floor plans

Design Proposal Ground Floor Plan

The first floor of my proposal is located within the basement level of Somerset House. This floor is composed in order to facilitate the storage of materials, while actively engaging visitors, creating an exhibition like feeling.

The material storage is lined in a perimeter plan, with openings and circulation points implemented, within the structure. The internal spaces on the ground floor are designed to enhance the existing arrangements, allowing for workshops and office spaces to work around the storage structure. The opening of a new courtyard space pushes my programme further, providing a space for my housed materials to be used for assembly and prototyping of new exhibition structures and systems. The storage structure is designed to interact with the existing building in a responsible and gentle way, without excessive interrogation, becoming almost like a second skin, blurring the threshold between old and new.

The ground floor facilitates the south facade for vehicle access.



1:250 Design Proposal Floor Plan



0 5 10 15 20m

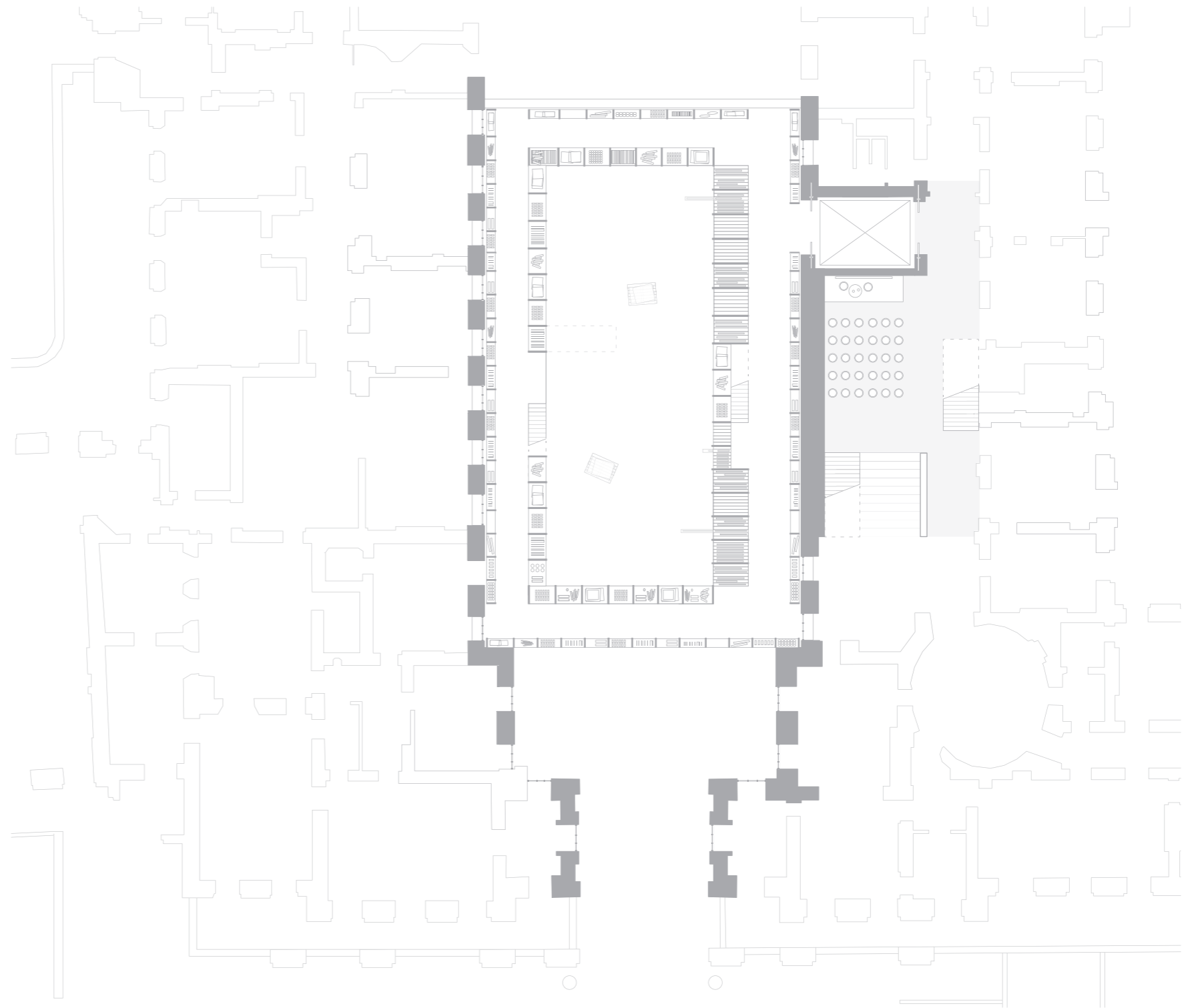
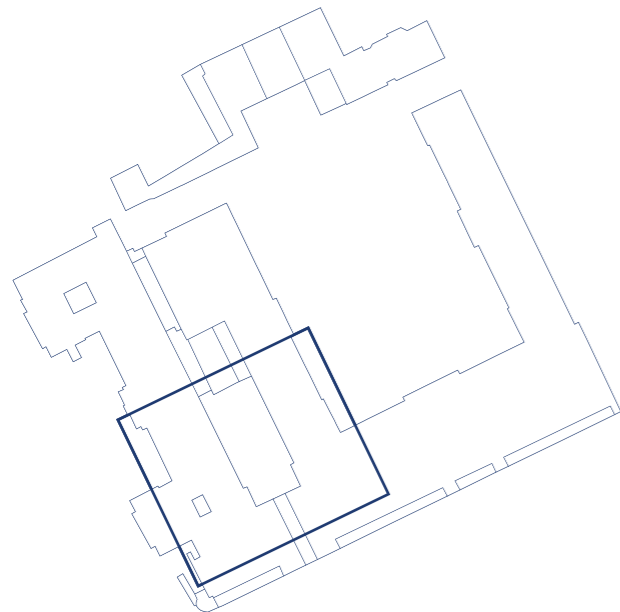
Materialising Storage

Combining my research, programme, and design development into floor plans

Design Proposal First Floor Plan

The first floor of my proposal is a continuation of the ground floor. This floor is composed in a similar way with another layer of storage sitting on the same plan as below. The courtyard now becomes double height, providing the space with a generous and abundant feeling. The perimeter storage on this floor will include interactive displays, and projections, enhancing the experiential element to the design, actively engaging and educating visitors.

The first floor sees more internal spaces being utilised, with the east side turning into the public hub, with spaces the main circulation route connecting the floors. There is also a public lecture area, which utilises the grand staircase as seating, transforming the space into a temporary amphitheatre whenever needed.



1:250 Design Proposal Floor Plan



0 5 10 15 20m

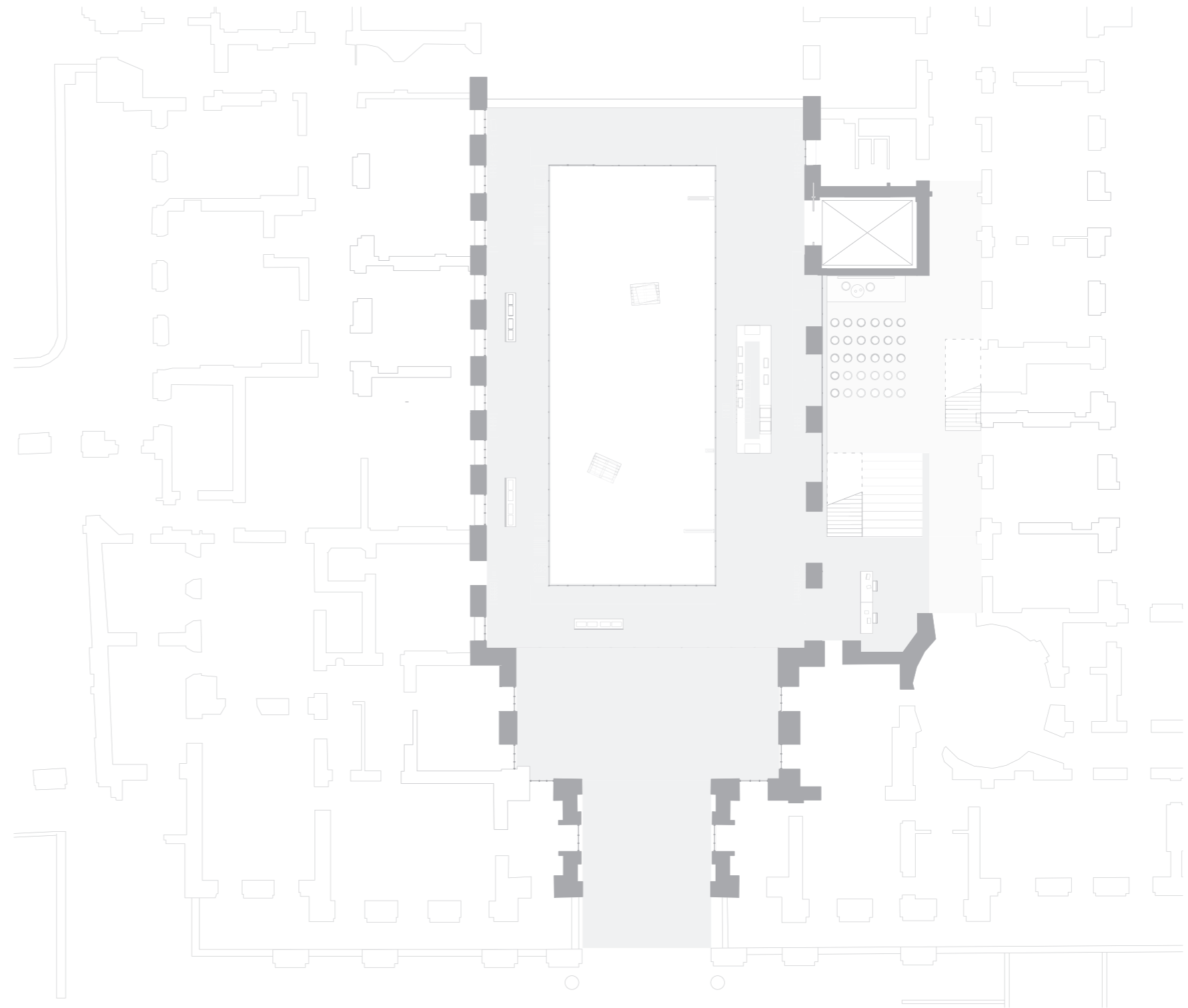
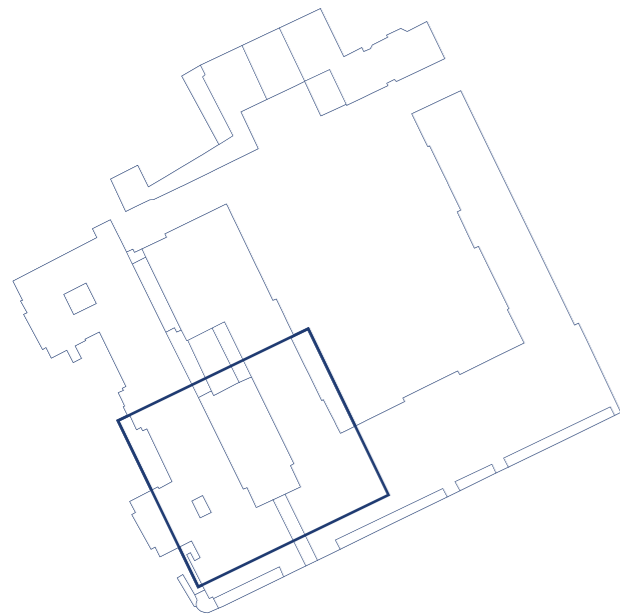
Materialising Storage

Combining my research, programme, and design development into floor plans

Design Proposal Second Floor Plan

The second floor of my proposal showcases perhaps the most radical change to the existing. This floor sees an expansion of the South facade terrace, bringing it into the courtyard, facilitating a revolutionary new public plaza, transforming the space from an under-used courtyard into a vibrant multi purpose area of Somerset House. The new terrace spans the whole length of my proposal, with a void revealing the courtyard.

The terrace offers a place for relaxation and reflection, with areas for seating and viewing. This new access point into the proposal becomes the main route of circulation, and directs visitors into parallel interior, where the programme continues, and access down to the storage becomes possible. The east side facade has seen a transformation, with new arched openings created, inspired by the arches of the south terrace, to enhance connectivity to the interior.



1:250 Design Proposal Floor Plan



0 5 10 15 20m