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The Fields of ELYSIUM

Growing and cooking education

Project Overview

The Fields of Elysium is a project that creates a secondary school, attended once per week, that centres around food education and providing employment skills and opportunities: issues particularly pertinent to the Autistic population. This will be achieved by altering and occupying the 'Elysium' cinema, which has been abandoned for 30 years.

The design involves the extensive removal of deteriorated fabric (ruinification), creating a relaxed and otherworldly space in the heart of Swansea. Sustainability is core to the project, reusing material where possible and sourcing new components locally.

Swansea on winter's evening (Prust 2023)

I. Introduction

Unit Overview
Location Information
Autumn Semester Summary
Autumn Semester Prospectus
Autumn Semester Site Selection
Defining the Brief

Unit Overview

The three core aspects highlighted here are derived from the unit brief and will go on to inform both the personal brief and design.

Autistic people

Mainstream schooling often fails to adapt to students' individual needs, this inflexibility can make school difficult for all pupils but is particularly unsuitable for an Autistic population. The brief highlights this, calling for a redefining of what a school can be.

Estimates of how many people are Autistic vary with commonly cited amounts ranging from 1-in-100 to 1-in-36 people. Findings seem consistent in showing worse outcomes surrounding employment post-education.

Swansea's High Steet

Heavily bombed during the war due to its industrial importance, Swansea's fabric is an interesting mixture of old and new. This is particularly visible in the Creative Arts Quarter. Ruins reveal themselves as you explore side streets. Historic facades are interspersed with all manner of development, much of which is in disrepair or unoccupied.

Interesting elements and characters present themselves, such as the quaint (if a little eerie) Highstreet Arcade, who's owner and designer, Frank Miners, occupies an office on the ground floor beneath an empty apothecary.

Sustainability

The project must respond to the need to adapt to our climate emergency. This will impact the project holistically, including influencing the development of the programme, site selection, and materiality

The back of a chapel at the southern end of the high street.

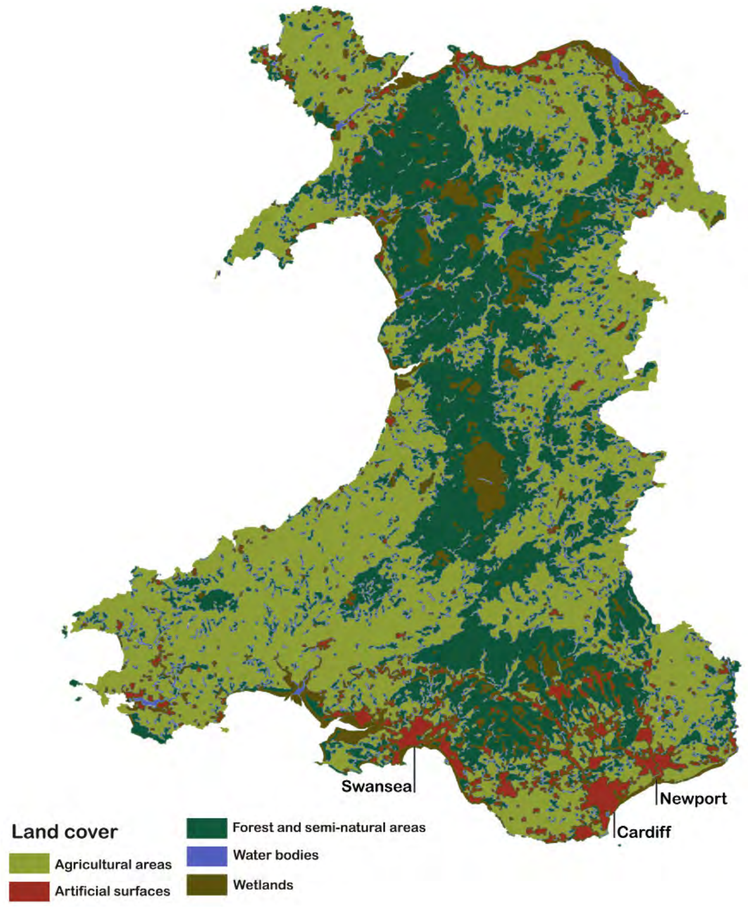
The southern end of the high street.

The middle of the high street.

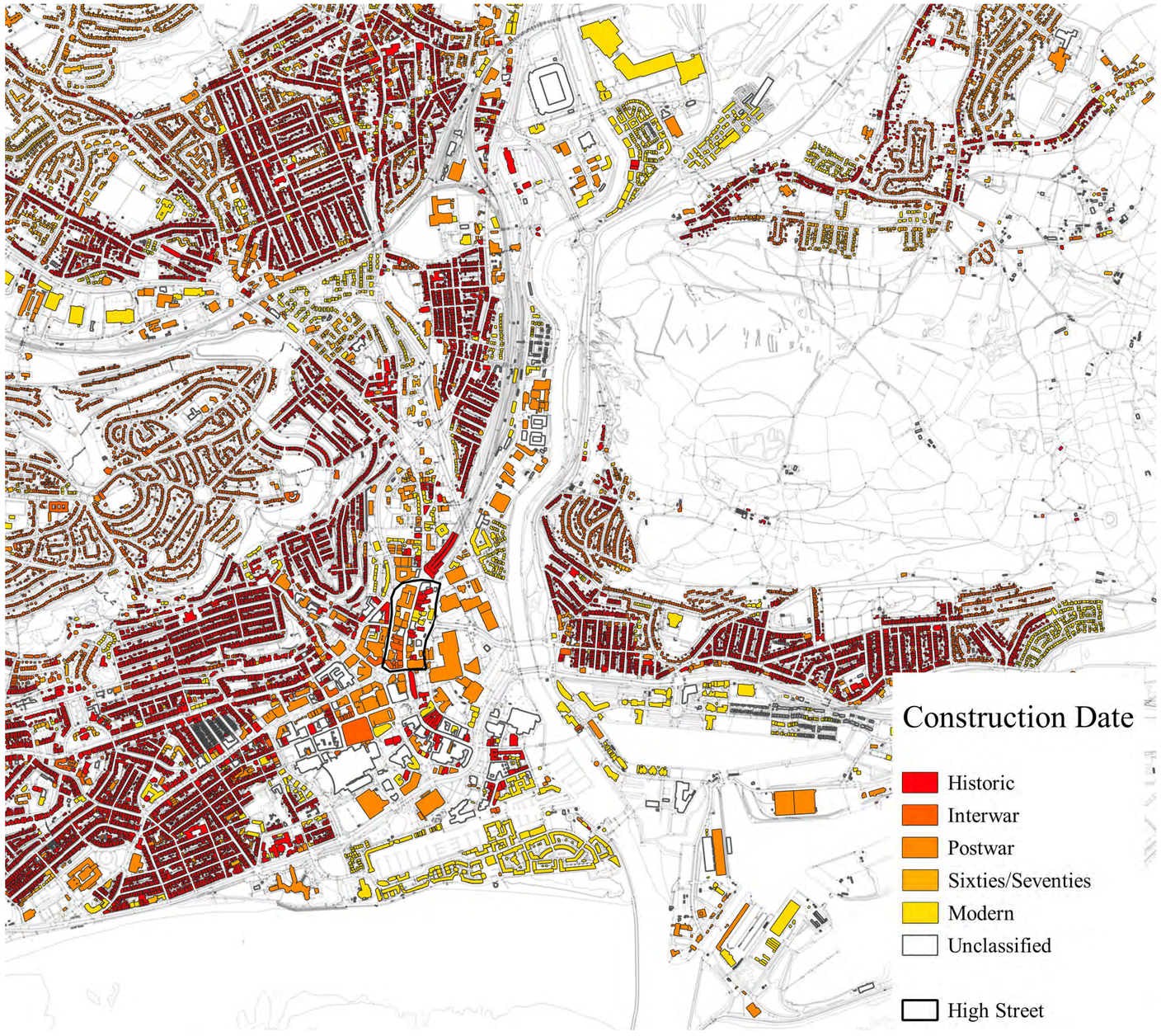
Location Information

Swansea is located on Wales's south coast, to the west of Cardiff. The second biggest city, Swansea is very urban compared to most of Wales.

The centre of Swansea was largely constructed post-war due to the destruction caused during the Blitz, with a few surviving buildings dotted about.



A map of Wales showing land use and locating Swansea.
Adapted from DataMapWales (DataMapWales 2019).



A map showing buildings' construction dates in Swansea and locating the high street.
Made with QGIS using Digimap data (EDINA Verisk Digimap Service 2023).

Group pencil drawing of the highstreet (Unit One 2023).

Autumn Semester Summary

Work from the Autumn Semester fed into the scheme, the project was highly influenced by research done in this semester and by some of the precedents visited on our study trip, such as Waterloo City Farm.

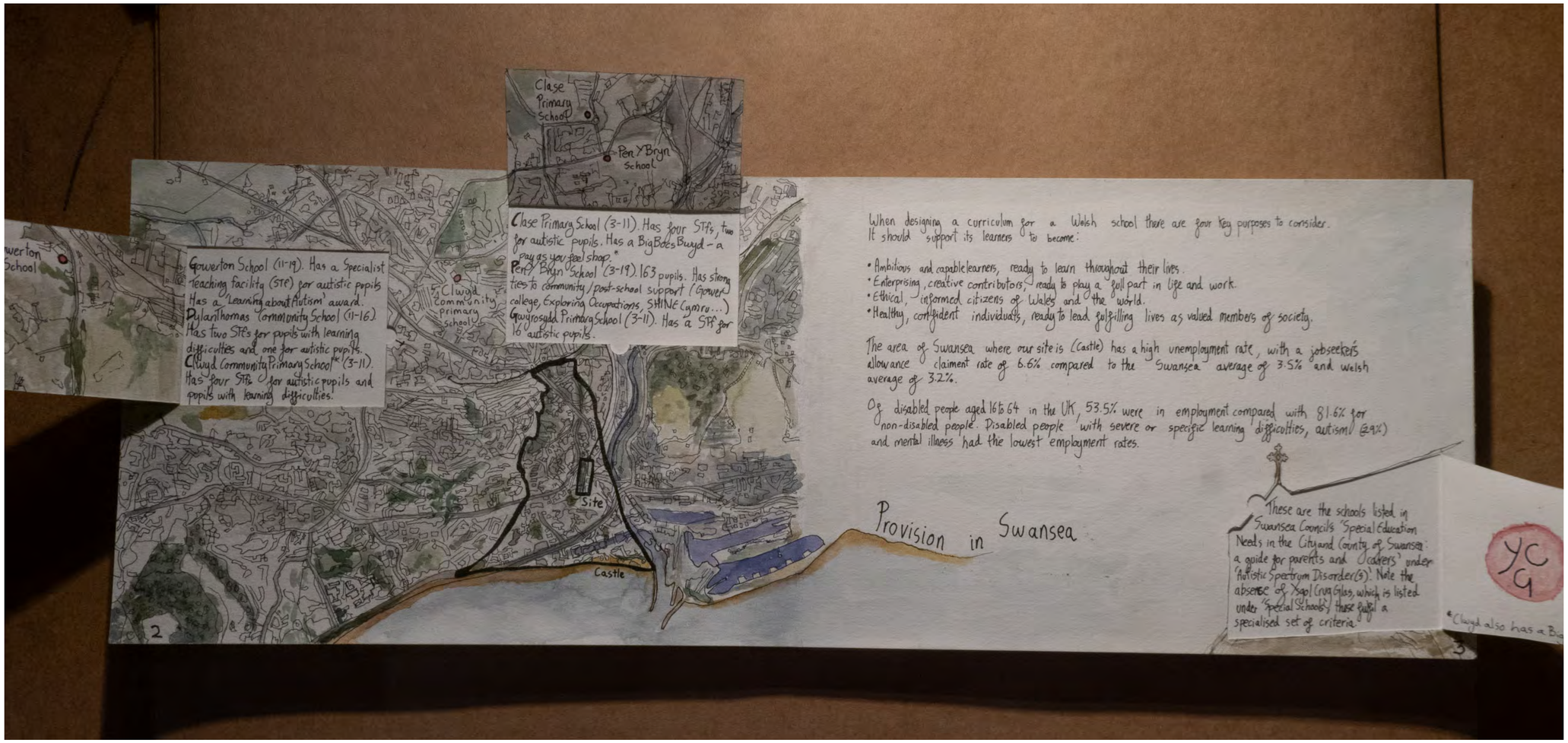
The piece of work that influenced this project the most was the final brief: the creation of a prospectus for our schools.

Ysgol Crug Glas staff members mentioned the need for more storage.

Outside the model-making building at Waterloo City Farm.

Research booklets from the autumn semester (Unit One 2023).

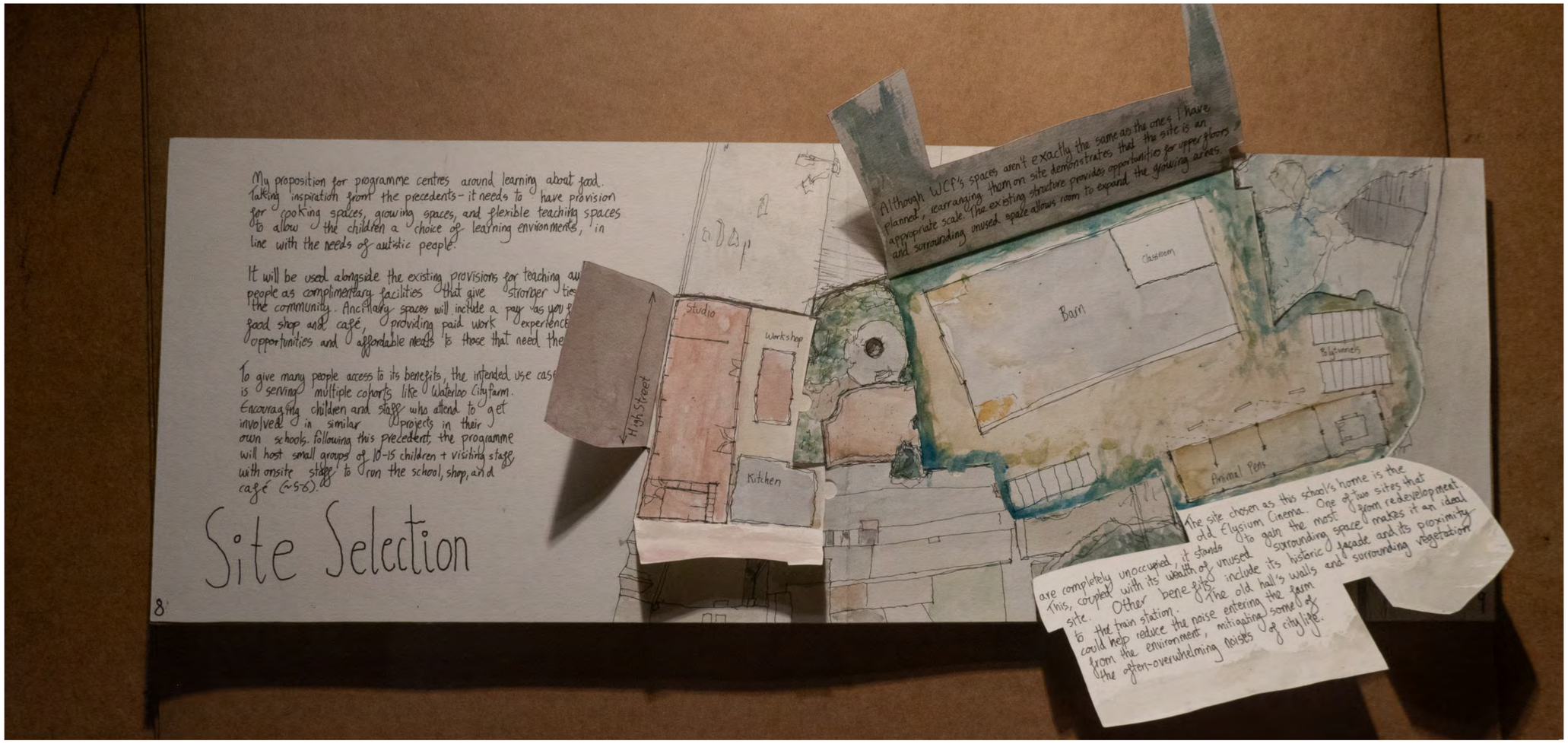
The cover of the 'The Fields of Elysium' prospectus (Prust 2023).



Pages 2 and 3 of the 'The Fields of Elysium' prospectus (Prust 2023).

Autumn Semester Prospectus

The prospectus for my school took the form of a flapbook, detailing the reasoning behind the site selection and programme development. These pages talk about how the site's central location creates an opportunity to make Autistic people visible, as the current provision is located further out, and a lot of it is tied to other schools.



Pages 8 and 9 of the 'The Fields of Elysium' prospectus (Prust 2023).

Autumn Semester Site Selection

The High Street has many vacant or underutilised properties, although there has been significant investment in the area, there is still plenty of room for development.

The site for the project will be the Elysium Cinema and Labour Hall (1914-1994). Above is the layout of a precedent's spaces on site to show it is an appropriate size. Similar schemes have proven to be effective and a project on the High Street centred around food, employment, and skills education could have a massive positive impact.

The upper level of the cinema, orange sun-burners hang from the roof (D Meurig 2021).

Plant life has begun to reclaim parts of the Elysium (D Meurig 2021).

Defining the Brief

This page marks the beginning of the spring semester. This was marked by the further defining of the brief, from which came these main goals:

Make Autistic people more visible in Swansea as the current provision is not in the city centre.

Provide education around food because Autistic people often face problems with food, and familiarity and control are helpful tools in dealing with this.

Provide employment opportunities.

Address the lack of accessible green space along the high street.

Create a space that Autistic people want to visit and can be themselves in.

Nature is reclaiming the decaying Elysium (Prust 2023).

II. Site Analysis & Concept

Site Overview
The Elysium's Current State
The Elysium's History
The Three Nights' Blitz
Elysium in Greek Mythology
Naturalia

Adapted from OS map of Swansea (Digimap 2024a).

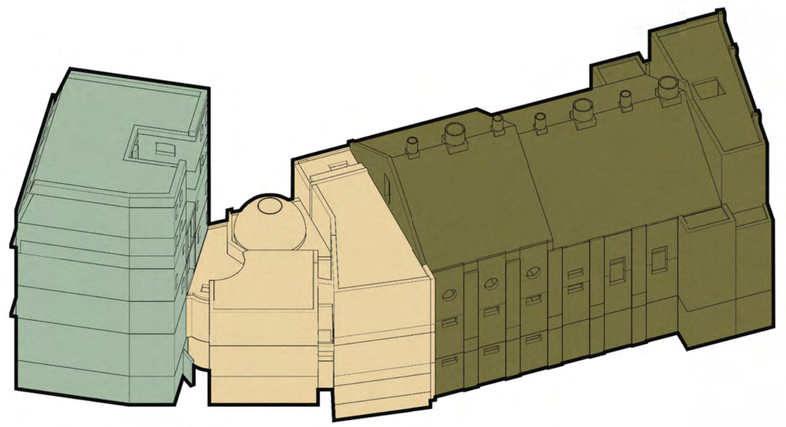


Diagram showing the sections of the Elysium.

Site Overview

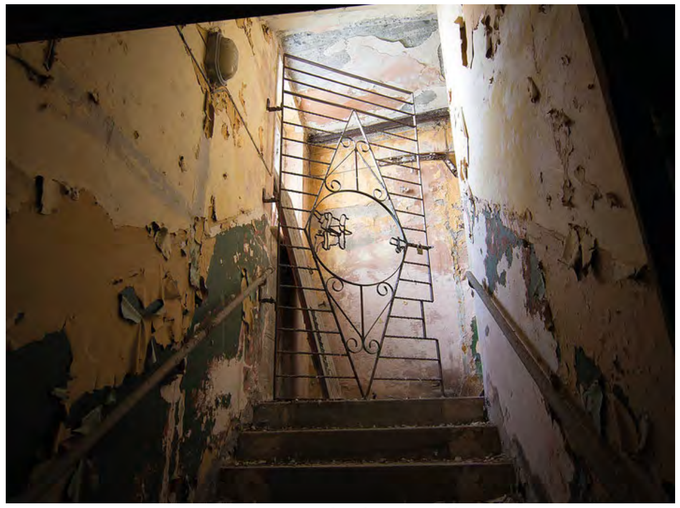
The Elysium is located at the north of the high street, close to the train station and multistorey car park. Its side of the street is on a gradient downwards, from the west to the east, creating a significant level change (the top of the 4-storey carpark is level with the street and linked by a bridge). The carpark's stairs are currently necessary to traverse this drop (shown in blue). A route that is not particularly welcoming.

The easiest way to start understanding the layout of The Elysium is to break it into three rough sections: the front, middle, and back.

The **front** section faces the High Street and previously housed shops and accommodation (later adapted into a WHSmith's, offices, and a cassino).

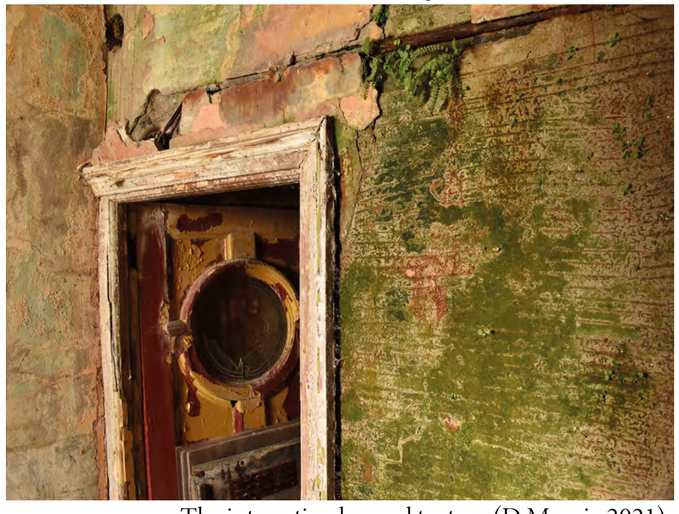
The **middle** section used to function as the cinema's foyer, ticket booth, and projection house. Also housed here were the NUR offices (National Union of Railwaymen) and further accommodation. In the basement were two small meeting rooms.

The **back** section largely comprised of the two-level cinema, bookended by the flytower (where curtains and set dressing would hang from, as it was also used as a theatre). Underneath sat two larger meeting halls and the workingmen's club. The cinema would later be converted into a bingo hall.



Detached stairwell gate (Lenston 2015).

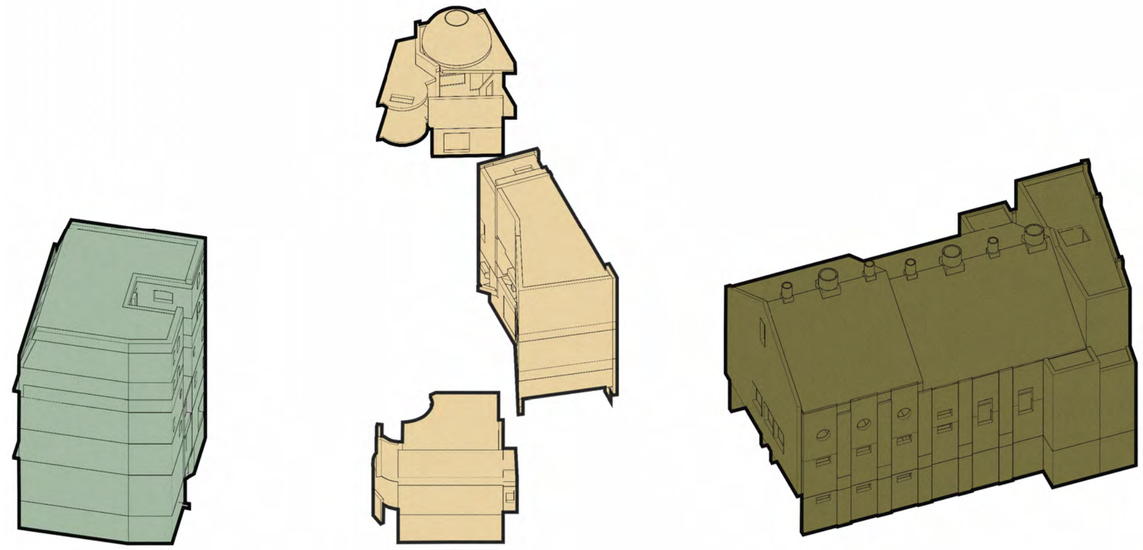
Corridor between meeting rooms (Lenston 2015).



The interesting layered texture (D Meurig 2021).

Acccounts from 1975 (LemonFactory 2020)

Tiled wall (LemonFactory 2020).



Exploded diagram showing the sections of the Elysium.

The Elysium's Current State

Lacking maintenance, the site has begun to transform into an ethereal ruin, a labyrinth of winding rooms, obscure trinkets, and collapsed staircases. It has all been afflicted with rainwater ingress, rotting away its wooden floors to mush and creating a hazardous but intriguing environment.

The remaining objects tell a story of the building's previous uses. Decimated projection equipment. The cinema's iron chairs with red cushioning caked in dust. Arcade cabinets, long robbed of their wiring. A piano beginning to fold inwards. A pristinely tiled wall, preserving detail of accommodation numbers. A render and mesh dome, topped with half-missing glass. The cinema's orange sun-burners, resembling upturned mushrooms growing from the ceiling.

Aerial photograph from 1921 (Aerofilms Ltd. 1921).

Aerial photograph from 1923 (Aerofilms Ltd. 1923).

Aerial photograph from 1959 (Aerofilms Ltd. 1959).

Historic map from the 1880s (Digimap 2024b).

NEW SWANSEA PICTURE THEATRE

THE "ELYSIUM" TO BE OPENED ON SATURDAY NEXT.

The "Leader" is officially informed that the "Elysium," the new picture theatre in High-street, Swansea, which has been in course of erection for some months, will be opened to the public on Saturday next. The opening ceremony, in the afternoon at 2 o'clock, will be performed by Mr. B. Tillett.

The buildings are the property of the Dock, Wharf, Riverside and General Workers' Union, and the main hall has been let to the Anima Company, Ltd., who propose giving cinematograph entertainments, with vocalists and instrumental turns, twice nightly at 5.45 and 8.15, with afternoon matinees.

The building contains spacious shops abutting on to an Arcade with show rooms over, and three floors above for staff accommodation.

The "Elysium" will accommodate about 1,400 persons; retiring rooms for ladies and gentlemen have been provided. In connection with this hall is provided a commodious stage upon which can be placed variety entertainments as the occasion may arise; there are also ample artistes' rooms.

An organ has also been provided, built by Messrs. Gray and Davidson. There is also a suite of offices to be utilised by the Dockers' Union.

On the lower ground floor there have been provided a large meeting hall, and two smaller halls, and other offices.

The architects for the building are Messrs. Ward and Ward, of 34, and 35, Norfolk-street, Strand, W.C., and the contractors, Messrs. Fred Pitcher, Ltd., of 133, Marylebone-road, N.W.

Newspaper clipping from the Elysium's opening (The Cambria Daily Leader 1914).

The Elysium's History

It seems that prior to construction of the cinema the front of the site had the same footprint, it is possible then, that the terrace facing the street is much older than the rest of the Elysium.

Adjoining the site was a burial ground, where now sits part of the hotel. It seems at this point, the east of the block was also terraced, with the infill a mix of gardens and alleys: possibly more vibrant in use than the unoccupied waste of today.

Designed by architects Ward & Ward, the cinema opened on April the 11th 1914, three months before the dawn of the first world war.

In the 1960s the cinema was converted into a bingo hall, bringing with it a refurnishing of its lower level.

Sunbeams through the ruins of a building after the Thee Nights' Blitz (Rowland 2015).

Streets filled with rubble (Rowland 2015).

'The Ruins of Messrs. Ben Evans Store' by Will Evans (Evans 1941).

The centre of Swansea after the rubble was cleared (Cooper 2021).

'A Bird's-eye view of the Bank of England' by Joseph Michael Gandy (Gandy 1830).

The Three Nights' Blitz

Swansea's status as an important port and industrial hub meant it was the target of a series of bombing raids on the 19th, 20th, and 21st of February 1941. Known as 'The Three Night's Blitz' the raids destroyed a large part of Swansea's centre and damaged more, with fires raging from the rain of high explosive and incendiary bombs. It resulted in 230 dead with a further 409 injured: accounting for the majority of Swansea's air-raid deaths over the course of the war.

The effect of these raids can still be felt in Swansea's built environment, both in the juxtaposition between the surviving buildings with those layered in afterwards and the presence of ruins such as Swansea castle. The Elysium is one of a few surviving structures from before this event but has now been left to fall into ruin.

Elysium in Greek Mythology

The Elysian Fields are the afterlife for the honoured in Greek myth – where the righteous and heroic live a blessed and joyous afterlife. This project aims to live up to its namesake creating an otherworldly paradisical escape in the heart of Swansea.

To this the sacred poet thus replied:
"In no fix'd place the happy souls reside.
In groves we live, and lie on mossy beds,
By crystal streams, that murmur thro' the meads:
But pass yon easy hill, and thence descend;
The path conducts you to your journey's end."
This said, he led them up the mountain's brow,
And shews them all the shining fields below.
They wind the hill, and thro' the blissful meadows go.

Virgil (Virgilius Maro, Dryden [trans.] 1697)

Moodboard for the atmosphere of Elysium [Clockwise from top left] (Ravasini 2014), (Knab 1870), (Moll 1891), (SONICA 2013), (Robert 1780).

Naturalia (Jonk Photography 2020).

Naturalia

Bearing blatant relevance to the Elysium's current state, and the legacy of ruin created by the Three Nights' Blitz, 'Naturalia: The Way of Ruins' showcases Jonathan Jimenez's photographs of nature reclaiming ruined buildings.

These photographs, combined with the desire for an ethereal space that will be inhabited by bountiful plant life, serve as the inspiration for the atmosphere driving the Fields of Elysium. Chasing this atmosphere will provide a way of introducing/maintaining plant growth in a way that feels more organic, allowing it to sprawl, creating a more relaxed atmosphere.

Adding this vegetation will also bring with it benefits for the environment (carbon sequestration) and to air quality.

The previous schedule of accommodation (Andylen 2016)

III. Programme & Schedule

Programme
Schedule of Accommodation

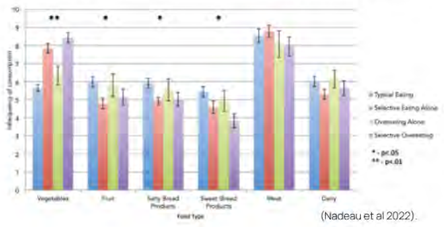
Autistic people and food.

Autistic people face many issues around eating. A combination of sensory sensitivity, demand avoidance, sensory stimulation seeking, a high occurrence of gut-related issues, and other traits, often leads to problems like Avoidant/Restrictive Food Intake Disorder (ARFID) and Eating in the Absence of Hunger (EAH). (Nadeau et al 2022).

These issues have a high degree of co-occurrence with being Autistic. As Autistic people are not a monolith, not every person will struggle with food, and those that do will have different traits/ issues and to different degrees. Contributing traits include:

- Hypersensitivity.
- Demand avoidance.
- Sensory stimulation seeking.
- Gastrointestinal disorders.
- Behavioural inflexibility.
- Difficulties with oral motor skills.

(Marí-Bauset et al 2014).



(Nadeau et al 2022).

Problems present themselves in the form of:

- High intake within a limited repertoire of foods.
- Avoiding vegetables or proteins.
- 70% of diagnosed Autistic people being selective eaters.
- Self-injurious behaviour when new foods are presented.
- Difficulty sitting for meals.
- Strong preference for brands and packaging.
- Inflexibility over where, when, and what utensils are used to eat.
- Long standing nutritional needs.
- Likelihood of health conditions such as diabetes and high blood pressure.

(Nadeau et al 2022, Withrow 2022).

Preliminary research shows that exposure to unfamiliar food, even without eating it, can be beneficial to encouraging Autistic children to try new foods (Luisier et al 2019).

The Association of British Dieticians recommends getting them involved in shopping for and preparing vegetables even if they are not expected to eat them. They also recommend creating a consistent mealtime routine, limiting smells and noise, and taking small steps, only changing one thing at a time. (The British Dietetic Association et al 2021).

It has also been suggested that trust between an educator and a pupil must be established before they can help with food selectivity (Fujino and Ikeda 2023).

(Stephanie Alexander Kitchen Garden Foundation 2023)

Learning and farming

Torquati et al (2019) studied 9 Autistic adults from an adult day care centre carrying out agricultural activities and found it to have a 'considerable positive effect on the performances of the adults'.

They generally preferred the greenhouses to other indoor and outdoor work - and performed best in situations where they could relate to other people and/or animals.

It is beneficial for Autistic people to spend time with other Autistic people, as written about by Crompton et al (2020), who also point to the benefits of informal peer support networks.

The benefits of gardening activities in education have been shown. Helping enable learning and community responsibility. This then leads to interesting, dynamic, educational experiences that boost academic performance and self-esteem (Hoffman et al 2007).

The urban farm Oasis Farm Waterloo (Waterloo City Farm) has stated that there is 'a 61% reported improvement in mental wellbeing; and 58% reported higher self-esteem' after regularly visiting their farm (Oasis Farm Waterloo [No date]).

The Stephanie Alexander Kitchen Garden Program (Stephanie Alexander Kitchen Garden Foundation 2023) is an ongoing Australian scheme that helps schools and services establish a 'Kitchen Garden Program' with the aim of educating children on how food gets grown and prepared 'from a seed to their plate'.
It lists the potential to improve:

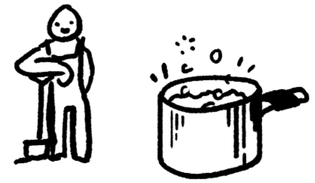
- Nutritional and health status.
- Social and environmental behaviours.
- Willingness to taste and consume fruits and vegetables.

As well as providing multicurricular learning tools (that could be matched with the goals of the Welsh curriculum).

The children show great enthusiasm towards the kitchen and garden days, alongside reporting higher confidence, pride, and self-esteem. This is due to achievements and the development of skills such as learning to use chefs' knives – a symbol of their capacity and of trust from adults.

It is reported that the children preferred the kitchen-based activities to the garden ones.

Reasons given by some children for not liking the garden were that it was "boring," unpleasant when too hot or too cold, and that some children did not like to get dirty. As one child explained, "If you get dirty, you've got no clothes to change into and parents yell at you!"



Programme

The programme is the synthesis of the research underpinning the scheme.

Traits such as hypersensitivity, demand avoidance, and behavioural inflexibility can contribute to issues with food for Autistic people. One issue these traits can cause is Avoidant/ Restrictive Food Intake Disorder. Other traits can create issues in unique ways, such as the seeking of sensory stimulation leading to eating in the absence of hunger.

My research showed that similar projects such as the Stephanie Alexander Kitchen Garden Foundation have been well received and have had positive impacts on wellbeing and performance in other aspects of life. These schemes combine gardening and growing education with cooking and kitchen training, creating a 'from seed to table' experience.

(School House Cafe 2020)

Training and employment.

It is especially important to have strong links (or 'Transition Bridges' [Rusch et al 2009]) to post-secondary employment or education for Autistic people, as they are at great risk of being unemployed (only one in five diagnosed Autistic people are in employment).

They are also more likely to switch jobs frequently or be employed in positions that require minimal expertise. Half of employed Autistic people will experience bullying or harassment at work.(Petty et al 2023).

Petty et al (2023) detail a list of problems and solutions whilst trying to find out which of these solutions are considered 'reasonable'.

Some of these problems include:

- High levels of social interaction.
- Busy environments.
- Unwritten rules.
- Unpredictable demands.

Often employers will want to help with these (Autistic people can make great problem solvers, and often have high productivity, concentration, and attention to detail) but will not know how to; highlighting the importance of involving the wider community in education around Autistic people.

Some solution suggestions are:

- The provision of quiet working environmentst.
- Allowing employees to wear headphones.
- Workplace education.
- 'Modifications to communication, including providing written instructions, reduced social interaction and the provision of flexible working hours.'

What this will look like.

For school children, sessions will last for 2.5 hours, once a week (the time used by both Oasis Farm Waterloo and the Stephanie Alexander Kitchen Garden Program), with a course lasting 10 weeks or longer.

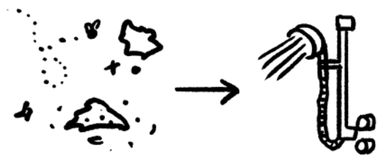
The main users of the kitchen garden project will be Autistic children already in specialist education. However the difficulties in access to specialist schools, acquiring a diagnosis, and high drop-out rates means that a wider catchment is needed, so attendance will not be restricted to just these people.

Educators and parents/carers will also be welcome, to help them learn in collaboration with the children.

The employment training will also be open to those who have recently left education.

The scheme will be funded by a café, charity, and by the schools that use it. The temporary nature of the project allows land costs to be kept down, by making use of a derelict site until a larger investment is made to regenerate it.

Goals	Spaces
Links with local schools: both for visits and to encourage their own projects (such as the Big Bocs Bwyd).	Food producing gardens. Teaching kitchens. Facilities to change clothes and get clean. Provision for escape spaces. Classrooms in case the kitchen or garden space is too overwhelming (or to enable a gradual transition from a familiar environment to a new one). A room for dietician appointments.
Using the site's central location to create community links, provide job opportunities and work experience. Help build familiarity with being in a busy place/ social environment.	A café on the High Street.
Function as broader escape space for Autistic people in Swansea and give a space to socialise with other Autistic people.	A separate community garden.



Programme

Some key takeaways from these projects were that the lack of cleaning facilities made the garden aspect less appealing and that greenhouses were an area that was particularly enjoyed.

The project will be for high school aged students and will serve 20-24 students per day (2 groups which switch from kitchen to garden, or vice versa, at midday).

The project also creates an opportunity for dietician's appointments on site as it will be a place the students are already familiar with.

Research also highlighted the difficulties that Autistic people often face around employment (only one in five diagnosed Autistic people are employed). Because of this, the site will also house a café, creating the opportunity for employment training and giving the students a place to display their culinary skills. The café will also help build community ties, welcoming Swansea into the scheme.

Schedule of Accommodation

This is how these spaces manifest into a schedule of accommodation for the project, with considerable space being set aside for storage, both for personal items, the garden, and for the kitchen.

These spaces were grouped corresponding to how the site is used throughout the day, with two groups of students crossing over through the middle at midday.

Cooking areas are located in the front next to the high street, transitory and staff areas in the middle, and the garden inside the cinema. There are also escape spaces located throughout. Both transition spaces and escape spaces are important when designing for Autistic people.

Further notes on the schedule of accomodation are as follows:

Toilet provisions will be accessible individual cubicles, this follows the provision at Ysgol Crug Glas and provides a level of support for trans and non-binary people (a demographic with significant overlap with the Autistic community).

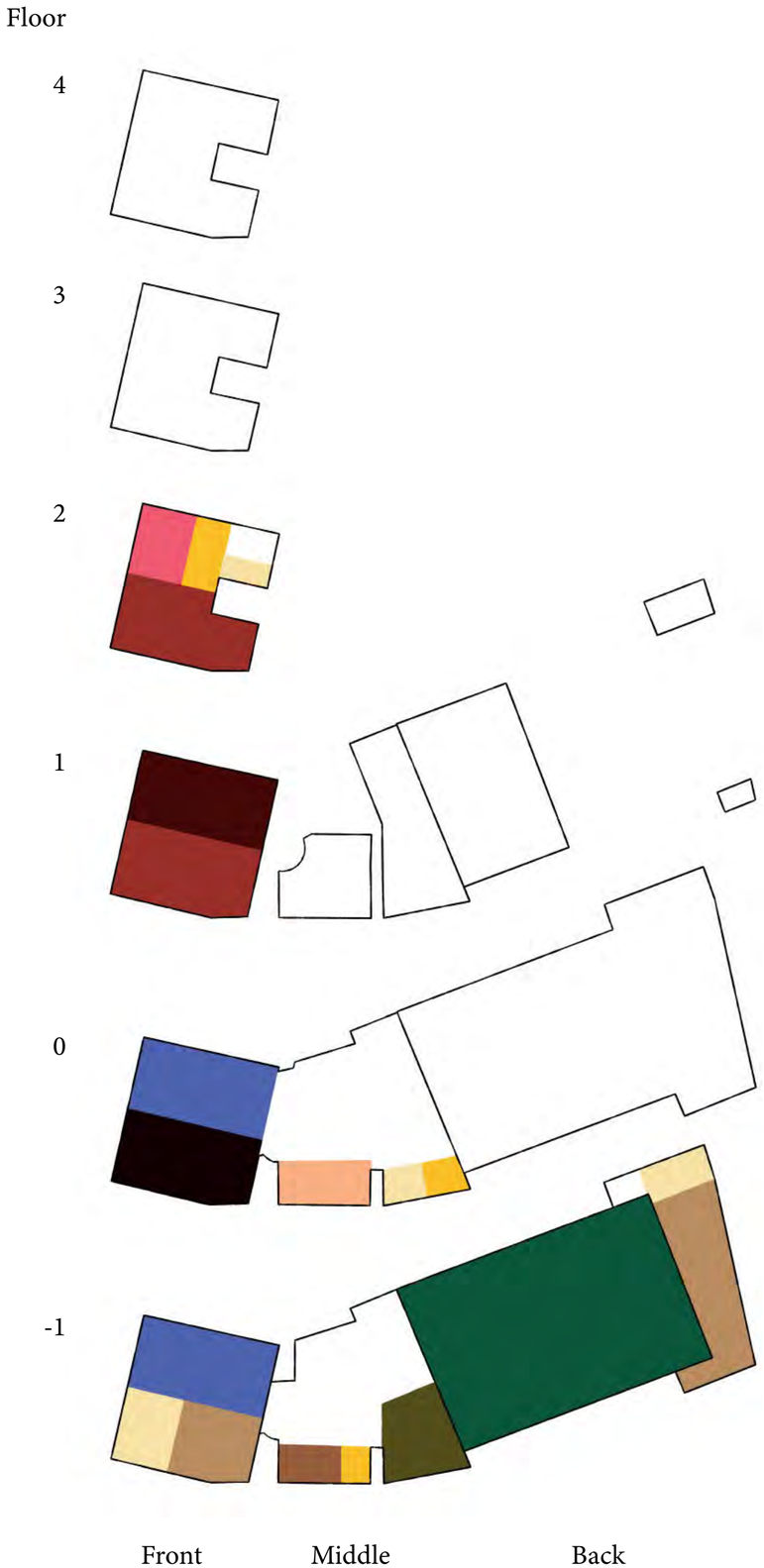
Layout advice tries to follow Magda Mostafa's ASPECTSS – acoustics, spatial sequencing, escape spaces, compartmentalisation, transitions, sensory zoning, and safety.

The organisation considers services, aligning the kitchens.

Old functions were kept in mind when determining what is appropriate for where.

The spaces not likely to all be rigid and may flow into each other.

Having kitchens in a similar spot allows for a similar layout, building familiarity with the environment to help students progress to the working kitchen.



Area: Front

	Space	Rough size
2x	Teaching Kitchen	55 sqm/each
1x	Working Kitchen	55 sqm
2x	Seating	55 sqm/each
1x	Storage	45 sqm
1x	Dietician's Office	25 sqm
3x	Escape Spaces	5 sqm/each
8x	Toilets (Public and private)	5 sqm/each

Area: Middle

	Space	Rough size
1x	Reception	45 sqm
1x	Staff Room	40 sqm
8x	Shower Rooms	6 sqm/each
2x	Escape Spaces	5 sqm/each

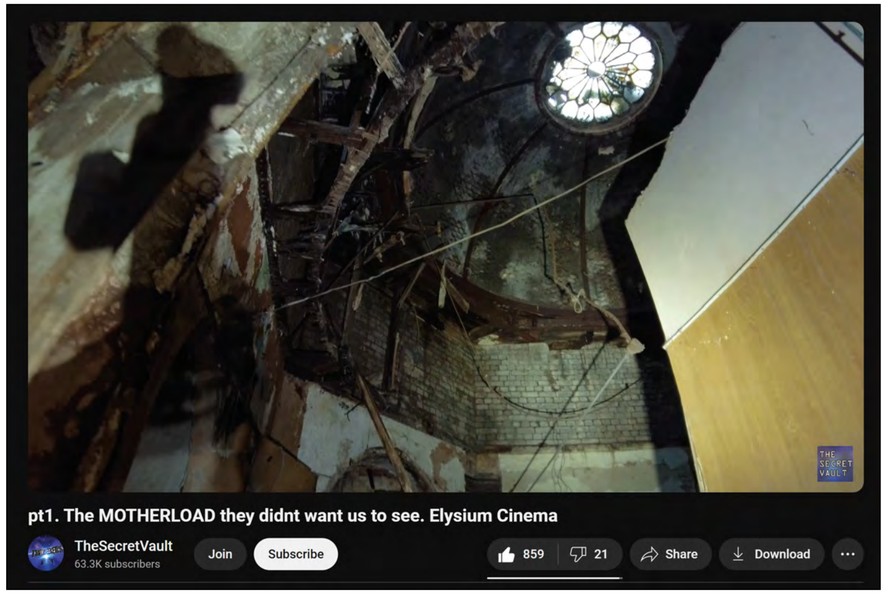
Area: Back

	Space	Rough size
1x	Producing Garden	360 sqm
	Chickens	
	Trees	
	Vegetables	
	Greenhouse	
1x	Storage	75 sqm
4x	Toilets	5 sqm/each

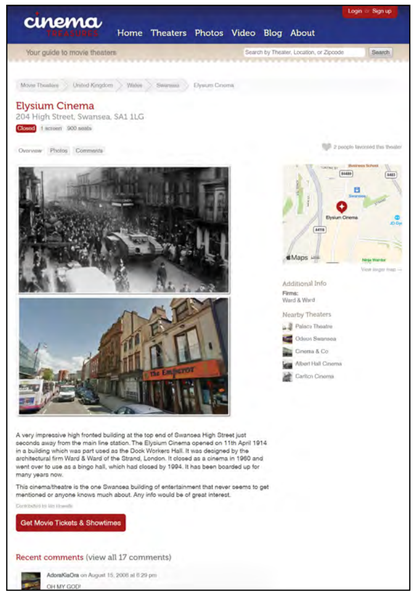
The cinema turned bingo hall has been discarded (D Meurig 2021)

IV. Modelling the Elysium

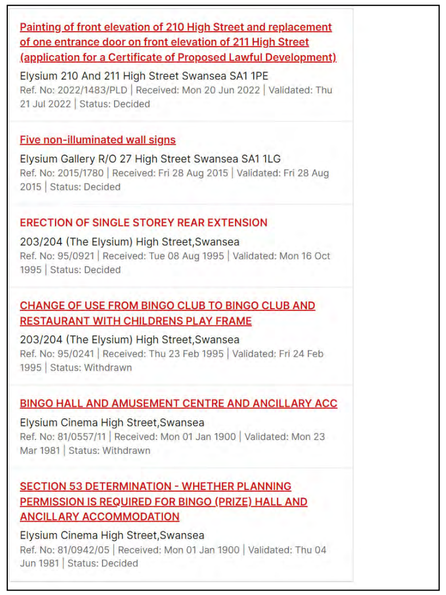
The Mapping Process
Extant Plans
Extant Sections
Axonometric Removal Diagram



The videos were instrumental in understanding the building (The Secret Vault 2021).



Cinema Treasures (Ian Howells 2007).



Planning portal (Swansea Council 2024).

Coflein entry (Coflein 2023).

The Mapping Process

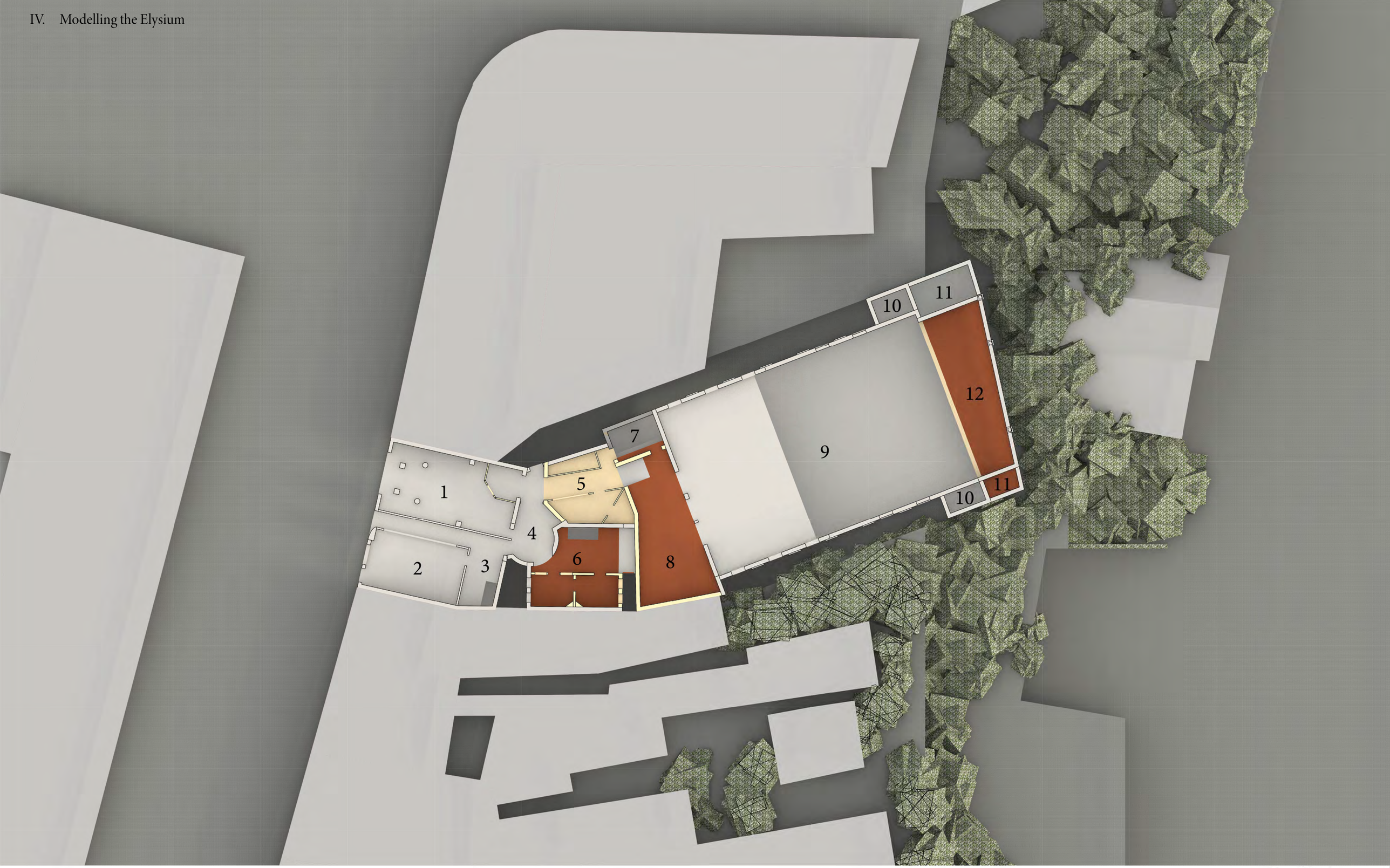
Despite its age, there is relatively little information available on the Elysium. After searching Coflein (the organisation in charge of Wales's national monuments record), Swansea's Planning Portal, and contacting the West Glamorgan Archive, no surviving plans were turned up. Extensive internet searching also proved fruitless in terms of measured drawings but did provide a wealth of photographs from urban explorers. These would have likely near impossible to stitch together into coherent plans without The Secret Vault.

This YouTube channel provided the most comprehensive resource available: a series of videos totalling 5 hours (when including the additional perspective of ExploringWithGav) in which three urban explorers circle their way through the Elysium's labyrinthine corridors. It is from thorough study of these videos that mapping of the Elysium could take place.

Extant Basement Plan
1:200 at A2

Front - 1. Meeting Room 2. Meeting Room 3. Stairs
Middle - 4. Hallway 5. Meeting Room 6. Toilets 7. Stairwell 8. Stairs 9. Meeting Room 10. Toilets
Back - 11. Meeting Halls 12. Labour Hall

Condition
- Hazardous
- Salavagable
- Good



Extant Ground Floor Plan

1:200 at A2

Front - 1. Cassino/Arcade (Entrance to cinema)
Middle - 4. Hallway with Noticeboard
Back - 9. Bingo Hall (Cinema)

2. WHSmiths
3. Stairs and WC
5. Box Office
6. NUR Offices
7. Stairwell
8. Toilets and Stairs
10. Fire Escapes
11. Stairwells
12. Fly Tower

Condition
- Hazardous
- Salavagable
- Good

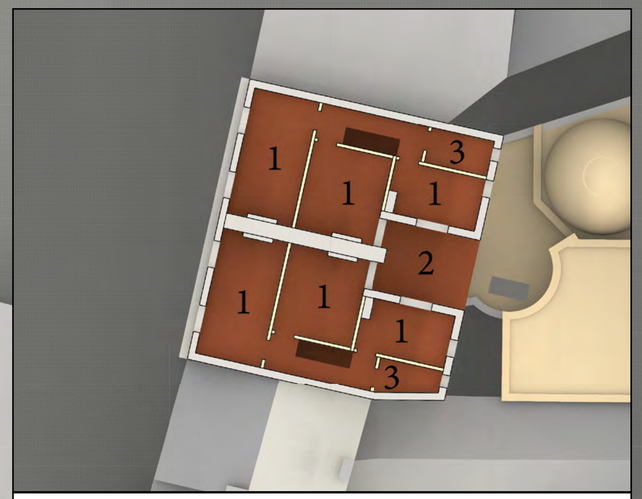
Extant First Floor Plan
1:200 at A2

Front - 1. Accomodation
Middle - 4. Dome
Back - 7. Bingo Hall (Cinema)

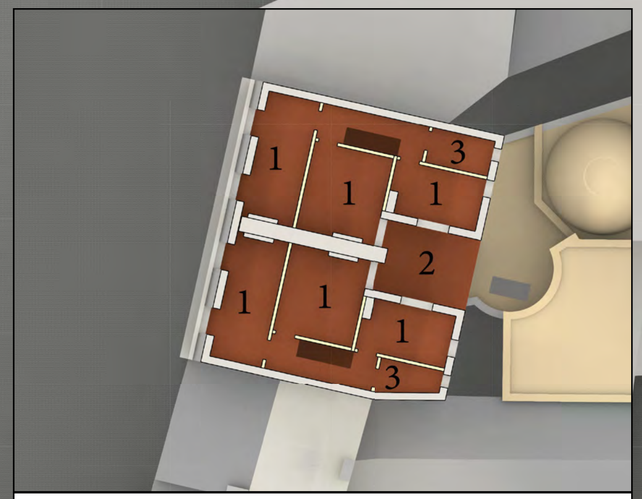
2. Office (Accomodation)
5. Accomodation
8. Fly Tower

3. Stairs and Hallway
6. Projection Room

Condition
- Hazardous
- Salavagable
- Good



Extant Third Floor Plan



Extant Fourth Floor Plan

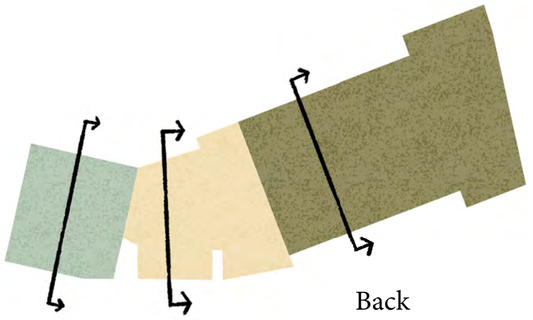
Extant Second Floor Plan
1:200 at A2

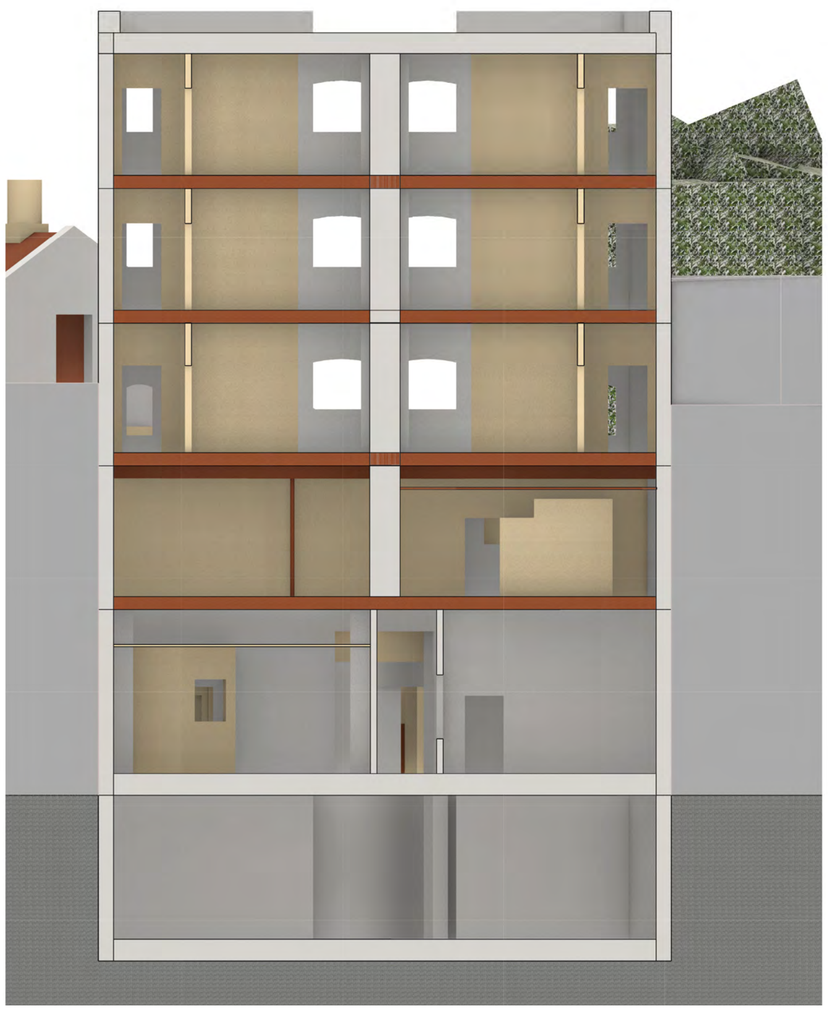
1. Accomodation 2. External Fire Escape 3. WC

Condition
- Hazardous
- Salavagable
- Good

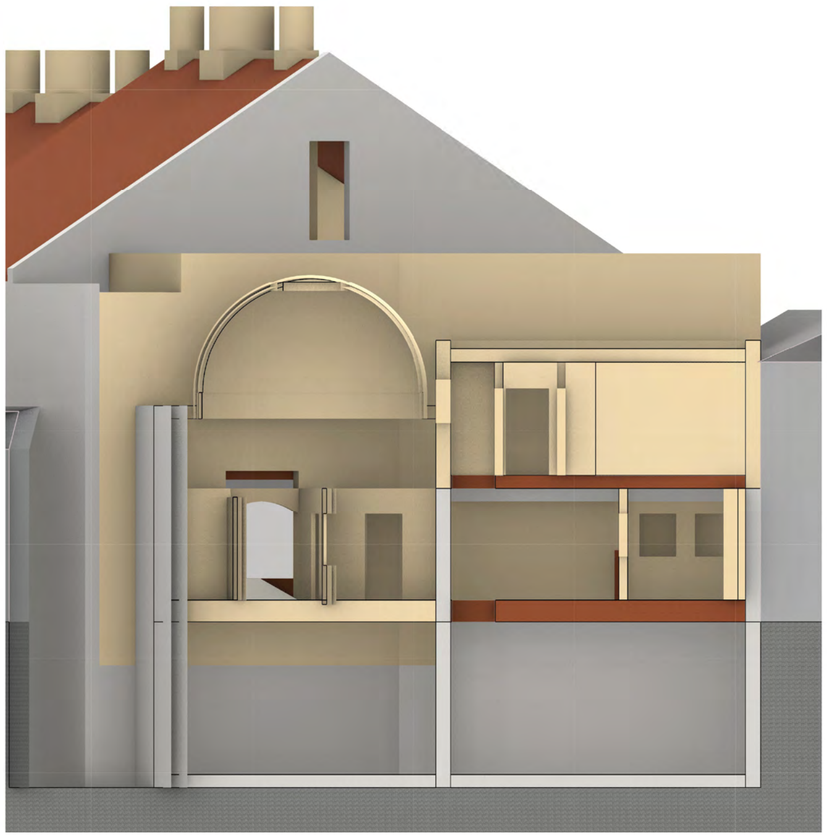
Extant Sections

The floors will need to be removed or replaced, as with roof of the cinema. Those stairs that are still there (not all of them) are dangerous and the explorers show the most caution around them.

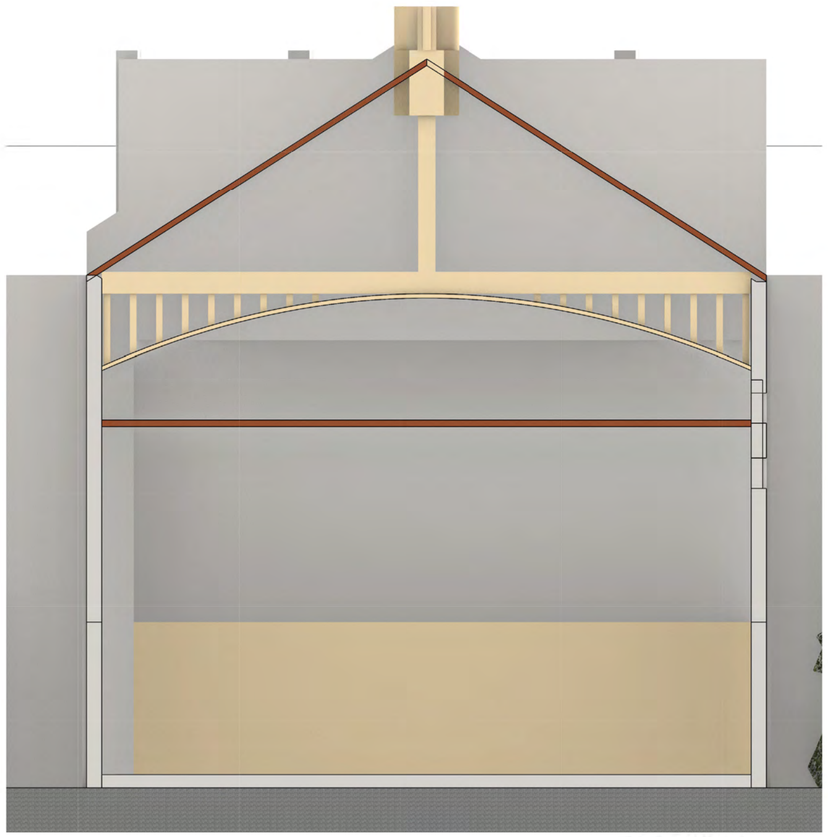




Front



Middle

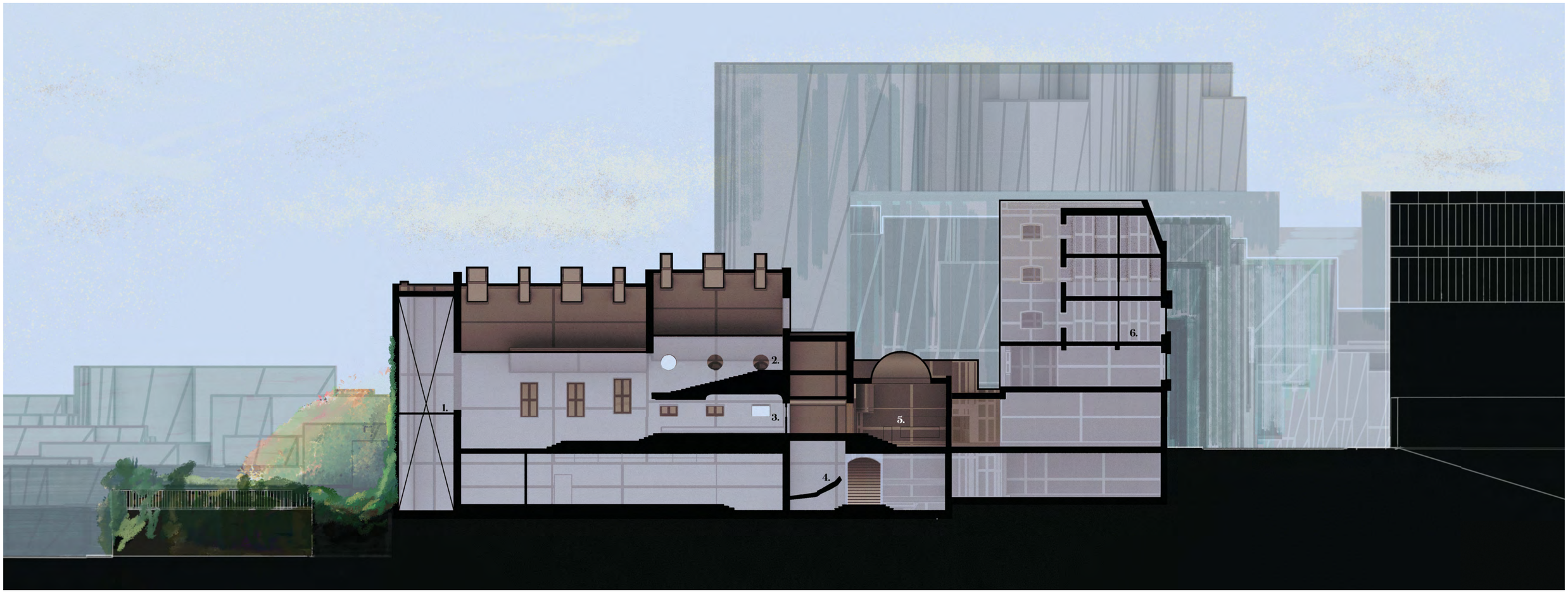


Back

Condition
- Hazardous
- Salavagable
- Good

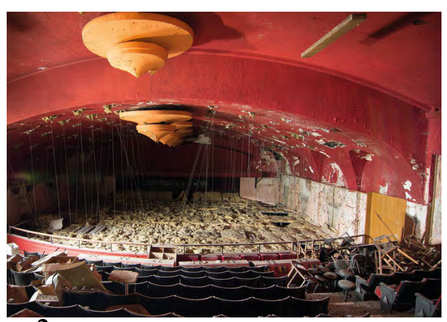
Extant Sections
1:100 at A2

Extant Section

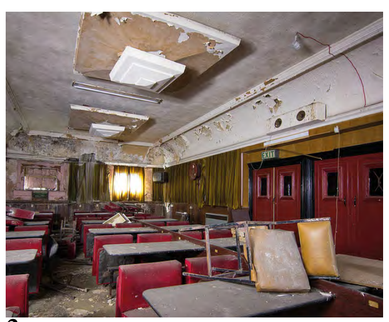


Notable areas of The Elysium (The Secret Vault 2021).

1.
The fly tower houses the stage and layers of internal structure, all of which is unstable.

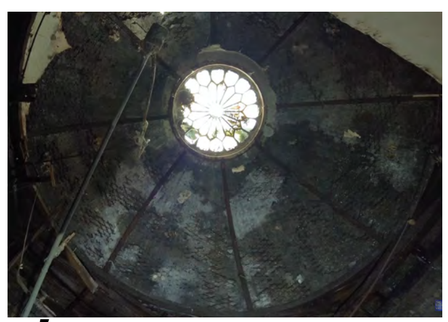


2.
The steps of the upper seating area are falling through in parts. The sunburners on the ceiling provided light and ventilation. A false ceiling was suspended to increase thermal efficiency. There is currently little access to light.



3.
The red doors to the cinema now lead to empty bingo tables. Some of the windows to the cinema have been blocked, others lack glass. The bingo calling machine is still present.

4.
Concrete steps to the basement reveal a portion of the ceiling that has collapsed. To access the Labour club and conference halls it must be ducked under.



5.
Capped with an ornate window, a concrete and mesh dome lets some light into the cinema's foyer.

6.
As with most of the building, the floors in the dormitories are unsafe and have rotted through in places. A variety of colourful fireplaces have their tiling still in place.

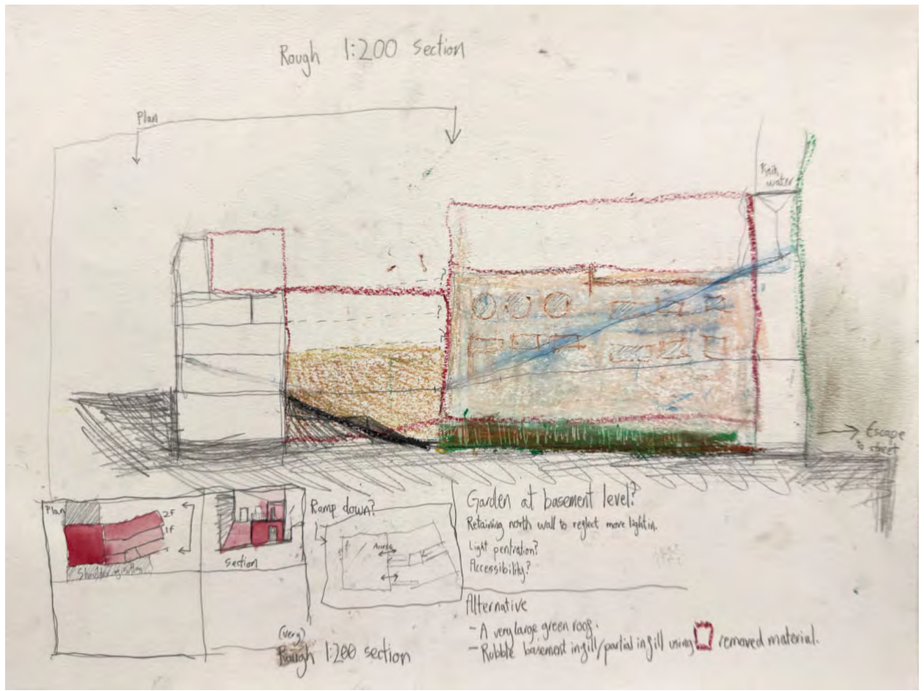
Condition
- Hazardous
- Salavagable
- Good

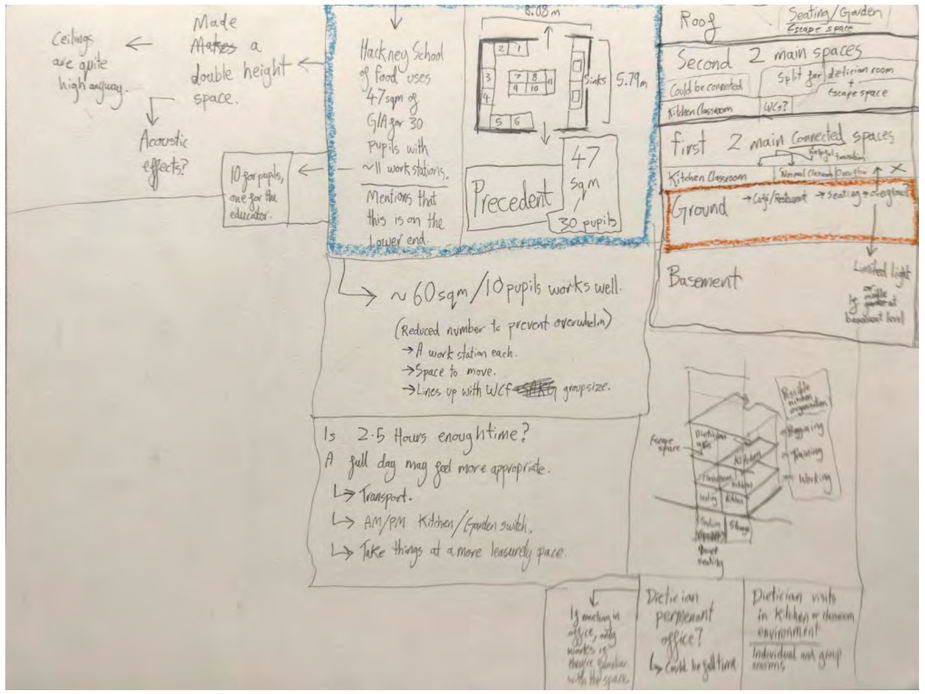
Axonometric Removal Diagram
1:250 at A2

A bug hotel outside a zoo local to the site, a small home made from reclaimed material.

V. Development

On-Paper Process Work
Precedent Summary
Materiality





On-Paper Process Work

Using the rough layout that followed the schedule of accommodation as a guide, spaces started to be arranged inside the semi-deconstructed Elysium.

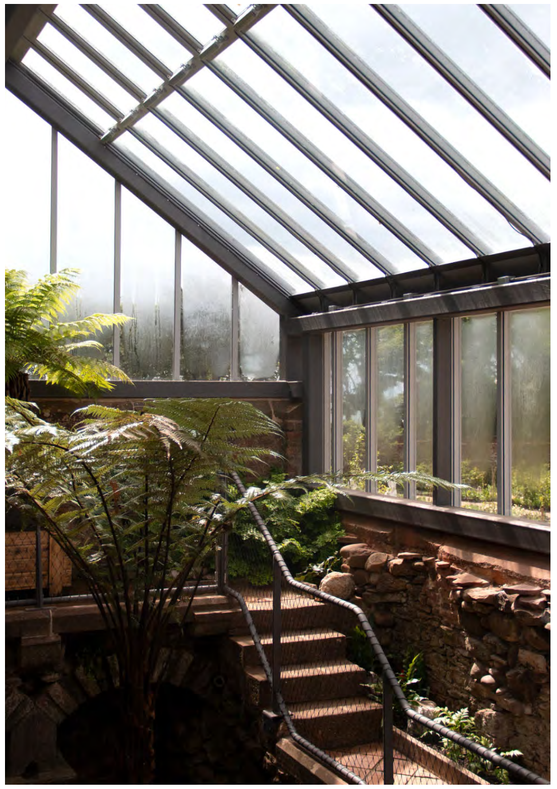
The removal of the cinema's roof and floor lent itself to a large open space for the garden. Occupying what was once the basement created a need for vertical descent from the high street ('But pass yon easy hill, and thence descend').

The middle section to becomes a transition space for both the public and the students – opening into the garden. Naturally the middle will be the location for the changing and cleaning spaces raised in the research for the programme. It is also sensible for there to be a variety of seating here for the students to have lunch, as the morning/ afternoon groups switch from kitchen to garden or vice-versa.

The layout for the kitchen is derived from the Hackney School of Food's layout, providing 12 adjustable height stations for the students and one for the educator. The Hackney School of Food states that this space serves 30 children. The Fields of Elysium allows for roughly three times the space per user: a station each. This is due to the need of reducing the chance of overwhelm in the demographic of secondary school age Autistic people, especially in the environment of a kitchen (where smells or textures may be a lot to handle on their own, without being crowded by people).

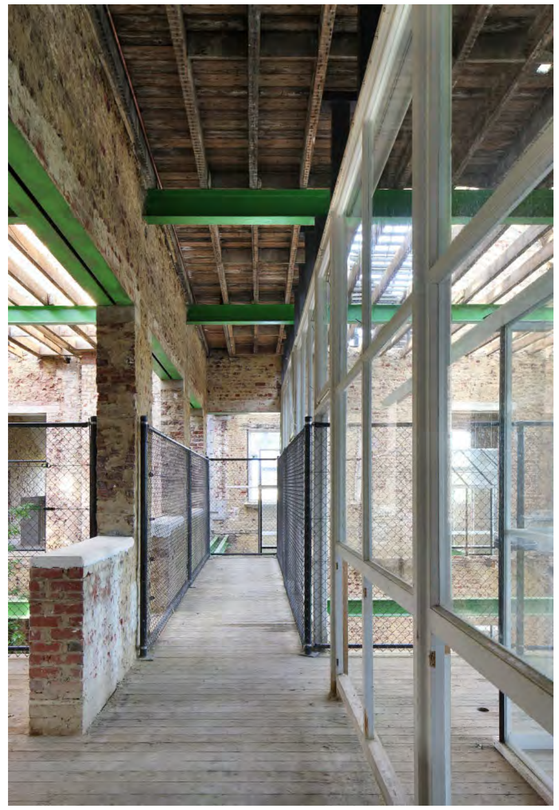
Precedent Summary

The project's glasshouse reuses an existing retaining wall (Wilson and Kennedy 2023)



As with the farmstead, the fernery was one part of a larger project (Caruso St John 2022)

The School of Food has proved successful and has plans to grow larger (Hackney School of Food 2023).



Painted beams accent reused materials (Dujardin 2016).

Highland Farmstead

Precedents were further used to inform the quality of the architecture. First have Moxon Architect's highland farmstead, a domestic project which incorporated a greenhouse into the ruins of a sheepfold and farm store.

Hospitalfield Arts

Second is Caruso St John's Hospitalfield Arts, which likewise occupied a ruin, restoring a fernery as part of a larger project. Both of these precedents went on to inform the construction and quality of the greenhouses in the scheme.

Hackney School of Food

Next is the Hackney School of Food by Surman Weston. The school produced a helpful toolkit, detailing how their school was created and what they would have done differently in hindsight. This was an extremely helpful resource.

PC Caritas

The final precedent here is PC Caritas by Vylder Vinck, a project that occupies what was once a psychiatric clinic, creating a series of garden rooms that are continuously evolving and reusing the existing materials.

The use of warm, natural materials is advised when designing for Autistic people (Modena et al 2011).

Earth capping was considered for the wall but deemed unecessary (Historic England 2013).

Steel plates will be used to strengthen the wall and connect it to the timber elements (Modena et al 2011).

Injections to strengthen the walls may be necessary in certain places (Modena et al 2011).

Materiality

Rammed Earth Dilemmas
The initial idea for materiality was to use rammed earth, inspired by Martin Rauch. After technology consultations, concerns were raised about the lack of precedent in the UK and questions raised about its weathering. To combat the weathering, Rauch had been putting checks in the walls that reduced the speed of water running down it, limiting the amount of material removed. Although this may still have been suitable, the high demand in terms of labour and the high likelihood contractors would have never worked with the material also helped lead to the decision of switching to a construction centred around timber.

Semi-dried oak will be used for both the infill walls and the structure needed to support the retained ruinous walls. The timber selection was due to the need for a hardwearing, locally sourced material. As is the nature of this material, it will begin to turn silver-grey as it ages.

Reusable steel plates will be used to connect the timber elements, both to themselves and to the existing structure. This is inspired by Waterloo City Farm's barn which also uses reusable steel connectors. These plates will allow for the timbers to be reused alongside the plates themselves, improving the end-of-life options for the materials, following the sustainable design ethos.

Diffused light enters the empty NUR offices (D Meurig 2021).

VI. Ruinification

Why Ruin?
Result of Modelling
Lighting the Garden
Vertical Descent and Clearing the Way

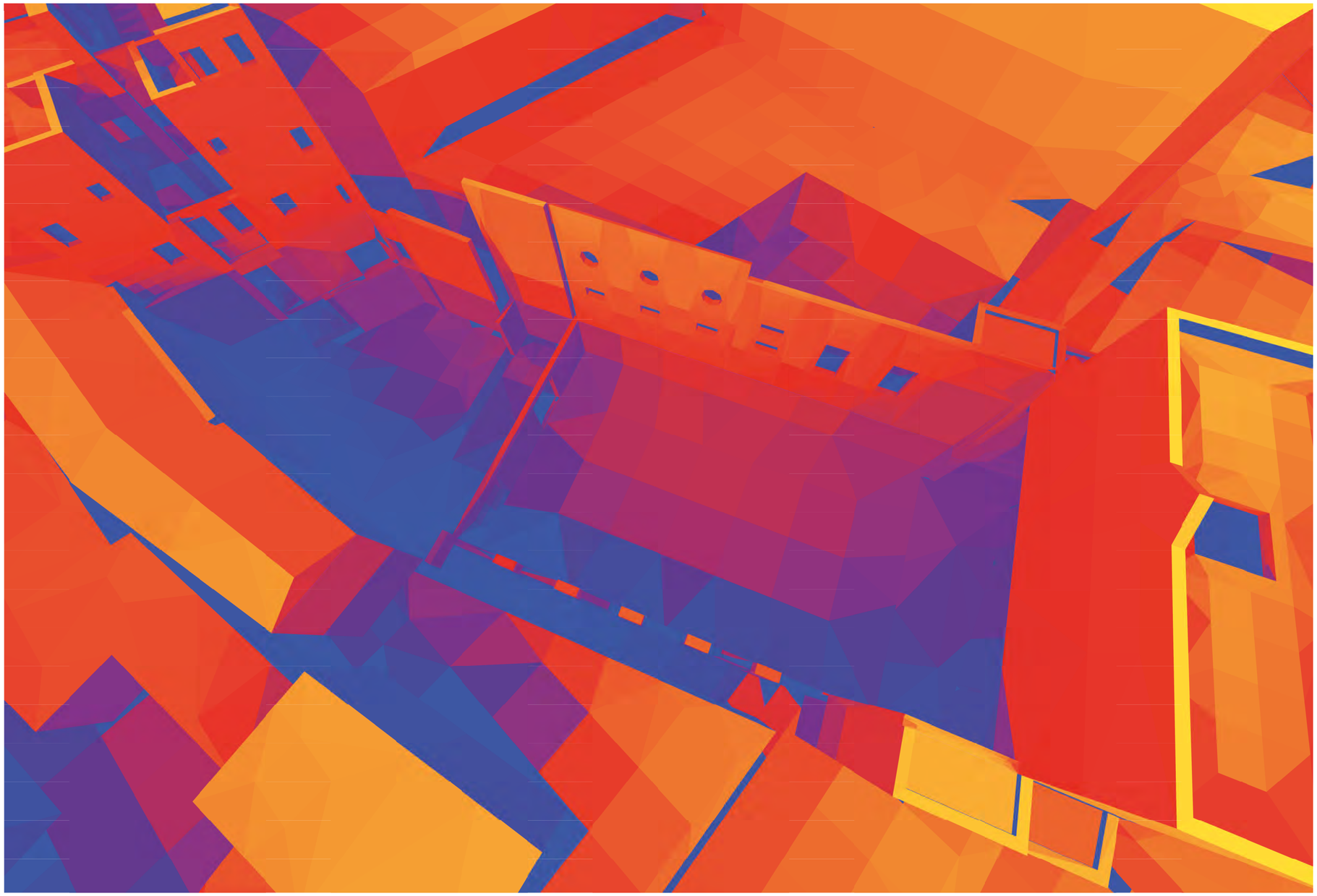
A concept painting of The Fields of Elysium's garden, created to argue for the use of ruinifcation, using collaged elements from the Elysium mood board.

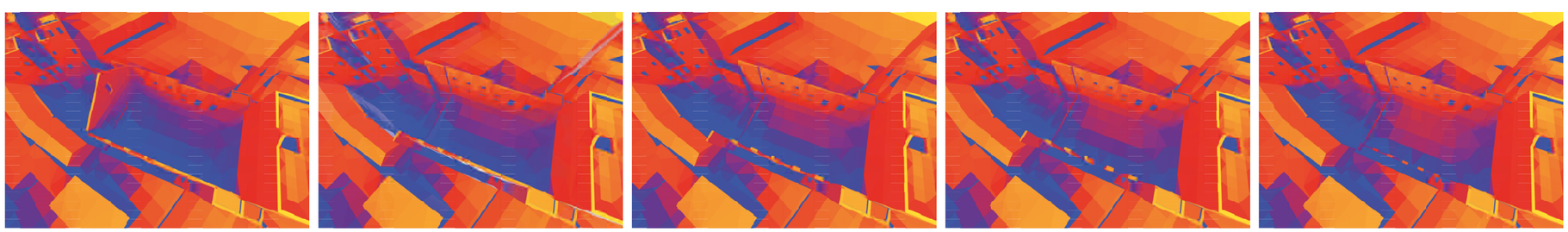
Why Ruin?

The idea behind ruinification comes from a combination the Three Nights' Blitz, the fact the Elysium is already falling apart, and the desire for a relaxed, otherworldly space, tying it to its namesake.

The Fields of Elysium's garden creates a need for natural light, leading to the taking down of the cinema's south wall. The flytower and north wall will be left in tact and supported, serving the dual purpose of shielding the site from noise (from the train station and road) and giving a sense of scale of the original cinema.

The back wall of the flytower already has vegetation growing on it and will telegraph this atmosphere to the outside world.





Part of the technology integration, a study of the site's daylight hours (Prust 2024).

Lighting the Garden

This need for lighting the leads to the south wall of the cinema being taken down. This also reduces the need for support structure on this south wall.

A series of daylight studies were conducted to see if it was necessary to fully take down this wall.

Vertical Descent and Clearing the Way

As the garden occupies the basement level, it creates a vertical decent, from the high street and café into this space.

It also creates a view over the garden making the public feel welcome to walk through and making the Autistic students visible.

The site's growth has already started (D Meurig 2021)

VII. Building Up

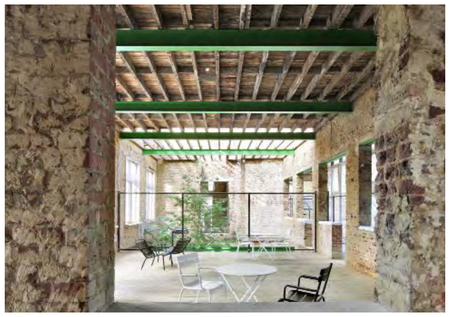
Proposed Plans
Proposed Section
Proposed Axonometric
Structure for the Ruins
Construction
Rear Elevation

The Working Greenhouse

Occupying what was once under the cinema, a working greenhouse will run along the north wall, using the same structure holding up the wall, inspired by Moxon's highland farmstead.

Proposed Basement Floor Plan 1:100 at A2

Front - 1. Cafe seating 2. Cafe toilets 3. Cafe storage
Middle - 4. External stairs 5. External cafe seating 6. Terraced planting bed 7. Rest space 8. Showers and changing area
Back - 9. Greenhouse 10. Trellaced planting area 11. Planting bed 12. Fruit trees 13. Toilets 14. Garden Storage



Treatment of the Fabric

The reception (4) looks over the location of the old schedule of accommodation which will be pulled through the wall's new lining.

Proposed Ground Floor Plan 1:100 at A2

Front - 1. Cafe seating 2. Cafe kitchen
Middle - 3. External landing 4. Reception 5. Staff room 6. Student seating

The Teaching Kitchen

The kitchen will use adjustable height workstations with roughly three times the space per student as the Hackney school of food as the students will be older and Autistic.

The Classroom

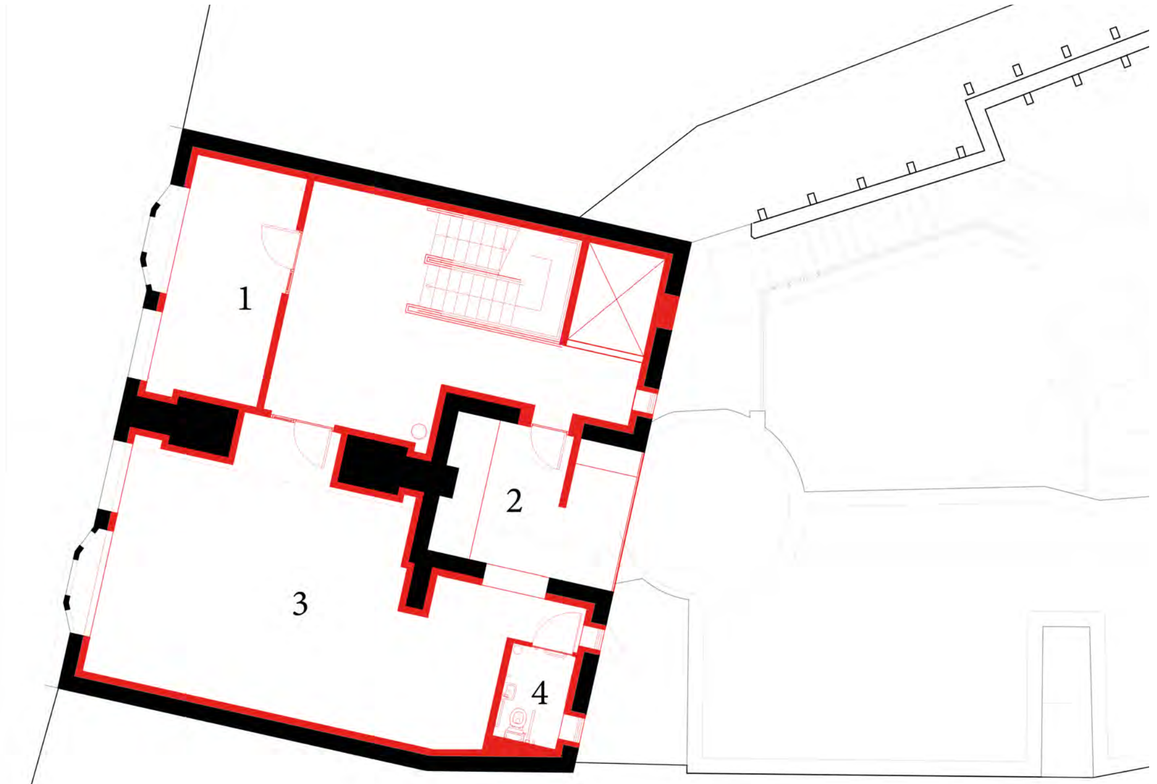
The classroom provides a space to introduce new students and gives choice so that students are not forced into a sensory experience they find distressing.

An Escape Space

This escape space overlooks the scheme, creating a place to go to be alone which can be vital if a student becomes overwhelmed.

Front - 1. Breakout room 2. Student seating 3. Teaching kithen 4. WC

Proposed First Floor Plan 1:100 at A2

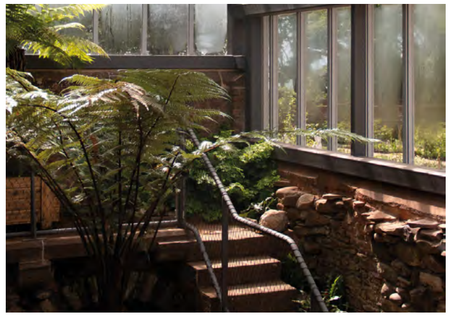


Front - 1. Dietician's office 2. Escape space 3. Classroom 4. WC

Proposed Second Floor Plan 1:100 at A2

Existing shown in black
Intervention shown in red

0 1 2 5 10 m

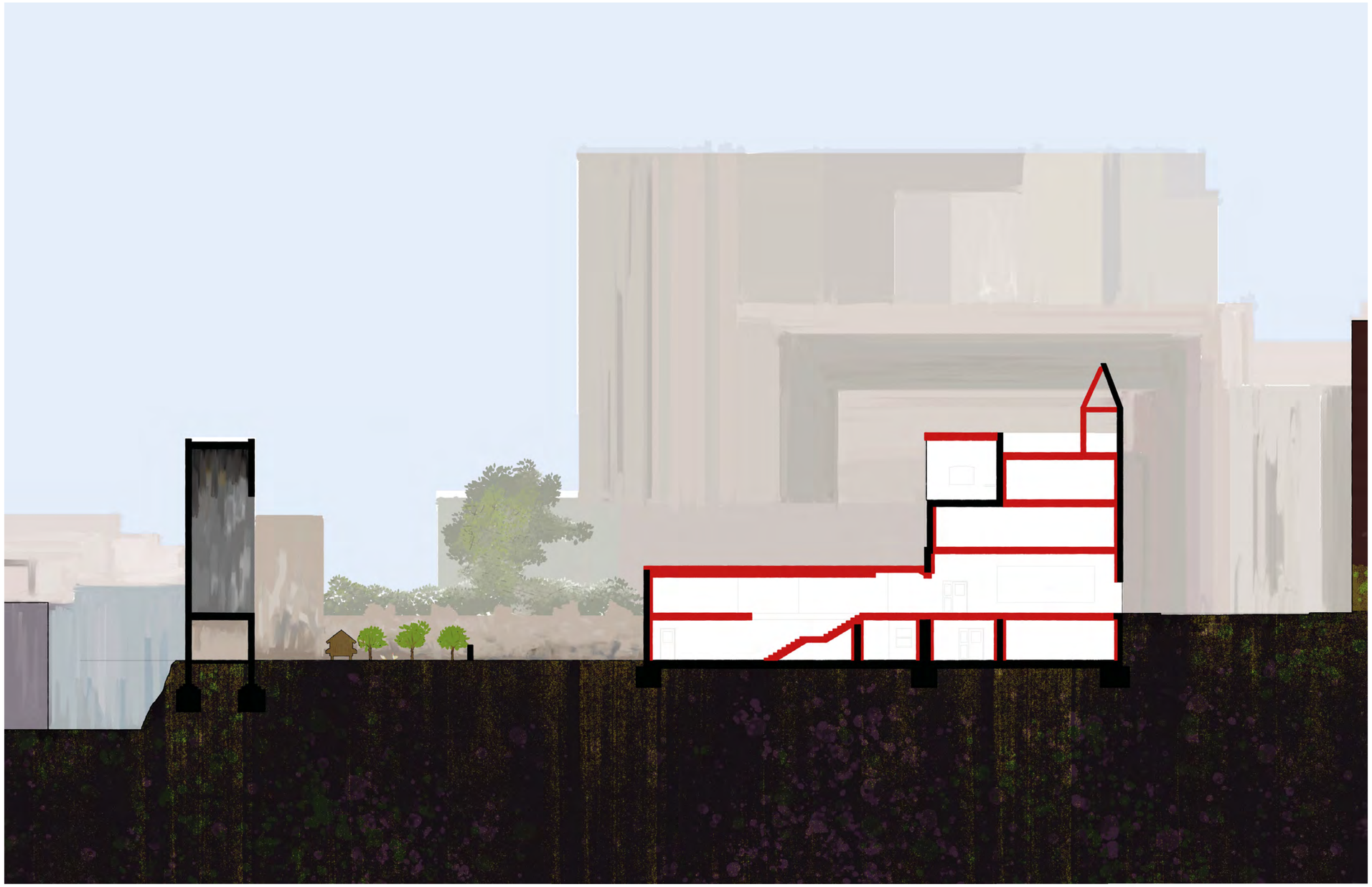


Rooftop Garden

The northern half of this level retains some of the existing walls and window openings, adding a fenestrated roof to create the site's second greenhouse.

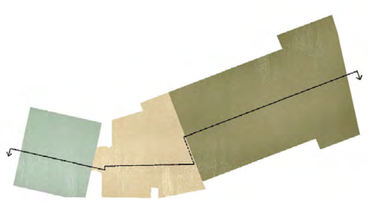
Proposed Roof Floor Plan 1:100 at A2

Front - 1. Greenhouse 2. Rooftop garden



Proposed Section

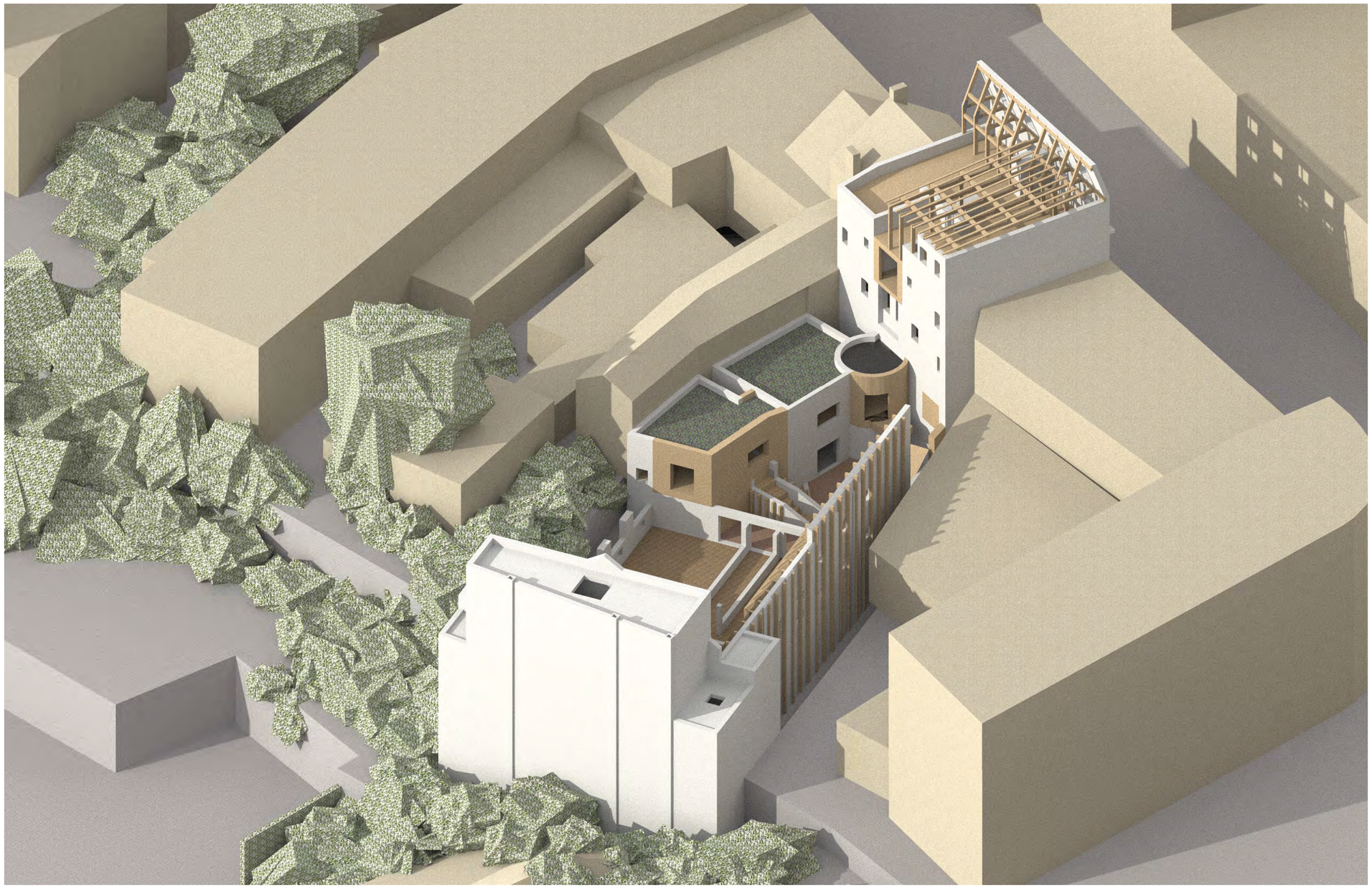
The top two storeys have been taken down while retaining the historic façade. This was done because the space they provide would be superfluous and it creates the opportunity for a rooftop garden that overlooks the scheme while reusing the existing foundations.



Existing shown in black

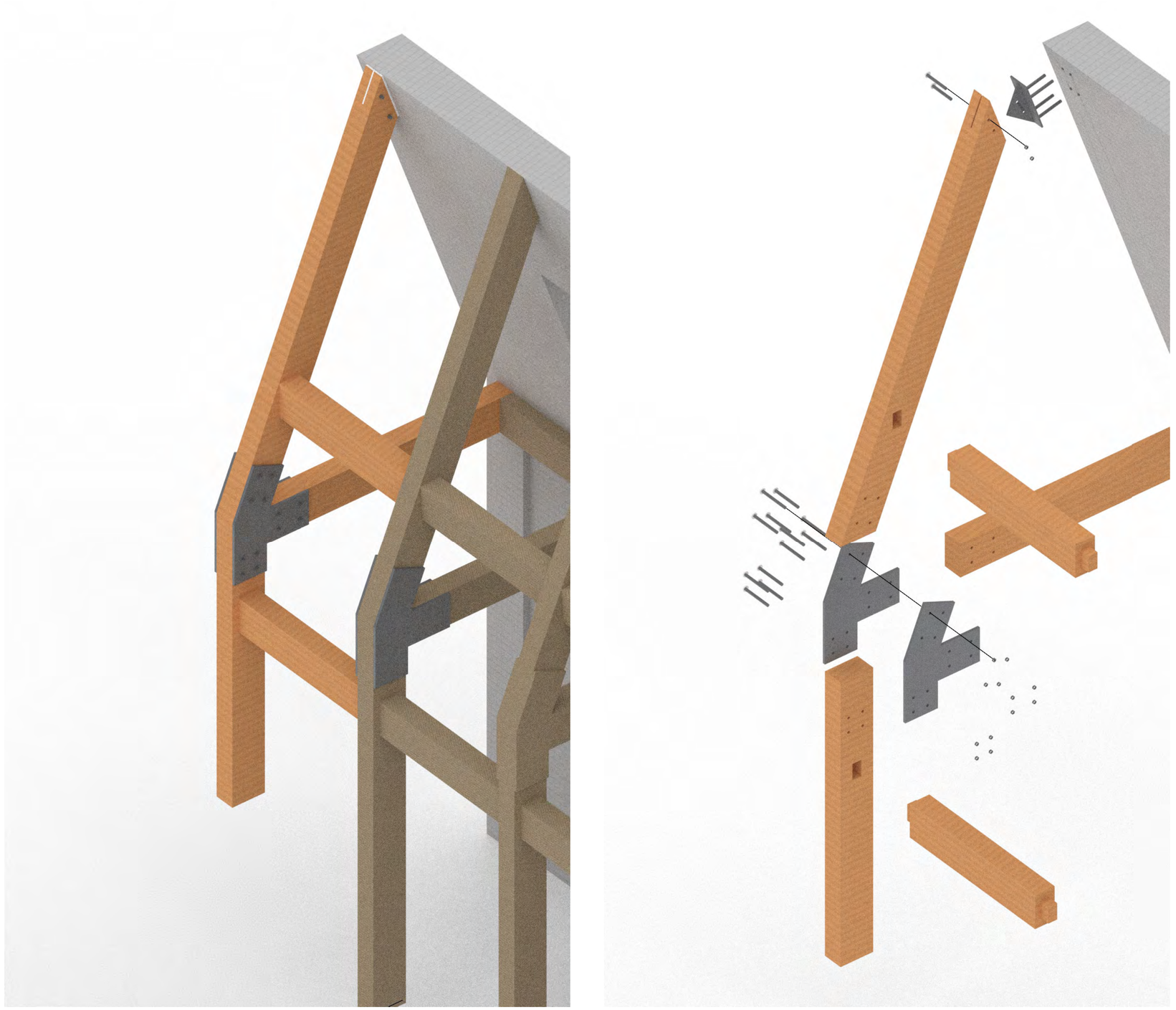
Intervention shown in red

0 1 2 5 10 m



Digital Model

Despite the deconstruction of it's two highest levels, the Elysium is still prominent amongst its neighbours. The rooftop garden that over-looks the scheme will be visible from the High Street, enticing people into the scheme.



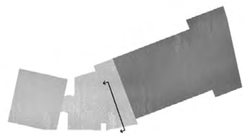
Structure for the Ruins

This page shows the structure that supports the ruins. These walls have been retained both to shield the site from noise emanating from the surrounding roads and train station and to give a sense of scale of the cinema the used to occupy the site.

This structure will be constructed out of semi-dried oak with steel fixings joining them.

Part of the technology integration, showcasing how the ruins' supporting structure will join together (Prust 2024).

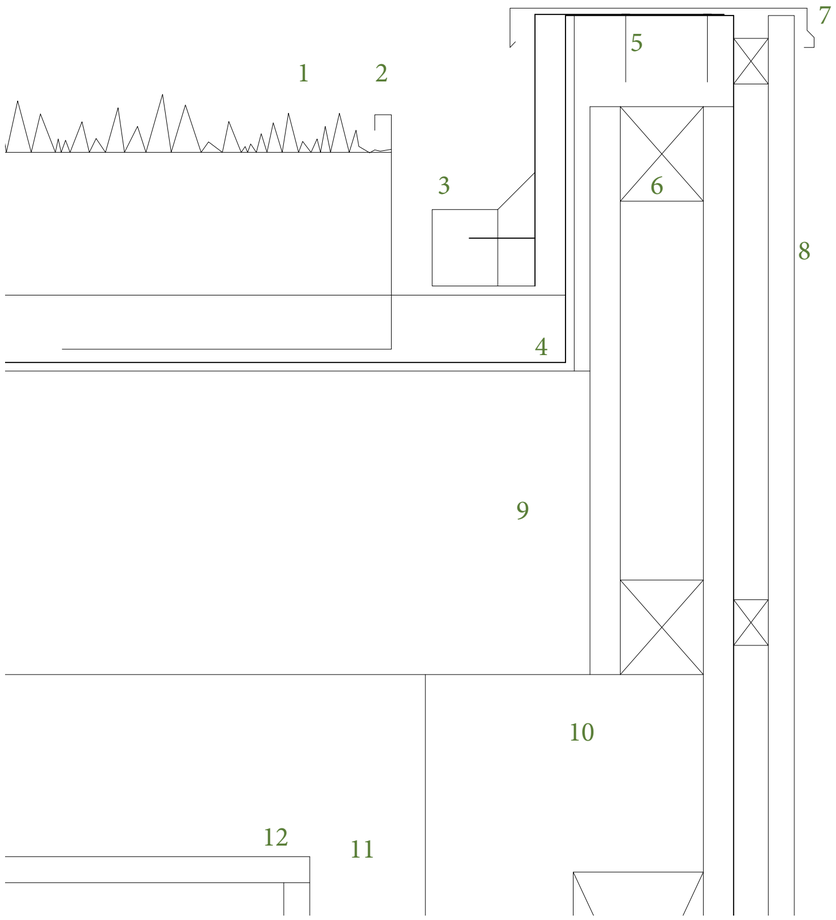
Construction Strategy



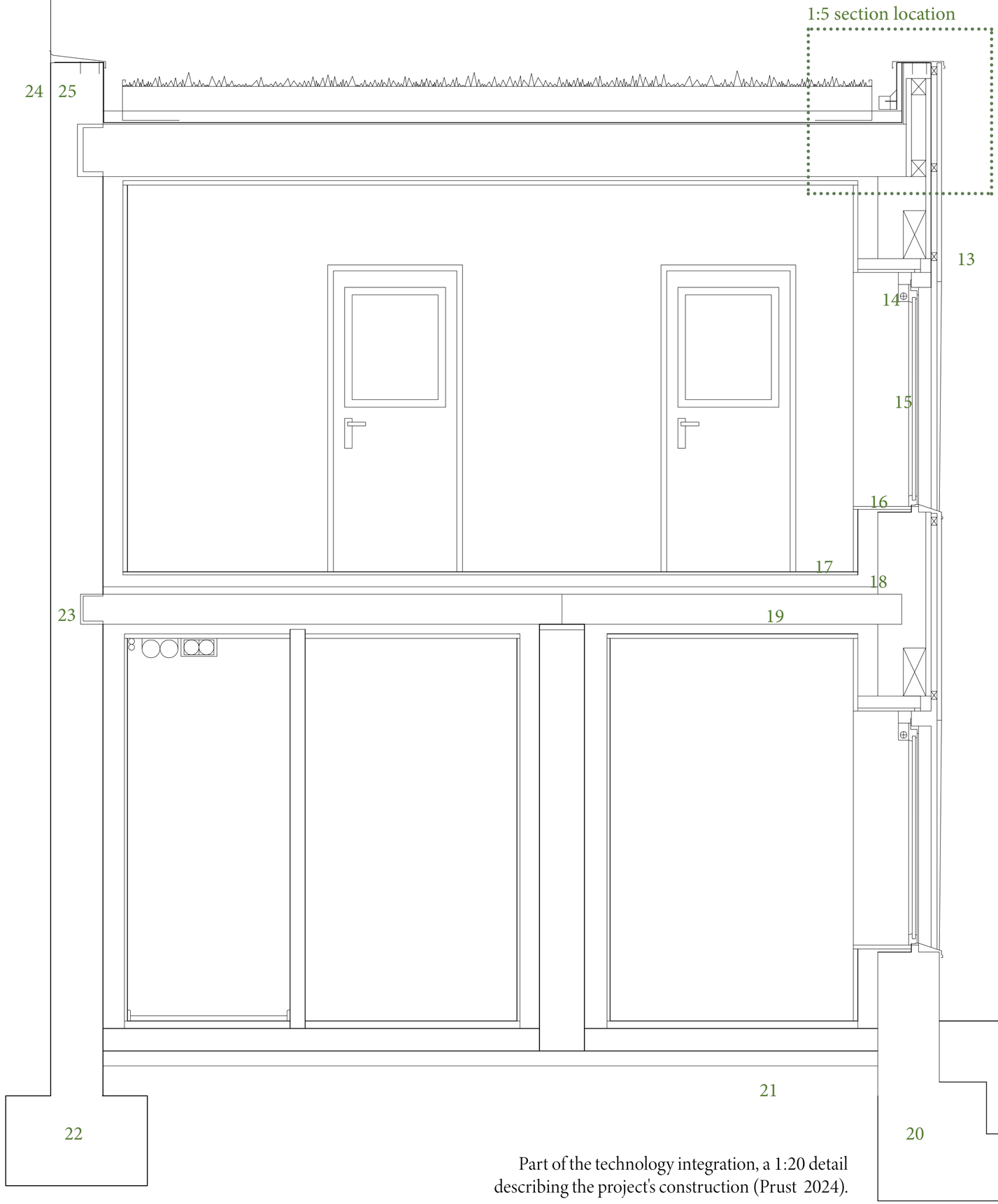
Detailed Solutions

1. Vegetation
2. Zinc seperating vegetation and drainage bed
3. Fall prevention system
4. Waterproof membrane
5. Nails securing waterproof membrane
6. Timber battons
7. Folded zinc parapet cover
8. Semi dried oak cladding
9. Timber beams (reused from site if possible)
10. Alternating timber stud wall (at 600mm centres)
11. Recycled insulation
12. Suspended plywood ceiling
13. Timber window frame and lintel
14. Roller blind
15. Double glazing unit
16. Timber internal window sil
17. Timber floor boards (reused from site if possible)
18. Rigid insulation
19. Timber beams (reused from site if possible)
20. Concrete foundation pad
21. Reused concrete floor slab
22. Reused foundations
23. Thermal break pads
24. Neighbouring brick wall (unoccupied)
25. Existing brick wall (English bond)

1:5 Construction Detail



Part of the technology integration, a 1:5 detail describing the project's construction (Prust 2024).



Part of the technology integration, a 1:20 detail describing the project's construction (Prust 2024).

Proposed Rear Elevation

This is the elevation from the rear of site, with the fly tower remaining largely unchanged from this side. The removal of most of the cinema's mass leads to the front of the project being visible where it once was not.

The roof of the cinema that is to be salvaged (D Meurig 2021)

VIII. Growing

Budding
In Bloom

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Layers of material (D Meurig 2021)

X. Technology

Introduction
Structural Strategy
Construction Strategy
Building Performance
Building Services
References

Introduction

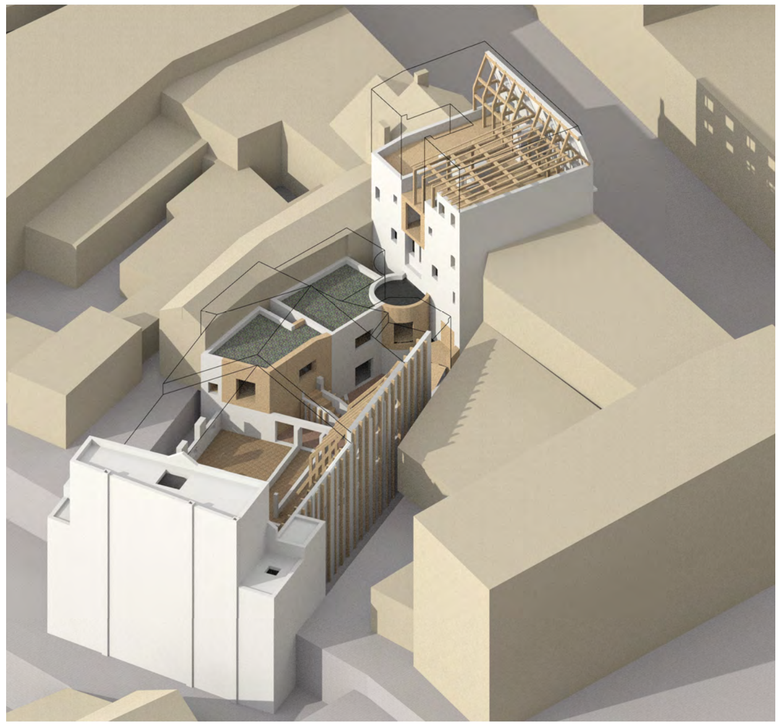
Architectural Aspiration

The scheme is a garden and kitchen school for high school aged Autistic people that reuses a cinema that has been unoccupied for 30 years. Kitchens can be a particular problem for the comfort of this user group due to the sensory stimulation (strong smells especially) this reinforces the need for sufficient ventilation and cooling.

The reuse nature of this project also creates unique technological demands. Elements of the project include partial demolition, supporting the architectural aspiration of ruinification, this creates a need for structure to support these ruins.

Users' Needs

The user group of Autistic students leads to sound being of particular concern, the effect of this is most apparent in the retention of walls, which is in part to mitigate noise entering the scheme from the surrounding roads and train station.



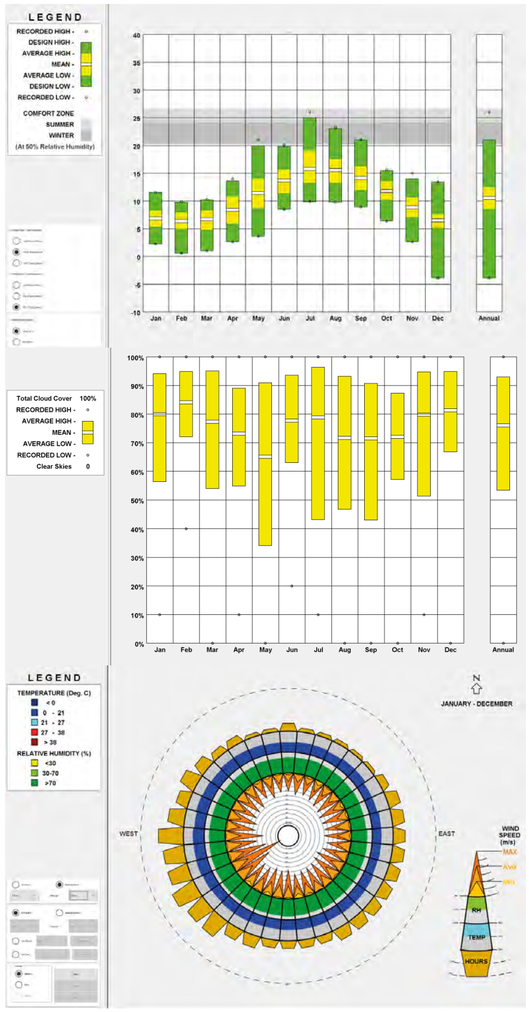
Alongside an overview of the scheme, these technology pages will focus in greater depth on different parts of the that are more relevant to each topic:

The structural strategy page will look at how the remaining walls will be supported at the and the reuse of existing elements.

The construction strategy pages will talk about the evolution of the scheme's materiality and how the intervention will interact with the existing fabric.

The building performance page will zoom into the teaching kitchen and its heating, cooling, and ventilation demands.

The building services page will look at how the scheme's layout and how fire safety is handled.



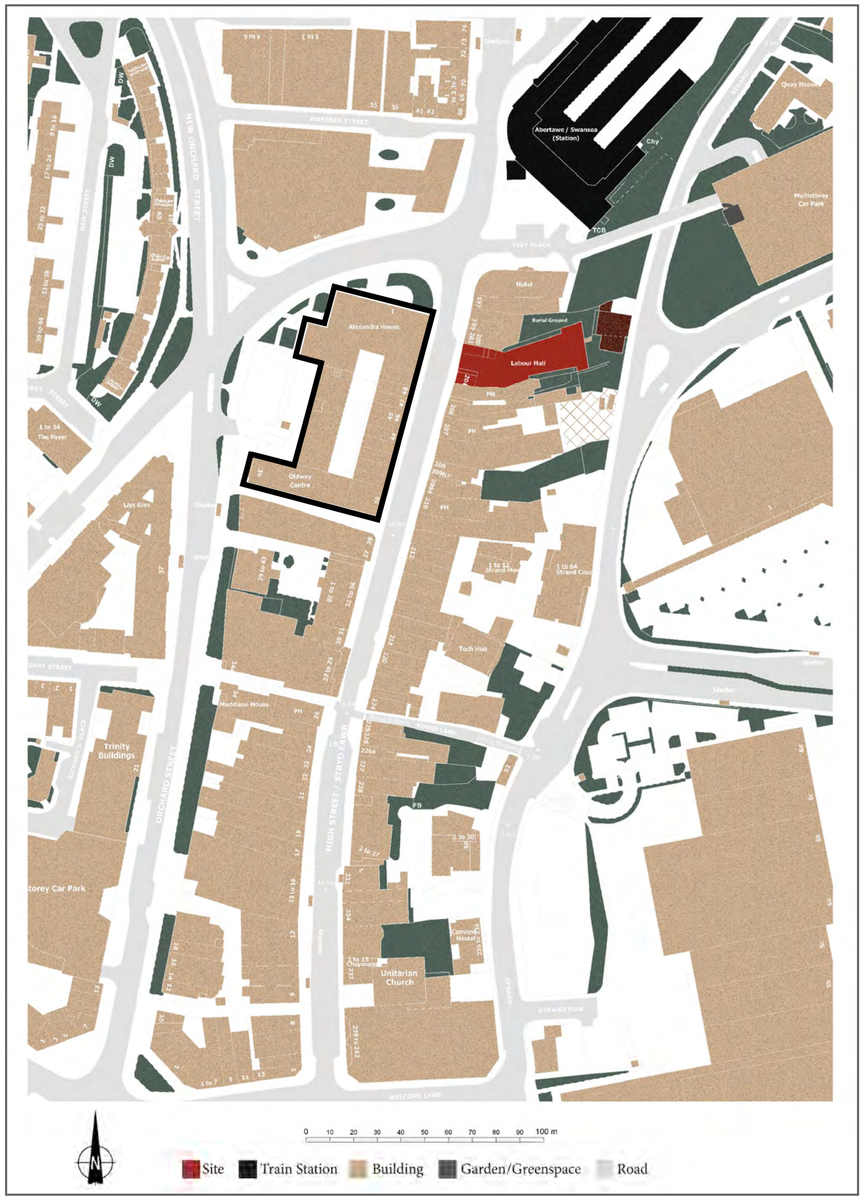
Data visualisation using Climate Consultant with data from OneBuilding.org (One Building 2023).

Local Context

According to the data, the scheme will need to be heated for most of the year, although due to passive gains from the activity of cooking, these demands may not be as high as you might initially assume from the data.

This heat gain increases the likelihood that the scheme will need some form of active cooling during the summer. Coupled with Swansea's relatively mild climate, a reversible air-source heat pump will likely be suitable to meet most of the building's heating demands.

Using a form of MVHR could increase the efficiency of such a system and would allow for active ventilation while maintaining control over the temperature.

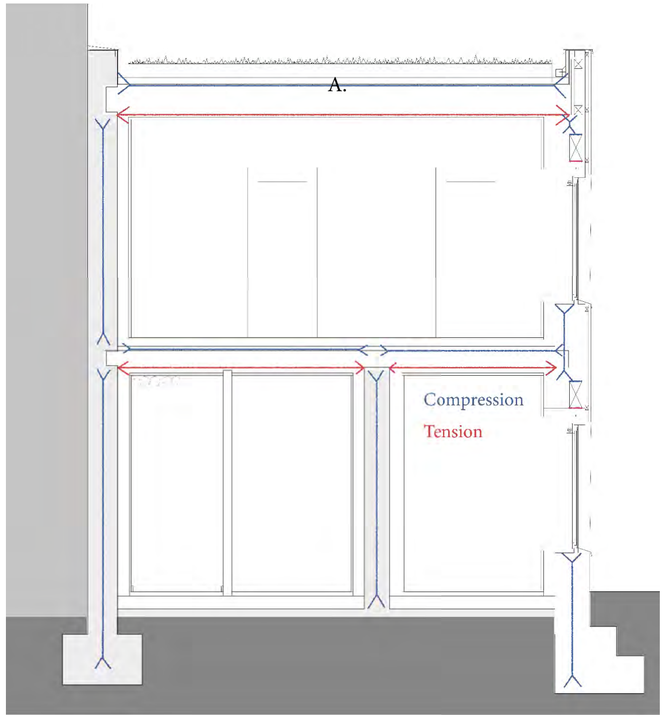


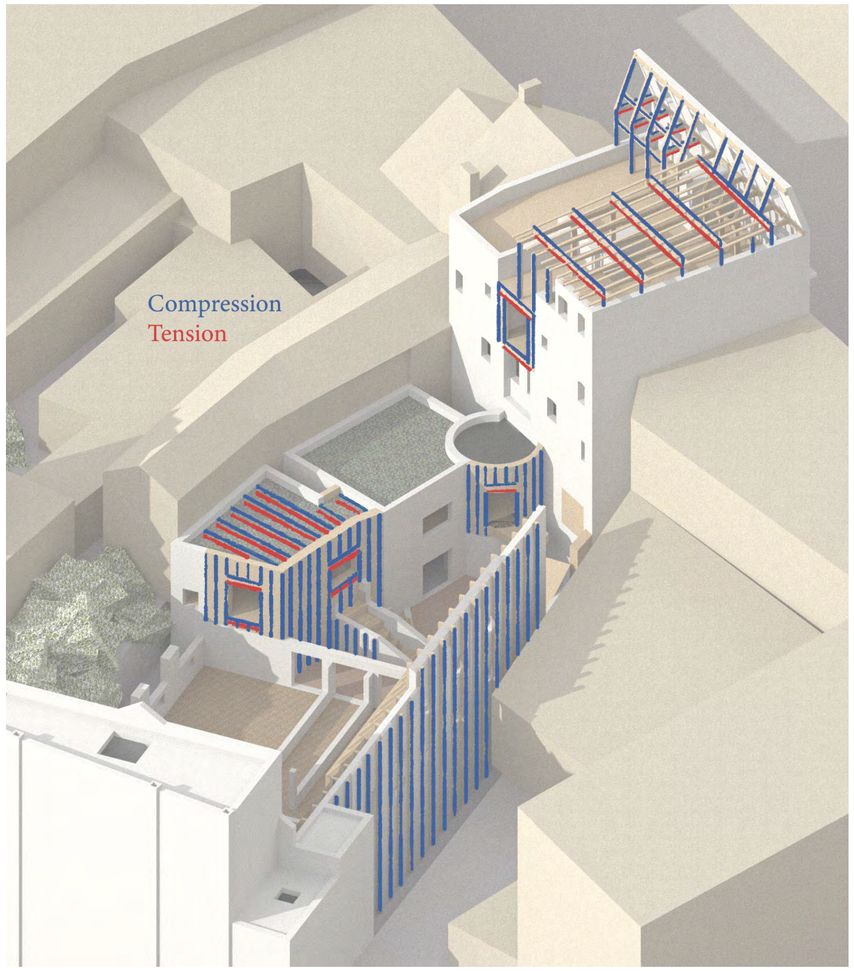
Location Plan

Note the train station to the north and surrounding roads as sources of noise. The Elysium is largely sheltered from the prevailing wind by the building to its west, which also limits the daylight hours in the evening.

Structural Strategy

As a great deal of weight has been taken of the existing fabric, with much less put back in its place (see image on the introduction page for the scale of the removal), the project will reuse the existing foundations, with notable exceptions being the bottom right of the section show here, where new fabric comes into contact with the ground. The footing of these foundations will be arranged so as to not disturb the existing concrete floor slab, although this will cost more than a more traditional pad foundation, it is only needed in a small area and saves the expenses of removing and replacing the floor slab.





Structural calculations
The top set of beams supporting the green roof (labelled A.) have the greatest span and the greatest dead load. The desire for the project is to reuse timber and/or steel elements from the part of the existing structure that is being dismantled. Because these elements will have the highest demand put on them, they will have first pick of any suitable fabric.

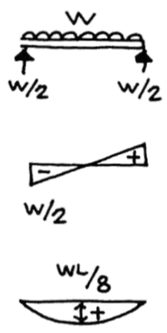
As cataloguing the existing members is outside the scope of this project, I will instead calculate a minimum suitable size for the elements this roof would need. (Assuming that the timber classification is around C16).

Load calculation
A sedum green roof has a saturated weight of approximately 80kg/m² (SemperGreen 2024).

If the beams are at 600mm centres, each beam will support the 300mm either side of it along its length (600mm * 5530mm) totalling 3.318m² per beam, giving a dead load of (80kg/m²*9.81km/m²*3.318m²) 2.604kN. This is modelled as a simply supported beam with a uniformly distributed load.

W=2.604kN
W/2=1.302kN
WL/8=(2.604*5.530)/8=1.800kNm

As the roof will only be accessed for maintenance, the live load will be modelled as a point load of 0.9kN.



Load: W=3.804kN
Maximum shear: W/2=1.902kN
Maximum bending moment:
WL/8=(3.804*5.530)/8=2.6295kNm
Assuming breadth is .25m

Stress calculation

d = ROOT([3.804*5.53*6*10^6]/[8*250*5.3])=ROOT(11907.238)
=109mm

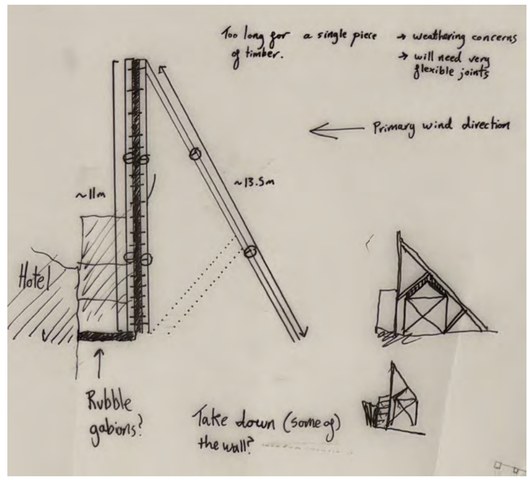
$$d = \sqrt{\frac{WL \times 6 \times 10^6}{8 \times b \times \sigma}}$$

Deflection calculation

d= ROOT([(3.804*5.53)^2*52.08*10^3]/[8800*250])=ROOT(10475.61)
=102.35mm

$$d = \sqrt{\frac{WL^2 \times 52.08 \times 10^3}{E \times b}}$$

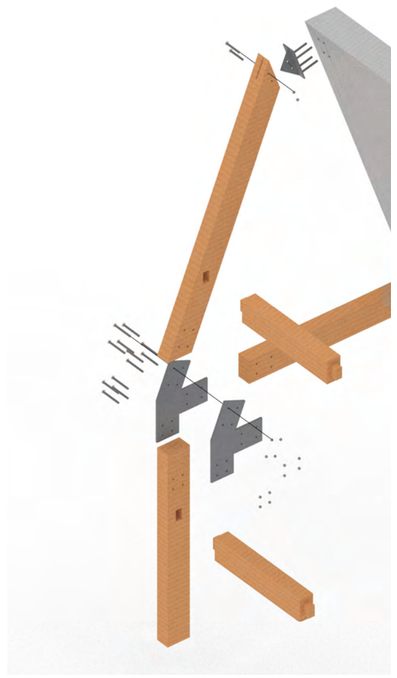
The limiting factor for sizing the beams will be stress, the beams will need to be larger than 109mmx250mm at 600m centres.
If the assumptions are correct, these requirements will make it difficult to reuse timber elements from the site. As there are few survivng steel elements it will likely be necessary that new or reused beams are sourced locally.



Structure for the Ruins

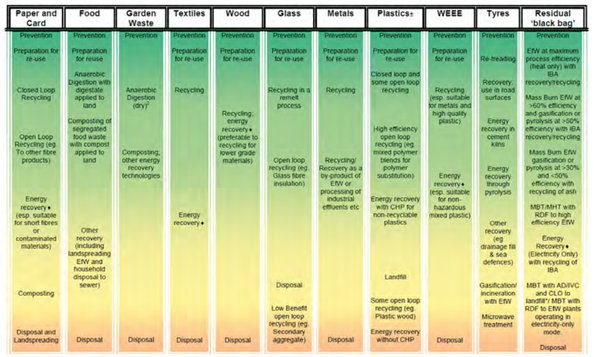
The structure that supports the ruins will be constructed from locally sourced semi-dried oak, as this supports the scheme's sustainability and atmospheric goals, with a desirable silvering as the structure weathers. Steel fixings will be used due to their hardiness and the opportunity to reuse them at the end-of-life.

Standard size of local source used (250 x 200mm)



Construction Strategy

The most demanding part of the project concerning construction are the infill walls where structure has been taken away. The treatment concerning existing walls can be seen on the left of the section on the following page, wrapping the inside of the building with insulating material covered by wooden boards, to reduce the heating and cooling demands of the scheme.

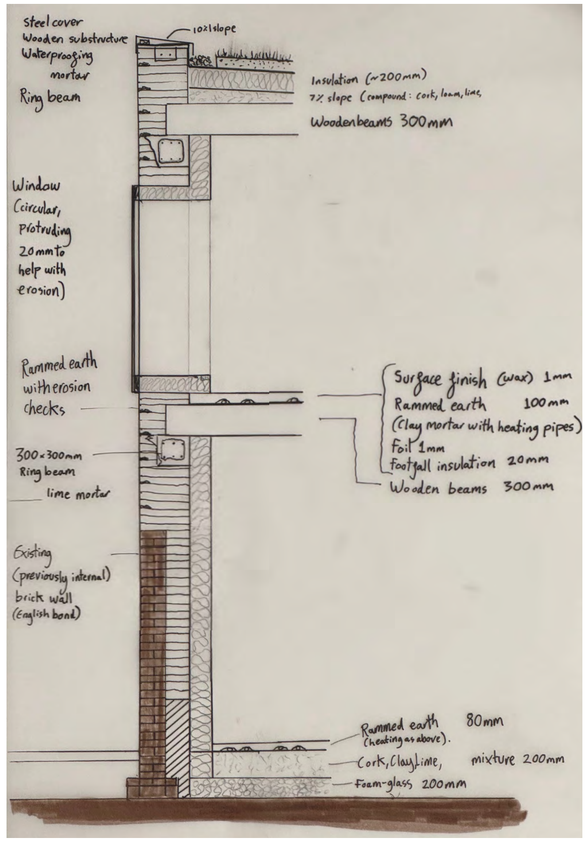


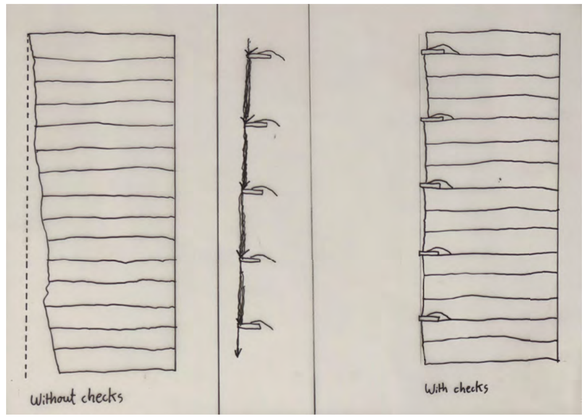
The waste heirarchy (Welsh Government 2012)

Reuse Ideals

After reading the books 'Material Transfers: Metaphor, Craft, and Place in Contemporary Architecture' and 'Building from waste: recovered materials in architecture and construction' I wanted to try and incorporate elements of reused and recycled materials into the project's construction beyond just the existing walls. Unfortunately many of the products or methods mentioned are unavailable in the UK and would be very costly, both financially and environmentally, to import. This would likely nullify any positive attributes beyond aesthetic considerations. Some elements did make it through though, such as using rubble gabions to add thermal mass to parts of the garden.

One of the main takeaways from this was the desire to use renewable insulation such as straw or shredded paper, however this proved to be too space inefficient when trying to implement it into the existing building.





Trial and Error

My initial response to these needs was to use rammed earth, inspired by Martin Rauch. This was for a number of reasons: it tied with the natural atmosphere of the garden, it would neatly interface with the remaining brickwork, and it would weather into itself as the plant life and students grew creating a desirable effect. The earth would also provide a great deal of thermal mass.

However despite growing use on mainland Europe, the specific structural system has yet to be proven in the UK and it is very likely contractors would be unfamiliar with the system. Due to these concerns, particularly those around weathering, the design evolved to use a more traditional timber system.

Existing fabric

(D Meurig 2021)

The current fabric is mostly grey brick, joined using an English bond. Wooden floorboards are supported by timber beams, with steel making the occasional appearance where extra support was needed.

Proposed External Materials

Semi-Dried Oak Cladding

(All Good in the Wood 2024)

(Hagger 2015)

Sedum Green Roof

(Sedum Green Roof 2016)

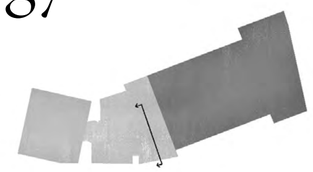
(Sedum Green Roof 2016)

Construction Detail Precedent

Médiathèque René Goscinny (Mobilis [N.D.])

The precedent that had the most influence over the following construction detail was Médiathèque René Goscinny. I came across it as well as other influential precedents in the book 'Detail in Contemporary Timber Architecture' by Virginia McLeod.

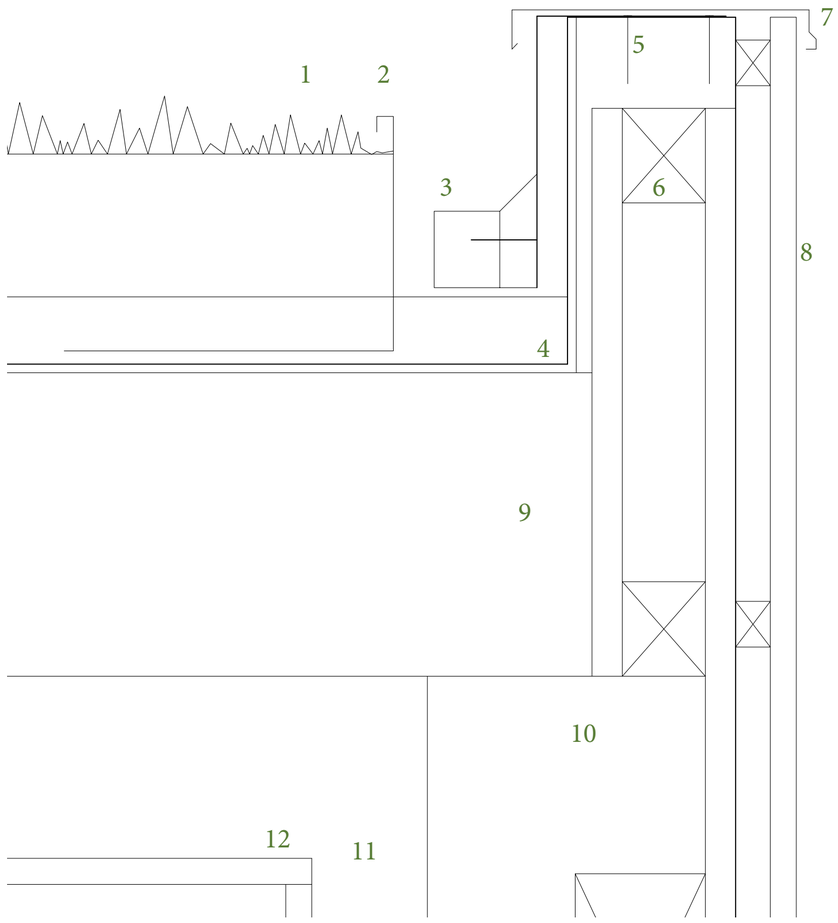
Construction Strategy

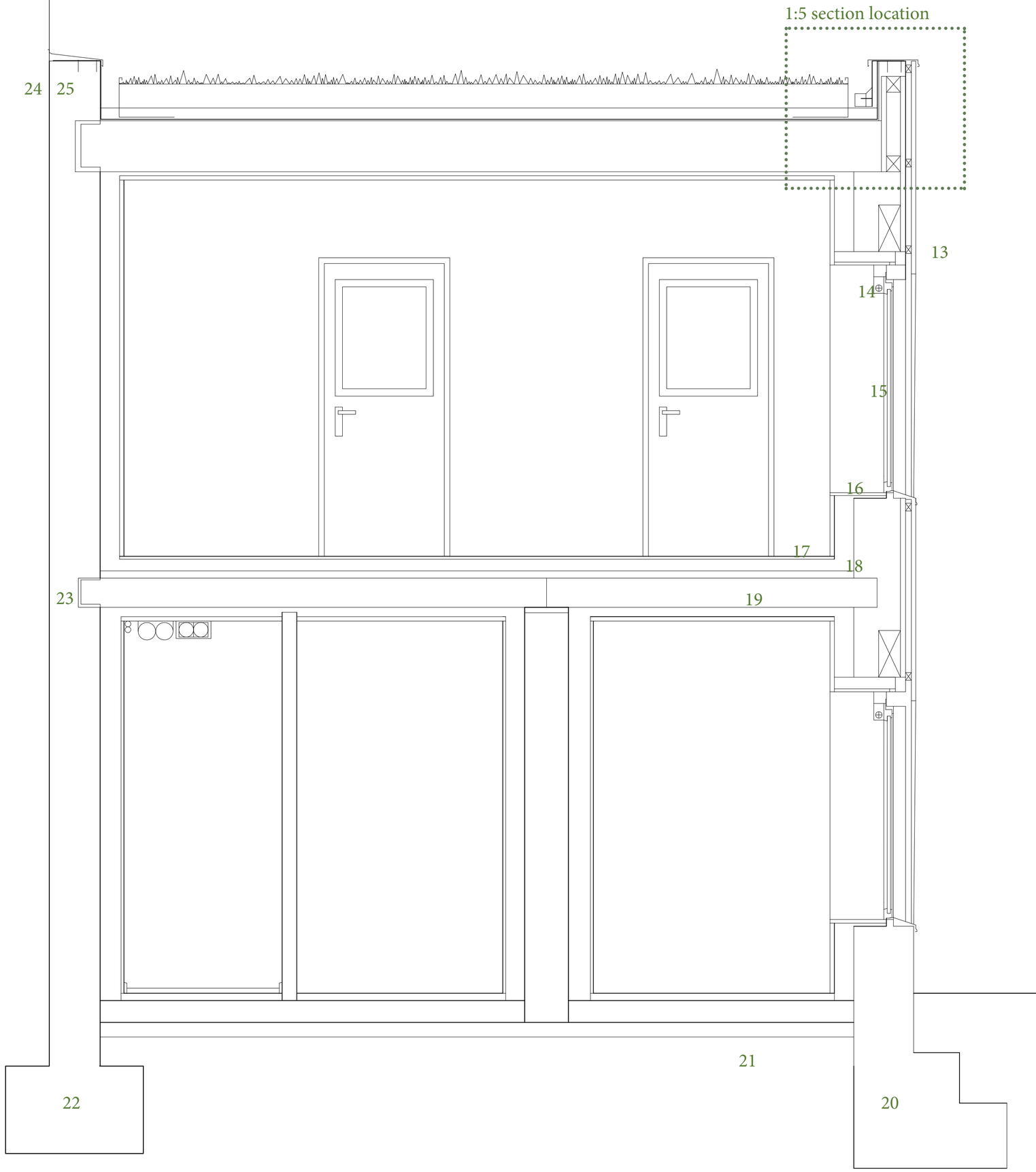


Detailed Solutions

1. Sedum
2. Zinc seperating vegetation and drainage bed
3. Fall prevention system
4. Waterproof membrane
5. 80mm nails securing waterproof membrane
6. 40 x 50mm Timber battons
7. Folded zinc parapet cover
8. 30mm Semi dried oak cladding
9. 250 x 200mm C16 timber beams (reused if feasible)
10. 152mm alternating timber stud wall (600mm centres)
11. Mineral wool insulation
12. Suspended plywood ceiling
13. Timber window frame and lintel
14. Roller blind
15. Double glazing unit
16. Timber internal window sil
17. Timber floor boards (reused from site if possible)
18. Rigid insulation
19. Timber beams (reused if possible)
20. Concrete foundation pad
21. Reused concrete floor slab
22. Reused foundations
23. Thermal-break pads
24. Neighbouring brick wall (unoccupied)
25. Existing brick wall (English bond)

1:5 Construction Detail





Building Performance

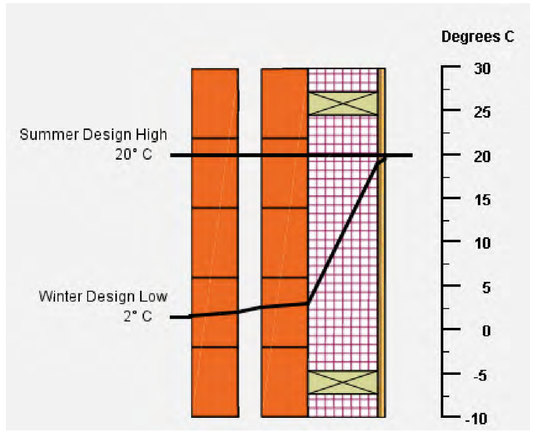
Energy Balance Worksheet

In terms of responding to the holistic approach to energy efficient design, the location, orientation, aspect ratio, and thermal mass are determined completely or in-part the the existing fabric that the project is responding to. This creates a greater reliance on the efficiency of the heating and lighting systems. Specifying more thermally resistant insulation is more efficient but will begin to eat into the internal space or require the use of unsustainable products such as EPS or XPS.

Due to the kitchen's single aspect and high need for ventilation, the room will not meet the outlined targets. This can be compensated by ensuring that the other spaces in the project with fewer demands are sufficiently efficient to balance out this cost.

Room FABRIC INPUT variables		
	MIN	MAX
External opaque inc windows		
Area (m^2)	38.55	38.55
Overall External opaque fabric		
Area (m^2)	32.45	32.45
Area weighted avg U-value ($W/m^2/K$)	0.39	0.27
Windows		
North facing Area (m^2)	0	0
East facing Area (m^2)	0	0
South facing Area (m^2)	0	0
West facing Area (m^2)	6.1	6.1
U-value ($W/m^2/K$)	1.6	0.5
SHGC	0.3	0.6
Room		
Room Floor area (m^2)	41	41
Room height (m)	3	3
Room volume (m^3)	123	123

Room OCCUPANCY INPUT variables (e.g. EN 16798 - Annex C)		
	MIN	MAX
Occupants during occupancy hours		
Number of occupants	10	12
Metabolic gains/person (CIBSE A)	126	126
Equipment gains/person (CIBSE A)	200	586
Standard occupancy hours		
Time (01:00 - 24:00) (Full hours only)	09:00-15:30	08:00-17:00
Ventilation: people (EN16798, B.3.1.2. Method 1. Table B.6)		
IEQ Category I to IV (Use 1 to 4)	2	2
Ventilation rate (l/s/person)	7	7
Ventilation: pollutants (EN16798, B.3.1.2. Method 1. Table B.7)		
Pollutant category. Type in (in order from MAX to MIN): Non-Low Low Very Low	Non-Low	Non-Low
Ventilation rate (l/s/m2)	1.4	1.4
Background Ventilation (CIBSE)		
Infiltration rate (ach)	25	30
Temps by room use (CIBSE A Table 1.5 OR EN16798 Table B5)		
Winter T Heat setpoint °C	18	18
Winter T Heat setback °C	15	15
Summer T Cool setpoint °C	25	25
Summer T Cool setback °C	18	18
Lighting loads (CIBSE A Table 1.5 OR EN16798 Table B18)		
Lighting levels (lux) (CIBSE A Table 1.5)	500	500
Lighting efficiency (W/m2/100 lux)	6	3



Kitchen wall u-value

Material	Thickness	U-Value
Inside air film	0.0	8.33
Plywood	15.9	7.69
Studs (wood, 610mm)	101.6	1.28
Blown fibre	101.6	0.39
Brick	101.6	9.09
Air space	50.8	6.67
Brick	101.6	9.09
Outside air film	0.0	25

Values from Opaque

Total U-Value: 0.39

Increasing the thickness of the lining

Material	Thickness	U-Value
Inside air film	0.0	8.33
Plywood	15.9	7.69
Studs (wood, 610mm)	152.4	0.85
Blown fibre	152.4	0.26
Brick	203.2	9.09
Air space	50.8	6.67
Brick	101.6	9.09
Outside air film	0.0	25

Values from Opaque

Total U-Value: 0.30

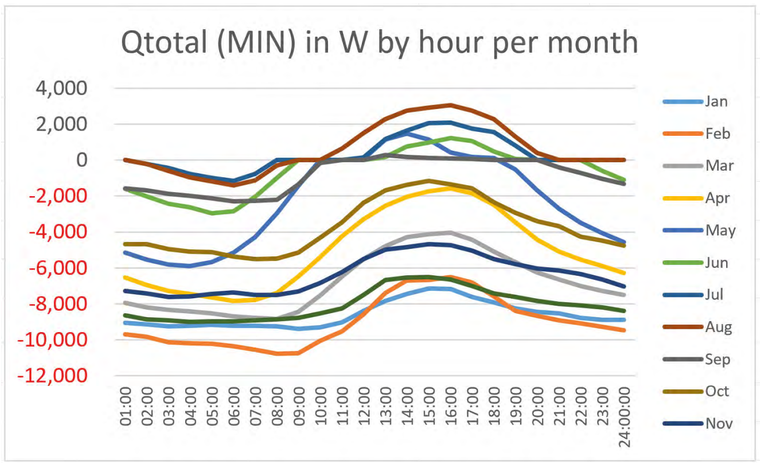
Using different insulation materials

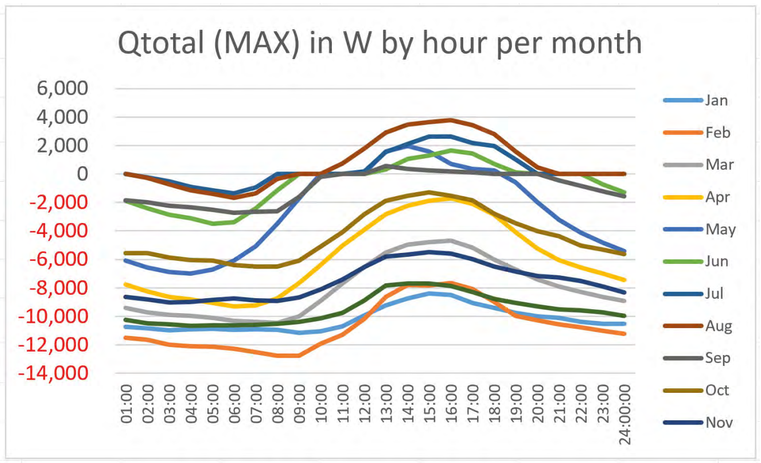
Material	Thickness	U-Value
Inside air film	0.0	8.33
Plywood	15.9	7.69
Studs (wood, 610mm)	152.4	0.85
Insulation Board	152.4	0.20
Brick	203.2	9.09
Air space	50.8	6.67
Brick	101.6	9.09
Outside air film	0.0	25

Values from Opaque

Total U-Value: 0.27

RIBA 2030 Climate Challenge target metrics (max) - operational energy (kWh/m2.yr)				Building as designed (including occupant energy use) - operational energy (kWh/m2.yr)	
Sustainable Outcome Metrics	Business as usual	2025 Targets	2030 Targets	MIN operational/year	MAX operational/year
non-domestic (new offices)	130.00	75.00	55.00	323.2	384.1
non-domestic (new schools)	130.00	70.00	60.00	323.2	384.1
domestic/residential	120.00	60.00	35.00	323.2	384.1



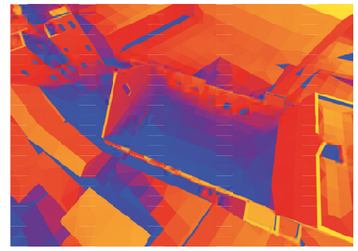


Lighting for the Garden

Using the programs Rhino and Grasshopper I was able to conduct a lighting study for the garden to determine if it was necessary to fully deconstruct the cinema's southern wall or whether it could be partially taken down to maintain some noise protection from the direction and contribute to the project's atmosphere.

By doing the study it became apparent that the wisest choice was to fully remove the wall, allowing the garden the best chance at success. The darkest spot (at the south east of the garden) will be where the fruit trees are positioned, giving them a chance to rise above the neighbouring obstacles and access light that other plants would not have been able to.

1



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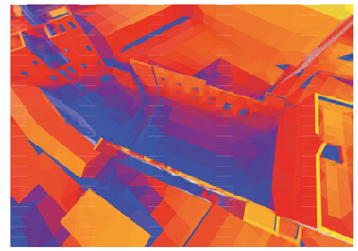

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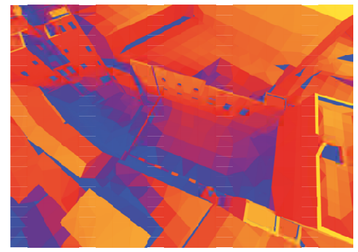
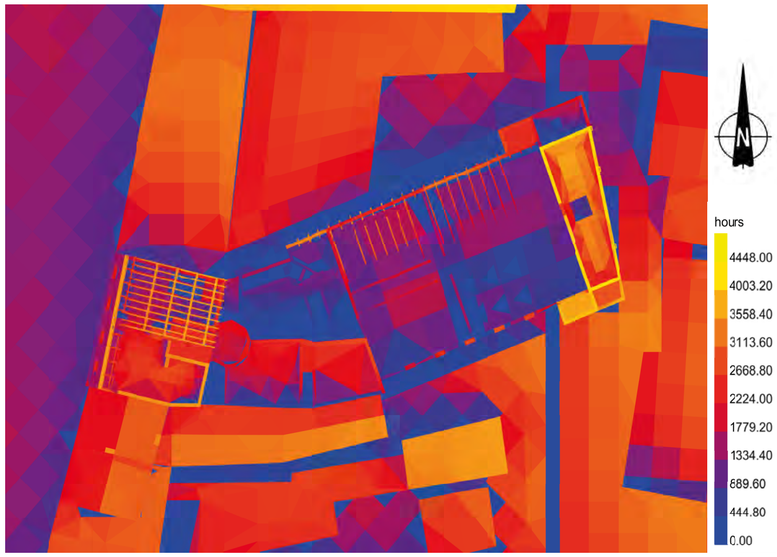
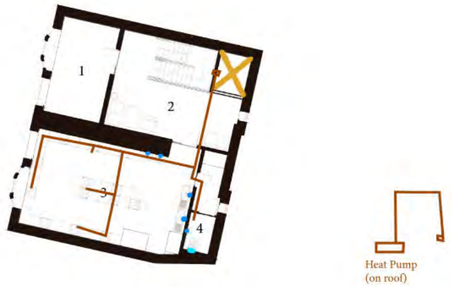


Final Layout



Analysing the lighting of the project's massing helped determine the layout of the garden.

Building Services



Services
As mentioned in the introduction, the project will use a MVHR system to increase the efficiency of its heating and cooling. Active ventilation is necessary due to the demands of the kitchen and changing/shower spaces. The provision of the heating and cooling will come from three reversable air-source heat pumps (locations shown on diagram). These are located away from main entrances and flammable cladding to avoid the spread of fire/smoke.

Fire
Despite being a storey below street level, because of the site's gradient the 'basement' level is open on one side making it more akin to a ground floor than a basement for the sake of fire regulation as horizontal escape is the main option.

The project will employ a fire suppression system, in line with regulation – especially important here as the top floors are only served by a single stairway. Crashmats will be located at the head of each flight of stairs to assist with the evacuation of any physically impaired students/ visitors/teachers.

Water (cold only)
Water (hot and cold)
Lift (1.8 x 2.3m)
Stairs (170mm rise, 270mm going)
MVHR System

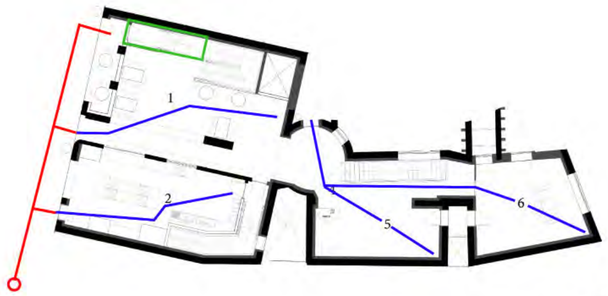
Fire Safety

3

2

1

0



-1

Assembly Point
Longest escape route
Protected escape route

Table 3 Minimum number of escape routes and exits from a room, tier or storey	
Maximum number of persons	Minimum number of escape routes/exits
60	1
600	2
More than 600	3

Single escape routes and exits

4.5 In order to avoid occupants being trapped by fire or smoke, there should be alternative escape routes from all parts of the building. However a single route is acceptable for:

a. parts of a floor from which a storey exit can be reached within the travel distance limit for travel in one direction set in Table 2 (see also paragraph 4.7). This is provided that, in the case of places of assembly and bars, no one room in this situation has an occupant capacity of more than 60 people or 30 people if the building is in Institutional use (Purpose Group 2a). The calculation of occupant capacity is described in Appendix C; or

b. a storey with an occupant capacity of not more than 60 people, where the limits on travel in one direction only are satisfied (see Table 2).

All escape routes, including stairs and door sets, are at least 850mm wide.

Level: 3 (Maximum number of persons 20)

Number on Plan	Distance (m)	Required distance (m)
1	7.68	18 (purpose group 5c)
2	17.35	18 (purpose group 5c)

Approved Document B Volume 2, page 54, table 2 (Welsh Government 2021).

Level: 2 (Maximum number of persons 20)

Number on Plan	Distance (m)	Required distance (m)
1	7.60	18 (purpose group 5c)
2	11.73	18 (purpose group 5c)
3	13.56	18 (purpose group 5c)

Approved Document B Volume 2, page 54, table 2 (Welsh Government 2021).

Level: 1 (Maximum number of persons 20)

Number on Plan	Distance (m)	Required distance (m)
1	7.51	18 (purpose group 5c)
3	16.54	18 (purpose group 5c)

Approved Document B Volume 2, page 54, table 2 (Welsh Government 2021).

Level: 0 (Maximum number of persons 50)

Number on Plan	Distance (m)	Required distance (m)
1	12.34	18 (purpose group 4)
2	10.91	18 (purpose group 4)
5	11.10	18 (purpose group 5c)
6	17.43	18 (purpose group 5c)

Approved Document B Volume 2, page 54, table 2 (Welsh Government 2021).

Level: -1 (Maximum number of persons 35)

Number on Plan	Distance (m)	Required distance (m)
1	14.25	18 (purpose group 4)
2	17.79	18 (purpose group 4)
3	11.26	18 (purpose group 4)
7	8.67	18 (purpose group 5c)
8	6.03	18 (purpose group 2(b)(c))

Approved Document B Volume 2, page 54, table 2 (Welsh Government 2021).

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