

**WATERSHED**

Cultural Cinema and Digital Creativity

# Watershed Development

childs+sulzmannarchitects

Pre-application Enquiry Supporting Statement

30th November 2018

Revision C

## **Pre-Application Enquiry Supporting Statement**

### **Watershed, Bristol / Watershed**

To expand Watershed's leading cultural cinema and digital creativity offer to broaden the local and international reach. The project will re-develop existing space and add new space co-located with the world leading Pervasive Media Studio for innovation, incubation and growth of new cultural products, services, experiences and businesses.

**Date: 30/11/2018**  
**Revision C**

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# 1.0 Introduction

## Executive Summary

### Watershed Development: Cinema and Studios

Over the past two decades Watershed has grown significantly building a reputation for inclusive talent development and innovation. Working at the intersection of creativity and technology, culture and commerce, it is internationally recognised as a ground breaking Cultural Cinema and Digital Creativity Centre.

Watershed is a beacon of Bristol's thriving cultural and creative eco-system and a key node in the regional innovation cluster. Watershed has played a major partnership role in place making, sitting at the gateway to Harbourside its cultural programme and management of E & W Sheds have played a significant role in making the Harbourside the city asset it is today.

Watershed plans to invest in new and re-furbished facilities to meet growing demand from a growing city region. This investment will create stronger Engagement with diverse communities and build pathways through Exhibition, Talent Development, Invention, Incubation, Innovation, Production and Sustainability.

We have looked at a range of growth options over the past 5 years including offsite space and re-location. Our research concludes that the best option is to expand the range and density of activity on the current site. Successful creative incubation relies on strong networks and the clustering effect is most impactful when there is close physical proximity. To achieve this we plan some re-organisation of the ground floor and a new extension to the Anchor Road facade with associated re-invention of the

public realm at the junction of Anchor Road and Canons Way.

Our design approach is driven by the combination of needing more space to serve Bristol city region communities, more income to sustain service delivery, and the imperative to be more environmentally sustainable. We will build in the most sustainable materials, minimise energy consumption through passive systems where possible and maximise green energy generation through optimising locations for PV cells. The combined impact will sustain Watershed and conserve the heritage of E & W Sheds as working dockside buildings.

The planned re-development of E&W Sheds will:

- Create visibility and accessibility for the innovation cluster centered on Watershed
- Co-locate new Start-up and Grow-On Studios with the Pervasive Media Studio creating vital affordable work space for 100+ creatives
- Increase capacity to develop diverse young talent and grow the impact of Rife
- Improve workshop/event/conference rooms for community and commercial use
- Add Cinema 4 to extend the diversity of world cultural cinema and grow audiences
- Improve the public realm to Anchor Road
- Sustain public use of and access to the historic dockside sheds

It will anchor growth, productivity and profile for the Bristol cultural and creative digital cluster as well as making Watershed a more robust and self-sustaining organisation.



# 1.1 Introduction

## Watershed

Watershed was set up as Britain's first media centre in 1982 engaging with cultural cinema, photography and new media. It occupied two derelict transit sheds on the harbourside in Bristol when the docks were in decline and vacant buildings such as these were not seen as having any value or any viable use.<sup>1</sup>

Over the last 35 years Watershed has adapted and changed in response to the increasing importance of new and digital media. It is now internationally recognised for pushing the boundaries of emerging technologies. A 2010 report by the International Futures Forum describes the Watershed as a "creative ecosystem operating in many different and overlapping economies".

Watershed has played a significant role in the regeneration of the city docks and acted as a catalyst for further development of the waterfront. It has occupied this pair of late nineteenth century transit sheds since its inception when the site was acquired from Bristol City Council.

Although these buildings have been constantly repaired and adapted over the last thirty years, the organisation continues to be constrained by the very basic nature of the buildings it occupies. After all they are only simple frames with thin brick walls and a slate roof. Significant improvements have always been hampered by conservation issues.

The Grade II listed 'sheds' accommodate three cinemas, a café bar, conference and event space and the Pervasive Media Studio, the research space that brings together a network of over 100 artists, technologists and academics to explore the future of creative technologies.

childs + sulzmann were appointed in 2013, to act as a Lead Consultant and to provide Architectural and Principal Designer services for the conservation and conversion of the Grade II listed E and W Sheds on Bristol Harbourside. ARUP were also appointed as Mechanical and Electrical Engineers, and Civil and Structural Engineers.



Link between E + W Sheds at night

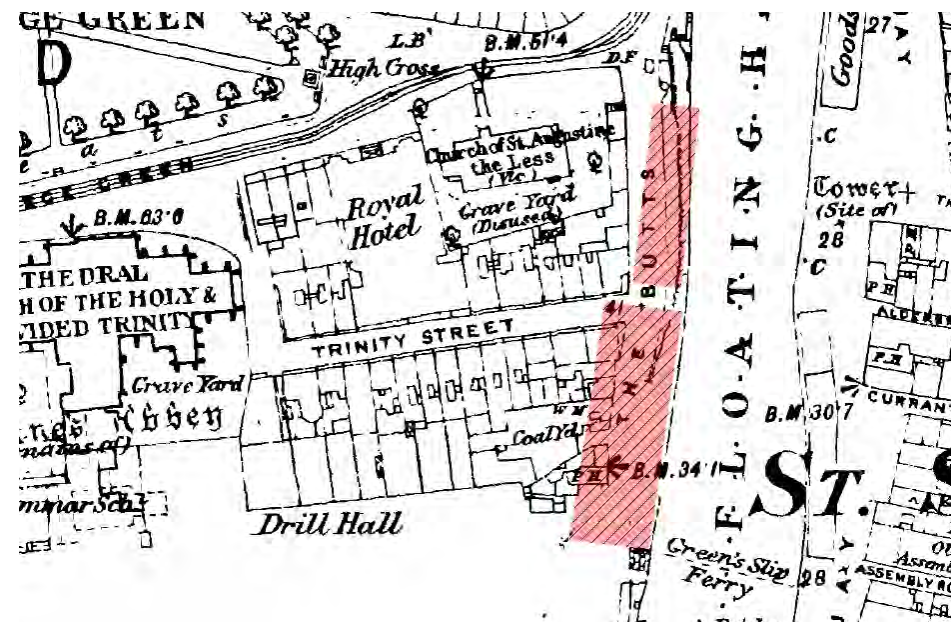
<sup>1</sup> The planning policy at the time suggested that the sheds should be demolished.



## 2.0 History

### Development of the Harbourside

1880 Historic Map



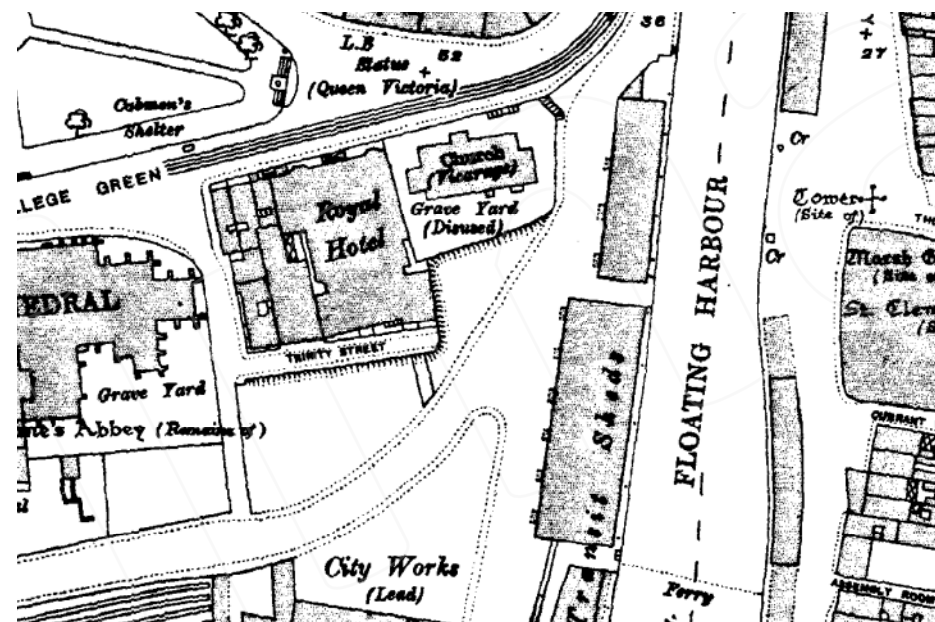
Watershed is situated in the Harbourside area adjacent to the city centre overlooking the Floating Harbour and St Augustine's Reach. The early development of this area reflects the emergence of Bristol as England's second port city.

The Bristol City Docks were constructed six miles inland from where the River Avon meets the Severn Estuary at the point where the Avon could be crossed, and ships could be carried up river on the tidal current. The first quays were constructed along the River Frome at the junction with the River Avon in 1239 and it is this area that developed to be the centre of Bristol. This was expanded between 1240 and 1247 with the creation of a diversionary channel cut to form an extensive harbour accessible to large ships with the soft mud of the tidal river providing a resting place for ships at low tide. This feat of medieval engineering has been considered a crucial factor in Bristol's development as a port and city.

Increased global trade in the 16th, 17th and 18th centuries placed the harbour under increasing strain with its medieval wharves struggling to cope with the volume of trade. The Merchant Venturers, managing the harbour on behalf of the city's merchants, undertook work to lengthen the quay in the 1690s, 1717 and 1724. These works coincided with improvements to the facilities and repairs to the harbour itself along with construction of cranes to assist with the unloading of goods.

The tidal nature of the River Avon, fluctuating around 9m between low and high tides, meant that the emergence of other dock cities, such as Liverpool, were challenging the viability of Bristol as a port. The Bristol Docks Company commissioned William Jessop to devise a scheme that would equalise the levels inside and outside the dock for the safe passage of vessels. This involved the construction of the Cumberland Basin and entrance locks from the River Avon and a junction lock between

1910 Historic Map

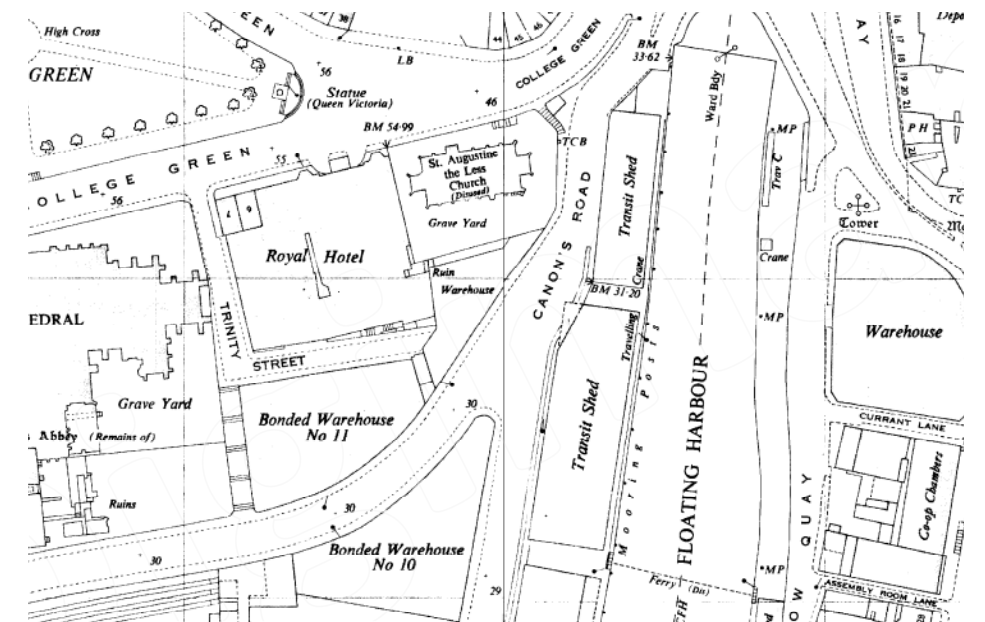


the basin and what is known today as the Floating Harbour. The course of the River Avon was diverted into the New Cut as part of the process.

The construction of the Floating Harbour transformed the development of the city with shipbuilding relocated to the south of the river on Spike Island enabling the land adjacent to the harbour to be generated for commercial uses. In 1865 the quay lengths were extended, and the railway was extended to service the new warehouses and transit sheds constructed along the docks. The Canon's Marsh Quay was developed further in the 1890s with the construction of Transit Sheds E and W, now housing Watershed.

Construction of the ports in Avonmouth in 1877 and Portishead in 1878 meant that the Bristol City Docks became increasingly redundant as they could no longer accommodate larger ships. The subsequent loss of the key industries such

1940 Historic Map



as the trade and repair of ships led to a further decline in the docks and they were ultimately closed by Bristol City Council in 1969 with all commercial traffic ceasing in 1975.

Since this period various plans for the docks have been proposed to redevelop the area whilst retaining the quayside structures and historic features.



## 2.1 History

### Context

Transit Sheds E and W were constructed in 1894 and 1893 respectively as part of the late-Victorian development around the Floating Harbour. The Transit Sheds, built for the storage of goods, vary slightly in architectural style, with E-Shed constructed with an elaborate Jacobean style gable and octagonal turret facing the Centre.

The buildings were constructed over the brick vaulted structure forming the wall to the Floating Harbour. The foundations to the building vary in construction due to the geology of the site, located between Brandon Hill and Canon's Marshes. The foundations located on the rock are in-situ concrete with stone pads to the cast iron column base, with the marsh areas utilising timber piles below the columns.

At ground floor the cast iron columns support cast iron beams with bolted top and bottom flanges, the beams in turn support the timber first floor deck. The roof structure of W Shed is divided into 2 pitches with a central valley supported by timber trusses and posts transferring load to the cast iron columns below. The roof structure over E-shed differs with steel trusses spanning the width of the building.

Originally the east façade of the building extended to the water's edge at both ground and first floor level. This enabled the easy transfer of goods from ship to shore. This was further facilitated by a crane that ran the length of E and W sheds supported by the iron columns and concrete beam spanning between at first floor level. The crane was removed prior to the buildings conversion however the supporting structure has been retained and utilised as part of the balcony design.

Further research on the history of the building will be undertaken for the next stage of the project to be included within the Heritage Statement.





## 2.2 History

### Timeline

**1960 - 1970s** Bristol City Docks close for commercial traffic and the dockside falls into dereliction. E & W Sheds scheduled for demolition. Arnolfini temporarily occupy W Shed.

**1975** Campaign leads to listing of E & W Sheds to save from demolition.

**1980s** Bristol City Council introduced plans for the regeneration of the derelict harbourside area. A partnership was established between the British Film Institute, JT Group, and Bristol City Council to secure funding for the regeneration of E & W Sheds including a new media centre focusing on film and photography.

**1982** Watershed opened its doors and declared itself to be 'Britain's First Media Centre' seeking to capture and contextualise the shift in media at the point when Sony launched the CD Player, Sinclair the ZX Spectrum, Channel 4 were starting up, and the Commodore 64 began its spectacular run of popularity.

**2005** Watershed completed a £3.5 million Capital Development investment programme (funded through Arts Council Lottery) which enabled them to meet the growing demands of audiences, artists and partners.

**2007** Watershed purchased the Head Lease on E&W Sheds to manage ground floor uses and improve public enjoyment of the Harbourside.

**2008** Watershed created the Pervasive Media Studio which has underpinned the expanding creative technology innovation and talent development role driving cluster growth and inclusion in collaboration with UWE and UoB.

**2018** Watershed is internationally recognised for Diverse Cultural Cinema and Inclusive Digital Creativity.

**For 2017/18** Key performance headlines include:

- 1.5 million people visited us on the web
- 450,000 visitors to our venue
- 174,000 tickets purchased for our venue screenings and events
- 104,000 people engaged with projects beyond the venue
- 36,000 young people engaged with our programmes
- 153 artists and creatives are resident in the Pervasive Media Studio, 45% identify as female, 12% are BAME, 17% received free school meals, 44% were the first in their family to go to university
- 101 full time equivalent jobs at Watershed
- Films from 52 countries exhibited
- 6 continents hosted Watershed events or collaborations
- Watershed Group turnover in 2017/18 is £5.8 million
- Watershed's direct economic impact in 2017/18 including residents is £16.2 million
- Pervasive Media Studio residents reported turnover in excess of £5.4 million and secured in excess of £5 million in research funding



Historical photos of Watershed



## 2.3 History

### Design

There has, for some time, been a tension between the needs of many of our cultural institutions and the heritage buildings they so often occupy. Watershed is attempting to deliver a highly creative programme within the shell of this listed building.

In the past the degree to which the building could be altered or adapted to meet the changing needs has been severely limited by the conservation imperative. At this point, however, it appears that an argument can be made for substantial interventions at Watershed to add to the historic fabric, to better suit the needs of the organisation and to support its future sustainability and financial viability.

Watershed has been phenomenally successful but for the past five years the organisation has been severely challenged by its buildings. Various options have been examined, from annexing adjacent or nearby buildings, to moving to another part of the city. None will deliver on the complex brief for growth. Occupying separate buildings has been tried but this denies the cross-over of ideas and collaborative working on which the Centre survives and thrives. The alternative of moving across the city carries with it the danger of the Watershed losing its identity, apart from the purely economic challenge this would entail.

There is no doubt that Watershed is a cultural icon in the city and that it should remain at the dockside location with which it is so strongly identified.

Consequently, in 2013 Childs+Sulzmann architects were commissioned to carry out an extensive feasibility study into the possible development of the Canons Road turning head site adjacent to Anchor Road.

This study was intended to establish the extent of the alterations necessary to expand the work of the organisation, make it more visible and accessible to the public and to build a significant level of economic and environmental resilience into the associated business model.

#### The key ambitions were identified as:

- To provide sustainable and resilient space for Watershed's future
- To expand activities and generate additional income through a combination of more intensive use of existing space and creation of new space
- To improve the environmental performance of the building
- To improve the public realm around Watershed
- To make the activity of Watershed more visible and more accessible
- To serve growing demand for cultural cinema, creative talent development, innovation and incubation

There is no question that Watershed has the opportunity to grow its activity and its influence. To achieve this potential it will be essential to create more space. Options for relocation have been examined and rejected on grounds of cost, disruption to the business and brand identity.



Previously presented conceptual design



## 3.0 Place

### Context

“Development adjacent to the Floating Harbour will be expected to be of a scale and design appropriate to its setting, reflecting the special interest and visual prominence of quayside areas and character and setting of the surviving historic buildings and fabric and preserving and enhancing views to and from the Floating Harbour.”

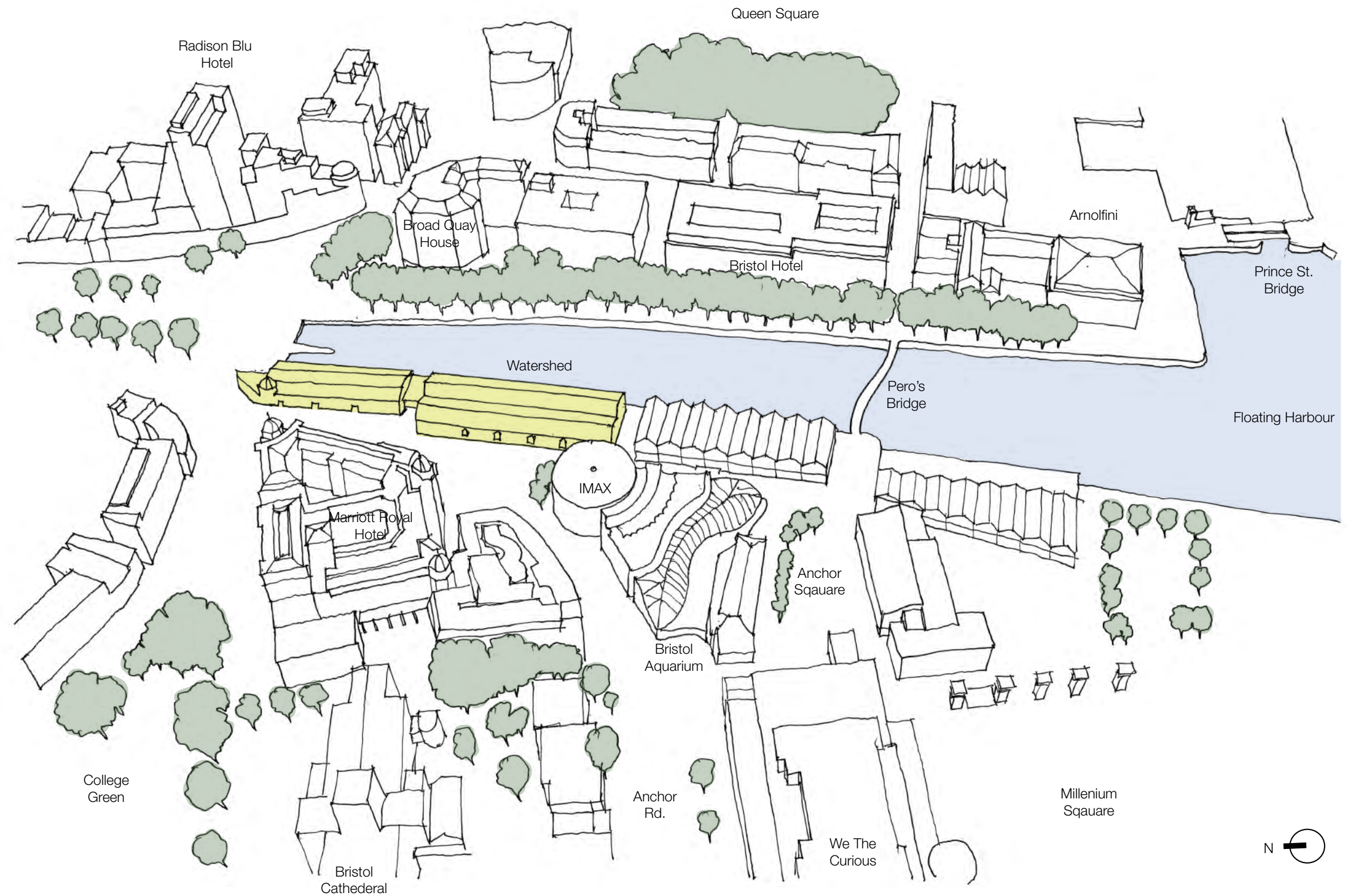
#### Policy BCAP41: The Approach to Harbourside

In considering the location and potential scale of development at Watershed it is clearly relevant to take into account the immediate and wider context.

When Watershed was first developed in the early 1980s (opened 1982) the majority of the harbourside was still derelict. Tentative new development began with two adjacent sheds being demolished and reconstructed in the 1990s to accommodate bars and restaurants. Following the installation of Pero's Bridge and then the completion of Millennium Square, the whole area was rapidly developed at a very different scale.

Watershed now inhabits a relatively dense urban context and is seen in relation to a number of significantly higher buildings; the IMAX Cinema, One Cathedral Square and Marriot Hotel adjacent, Broad Quay House and the Radison nearby.

Although it will be critical to respect the character of the City Docks Conservation area there is an opportunity to add or extend Watershed at a scale that reflects and responds to the immediate surroundings.





## 3.1 Place

### Conservation Area

“...working with and enhancing what the area already has to offer while capturing the potential for beneficial change...”

Watershed is located in the City Docks Conservation Area. The conservation area has been divided into a number of areas of distinct character that have been defined by Bristol City Council as reflecting a particular aspect that goes beyond layout and built form; Watershed is situated in Character Area 5 Canons Marsh.

This character area covers the former marshland belonging to the Augustinian Abbey Canons (now the cathedral) and was subsequently used for ship building and other industrial activities. The majority of the area was redeveloped at the end of the 20th century as the ‘Habourside’ a mixed-use area of offices, residential, leisure and retail.

The predominant characteristics of this area have been defined as follows:

#### Scale + proportions:

- Buildings from 2.5 up to 4 storeys, set back from road behind well-defined boundaries, usually rubble stone walls
- Residential scale, most dwellings semi-detached pairs, terraces or flat blocks
- Occasional large, detached industrial / office buildings set in own substantial plots
- Pitched and gabled roofs, or ‘M’ roofs concealed behind parapets Properties set in substantial grounds

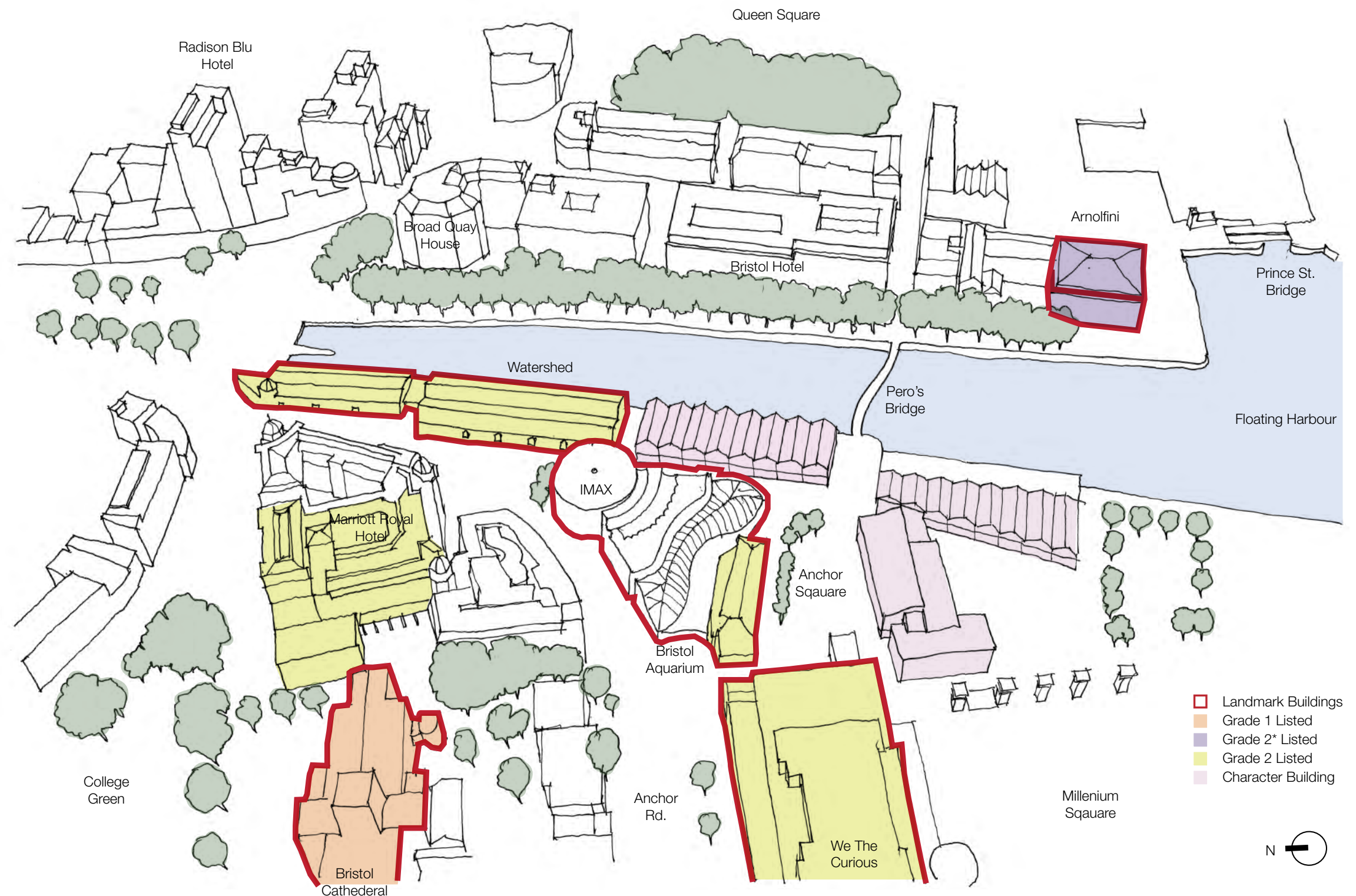
#### Architectural Treatment:

- In residential building, mix of Classical/Regency and later interpretations
- Industrial / Office buildings contemporary, high-quality design

#### Material Palette:

- Main facades: rubble stone, render, brick, metal & timber cladding
- Boundary Treatments: coursed lias rubble, wrought iron gates and cast iron railings, pennant rubble

Watershed is considered a key building within this character area.





## 3.2 Place

### Site Context

“Development should preserve and enhance the setting of surviving heritage assets within and adjoining the regeneration area and improve the quality of public open space in the area.”

#### Policy BCAP41: The Approach to Harbourside

When considering areas for extending Watershed there is a large unattractive and poorly used space at the rear of the sheds which offers an opportunity for expansion and significant improvements to the public realm.

The context for the site is varied but the immediate context is defined by the industrial nature of the converted warehouses along the quayside, the Imax development (now the Bristol Aquarium) and the Marriot Hotel/ One Cathedral Square and modern office buildings along Anchor Road.

Our proposed extension responds to the heights of the surrounding buildings and draws on the structure, rhythm and materiality of the existing warehouses. The use of timber as the primary structural element references both the clients design for a sustainably engineered building and the rediscovery of the potential use of this traditional material in contemporary buildings.

The site proposed for the extension, immediately behind Watershed, adjacent to the A4 Anchor Road does not contribute to the public realm and is in effect a large delivery bay for leisure uses along the quayside. The ambition for the project is to reinvent this area as a public space that will improve the streetscape and provide new active frontage on the west side of the building.





### 3.3 Place

#### Public Movement

“Through development, opportunities will be sought to provide new or enhanced public open spaces in the Cumberland Basin regeneration area and to rationalise the existing highway infrastructure to release more development land.”

##### Policy BCAP41: The Approach to Harbourside

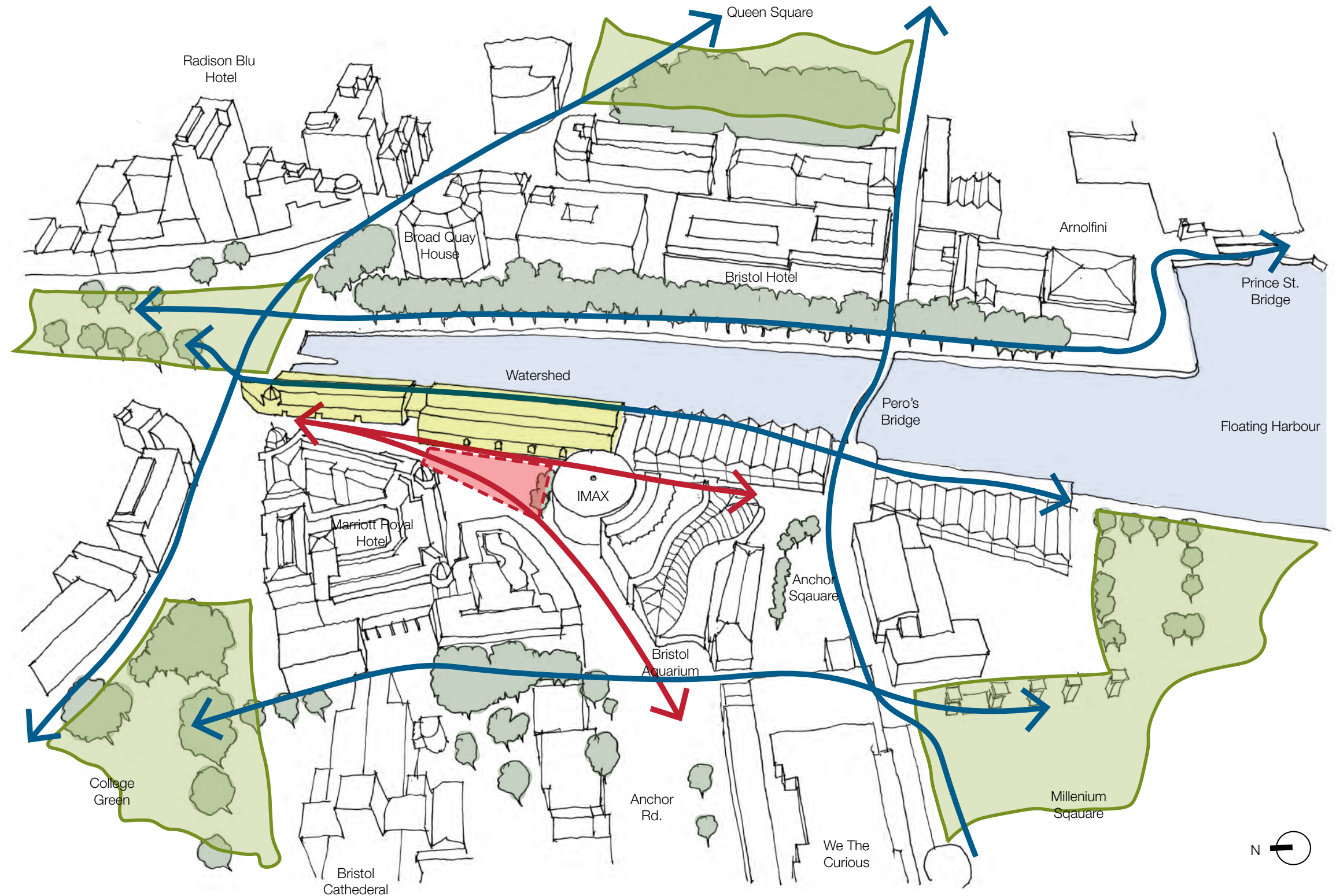
The site proposed for the extension to Watershed is situated to the rear (west) side of the building between the façade and Anchor Road. This area is currently used as the delivery area to the rear of Watershed and the entrance to Canons Road. The use of the area as a large delivery bay has a particularly negative impact on the public realm and these proposals suggest that this can be regenerated to improve the public movement and create a new public space.

Currently the pedestrian movement around Watershed takes place on the east side of the building, below the colonnade adjacent to the Floating Harbour. This area can be over-populated during peak hours and conflicts are created between the outdoor seating, markets at weekend and the flow of people. The pedestrian walkway connects Anchor Square / Pero's Bridge to the city centre with large numbers of people using this route.

The routes along Anchor Road and Canon's Road are used significantly less and this is due to the busy flow of traffic and the negative perception of the area. Canon's Road in particular is perceived as a service space with bins and access doors to the business located along the edge of the Floating Harbour.

This scheme proposes improvements to the Anchor Road side of the building by tackling two issues; reducing the size and impact of the deliveries to the rear of the building and creating a new entrance and public space at the rear of the building. This strategy will provide a new open space at the midway point between the junction with Park Street and the crossing point located by 'We the Curious'. This will provide a more attractive route along Anchor Road with a new public space and active frontage.

These proposals need to be developed with the council and landscape architects to realise a space that can be of positive benefit to the city. We believe however that this strategy is aligned with Bristol City Council's policy for the area.





## 3.4 Place

### The Building

The existing facilities have developed incrementally over time and vary greatly in efficiency and viability. The Pervasive Media Studio created in 2008 offsite and expanded onsite in 2011 is extremely successful and thriving in its current form.

The kitchen was refurbished in December 2015 as part of a small capital works programme. New low energy equipment was installed, kitchen layout improved, hygienic wall cladding installed and new flooring laid. This has been a highly successful intervention which has improved the efficiency and quality of the catering and reduced energy usage.

This also included new LED lighting installed throughout the majority of the first floor areas. childs+szulmann architects working with lighting designers from ARUP have installed a scheme which improves the public and working spaces and significantly reduces energy costs.

There are still further improvements that can be made to the existing building and these include:

- Improving the circulation spaces at first floor
- Relocating office spaces to provide natural daylight and views
- Improving ventilation and more efficient air conditioning for the cinemas
- Improving the entrance to Watershed and creating more activity visible at street level
- Thermal performance + natural ventilation to first floor office spaces
- Improving the efficiency of the air conditioning to the cinema

The following photographs illustrate the existing condition.



Recently refurbished box office



Refurbished Kitchen



Existing entrance to Watershed



Typical office space

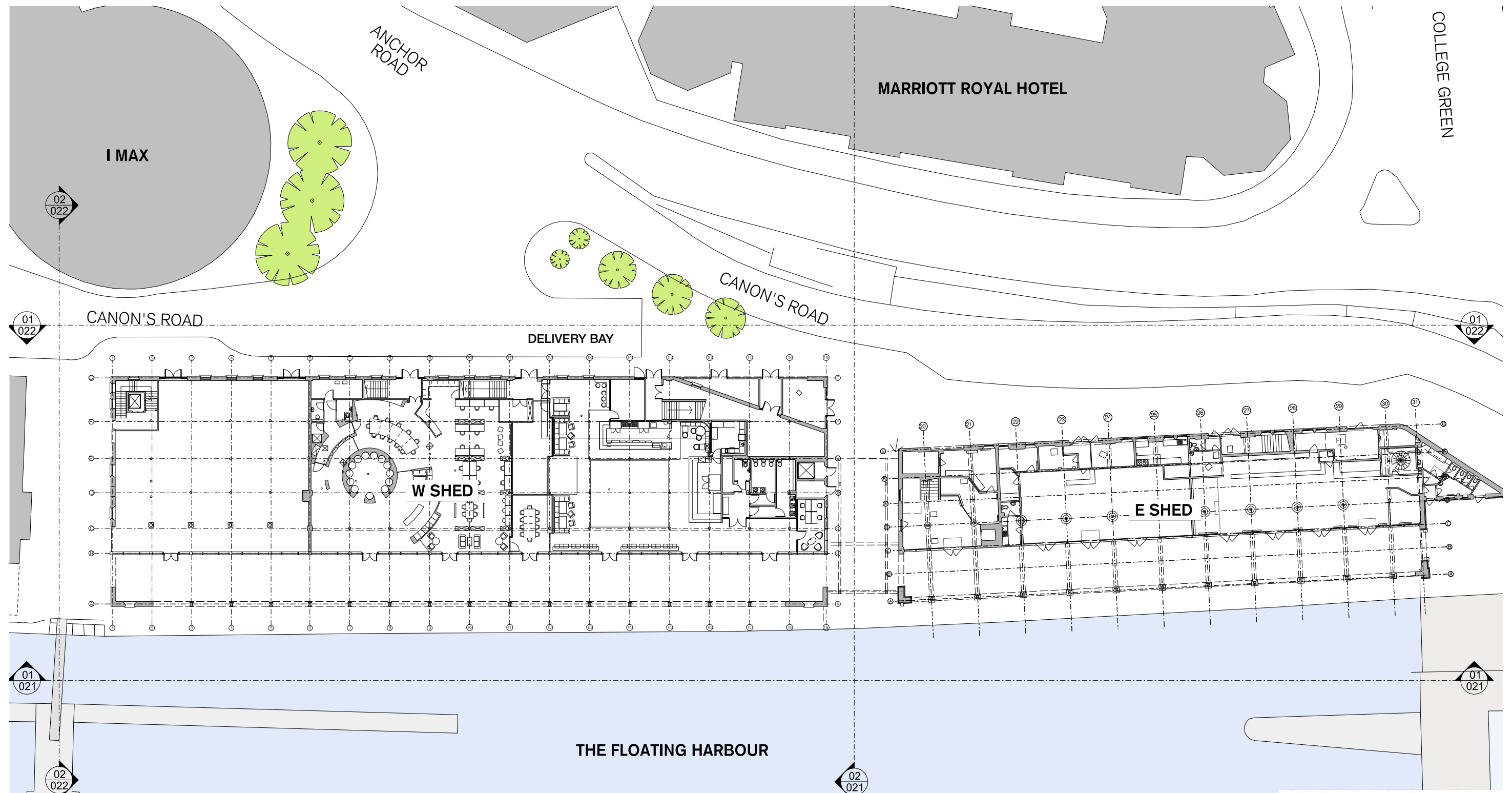


Circulation corridor at first floor



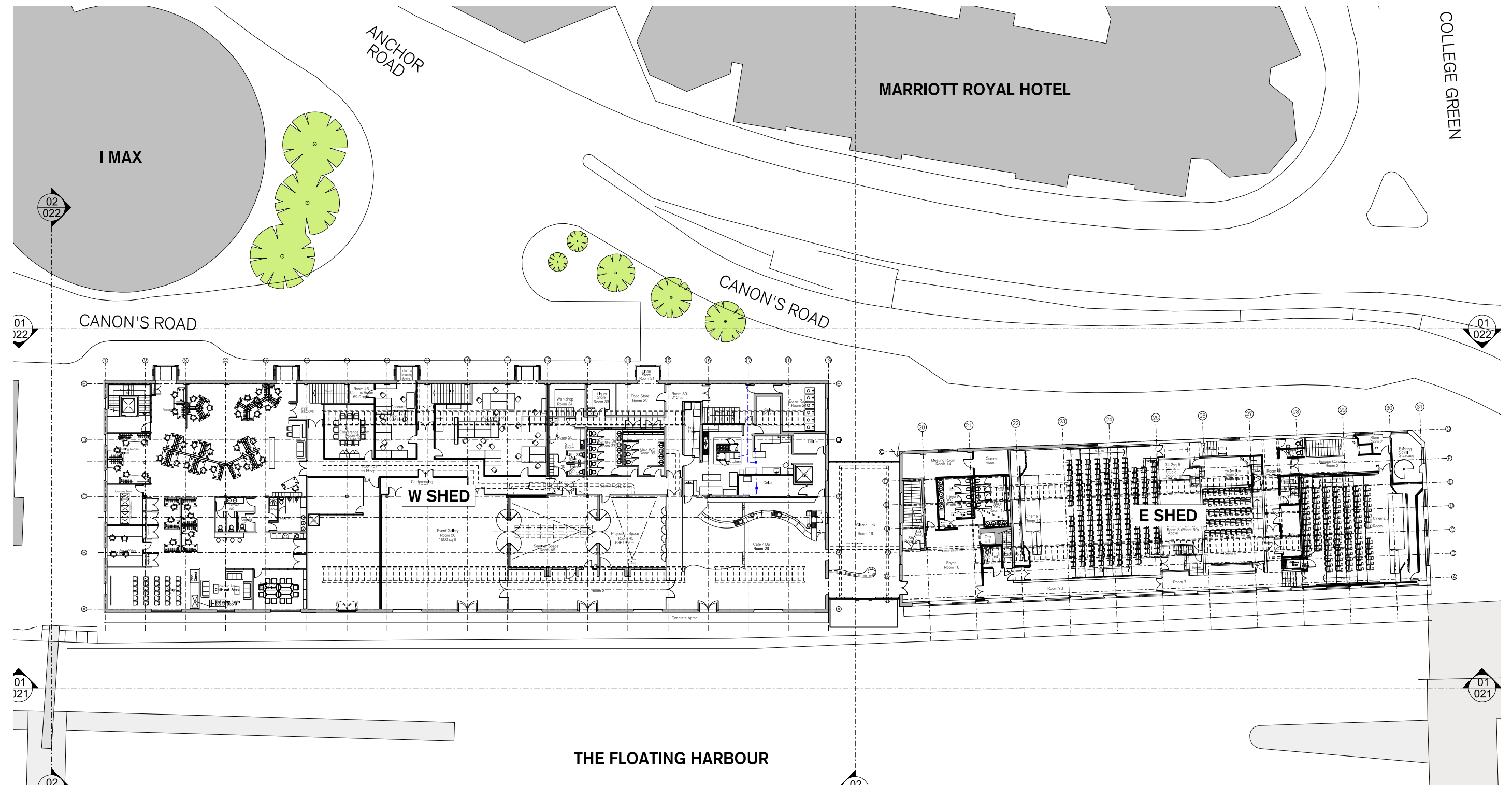
## 4.0 Existing Building

### GA Ground Floor-Existing



## 4.1 Existing Building

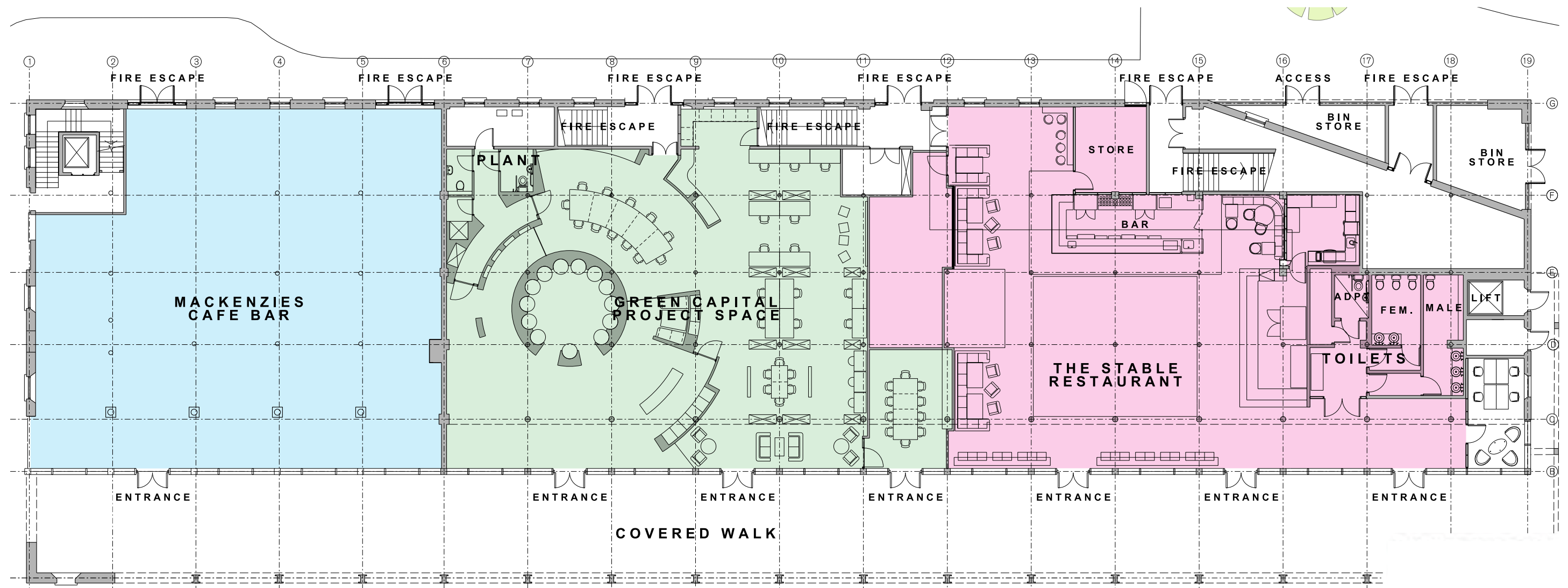
### GA First Floor-Existing





## 4.2 Existing Building

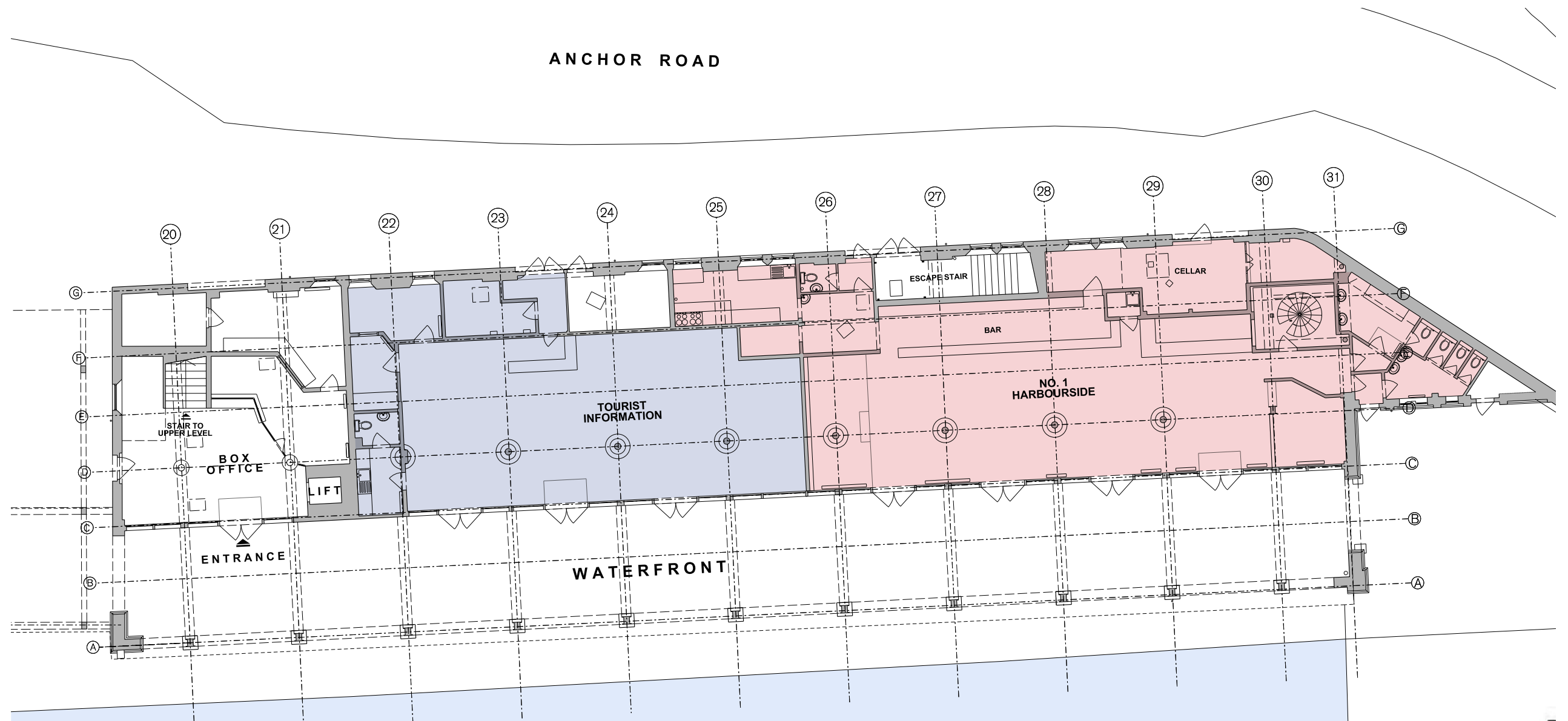
### Plan - Ground Existing W Shed





## 4.3 Existing Building

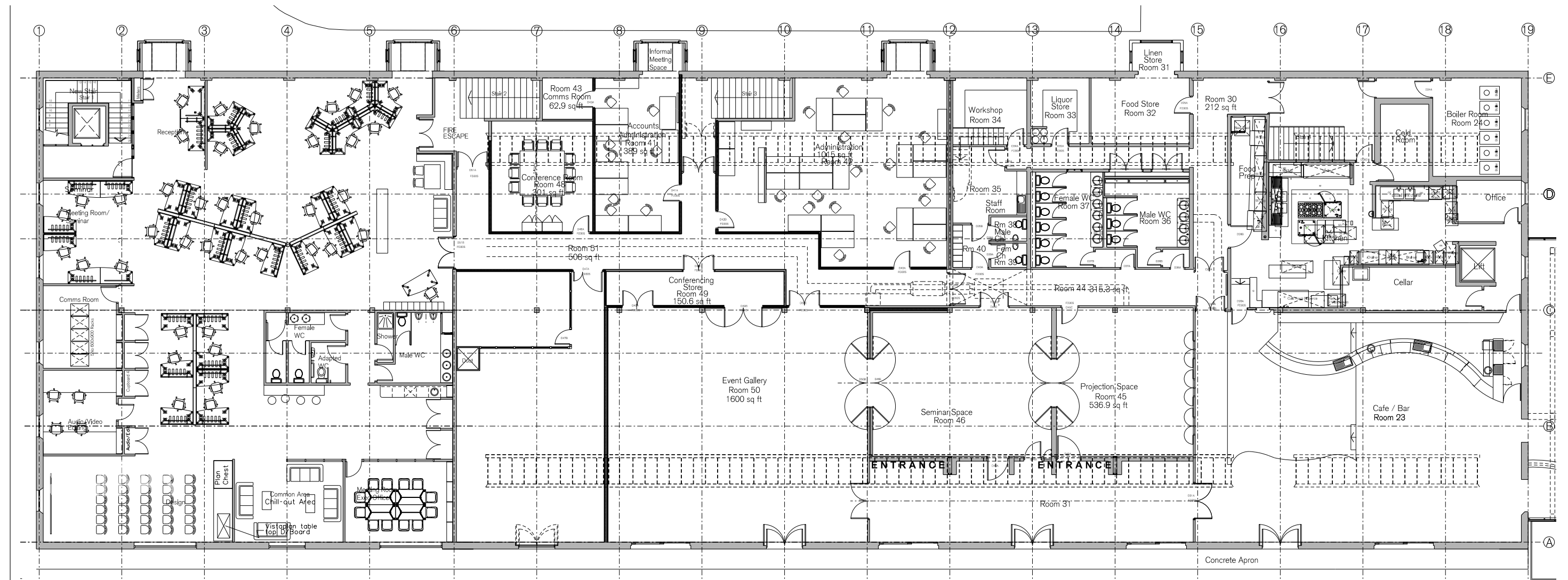
### Plan - Ground Existing E Shed





## 4.4 Existing Building

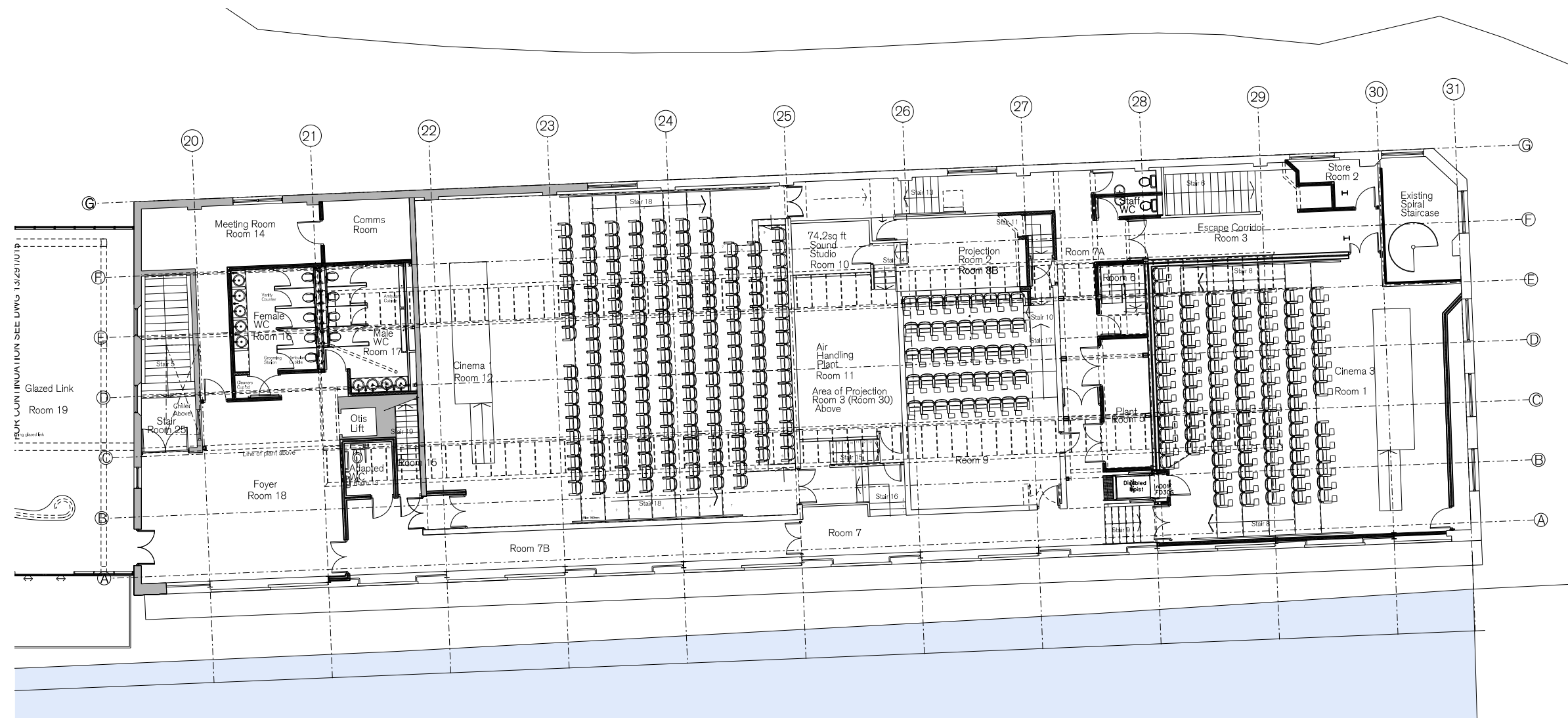
### Plan - First Existing W Shed





## 4.5 Existing Building

### Plan - First Existing E Shed





## 5.0 Opportunities + Constraints

The real opportunity here is to extend the building to accommodate all the project ambitions.

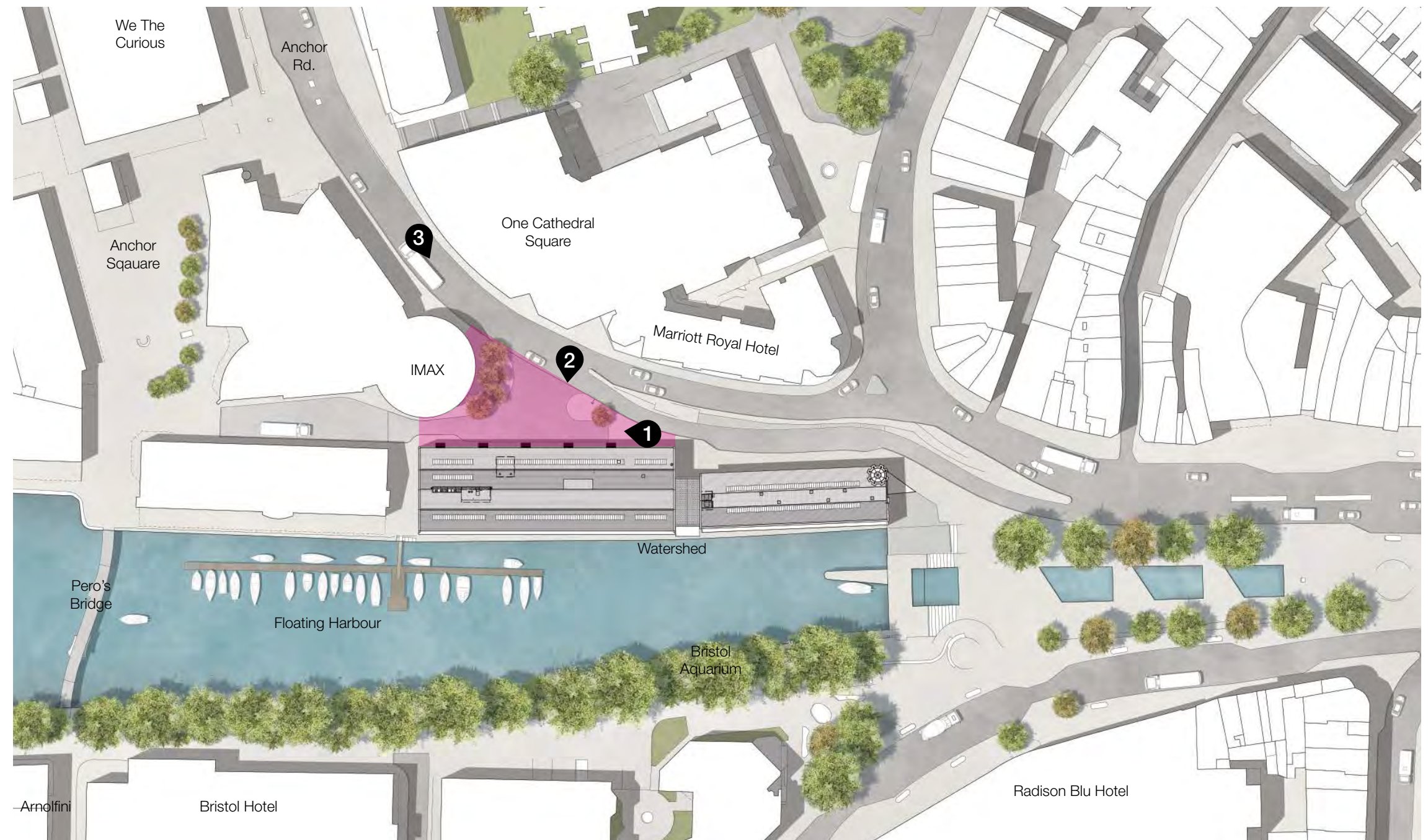
It has been clear for some time that the area behind and to the west of Watershed is underused and contributes very little to the operation of the adjacent businesses. It is also extremely unattractive and has a detrimental impact on the area around it.

There is an opportunity here to develop this area to the benefit of Watershed to significantly improve the public realm.

The constraints on such a development are:

- **Questions of ownership**
- **Location of underground services**
- **Impacts on the access to other businesses**
- **The sensitivities of the existing listed building**
- **The context of the conservation area**

These issues have been carefully considered to prove the feasibility of this opportunity; the analysis is demonstrated in the following sections.





## 5.1 Opportunities + Constraints

## Ownership Boundaries + Services

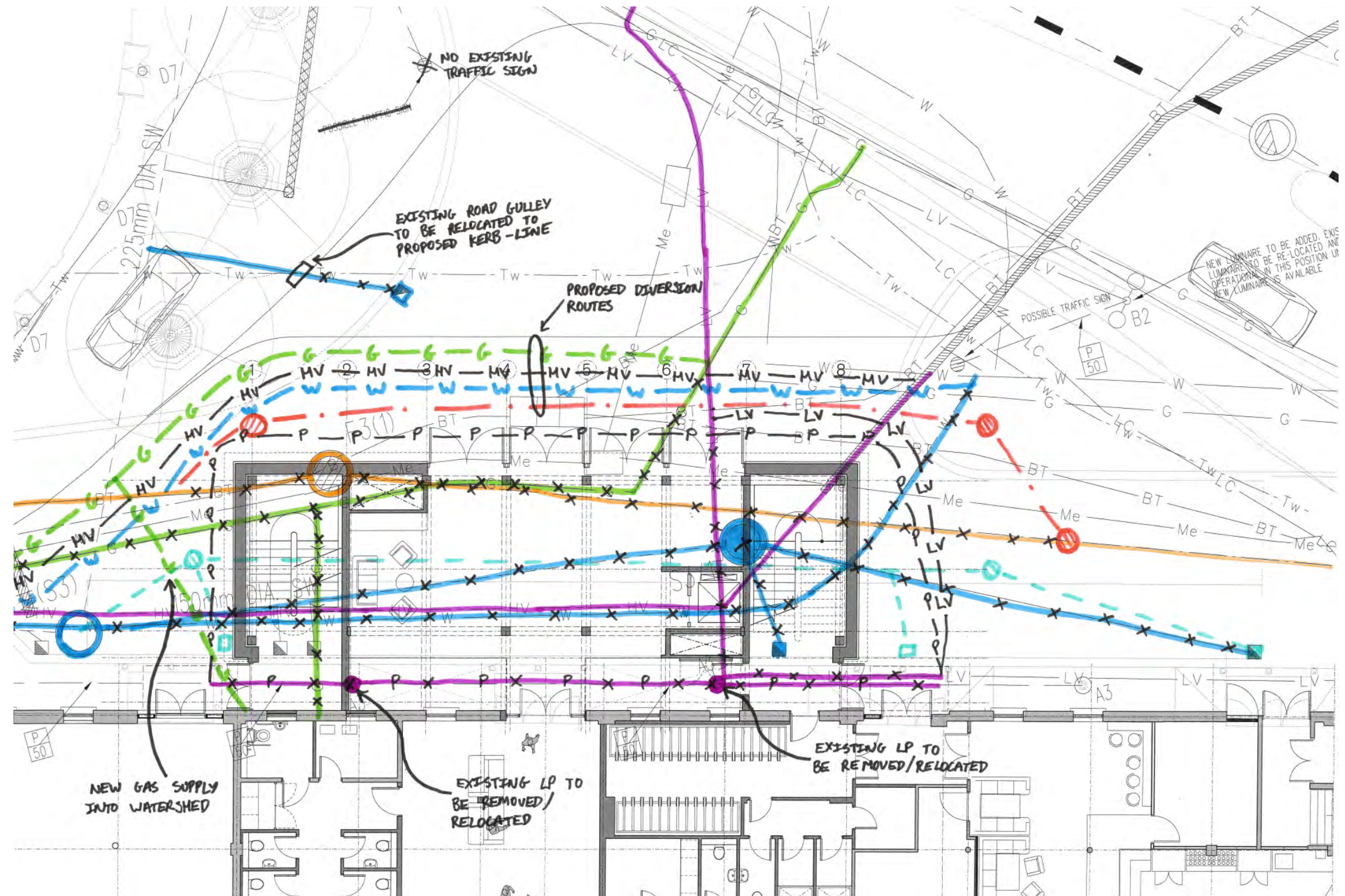
It has been necessary, in order to prove the feasibility of this strategy, to clarify the ownership of the area and any legal constraints on the development.

The owners have been approached and agreements in principle are in place to acquire the necessary rights over the site.

In addition to the land itself there are a number of underground utilities and services which carry associated legal restrictions. Consulting engineers ARUP were commissioned to survey and identify all the underground services in the area. The utilities identified include; telecoms, power and data, street lighting cables, gas, water, sewage and HV electricity cables.

It has been established that in most cases it is not possible to build over services, mainly due to future access requirements for maintenance or replacement. Each utility has been assessed for the potential impact of diverting the service to create a site and a strategy has been prepared that will enable sufficient to be relocated at a viable cost to generate a useful area to accommodate the footprint of the extension.

This diagram illustrates the diversion of services.





## 5.2 Opportunities + Constraints

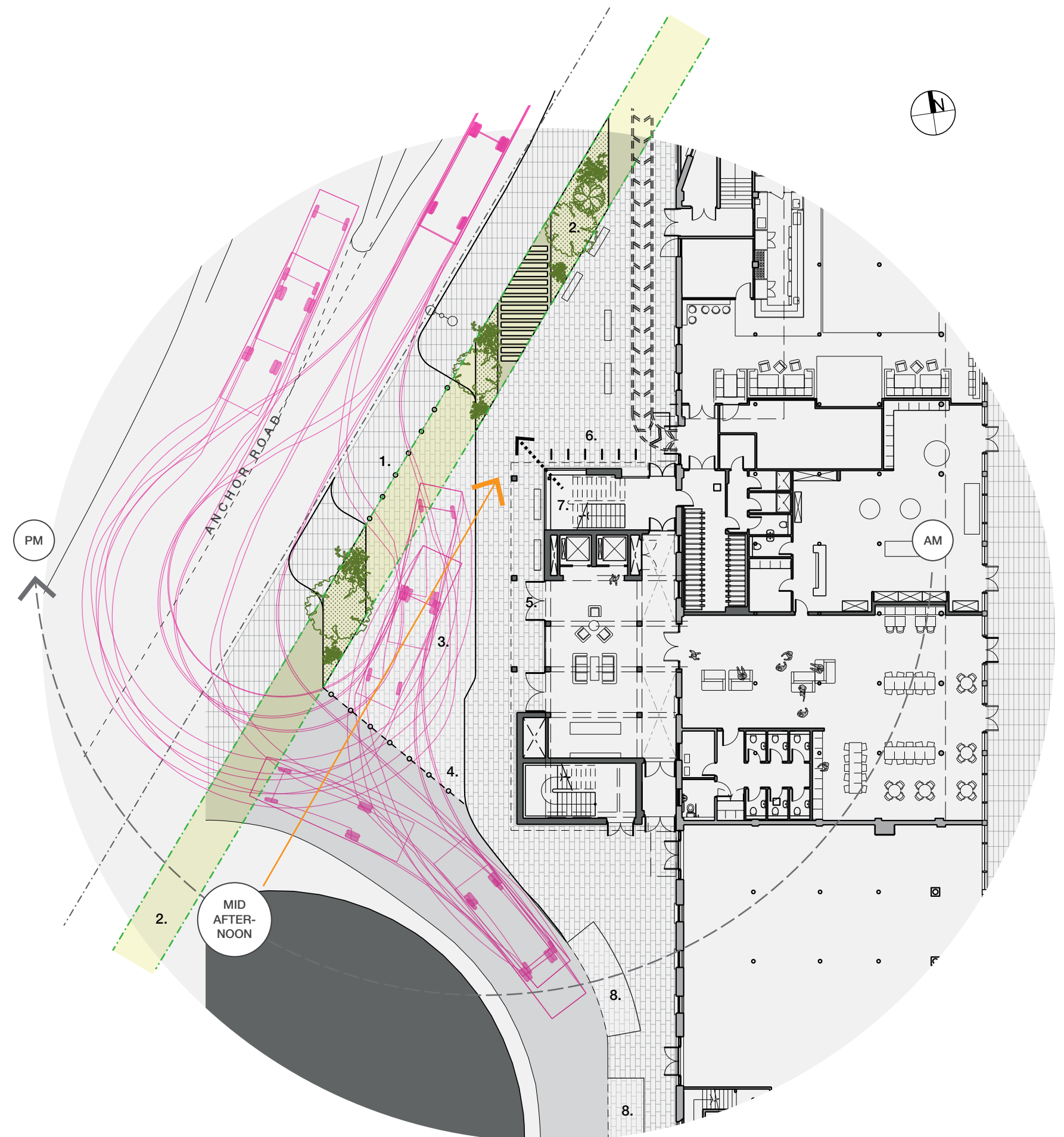
### Highways + Access

In addition to the relocation of services it will be necessary to realign the access to Canon's Road behind Watershed. This access road and associated turning head serves a number of businesses to the south of Watershed and the rear of the redundant IMAX.

ARUP have undertaken an initial tracking exercise to prove that a revised layout to the street can accommodate the turning radius required for larger delivery and refuse vehicles. This proves that the street can be revised to accommodate the new extension without impacting on the operation of the existing businesses or on Anchor Road itself.

The redesign of the turning head and the creation of an improved streetscape with active frontage will have a positive impact on Canon's Road.

1. Continuous paving treatment along the edge of road
2. Green belt in landscaping to soften and shield entrance to building
3. Additional space to the front of the building which can be used when not in use as turning area for large vehicles
4. Retractable bollards to protect frontage of the building as a pull-in bay from the road
5. Overhang on building creates covered entrance
6. External bike parking
7. Internal staircase opened up to provide views out from Northern corner of the building
8. Disabled Parking





## 5.3 Opportunities + Constraints

### Listed Building

Any proposals for alterations to the existing buildings clearly have to respond to the constraints of the listed historic fabric.

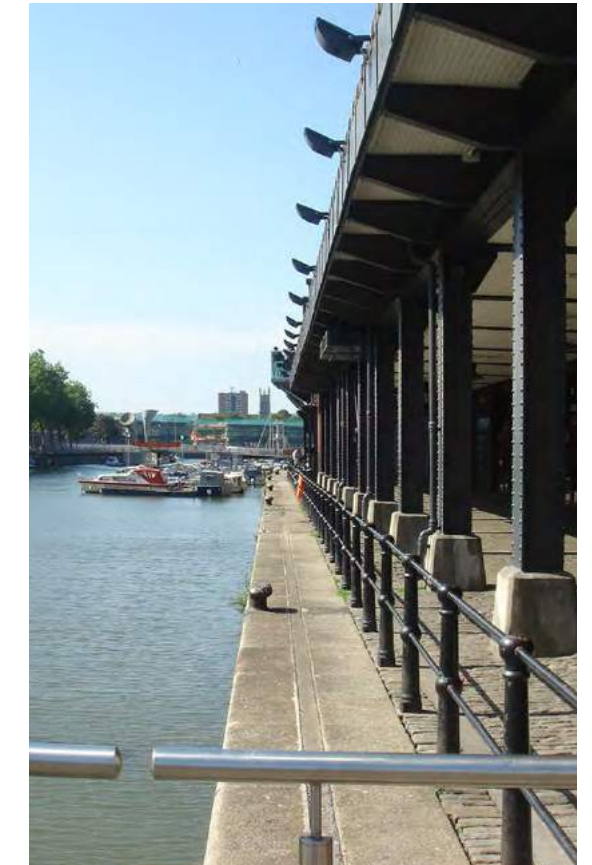
It could be argued that E + W Sheds were listed not for their architectural qualities but as a significant remnant of the commercial use of the docks. Whilst many of the functional quayside buildings that dealt with the transfer of goods from ship to shore have been demolished, Watershed is an important reminder of the history of the area.

E and W sheds are separately listed as Transit Shed E (List Entry Number 1282141) and Transit Shed W (List Entry Number 1282142) and both are Grade II listed.

Transit Shed E, the northern part of the building, has a Jacobethan style gable elevation facing the city centre with an octagonal tower. This detail was included within the designs to conceal the roof of the building from College Green at the request of the Port Authorities. The remainder of the building is essentially a functional warehouse design that establishes a very particular scale on this side of St Augustine's Reach. The heavy frame and permeable façade are reminders of the basic function of the original building. Internally the listing references the surviving steel truss roof and frame that any intervention will have to respond to.

Transit Shed W is a simpler building designed around its functionality with the main façade, facing the quayside, similar in design to Shed E. The rear of the building is more basic and consists of solid brick façade punctuated by large timber doors at street level with small timber projecting lofts above. These lofts, designed to crane goods to the waiting transit below, are interesting in their form but not referenced in the listing. Internally the listing as the columns at ground floor are steel with timber columns supporting double pitched timber trussed roof above. Transit Shed W will be the area of the building most affected by the new extension however the intention is to maintain the character of this part of the building with minimal loss of historic fabric.

The essential character of the Transit Sheds E + W is one of a simple robust construction with the functionality made legible through its architecture.





## 5.4 Opportunities + Constraints

### Conservation Area Context

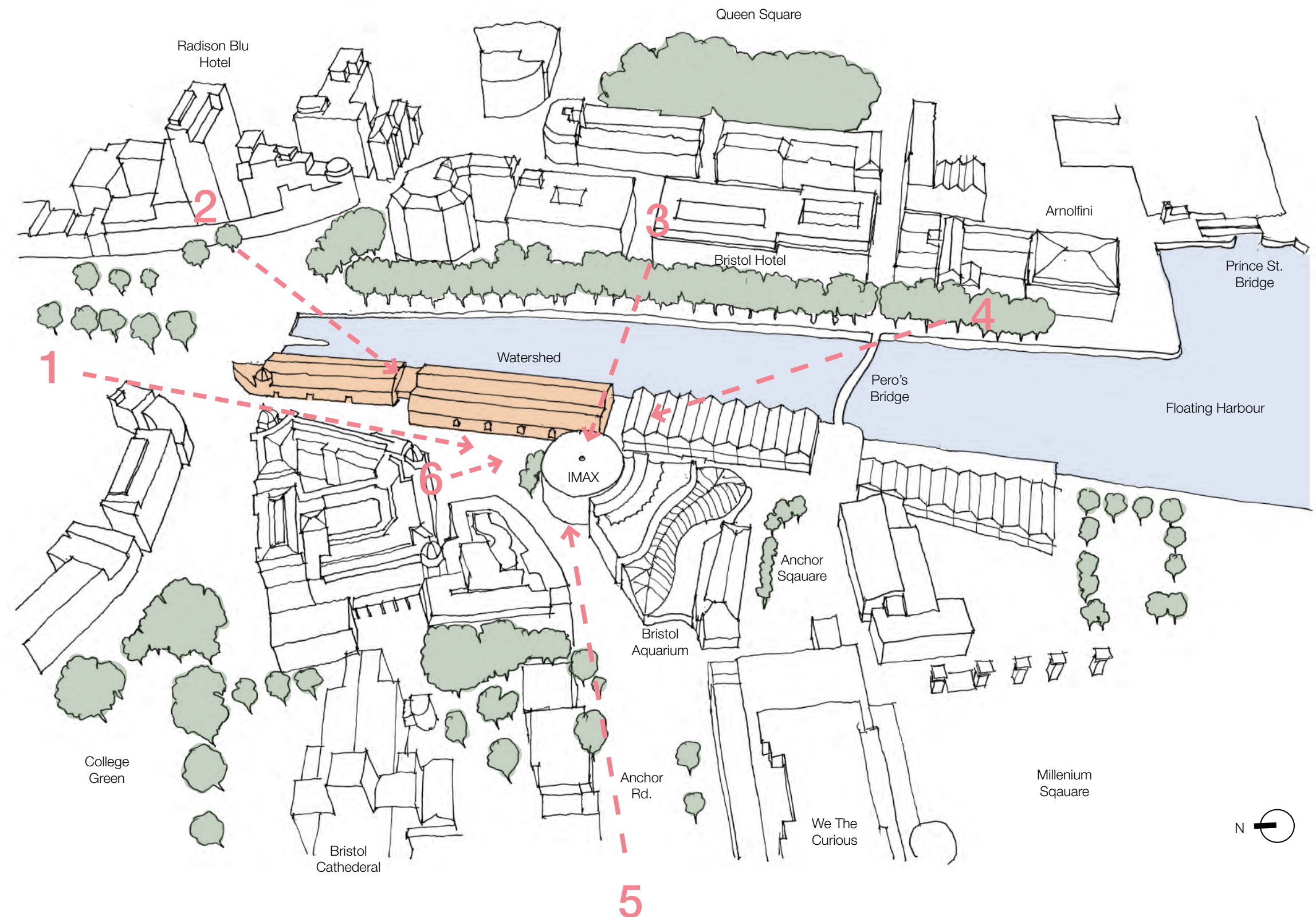
It is clear from a brief analysis of the Conservation Area appraisal and specific Character Area for Canon's Marsh that this part of the city is dominated by C20 buildings of a larger scale than Watershed.

It is also clear that it is the relationship between this part of the city and the water that is essential to the character of the area, not the architectural quality or history of the relatively new buildings that now occupy Canon's Marsh.

A case can therefore be made for an extension behind Watershed which responds to this scale without detriment to the listed building.

1. View from the centre along Anchor Road to the rear of Watershed
2. View from the centre across the Floating Harbour to Watershed
3. View from Narrow Quay across the Floating Harbour to Watershed
4. View from Pero's Bridge looking towards the centre
5. View from Anchor Road approaching the centre from the west
6. Panoramic view from Anchor Road

The diagram opposite highlights some of the key views which have been taken into consideration. See the following page for photos.





## 5.5 Opportunities + Constraints

### Conservation Area Context





## 5.6 Opportunities + Constraints

### Site Analysis

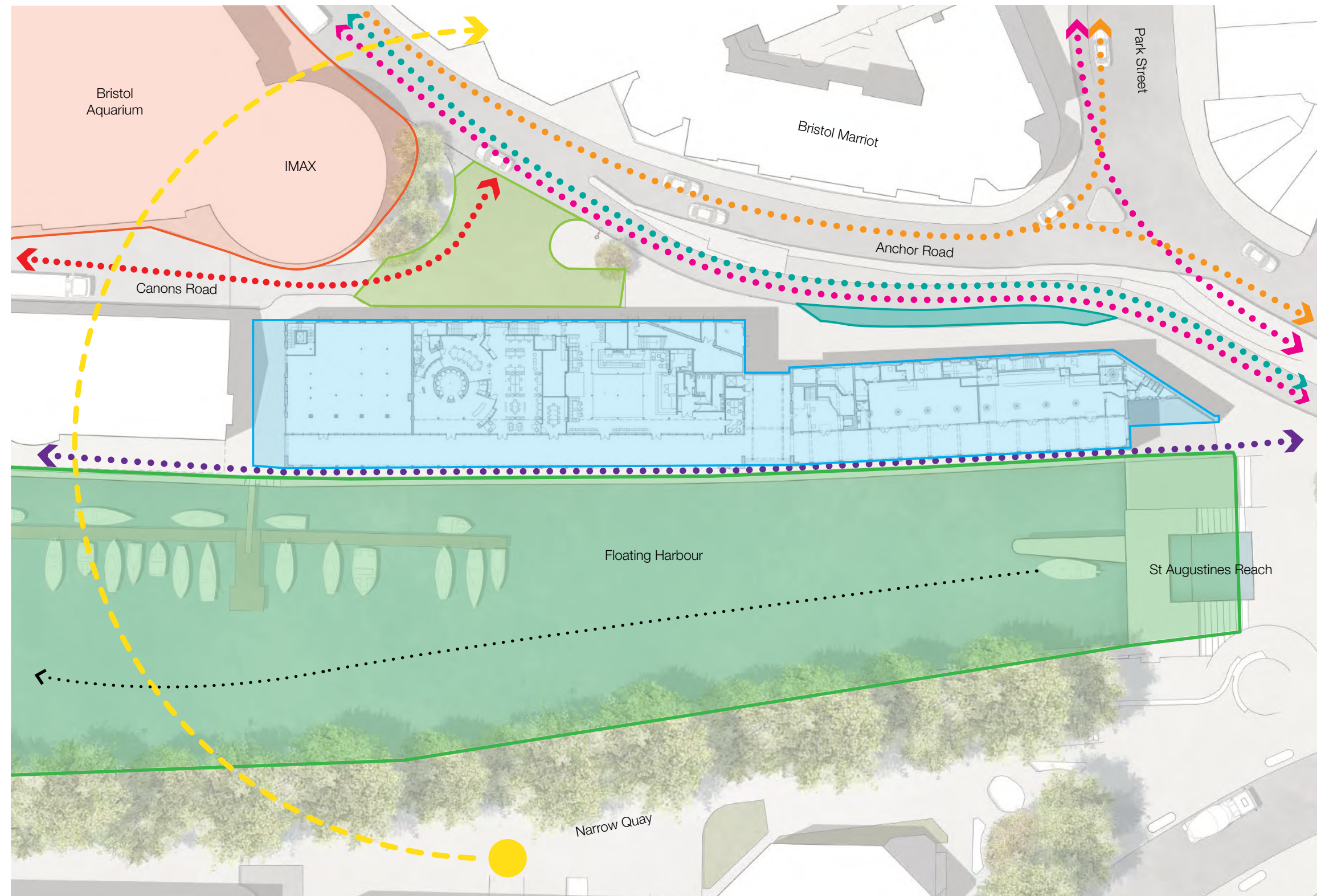
Having shown that it is possible to generate a viable development site on the Canon's Road turning head a more detailed site analysis will inform the proposals.

The plan illustrates the boundaries of the site, the sun path and orientation, the road layout and pedestrian movement.

The section highlights the relationship with the adjacent buildings.

The following photographs demonstrate the critical views around the site that will be taken into account.

- Ferry Route
- Sunpath
- Pedestrian Route
- Delivery Route
- Bus Route
- Cycle Path
- Cars
- Bus Stop
- Land owned by Harbour Master
- Land owned by Watershed
- Land leased by We The Curious form Bristol City Council



## 5.6 Opportunities + Constraints

### Policy and Conservation

#### Policy Context

##### Bristol Development Framework Core Strategy June 2011

The Core Strategy is the primary document in the Bristol Development Framework and sets out; the key strategic issues the city faces, the spatial vision and strategic objectives looking forward to 2026, and the delivery strategy that identifies spatial strategy and development principles. Key deliveries strategy targets that are relevant in the context for the proposals at Watershed include:

- **Policy BCS7** – offices and entertainment use for arts, culture and tourism located in town centres such as the Harbourside area, including promotion of mixed-use development that takes advantage of under-used land.
- **Policy BCS8** – seeks to strengthen the economic performance of the city through the provision of 150,000m<sup>2</sup> of new office space in the city centre.
- **Policy BCS13** – developments should contribute to both mitigating and adapting to climate change through measures that may include; high standards of energy efficiency, renewable and low-carbon energy systems, encouraging walking cycling and public transport.
- **Policy BCS14** – development should include measures to reduce carbon dioxide emissions from energy by; minimising energy requirements, incorporating renewable energy sources, and, incorporating low-carbon energy sources.
- **Policy BCS15** – making sustainable design and construction integral to new development
- **Policy BCS20** – new development will maximise opportunities to re-use previously developed land in and around the city centre. Imaginative design solutions will be encouraged at all sites to ensure optimum efficiency in the use of land is achieved
- **Policy BCS21** – new development in Bristol should deliver high quality urban design by; contributing positively to an area’s character or identity, promote accessibility and permeability, promote legibility, deliver high quality buildings and spaces, create lively and well-maintained public realm and create buildings that are

adaptable to changing social, technological, economic and environmental conditions.

- **Policy BCS22** - Development proposals will safeguard or enhance heritage assets and the character and setting of areas of acknowledged importance.

##### The Bristol Area Central Plan – March 2015

This document sets out the Council’s vision for the future of Bristol City Centre in 2026 developing the core strategy policies set out within The Core Strategy document. BCC sets out how the city centre will provide an enhanced cultural and tourism offer that complement the city’s established venues and facilities. There will be an emphasis on new development that delivers enterprise and employment particularly in the diverse and dynamic creative sector. The ambition is to create new development that provides flexible business spaces and create a vibrant and diverse mixed-use city-centre.

We believe that the proposals at Watershed will help BCC deliver on the following policies:

- **Policy BCAP6** - Delivery of employment space in Bristol City Centre; Seeks to deliver additional 120,000m<sup>2</sup> of new office floorspace across the city centre and in the Harbourside area. The policy seeks to encourage the integration of smaller scale office and creative industries development throughout the city centre.
- **Policy BCAP9** - Cultural and tourist facilities and water-based recreation; identifies Watershed as an important part of the city’s cultural offer and encourages further investment in cultural facilities in the city centre and in particular the Harbourside area. This policy seeks to retain existing cultural facilities and enhance those that make an important contribution to the distinctiveness of the city centre
- **Policy BCAP29** - Car and cycle parking; development in Bristol City Centre will be expected to meet or exceed minimum standards for secure cycle parking. This should also include associated facilities that will meet the requirements of staff and visitors
- **Urban Design Approach** – sets out principles for quality urban design supporting BCS21 of

the Core Strategy. The approach sets out three urban design concepts:

- **The Legible City** – highlights the pivotal role of public realm to create spaces that are well-connected, accessible, welcoming and high quality. This seeks to rebalance the public realm in favour of pedestrians and cyclists by reducing or removing the detrimental impact of vehicular movement.
- **The Restored City** – encourages the thoughtful and creative interventions into the city through contemporary design that responds positively to the historic local context
- **The Reinvented City** – encourages new and larger scale developments that respond to Bristol’s unique context in a more overtly contemporary and bold manner. This allows for a less restrained approach although strategic context considerations such as views, topography, landscape features and surrounding built forms will remain important influences in shaping proposals for new development.

- **Policy BCAP41:** The Approach to Harbourside; this policy focuses on working with and enhancing what the area has to offer. Watershed is identified as one of the city centre’s most important visitor attractions providing a focus for creative industries. Development in this area is expected to be of a scale and design appropriate to its setting reflecting the special interest and visual prominence of quayside areas and character and setting of the surviving historic buildings and fabric and preserving and enhancing views to and from the Floating Harbour. Opportunities will be sought to provide new or enhanced public open spaces by rationalising the existing highway infrastructure to release more development land. Development should preserve and enhance the setting of surviving heritage assets within and adjoining the regeneration area and improve the quality of public open space in the area.

#### Conservation

The Bristol Development Framework Core Strategy (June 2011) seeks to promote development that enhances the historic environment that reflects the rich and varied heritage of the city, Policy BCS22 states that:

Development proposals will safeguard or enhance heritage assets and the character and setting of areas of acknowledged importance including; Historic buildings both nationally and locally listed and Conservation areas.

Bristol City Council state that the historic environment is important not just for its own sake; it adds value to regeneration and has been a major draw in attracting businesses to the city, acting as a stimulus for local economic growth. This policy seeks to ensure that sites and areas of particular heritage value are safeguarded for the future or enhanced both for their own heritage merits and as part of wider heritage regeneration proposals.

During the pre-planning discussions with Bristol City Council, childs+sulzmann architects have been asked to consider the implications on the proposals with key conservation stakeholders including Historic England.

- **Grade II listing** - Historic England’s statutory remit for consultation on proposals for Grade II listed buildings is only triggered for proposals that involve substantial demolition. This is normally more than 50% of a principle external wall or a principle roof-slope. We can demonstrate that the proposals included within this application seek to conserve the existing fabric as far as possible and fall well below these criteria. This has been confirmed by Historic England in a letter September 2018.
- **Conservation Area** – Historic England’s statutory remit for consultation on proposals for development in a conservation area involves development that exceeds 1,000m<sup>2</sup>. The proposed area of the new building is therefore below the threshold, and this has been confirmed by Historic England in a letter September 2018.
- **Views of the Cathedral** – our initial visual impact analysis demonstrates that there are no

impacts on views from the Cathedral because of the extension to Watershed

- **Scale of extension to the listed building** – justification will need to be provided that the wider public and cultural benefits associated with the additional facilities for Watershed outweigh the harm to the listed building. We believe that the proposals are a relatively modest intervention when seen in proportion to the whole. It is also essential that the intervention has impact and visibility to make legible the change and demonstrate the contemporary activity and growth of Watershed. This approach is positively supported by the current / emerging City Centre Framework document which calls for ‘bold and imaginative transformation’.
- **Linear character of the building** - The extension attaches to only a small portion of W Shed, only 22 m in a length of 136 m. We suggest that this would not reduce the legibility of the shed-like character of the existing building. The design of the ground and first floor makes legible this linearity with glazing separating the existing building and the new circulation cores. This is further emphasised by the design of the first floor area where a mezzanine platform has been formed that leaves a void between the new floor structure and the existing break wall.
- **Improving the existing facilities** - Watershed owns the headlease to the whole of the building and the intention is to improve the experience at ground level, relocate entrances and animate the public realm. As part of these proposals Watershed are occupying the unit adjacent to the existing entrance to provide an extended foyer and new cinema. The existing unit that is currently the Bristol Energy offices will be converted to provide new accessible event/ studio space for Watershed and partners. Together these changes will give Watershed much greater street presence and access.
- **Building within the footprint of the listed building** – careful analysis of the existing building has been undertaken with structural engineers ARUP to ensure the minimum disruption and loss of historic fabric. Details of this approach are included within the structural strategies section.



## 6.0 Design Proposal

### The development of the brief

The brief has been informed by an analysis of what might be possible on the site available. To examine this question a workshop was held at Pervasive Media Studio with a consulting team representing a full range in expertise in architecture, structural engineering, heritage and urban planning.

The discussion was informed by input from Watershed management and operation teams.

The ambition for the workshop was to explore all the boundaries and constraints on the development and identify some areas for further investigation. The intention was to find innovative solutions to the challenges that the site and building posed.

The brief would be further clarified by developing the architectural layouts in parallel with Watershed's business plan. This helped identify configuration options for the new space and consider the future development and resilience of Watershed.



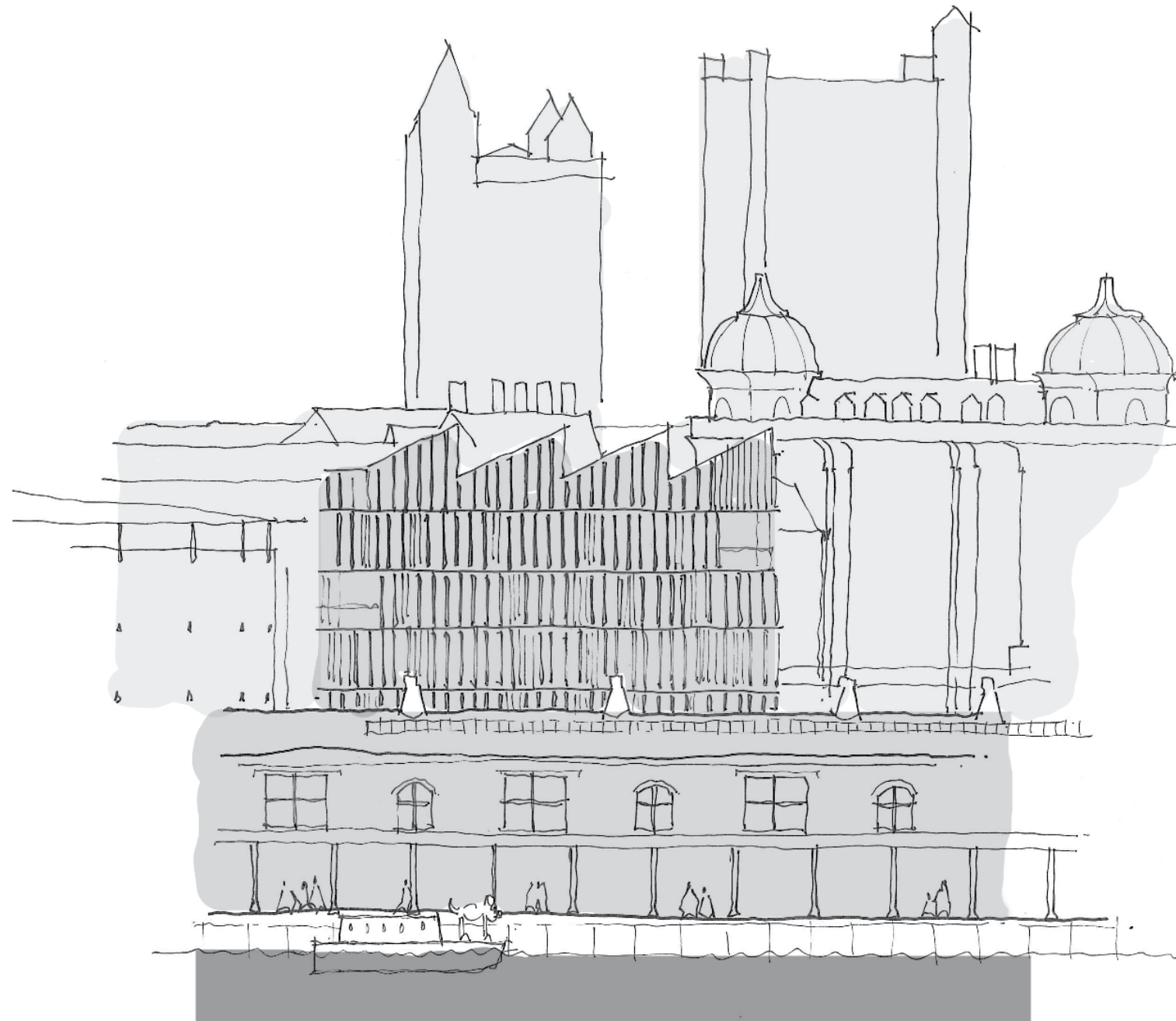


## 6.1 Design Proposal

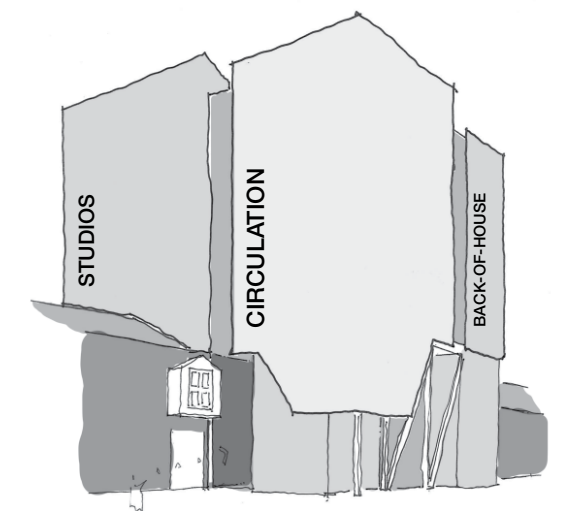
### The revised brief

The brief that emerged from the discussions and the continuing demand growth is:

- To build on the whole of the modest area available
- To extend the new construction into and over part of Transit Shed W
- To construct new space in an area that will generate least disruption to the existing business
- To generate the opportunity to rearrange the circulation through the building
- To create a new entrance from Anchor Road
- To extend the street level frontage of Watershed
- To provide a livelier foyer area on the ground floor
- Use the new building to demonstrate and advertise the expanding work of Watershed
- To create additional workspace for talent development, incubation and early stage growth
- To ensure that the development is a demonstrator in sustainable principles
- Develop an architectural solution which is respectful to the listed building and appropriate to the location
- Take full advantage of this busy and lively location to encourage new and more diverse audiences to Watershed
- Generate improved public realm to Anchor / Canon's Road
- Explore the use of emerging sustainable technologies
- Optimise potential for PV energy generation
- Target low embodied carbon in the construction materials



Layering of facades seen from the harbour



Proposed massing of proposal viewed from Anchor Road



New extension sits away from the original building to generate clarity between old fabric and new intervention



## 6.2 Design Proposal

### Design Research

It is essential in developing the design to recognise that Watershed is located in a prominent location in the conservation area and that the existing buildings contribute significantly to the character of this area of the quayside.

At the same time, it is crucial to express the expansion and ambitions of Watershed and demonstrate in the new elements, the values of transparency and sustainability that are driving this project.

Before proceeding with the development of the design it was crucial to establish the structural condition of the existing building and its capacity to carry additional floors.

ARUP were appointed to carry out a preliminary appraisal of the existing W Shed structure to investigate the feasibility of adding new spaces over the rear half of the building.

By using evidence from archive drawings and photographs they were able to determine a likely structural capacity based on the historic use of the building as a transit shed. During several rounds of opening up works it was possible to inspect the existing first floor structure and establish an understanding of the existing structural layout and materials.

In parallel with the structural analysis a detailed assessment was also made of the environmental performance of the existing buildings. The first task was to identify the areas of high energy use; heating, lighting, kitchens etc. and the primary causes of heat loss through the fabric.

The headline findings were as follows:

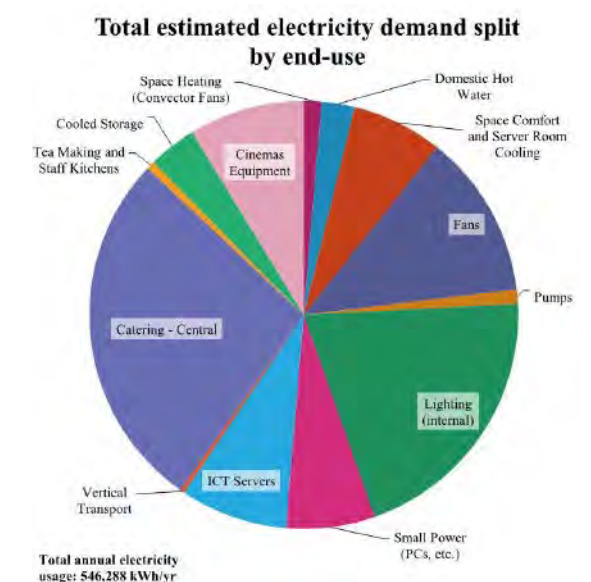
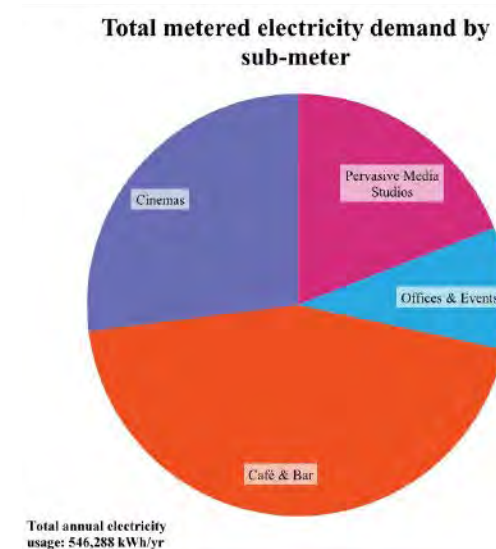
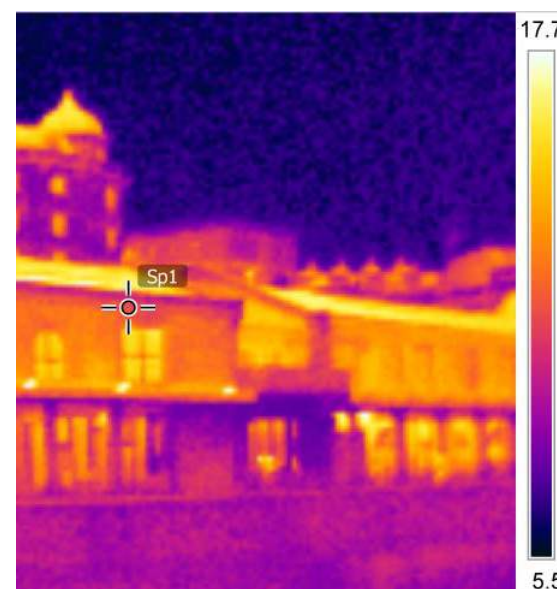
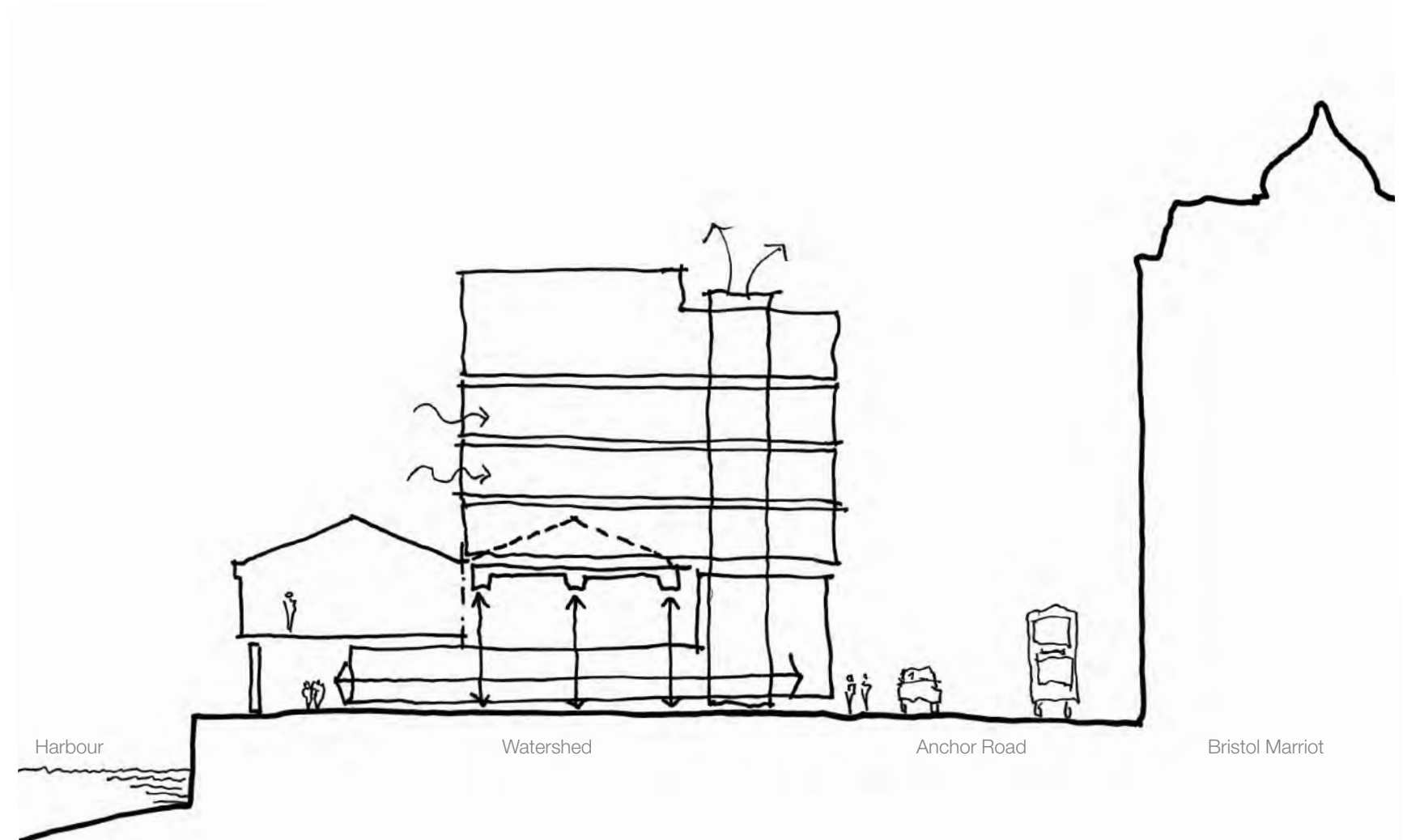
- As much of the lighting in the Watershed was the older, less efficient fluorescent type with no automatic control, it contributed to a significant proportion of the buildings' energy consumption. Much of the lighting within the existing building could be replaced with highly efficient LED technology with both presence and daylight linked control. Lighting in the new extension would also be designed to this standard.
- It was identified that the kitchen and bar

catering equipment use a particularly large proportion of the building energy. The existing controls did not allow the kitchen staff to cook in the most efficient manner and equipment was often left on when not used. It was strongly recommended that the replacement of much of the kitchen equipment with modern induction equipment would see significant energy savings.

- Due to the nature of much of the work undertaken in the building, the computer server loads were found to be particularly high. The replacement of these older rack servers with more efficient blade servers would reduce the building energy consumption
- The building has a single skin brick façade and as such there is a high proportion of heat lost through the façade. The introduction of a new circulation 'buffer zone' to the rear of the building, would effectively help insulate the existing building, reducing the heat loss and therefore energy consumption.
- Many spaces in the building are not effectively ventilated and therefore suffer from overheating. The introduction of natural ventilation via roof mounted 'terminals' (and perimeter openings on the new floor) will not only help improve summer time conditions in the building but would also negate the need to operate the mechanical ventilation plant and therefore reduce energy consumption.
- The roof of the new extension to the building could provide the opportunity for mounting solar PV panels for onsite generation of electricity. These panels can be mounted at the optimum south facing angle for maximum generation. There is also the possibility to locate the newer 'thin film' photovoltaic technology with the glazing of replaced rooflights. These rooflights would then provide the double benefit of both saving energy, through their improved thermal performance, and generate electricity.

The arguments were so persuasive for the alterations to the lighting and the replacement of the kitchen equipment that these works were put in hand immediately.

With the help of a grant from Arts Council England, these works were completed in Spring 2016 with immediate and substantial improvements in energy use and reduction in running costs.





## 6.3 Design Proposal

### Design Strategy

Various options for the extension have been considered at Watershed.

The structural investigations concluded that the existing structure could at most only support one additional floor (and this could not be confirmed without extensive and damaging opening up) therefore a new strategy needed to be developed to increase the accommodation.

The team reviewed the options and it was agreed that two key decisions were required to create the additional areas. These were:

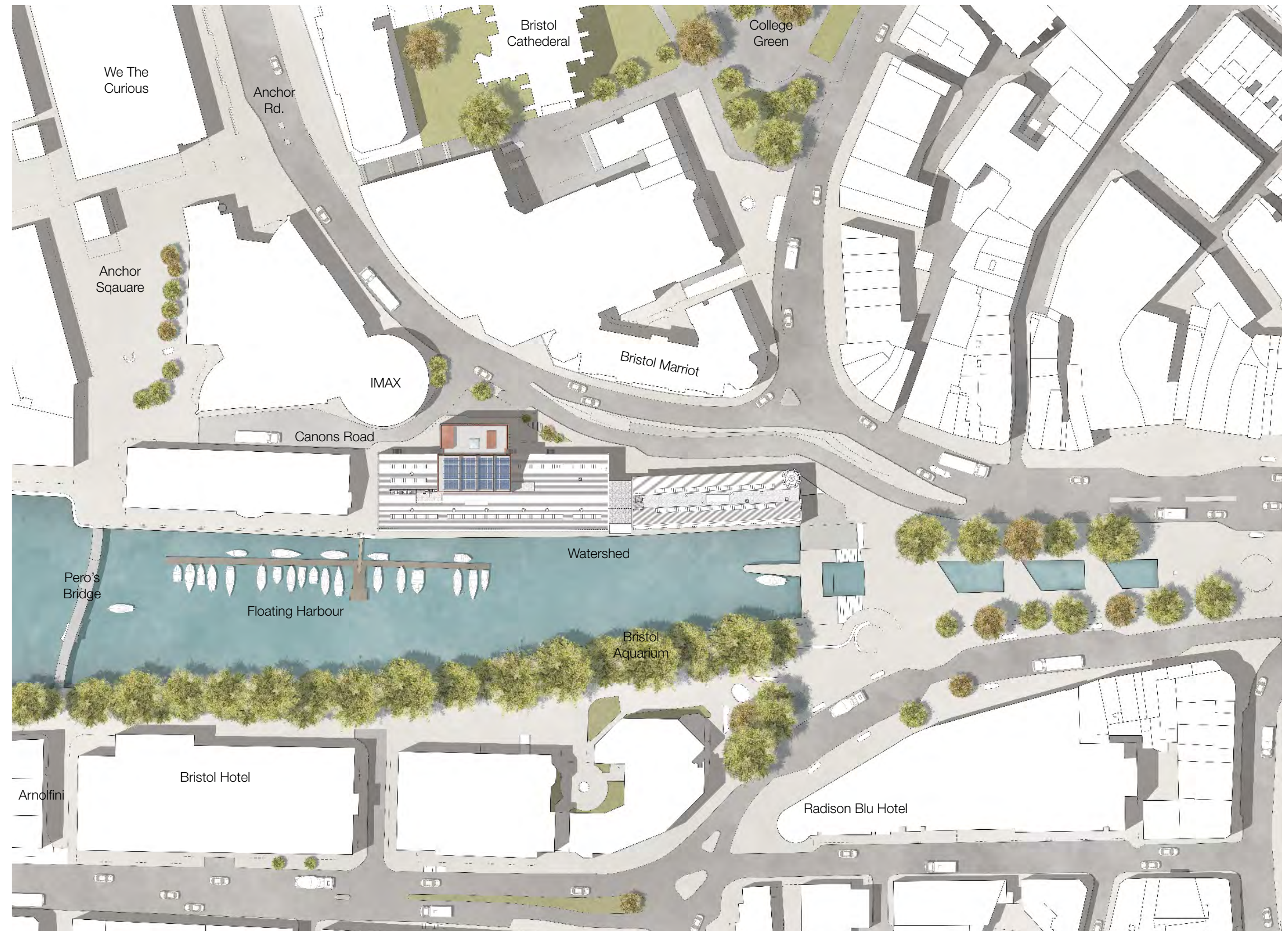
- Use the delivery bay on Anchor Road to extend the footprint of the new extension, and
- Remove part of the existing roof and structure and insert new frame to support additional floors.

The extension on the Canons Road site had been considered at an earlier stage of the project but was discounted due to the costs of relocating underground services. Further work was undertaken to review the location of the services. The purpose was to identify an area that could be made available with the relocation of the minimum number of services and without disproportionate cost. Some services could be incorporated within the design of the new foundations and some could be diverted. This in effect generates a viable building site.

The second decision was to work out the maximum area of the existing footprint that could be built over whilst minimising disruption to existing tenants. The team identified the area of W-Shed over the space currently being used by Bristol Energy at ground floor and the Watershed team at first floor.

This space could be made available for development as the lease on the ground floor space is due to expire in 2019, and the Watershed team could be accommodated elsewhere during the construction works.

Once the space is vacant parts of the existing structure and roof could be removed and a new framework constructed. There would be some enabling works prior to the main construction to create an alternative entrance to Pervasive Media Studio and maintain fire escape from the existing events spaces. These two strategic moves will enable Watershed to create the additional floor space required to meet the brief.



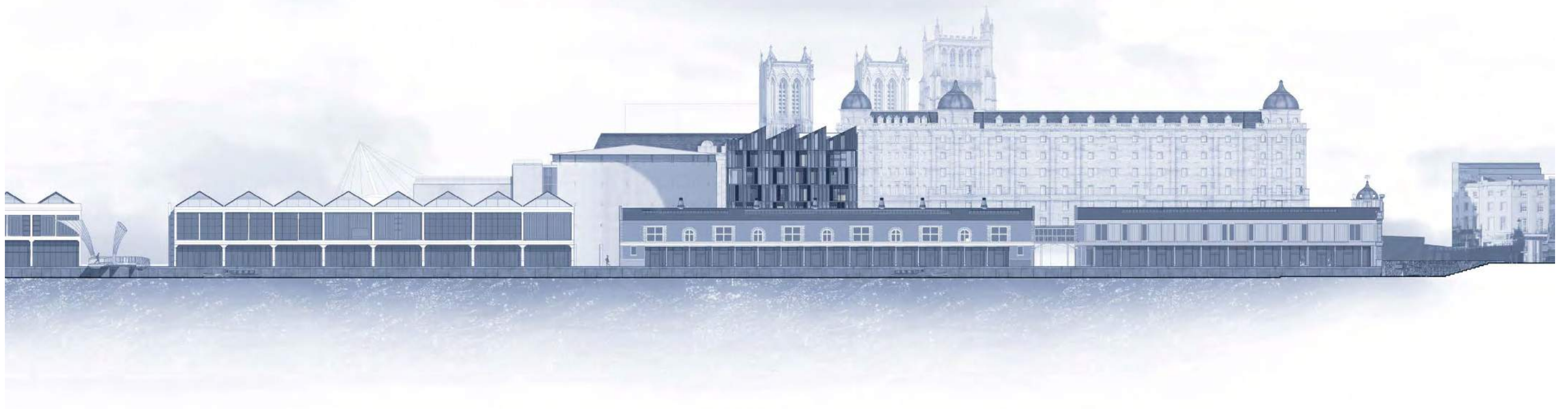
Proposed Site Plan





## 6.4 Design Proposal

### Context

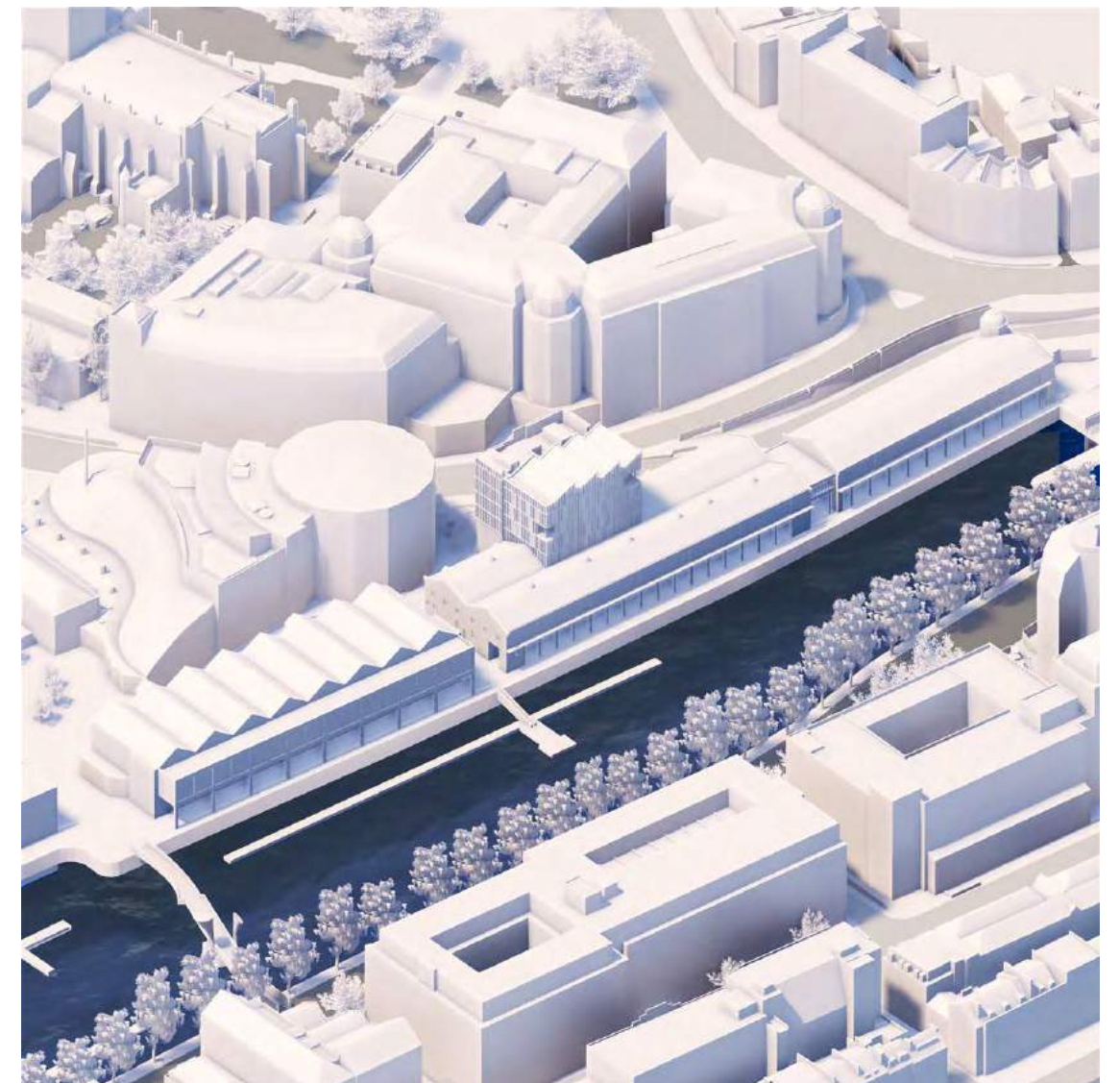
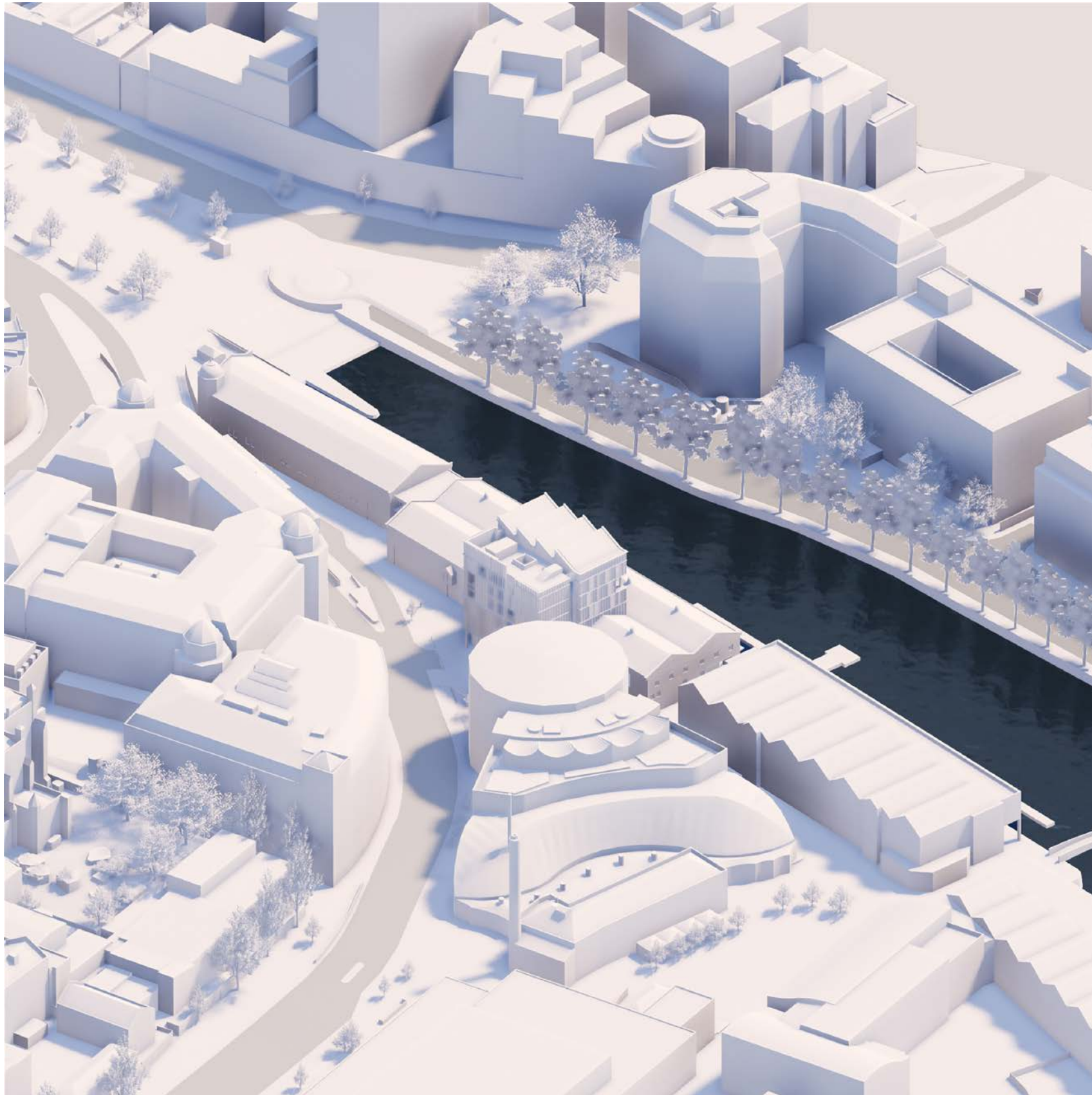


Rendered Elevation in context



## 6.4 Design Proposal

### Urban Massing

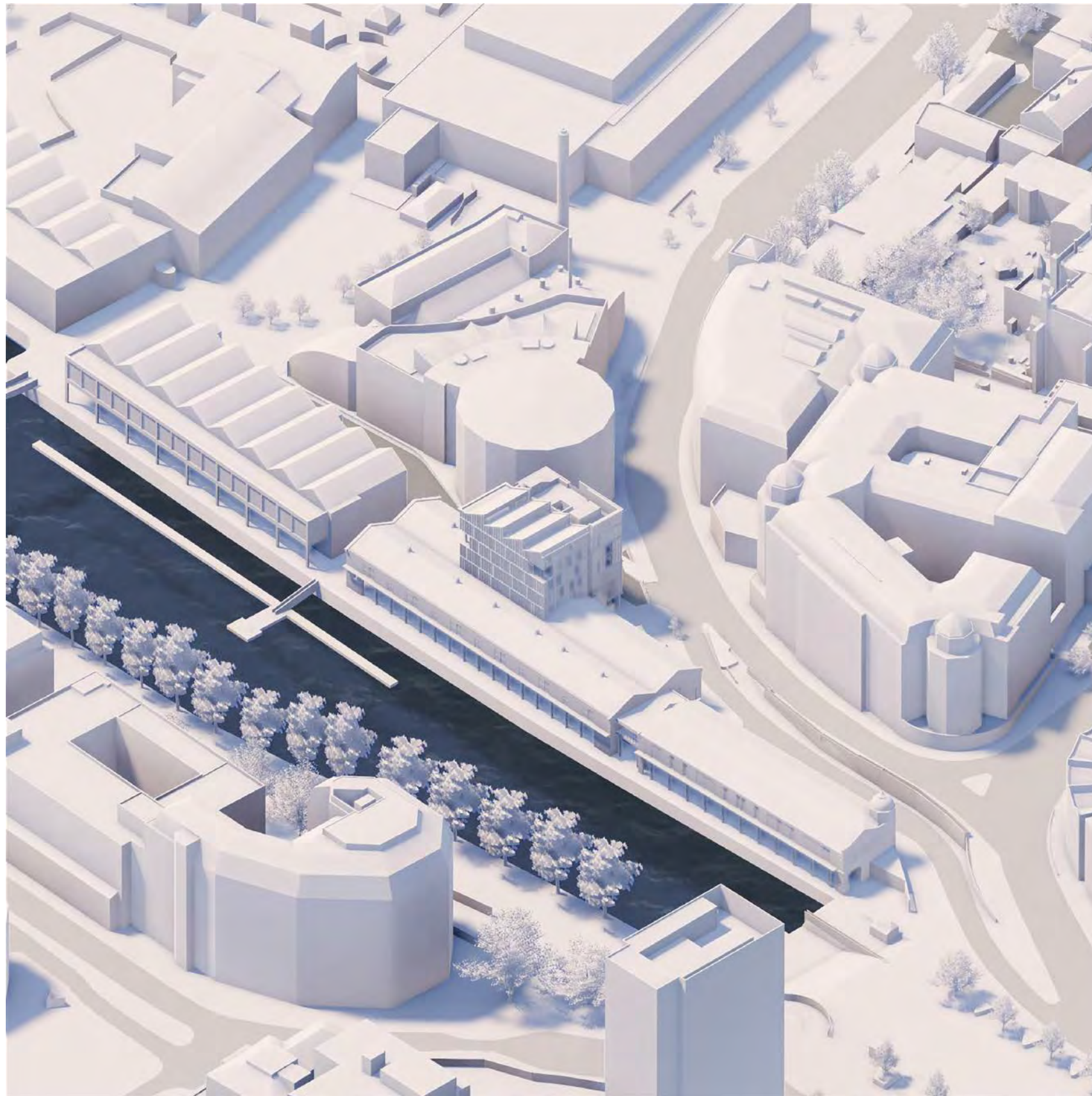


Above: Isometric view from south east  
Left: Isometric view from south west



## 6.4 Design Proposal

### Urban Massing



Above: Isometric view from north west  
Left: Isometric view from north east



## 6.5 Design Proposal

### Spatial Framework

The diagram here demonstrates the current proposal to intervene in part of the back half of W-Shed to create a platform for development. This is achieved by removing 5 bays of roof structure and constructing a concrete transfer deck, spanning over the existing wall at second floor level.

The proposed extension creates an additional 4 storeys of space as well as adapting the ground and first floor layouts. The Canon's Road turning head site is used for vertical circulation and extending the floor plates to provide active uses on the previously blank facade.

This scheme delivers the following programme of spaces:

#### Ground Floor W Shed:

- One tenant spaces in former Green Capital to provide a new retail unit (126m<sup>2</sup>)
- New Watershed Studio Event Space (290m<sup>2</sup>)
- Connection through the building via the studio to Anchor Road with external seating area,
- Cycle hub including bike storage, showers and lockers, and
- Separate out-of-hours entrance to the studio spaces on the upper levels
- 

#### First Floor W Shed:

- New event space Waterside 4 in former office space,
- Forward kitchen and furniture storage to improve servicing of conferences + events,
- Workshop space,
- Improved staff facilities,
- Improved and increased toilet provisions, and Events office

Additionally, there will be some alterations to the ground floor of Transit Shed E utilising the existing Tourist Information space to create:

#### Ground Floor E Shed:

- New 50+ seater cinema and expanded street presence in E-Shed.
- 12 person meeting room
- Plant space
- Extended street presence / foyer space
- New gender neutral toilets

The new extension will provide Watershed with the following facilities

#### Second Floor:

- New studio space with up to 60 work spaces
- 8 person meeting room
- Toilets + ancillary facilities

#### Third Floor:

- New studio space with up to 60 work spaces
- 4 person meeting room
- Toilets + ancillary facilities

#### Fourth Floor:

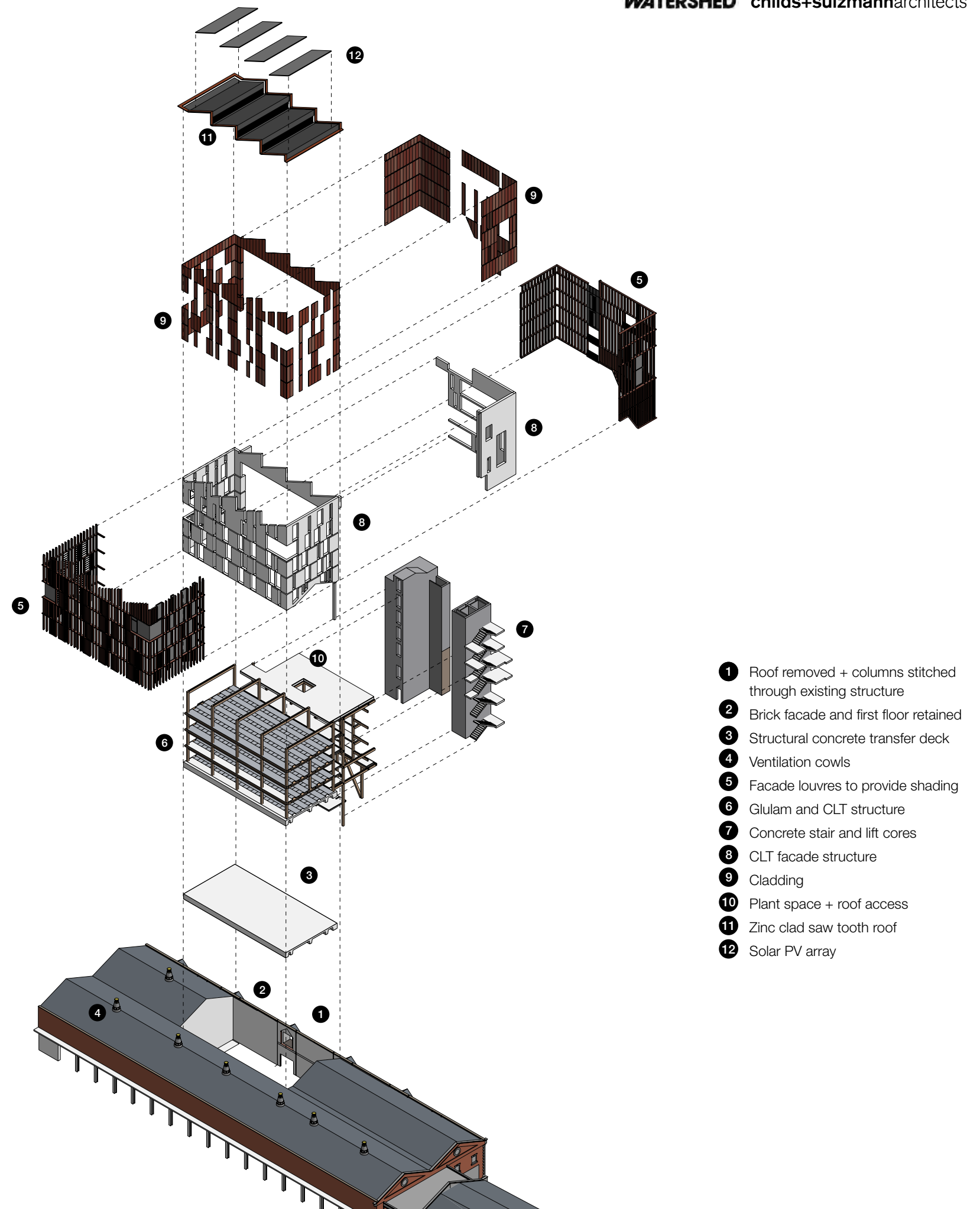
- New studio space with up to 60 work spaces
- Break-out space
- Toilets + ancillary facilities

#### Fifth Floor:

- New 200 people event space
- Break-out / bar space
- Toilets + ancillary facilities

The flat roof area of the new extension will provide a new plant space to service the new volume and improve the services efficiency to the existing building to further improve energy use and long term sustainability. The sawtooth roof over the events space will provide south facing pitches that can be utilised for a Solar PV array.

The proposed plans for the refurbishment and extension of Watershed to create additional Cinema and Studio capacity are presented on the following pages.

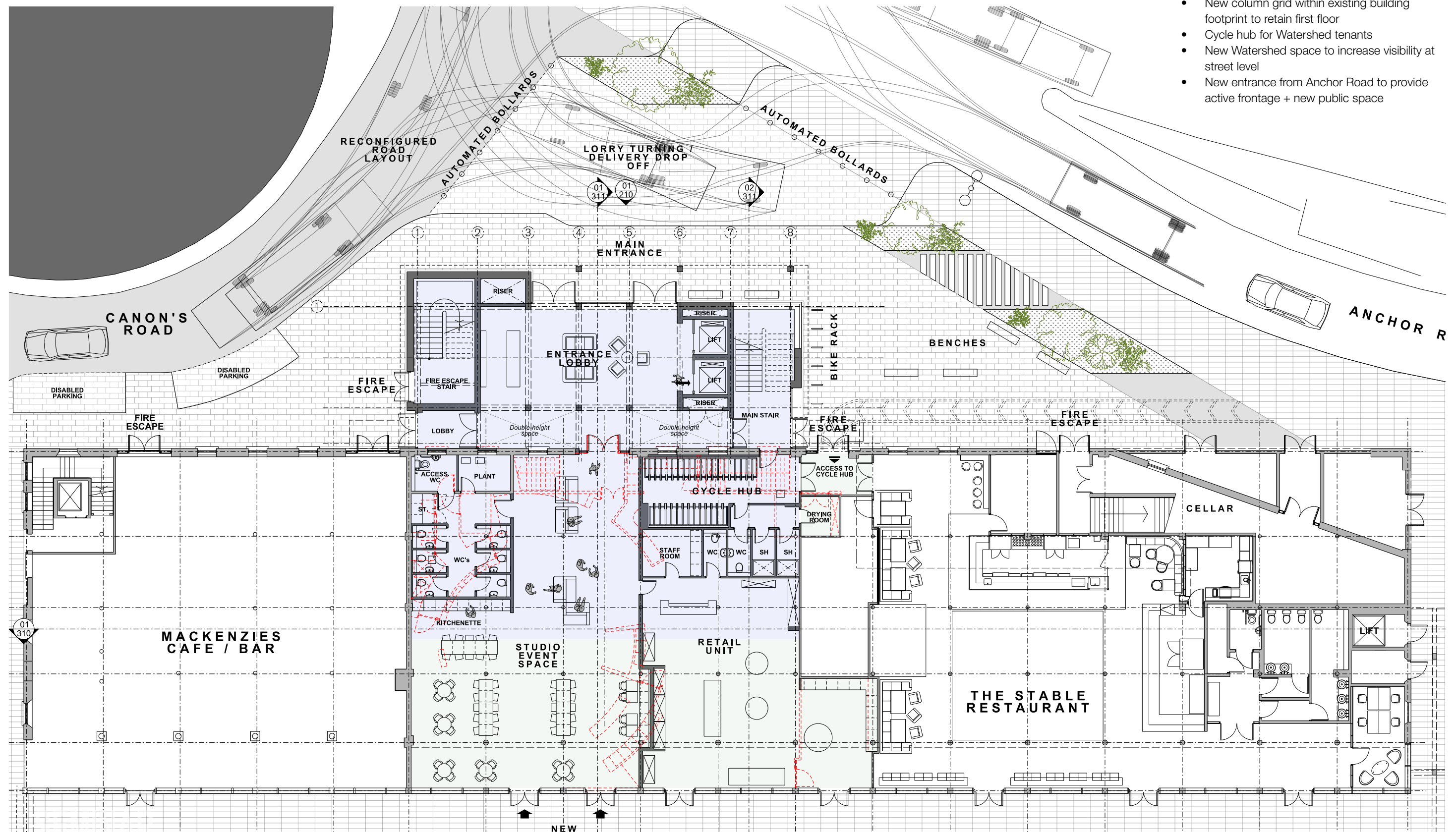


- 1 Roof removed + columns stitched through existing structure
- 2 Brick facade and first floor retained
- 3 Structural concrete transfer deck
- 4 Ventilation cowls
- 5 Facade louvres to provide shading
- 6 Glulam and CLT structure
- 7 Concrete stair and lift cores
- 8 CLT facade structure
- 9 Cladding
- 10 Plant space + roof access
- 11 Zinc clad saw tooth roof
- 12 Solar PV array



## 6.6 Design Proposal

## Plan - Ground Floor Proposed



- Key moves:**

- New column grid within existing building footprint to retain first floor
- Cycle hub for Watershed tenants
- New Watershed space to increase visibility at street level
- New entrance from Anchor Road to provide active frontage + new public space

- New Building
- Original Building Refurbished
- Demolitions



Not to Scale

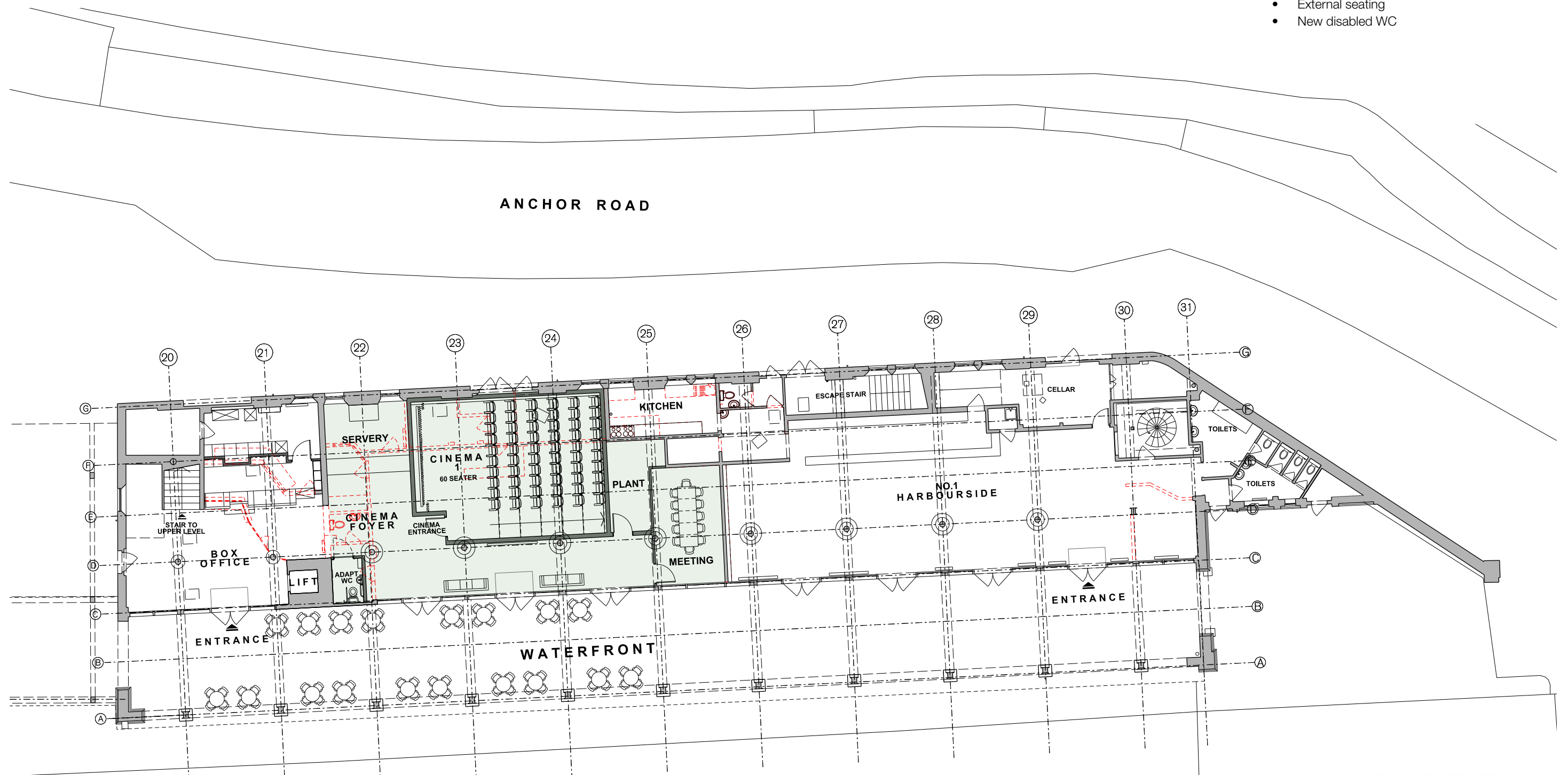


## 6.7 Design Proposal

### Plan - Ground Floor Proposed - E-Shed

#### Key moves:

- New cinema 4
- Extend foyer space and increase ground floor presence within E Shed
- External seating
- New disabled WC



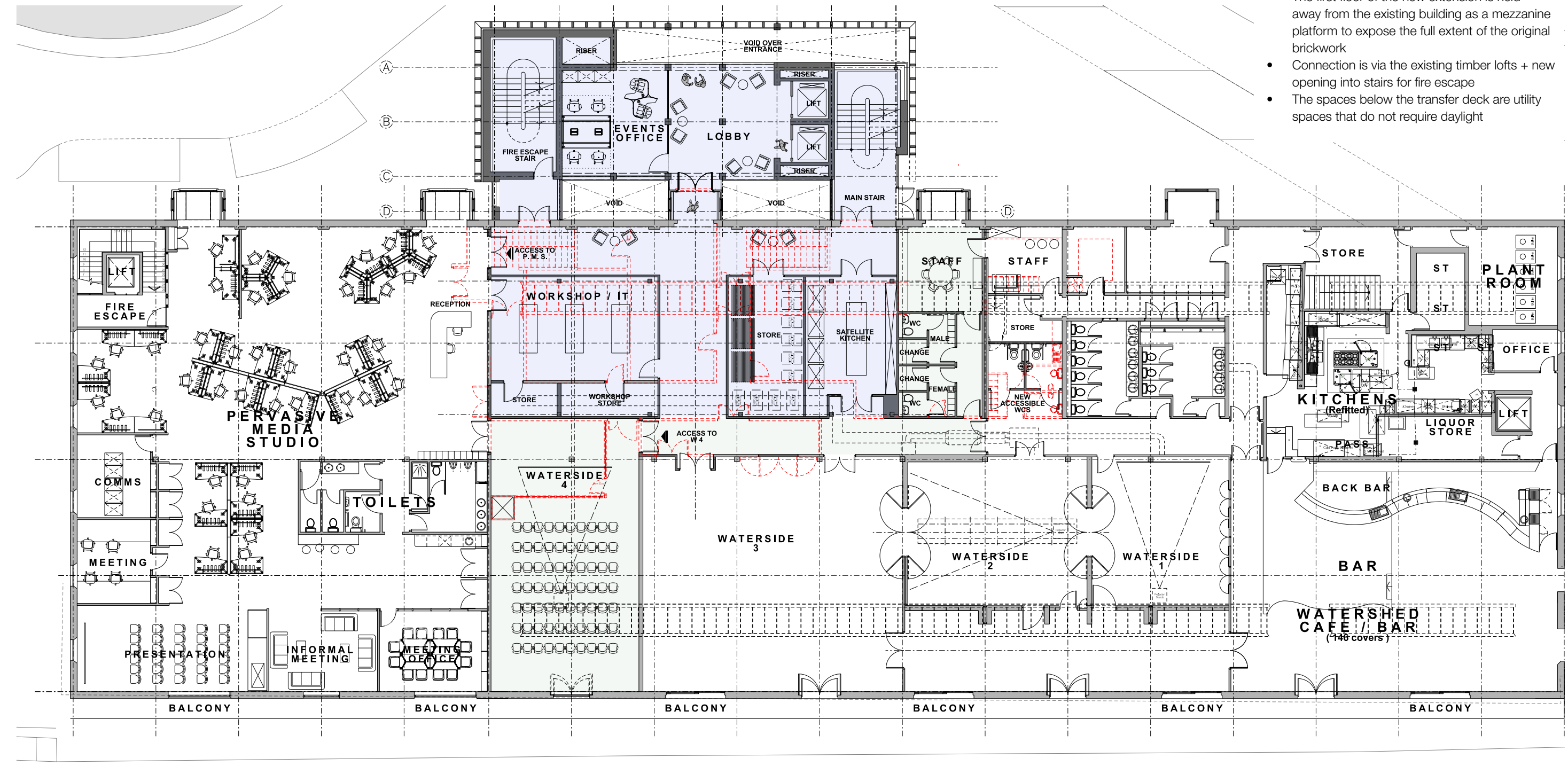
Original Building Refurbished

Not to Scale



## 6.8 Design Proposal

### Plan - First Floor Proposed



- New Building
- Original Building Refurbished
- Demolitions

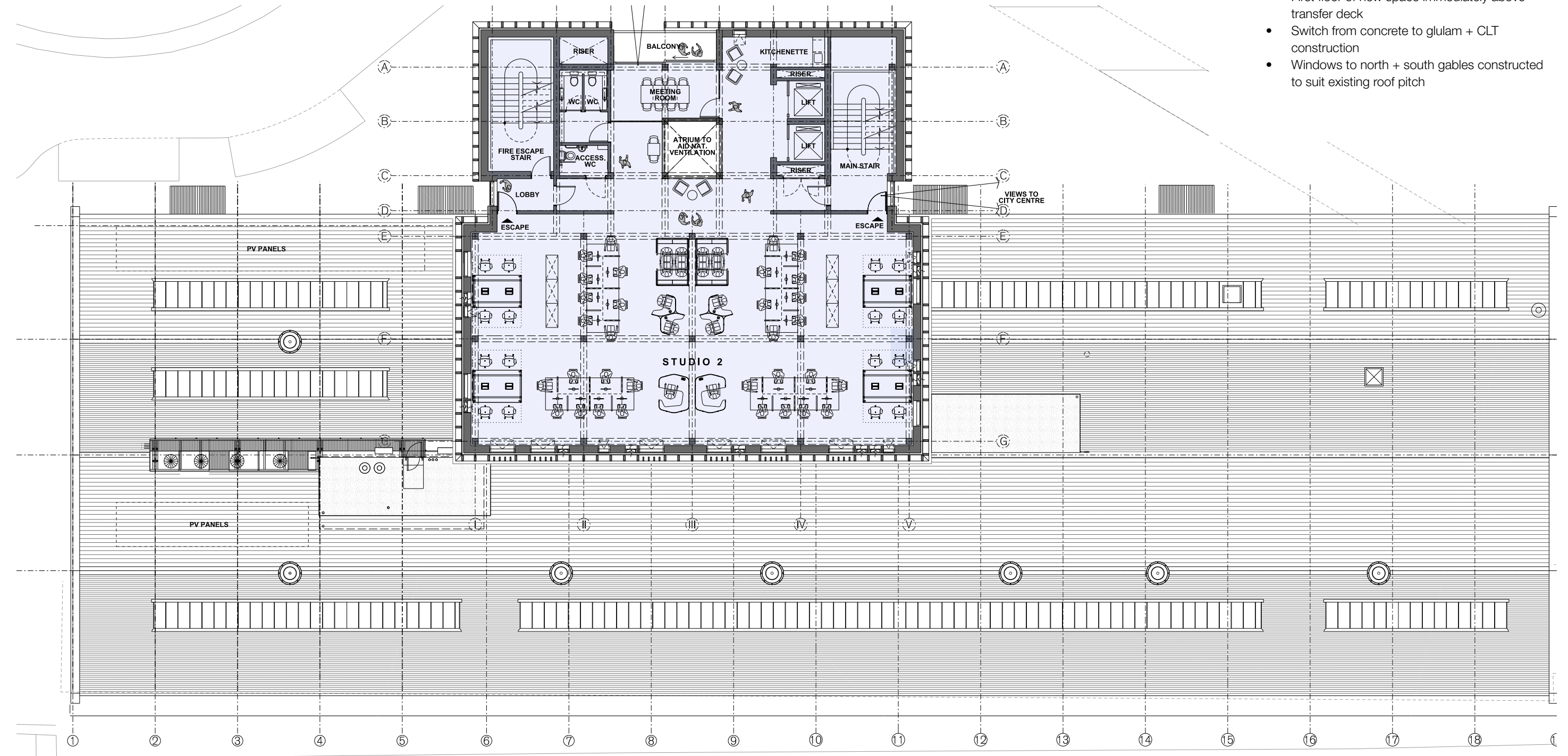


Not to Scale



## 6.9 Design Proposal

### Plan - Second Floor Proposed



#### Key moves:

- First floor of new space immediately above transfer deck
- Switch from concrete to glulam + CLT construction
- Windows to north + south gables constructed to suit existing roof pitch

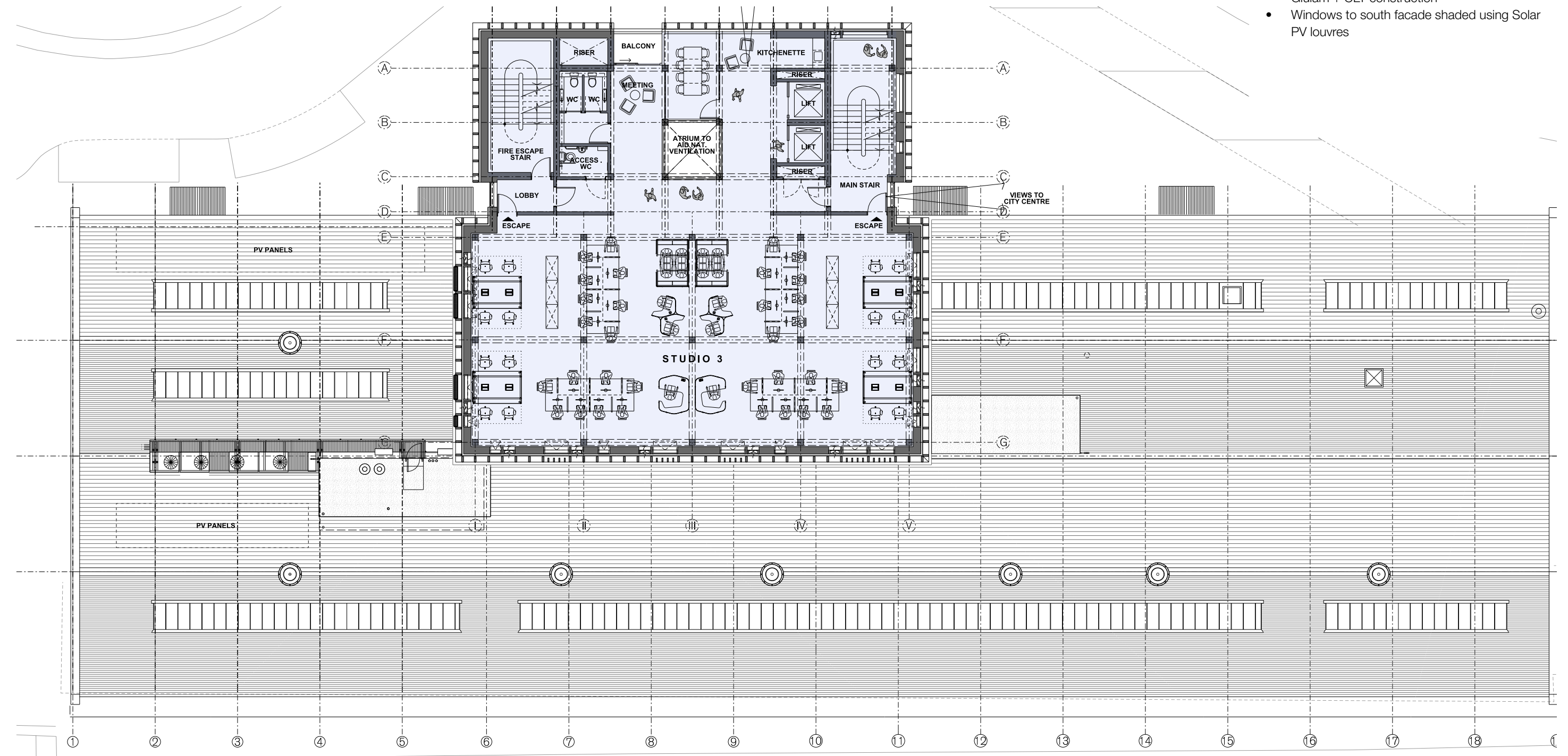


Not to Scale



## 6.10 Design Proposal

### Plan - Third Floor Proposed



#### Key moves:

- Glulam + CLT construction
- Windows to south facade shaded using Solar PV louvres

● New Building

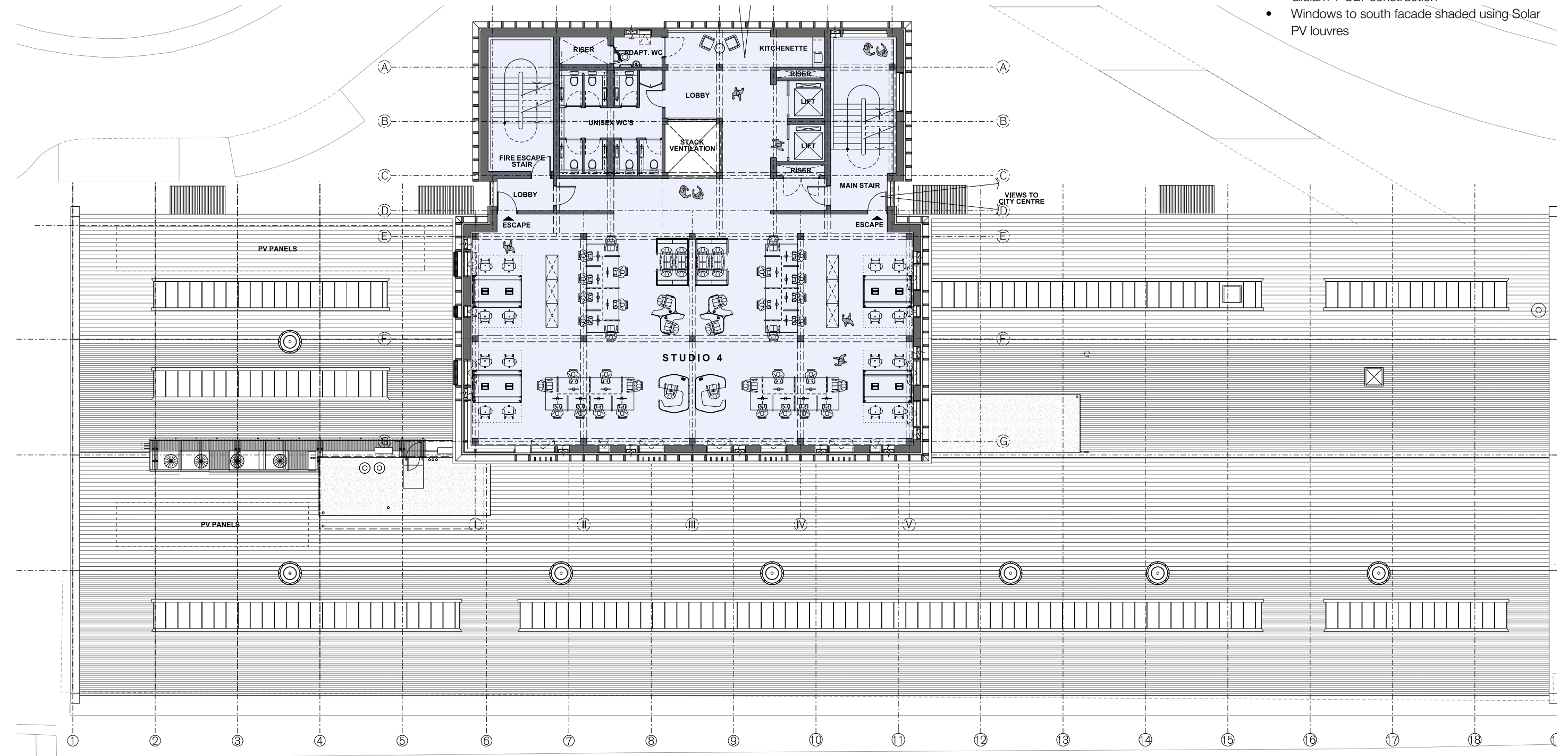


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## 6.11 Design Proposal

### Plan - Fourth Floor Proposed



● New Building

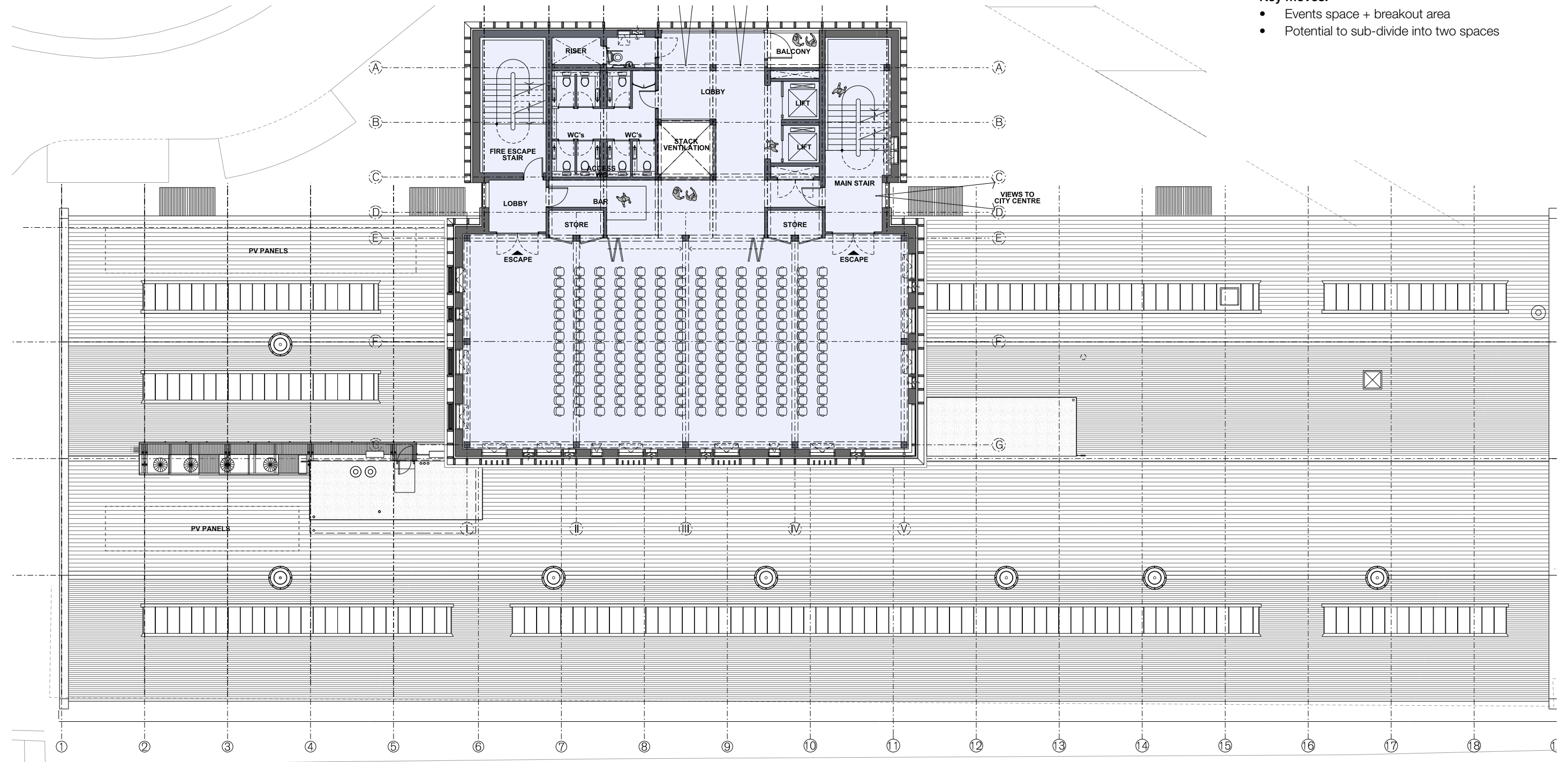


Not to Scale



## 6.12 Design Proposal

### Plan - Fifth Floor Proposed



#### Key moves:

- Events space + breakout area
- Potential to sub-divide into two spaces

● New Building

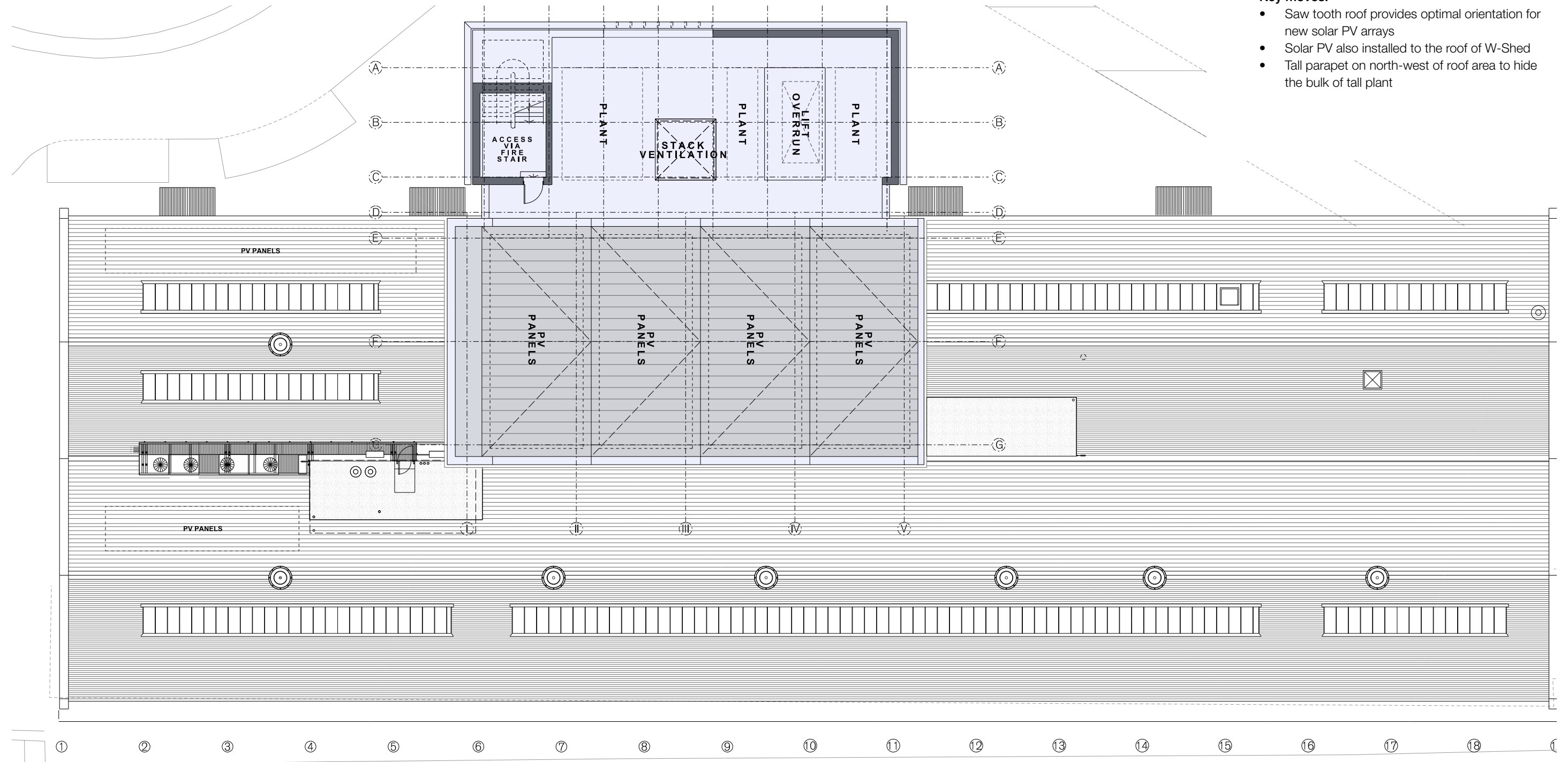


Not to Scale



## 6.12 Design Proposal

### Plan - Plant Level Proposed



#### Key moves:

- Saw tooth roof provides optimal orientation for new solar PV arrays
- Solar PV also installed to the roof of W-Shed
- Tall parapet on north-west of roof area to hide the bulk of tall plant

● New Building



Not to Scale



## 6.13 Design Proposal

### Structural Strategy

The architectural scheme is based on a clear structural narrative of visually exposed timber which will characterise the interior of the building. Externally the building will be clad in bespoke ceramics as a contextual response to the palette of the Harbourside.

An engineered wood structure will largely be constructed off site, then assembled rapidly. To facilitate this, it is important to keep the structural frame as regular as possible.

The timber structure will likely consist of CLT floor planks spanning between primary glulam double beams - one on each side of each glulam column to provide continuity and simplify the connection. The CLT planks may be continuous over multiple bays to improve the vibration response and speed up construction. Glu-laminated and cross-laminated timbers are highly pre-fabricated materials with inherently low embodied energy. This method of construction has the added benefit of Rapid construction and off-site manufacture. Lightweight construction with lower foundation loads compared to concrete frame. Timber framing has good aesthetic, environmental and sustainable properties.

There is a significant challenge in justifying the fire performance of fully timber multi-storey buildings. The fire stops and seals required around emergency escape routes and service penetrations between floors will have to be designed and subject to bespoke testing. The floor-to-floor height from ground to fifth floor has been designed to be less than 18m.

A potential solution is to use reinforced concrete for the circulation/service core at the back of the building and limit the use of timber to the structure supporting the typical office floor plates over the existing footprint of the Watershed.

This will benefit the fire strategy and allow more architectural freedom to play with the rear façade and form, while still keeping the timber structure highly modular and therefore minimise time on site.

Due to the height of the building the existing structure of the Watershed will be unable to support the proposed number of floors - new foundations and structure will be required. The proposed solution minimises the impact on the historic fabric by creating a transfer deck and back-pack structure within the Canon's Road site. The back-pack structure will provide full-height vertical circulation cores and risers and provide structural stability.

The transfer deck and backpack structure should be the same material for ease of procurement, shown here as reinforced concrete. Forming the transfer deck from concrete provides a great acoustic barrier between the existing building the new spaces above, as well as potentially allowing the refurbishment work to commence as early as possible. A possible construction sequence has been suggested by ARUP as follows:

#### 1. Start on site

While preparing the site behind the Watershed, begin internal works to separate occupied spaces from areas to be demolished or refurbished.

#### 2. Build new foundations and remove existing roof

The reinforced concrete core/slab structure is positioned far enough outside of the Watershed footprint to avoid interfering with existing foundations. Concurrently construct new foundations within the footprint of the new build floor plates. Due to the restricted headroom this will likely require specialist piling techniques.

Remove the roof and make discrete holes through the existing first floor to receive the supports for the transfer structure.

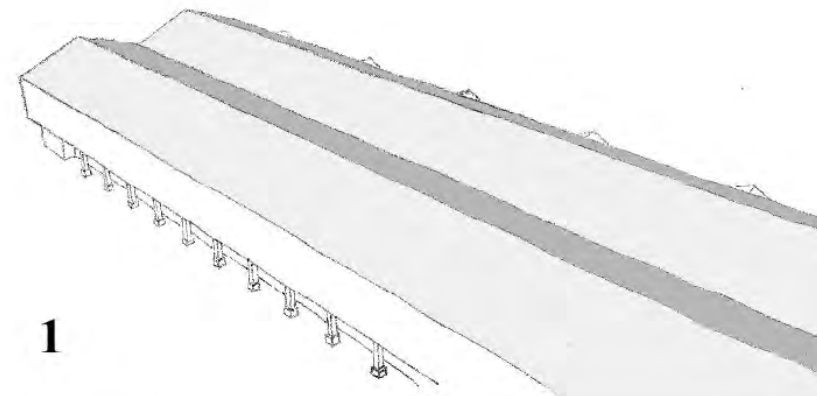
#### 3. Construct transfer deck at Level 2

Install steel legs and construct in-situ reinforced concrete cores and transfer deck. Form interface to existing building and begin refurb work to levels 0 and 1.

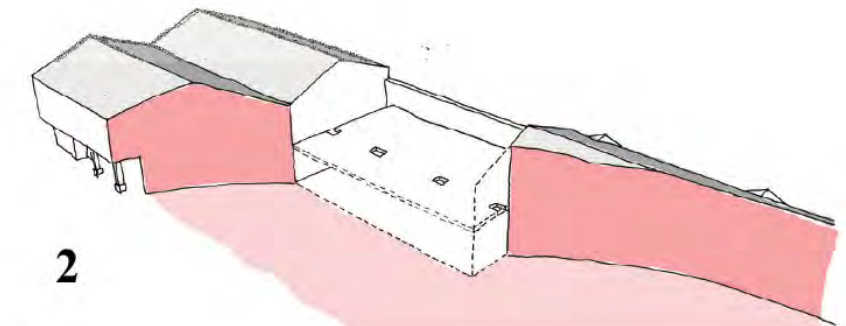
#### 4. Construct the rest of the reinforced concrete "backpack"

#### 5. Construct timber structure

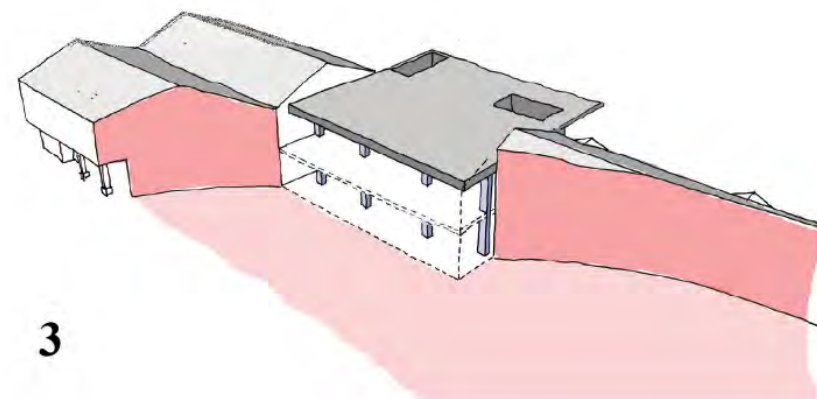
The timber system (glulam beams/columns and CLT slabs) should be highly repetitive to enable rapid fabrication and construction.



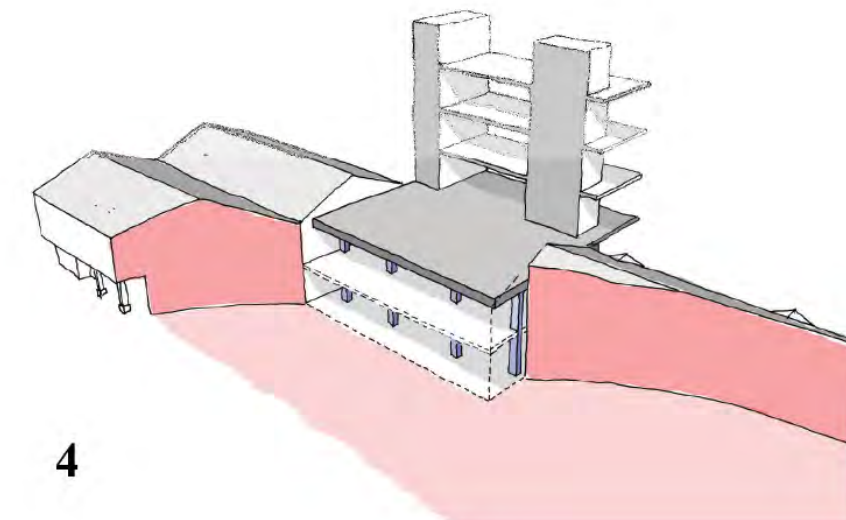
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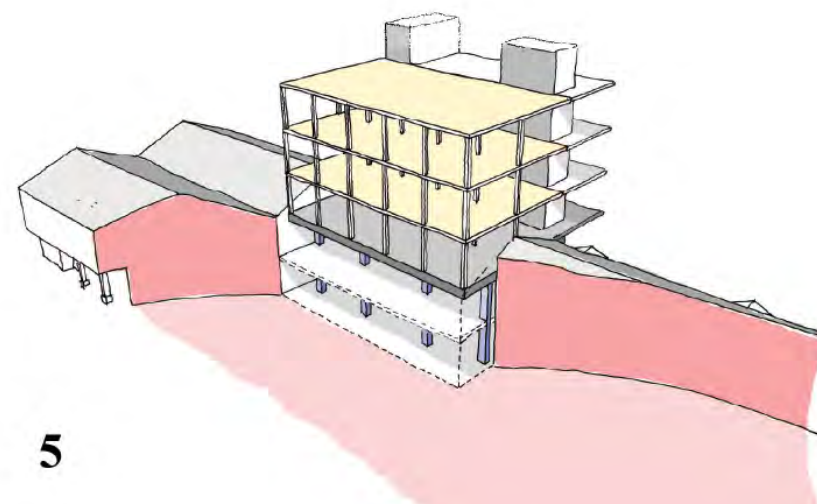
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3



4



5



## 6.14 Design Proposal

### Mechanical + Electrical Strategy

The Watershed development will be designed, wherever feasible, with a minimal reliance on 'active' energy consuming building services.

In the studio spaces, a natural ventilation solution is actively sought by the Watershed, given its inherent low energy consumption. In addition, the link to outside and occupant controllability make it ideally suited for this type of space.

A natural ventilation solution will use significantly less energy in operation than an equivalent air-conditioned building. This will enhance Watershed's low energy ethos, following the energy efficient replacement of lighting and kitchen equipment in 2015.

However, for a natural ventilation solution to be a success, it will need to provide the best possible internal conditions. The internal conditions are a direct function of the outside weather, but design solutions can be implemented to mitigate the extremes.

Solar shading and high performance solar control glazing will also be considered to help minimise solar heat gains. Internal heat gains will be minimised via low energy LED lighting with intelligent lighting controls; lighting will automatically dim when the daylighting levels are high and switch off when there is no occupancy. These solutions will all help limit temperature increase in a naturally ventilated space. The performance of the building in the colder months of the year will of course also be considered. The building will look to improve upon the minimum thermal insulation and air leakage requirements of the Building Regulations. This will minimise the active heating energy required.

Once the anticipated energy consumption of the building services solutions has been minimised wherever possible, we believe it is important to ensure that these services are delivered in the most energy efficient manner possible.

Heat pump technology will be seriously considered for the extension works. The high efficiencies now commercially available with this technology, along with the low heating loads due to excellent levels of thermal insulation, mean that the solution may be particularly appropriate for the extension. The

possibility of utilising a reverse cycle heat pump for also providing cooling (as required by the cinemas) will also be considered.

Further to the energy reduction and efficiency logic used for selecting the building services strategy, potential means for energy generation will be considered. Due to the city centre location and the constraints of the existing building, the options for generation are limited. Electricity generation via photovoltaic panels is a real possibility. Initial discussions with a supplier of solar PV glass have indicated that 'thin film' solar panels embedded in a glazed solution to generate electricity may be feasible. This technology is less dependent on orientation towards the sun which is attractive given that the existing roofs are orientated east-west meaning a traditional PV array will be inefficient. The sawtooth roof is designed to maximise south facing pitches to accommodate a significant PV array.

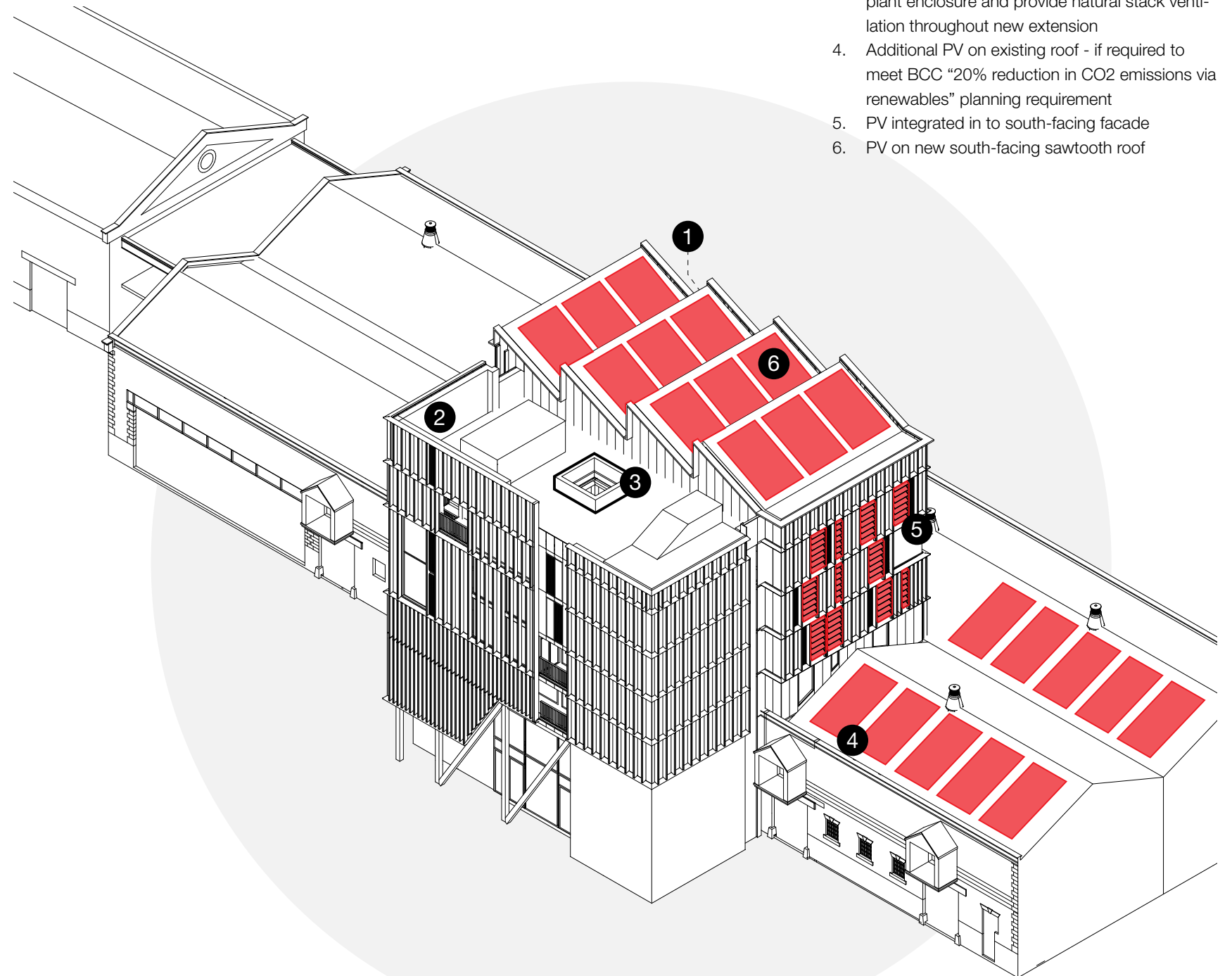
As part of the proposed capital works, Watershed are also keen to improve conditions in some of their existing spaces. The areas of focus are the existing conference rooms and to some extent the bar.

Due to the existing building's orientation, the roof with minimal insulation and limited ventilation provision, these spaces get uncomfortably warm and stuffy in the summer. The worst performing spaces which include the existing offices in W-Shed will be incorporated into the new building area and will be utilised as storage and workshop spaces. Watershed are keen to improve conditions, but do so in an environmentally friendly manner and retain the historic fabric as a feature where possible.

We are proposing as part of these works a retrofitted, roof mounted ventilation chimney solution. This solution will act as both an exhaust air path; extracting the warmest air from the top of the space, but also as an inflow air path providing natural ventilation flow rates in quantities sufficient to reduce temperatures and CO2 levels for the occupants.

The existing windows to the first floor of W Shed will also be replaced to improve the thermal performance of the glazing. Consideration will also be given to the relocation of the existing cooling plant serving the cinemas to improve the efficiency of these units.

1. High level windows on vertical side of pitched roof to naturally ventilate event space below
2. Plant enclosure to fit chimney and other plant requirements, including high parapet to disguise the bulk of tall plant
3. Atrium chimney to extend approx. 2m above plant enclosure and provide natural stack ventilation throughout new extension
4. Additional PV on existing roof - if required to meet BCC "20% reduction in CO2 emissions via renewables" planning requirement
5. PV integrated in to south-facing facade
6. PV on new south-facing sawtooth roof





## 6.15 Design Proposal

### Thermal Loading

The viability of a naturally ventilated building which maintains acceptable summertime conditions is vastly dependent on internal heat loads.

Both solar gain and lighting loads can be 'controlled'/minimised via an intelligent building design but are often less than 50% of the total internal load.

The graph opposite shows:

1. The BCO standard maximum loads
2. The maximum anticipated internal loads
  - a. Densely occupied space (1 person/4m<sup>2</sup>) - as shown in the current plans
  - b. Estimated IT provision of 50% of people using laptops and 50% using desktop PCs
  - c. Typical lighting load (no intelligent lighting controls)
  - d. Typical solar gain (limited shading)
3. The 'ideal' natural ventilation scenario
  - a. A slightly less densely occupied space (1 person/5m<sup>2</sup>)
  - b. IT provision of 100% laptops (1 per person)
  - c. Daylight linked and dimmed lighting
  - d. Solar gain resulting from optimised shading and glazing design

### Conclusions

- Maximum anticipated gains will not achieve acceptable summertime conditions (without means of additional 'cooling')
- Lighting and solar gain reductions are possible via intelligent design facade.
- Impact on occupancy and IT reduction would need to be discussed with Watershed as they make up the largest proportion of the load
- Note that occupancy gains are likely to be higher than BCO standard while IT is lower
- High level initial thermal modelling shows that the building could achieve industry standard 'adaptive comfort criteria' in summertime - however note it will still get hot! Modelling currently shows ~50hrs/ year over 28°C and up to 31°C internally (when it's hot outside). Provision of PV arrays should generate sufficient power to meet the need for cooling at these times
- Measures such as introducing 'thermal mass' via PCM could help improve conditions

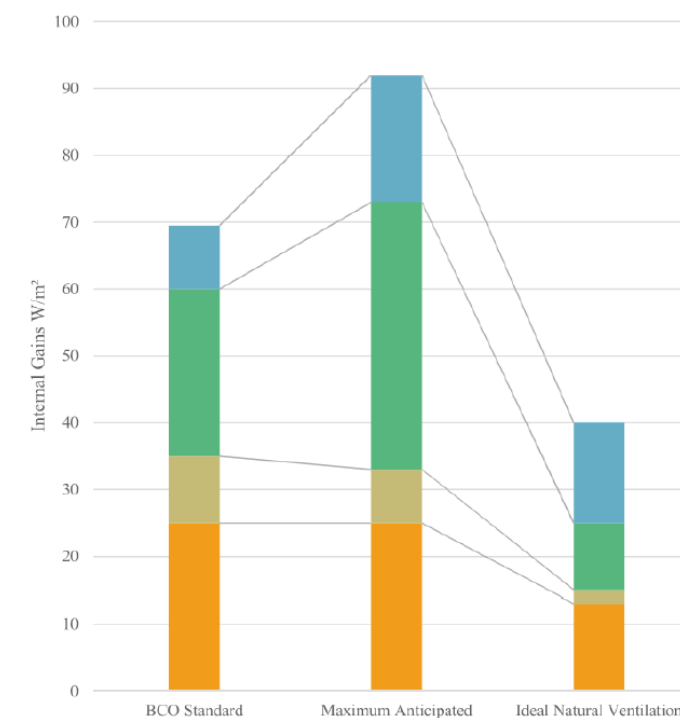
### Natural Ventilation

Our initial calculations demonstrated that natural ventilation via perimeter openable windows alone would not provide the ventilation flowrates needed to maintain comfort.

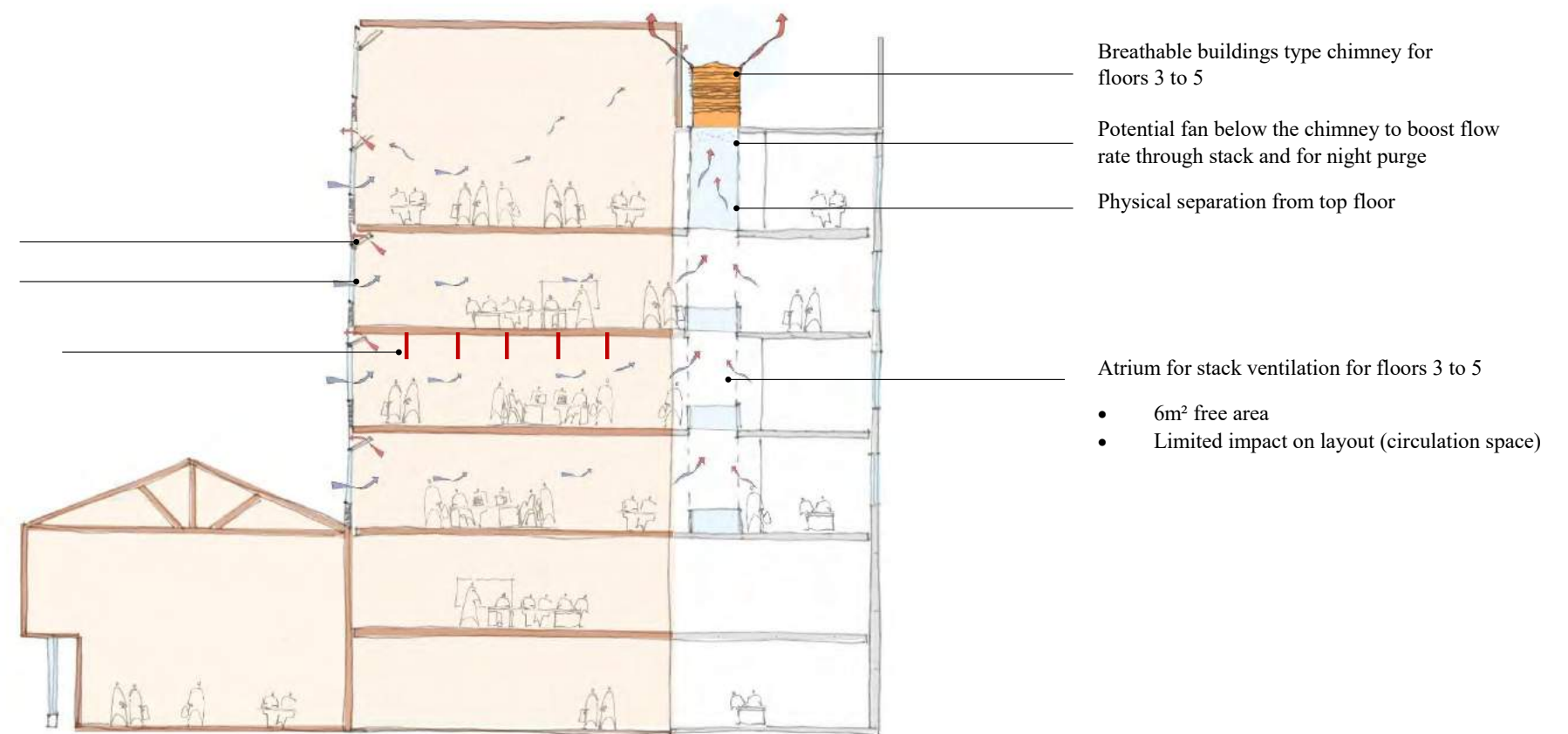
Equally the centre of the studio floorplate is too far from openable windows to see a benefit from natural ventilation.

By introducing a small central atrium, this will act to encourage further crossflow ventilation, driven by the 'stack effect'. This would provide a better flow regime and distribution of air as well as improve resiliency (particularly during still days).

The stack would be physically separated from the top floor which would have its own dedicated roof mounted natural ventilation 'chimney' system.



Thermal loading graph



Arup design principles

## 6.16 Design Proposal

### Façade Design

#### East Facing Façade

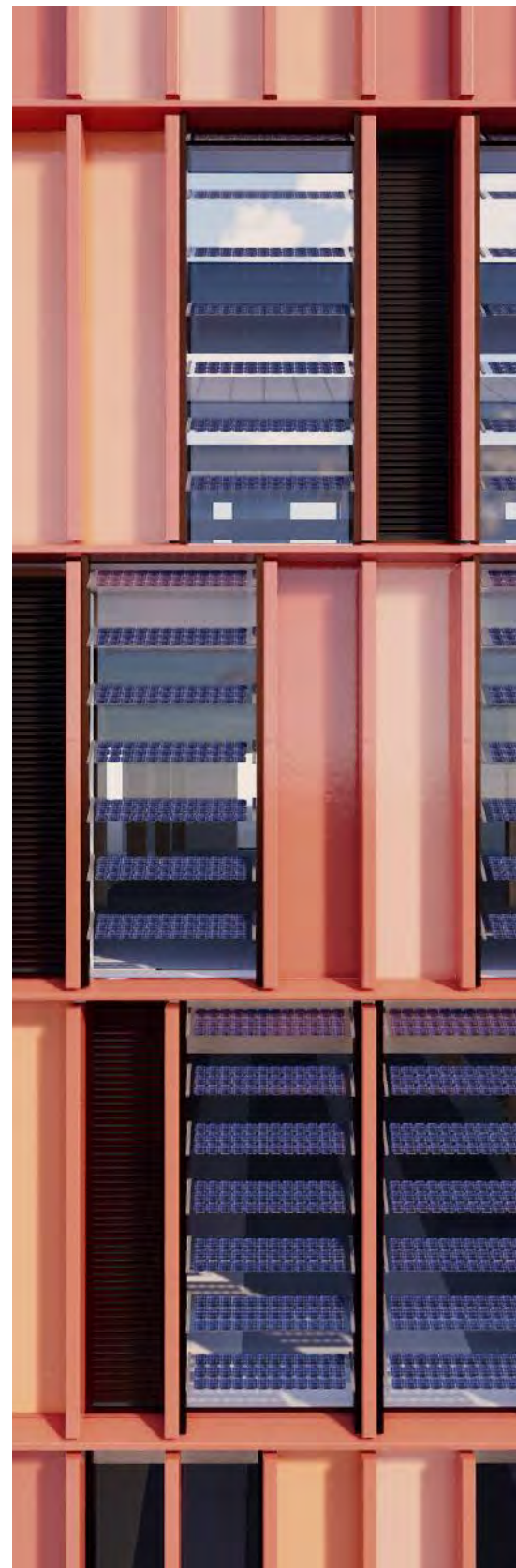
- On the longest day sees sun at angles of up to 60° in the sky.
- Due to the significant variation in both sun height and sun angle throughout the day fixed shading (vertical or horizontal) would only be of benefit for a fraction of the day.
- A moveable solar shading system will track the sun angle as it moves across the sky, optimising the amount of solar shading into the space, minimising solar gain and maximising daylight penetration.
- Photovoltaic cells can be integrated into the movable shading. The additional benefit is that as they track the sun angle for optimal shading they will always be optimised for electricity generation.

#### South Facing Façade

- On the longest day sees sun at a consistent angle of ~60° in the sky.
- In mid-March and mid-September sees a sun angle between 30-45° in the sky. This variation is nowhere near as significant as on the East facing facade.
- Horizontal shading (at regular intervals over the facade - rather than solely located at the top of windows) will provide maximum reduction in solar gain for this facade.
- Integration of PV into the moveable solar shading will provide significant generation potential given the sunlight intensity during the summer months.

#### West Facing Façade

- On the longest day sees sun at angles of up to 50° in the sky.
- It is anticipated that One Cathedral Square adjacent to the Marriott Hotel will provide significant shading to this facade outside of peak summer, when the sun is lower.
- Fixed vertical shading will reduce solar gains in June, when the sun is at a high angle down Anchor Road.



Proposed facade

#### Facade Elements



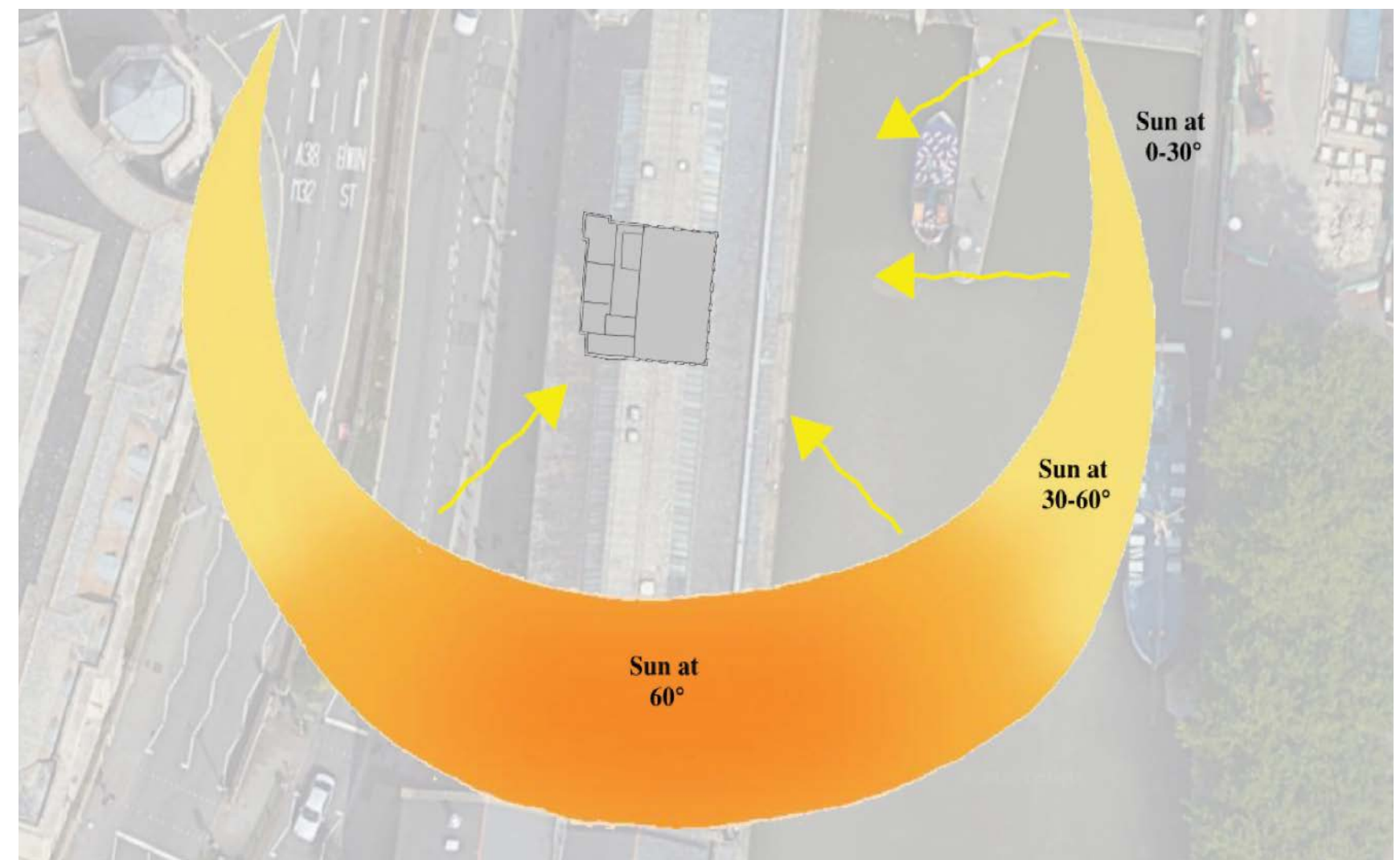
Vertical fins for solar shading



Ventilation louvres



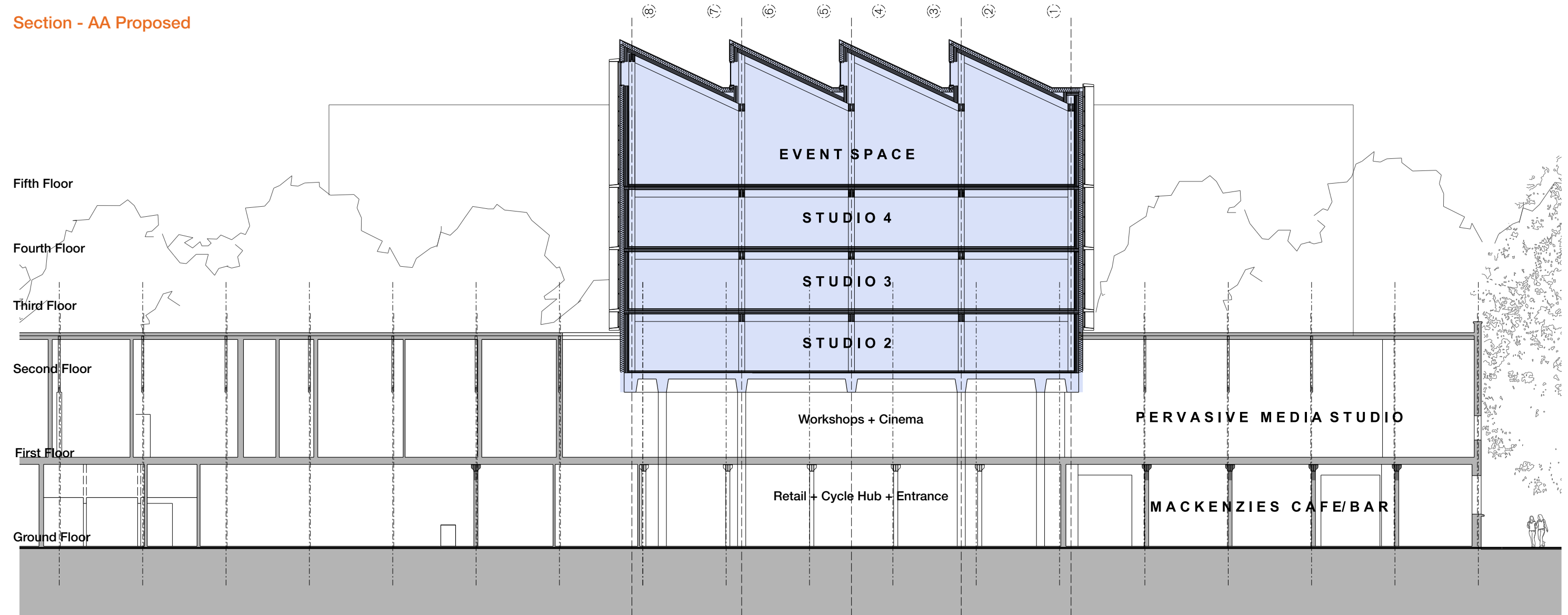
PV cells integrated into brise soleil





## 6.17 Design Proposal

### Section - AA Proposed



Not to Scale



### CLT + Glulam precedent examples



## 6.18 Design Proposal

### Material Strategy

The materials selected for the extension to Watershed have been chosen for their low embodied energy, to compliment the sustainability strategies and to reflect the existing material palette of the Habourside.

The building will be constructed from CLT timber and finished externally in ceramic cladding. These two materials will characterise the look and feel of the new extension.

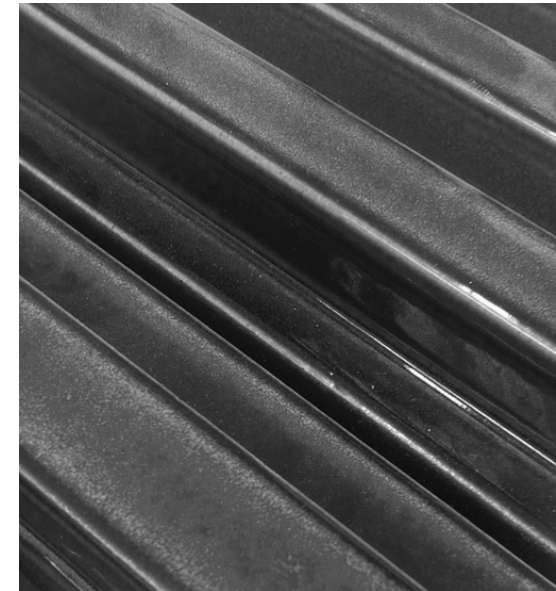
The proposed ceramic facade offers significant scope for development beyond its appearance in this document, to best reflect and build on the identity of the building's surroundings and the wider harbour.

Watershed has an established history of collaboration with artists and the new extension will be a continuation of this spirit.

It is intended that the appearance of the ceramics will be developed in close collaboration between makers, artists and architects. Whilst a rhythm of vertical fins has been established for the overall form of the facade, collaboration with these other disciplines will help inform the placement, colouring, texture and detailing. In doing so the facade will become an elegant and quality intervention to the harbourside streetscene. The variation and depth of the facade will allow the building's appearance to shift and respond to changing light across the seasons, whilst proving robust to weathering and urban pollution. The design process will also engage heavily with the creative technologies the building will ultimately provide a platform for.

The pages that follow set out a more in-depth look at the material palette and precedent projects that have informed the thinking so far.

Examples of ceramic facade prototypes by Darwen Terracota





## 6.19 Design Proposal

### Material Palette



#### Ceramic fins

Ceramic fins will define the façade of the building, giving it rhythm, providing shading to the glazing and a structure to support the glazed PV louvres on the south façade.



#### Brick

Brick will be used for the structural cores of the new building that characterise the proposal at street level. A thinner and much lighter coloured brick is intended to manage to transition in colour and texture from the existing brick sheds, to the new ceramic facade above.



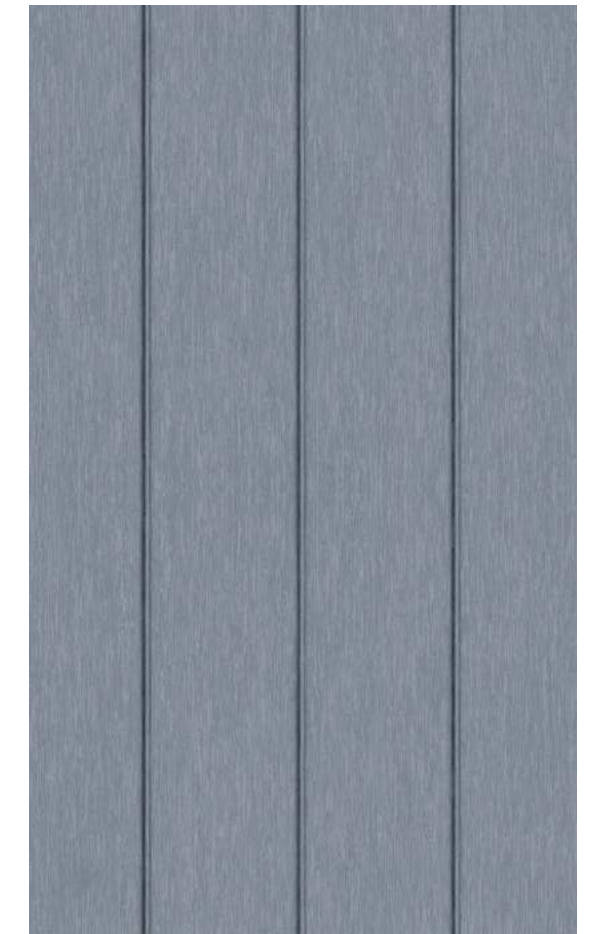
#### Vertical ceramic cladding

The building will be wrapped in an additional weatherproofing layer of ceramic panels that sit between the fins, and create a rich variation of colour and patina that will reference the brick architecture of the harbourside.



#### Hybrid timber and aluminium glazing and curtain wall

A system that provides the durability externally with an internal finish that will enhance the timber detailing to the interiors.



#### Zinc roof

A highly insulated lightweight metal sawtooth roof supports the solar PV installation.

Externally the new public realm design will incorporate the granite, stone and cobbles found elsewhere across the harbourside developments.



## 6.19 Design Proposal

### Material Precedents



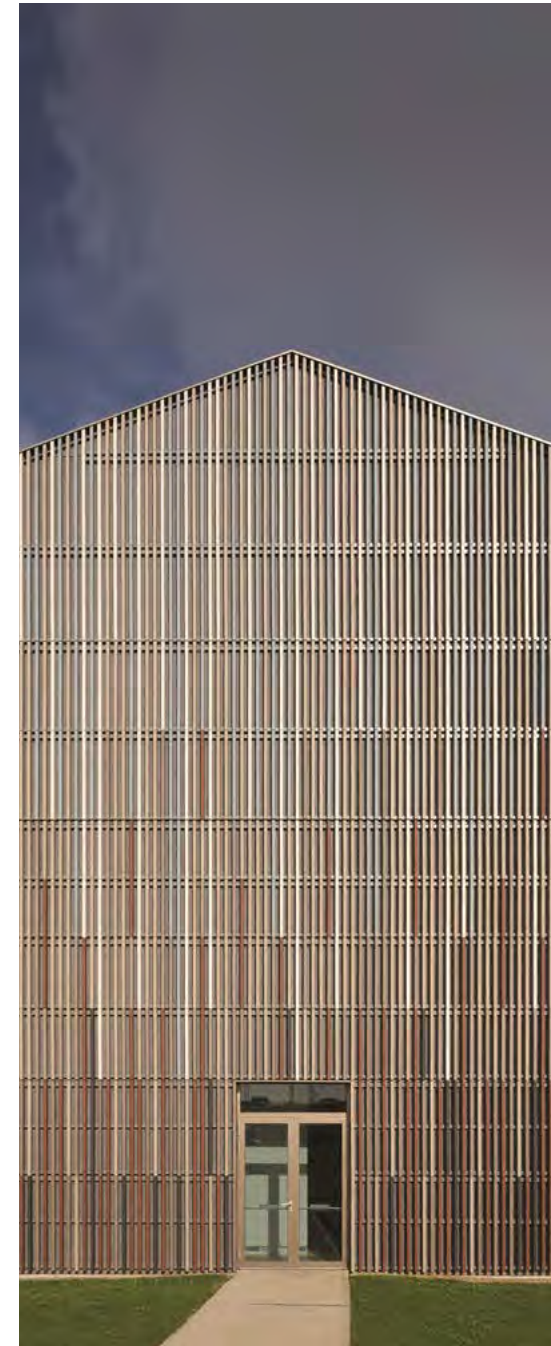
South Molton Street, DSDHA

The use of ceramics in this instance successfully blend the adjoining brick buildings in to a distinct yet sympathetic addition to the street scene. The ceramics also form large vertical louvers over the glazing which is a useful precedent for the intention behind the Watershed proposal.



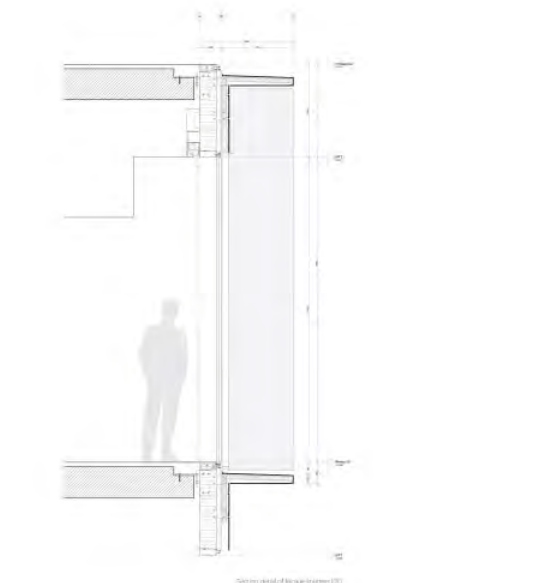
Karlsruhe Performing Centre, 3P

This building employs a bespoke ceramic cladding panel, that when installed in different orientations creates a diverse palette of colour and texture as the light catches the faceted panel in different ways.



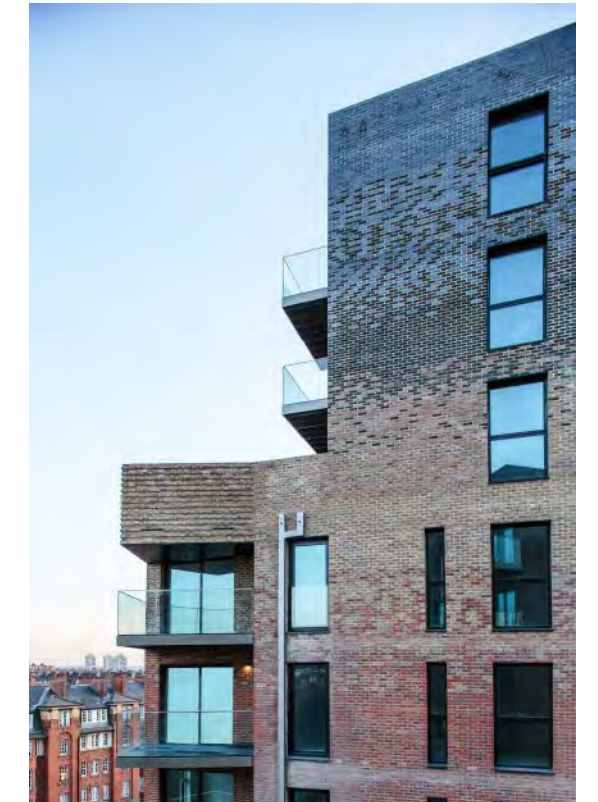
Welding Institute, Eric Parry Architects

Eric Parry's Welding Institute uses a standardised ceramic system, but varies the colour of each component to create a gradient across the overall facade.



Maersk Tower, C.F Moller

Although achieved with copper louvers rather than ceramic, the Maersk Tower is a highly successful example of the rhythm and colour variation the Watershed proposal is striving for. The section shows how the deep louvers provide protection to the glazing between.



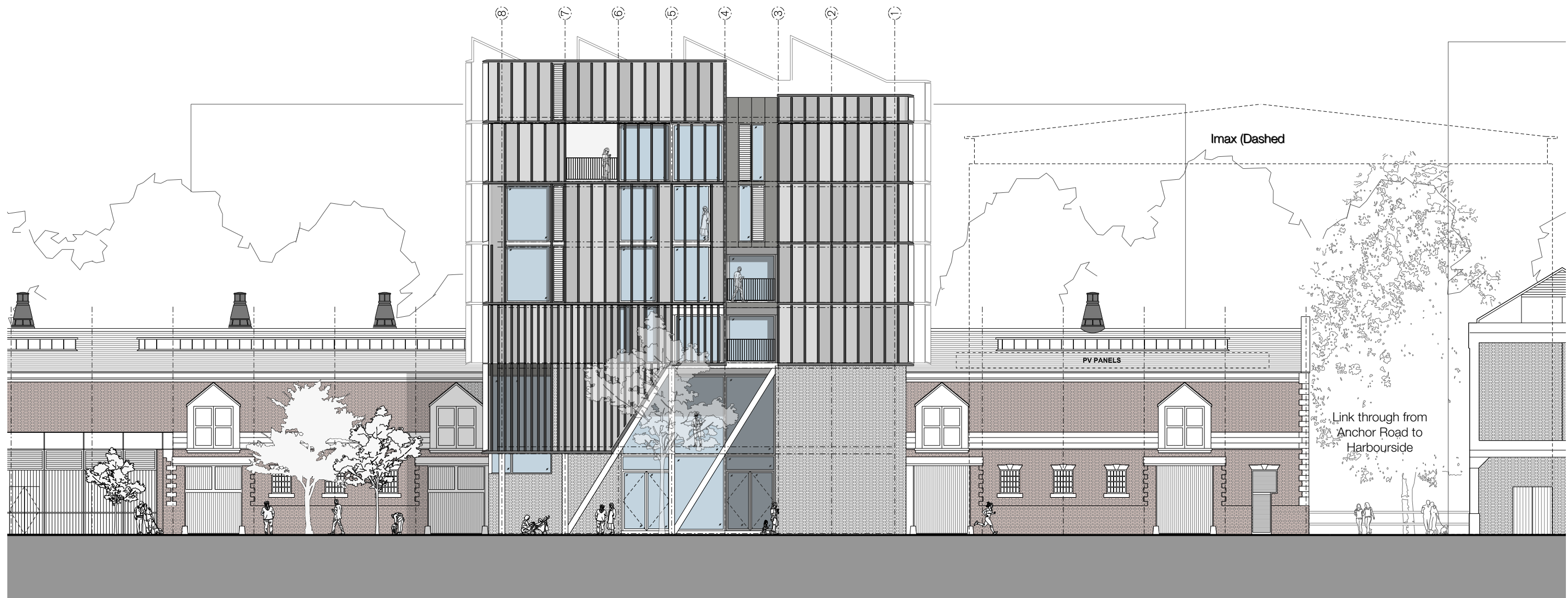
Trafalgar Place, drmm

This project references the brick and stone palette of older buildings near by, to derive a playful and highly contextual response to varying the colour of a new brick building to the area. This technique could be mirrored in the colour palette of the ceramics for Watershed.



## 6.20 Design Proposal

### Elevation - West Proposed



Not to Scale



## 6.21 Design Proposal

### Elevation - East Proposed



Not to Scale



## 6.22 Design Proposal

Elevation - North Proposed



Not to Scale

## 6.23 Design Proposal

### Elevation - South Proposed



Not to Scale



## 7.0 Proposed Visuals

VIEW 6: Proposed View from Anchor Road to Rear of E Shed





## 7.0 Proposed Visuals

### VIEW 3: Proposed View from Prince's Street





## 7.0 Proposed Visuals

VIEW 4: Proposed View from Pero's Bridge





## 7.0 Proposed Visuals

### VIEW 2: Proposed View from the Fountains





## 7.0 Proposed Visuals

### VIEW 5: Proposed View along Anchor Road





## 7.0 Proposed Visuals

VIEW 1: Proposed View from City Centre





## 8.0 Summary

### Vision for Watershed

#### Watershed Increasing Public Benefit through Capital Investment

Created in 1982 as Britain's first Media Centre, Watershed today is a creative hub for Bristol and an international exemplar of cultural innovation in the digital age. Over more than thirty years, Watershed has built a reputation for civic leadership and inclusive city centre stewardship. This is experienced through the quality of engagement with audiences, creative talent, community groups, local business, visitors and city services. We plan to expand in response to continued growth in demand for our services. These plans are grounded in delivering increased public benefit in the most sustainable environmental and economic model we can deliver contributing to Place Making, Inclusive Growth and Cultural Engagement.

***“It's the best neighbour – it listens, it's collegiate and not competitive”***  
*Stakeholder research 2016*

#### Creativity and innovation at the heart of the city

Watershed's Pervasive Media Studio is an internationally acclaimed collaboration space for creative technology innovation bringing together industry, university research and new talent. Bristol is continuously winning accolades as an innovation centre and for being the best place to live. Affordable space for creative talent to work and collaborate in the heart of the city is a key part of inclusive Bristol place making, however there is a growing shortage of suitable workspace for creative talent just as demand increases. There are multiple benefits in being part of the physical cluster at Watershed with proximity to both peers and the wider Watershed network enhancing productivity and supporting new ideas to develop, grow and gain profile in a crowded marketplace. We plan to create new workspace with affordable and flexible rentals so that we can support creative enterprises through the vulnerability of early growth. In growing the scale and profile of the creative technology innovation centre at Watershed we will increase economic growth, support more diverse talent, drive productivity and attract investment.

#### Wider choice of cultural representation

Film is increasingly the international cultural medium through which diverse cultures can share their experience and identity. Watershed is one of very few places in the UK outside London where audiences can engage with the expanding diversity of world cinema in depth all year round. Other examples are Home Manchester and Film House Edinburgh. Our plans include new cinema provision to further expand both programme choice and audience access to cultural cinema.

***“Watershed is recognised as a centre of excellence in terms of maintaining and developing regional film culture and its ability to have an impact across cultural, social and economic agendas.”***  
*BFI Audience Awards*

Watershed's www.rifemagazine.co.uk programme offers a platform for young people from all communities to express themselves and to explore their interests with peers. The new workspaces will include physical space for more young people to work alongside the Watershed cluster to develop their digital creativity and to take the first steps on the pathway to working in the creative industries.

#### Conservation and environment

Our ambitious plans for ensuring we improve the environmental sustainability of the whole venue are at the core of our design approach. This will serve as a best practice case study for others wishing to pursue similar goals in complex city centre environments. As with everything Watershed engages with, we will share knowledge, methodology and practice to spread benefit as widely as possible.

Watershed occupies a building which was designed for 19th century goods transit but through being re-purposed it has a useful future way beyond its original design life. The works will enable us to make essential improvements to the public enjoyment and use of the building creating greater financial resilience which will unlock future funding for conservation and repair to ensure that we can continue to offer public enjoyment of this historic building 7 days a week.

#### Welcoming everyone

As a 21st century public organisation we are constantly reviewing the nature of the welcome we offer - giving particular focus to ensuring that those who are least well served by society are included and engaged. Our new spaces will improve access and accessibility through extending our ground floor street front presence with improved physical access to the upper floors of the building. We will also improve our toilets and facilities including for people with disability and young children plus the introduction of gender neutral facilities.

***“Watershed are setting a precedent here: they are saying you belong here as much as anyone else, they are saying you are entitled to this space”***  
*Raquel Meseguer, Disability Arts Online, published August 2018*

Making our business model more resilient will enable us to continue to invest in a pricing structure which heavily discounts ticket pricing to remove economic access barriers for young people and those who are not economically active.

#### Improved street level environment

On one side Watershed is the gateway to the historic Harbourside, on the other side it is: a cut through, a bin store and a turning space - we will improve the public realm on Anchor Road creating a new welcoming entrance and providing street level animation which will greatly improve the look and feel of the city centre for all users. Also through creating more street level presence for Watershed we will both improve access to Watershed and at the same time extend Watershed's influence into the surrounding area with direct benefit to local businesses and the quality of the public spaces encouraging wider public use.

#### Vibrant social, visitor and business hub

Watershed is a much-loved social, visitor and business hub for people to engage with the vibrant culture of Bristol's Harbourside and with each other. Long overdue for a full refurbishment, our enhanced venue will delight new and existing customers and communities, opening for longer hours with state of the art services and facilities across our cinema, cafe/bar, event and innovation spaces. Capital investment will secure Watershed's future as an engaged 21st century cultural development centre at the heart of Bristol city region.

***“an inspirational hit of Culture”***  
*Sunday Times August 2018*

