OVG
OAK VIEW GROUP™

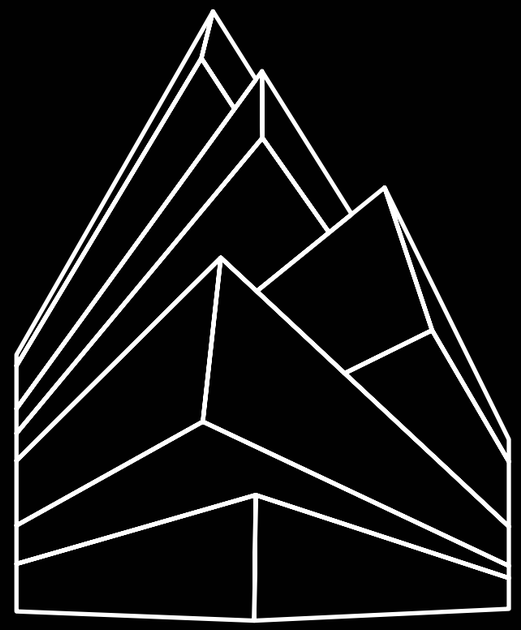
OVG MANCHESTER
DESIGN AND ACCESS STATEMENT

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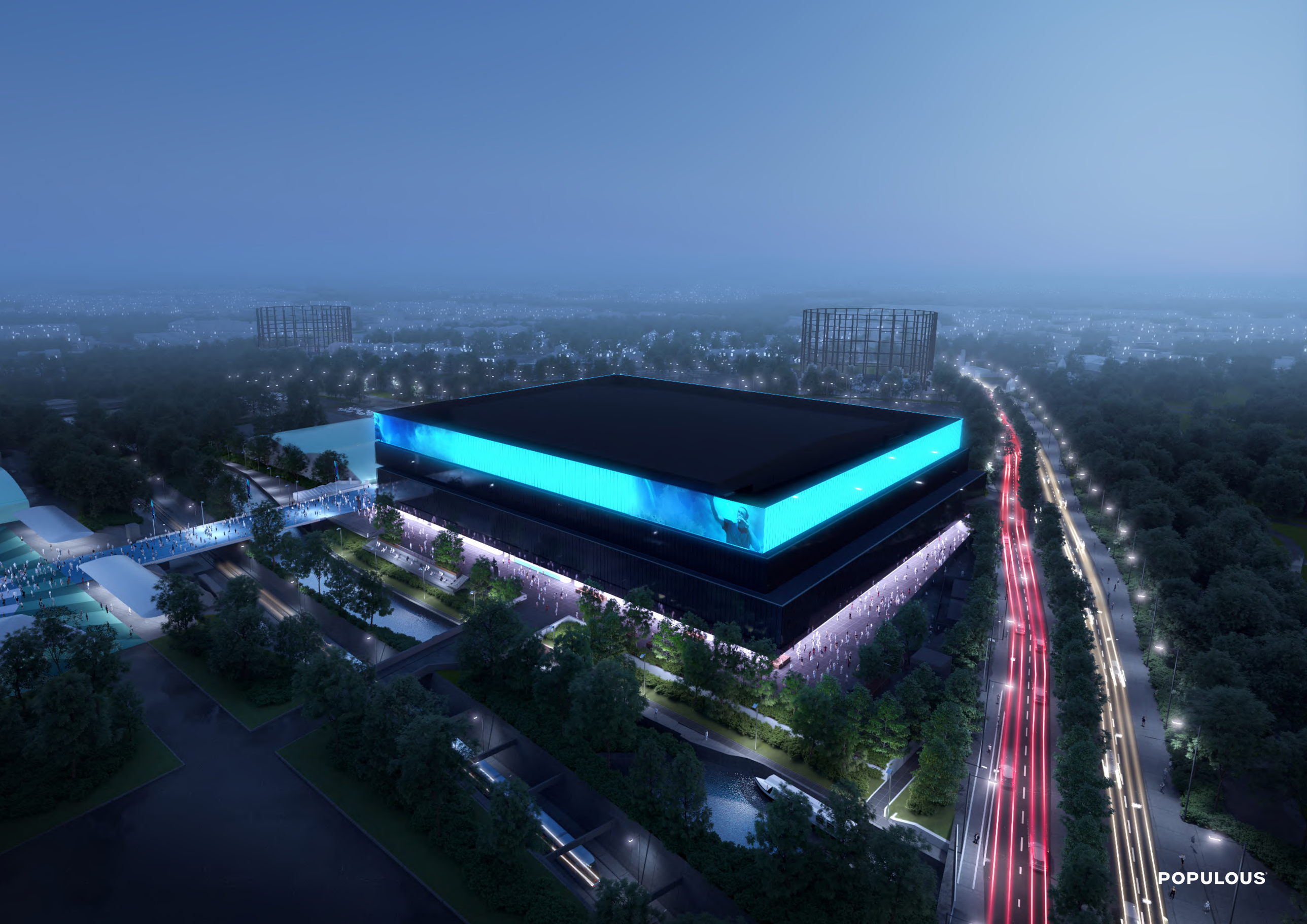
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DESIGN AND ACCESS STATEMENT

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INTRODUCTION

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1.0 Introduction

This Design and Access Statement supports an application for full planning permission and consent to display advertisements made by OVG Manchester Limited, part of Oak View Group (OVG), with the support of City Football Group (CFG), for the redevelopment of the site, which is part of the Eastlands SRF Update which identifies the leisure opportunities at the Etihad Campus.

The application seeks 'full' planning permission for a new, state of the art multi-purpose venue. The venue will be part of the developing sports and entertainment district of the Campus, in line with the opportunities identified in the 2019 draft update to the Eastlands Regeneration Framework.

This document explains the design principles and concepts that inform the purpose, scale, function, form, landscaping and appearance of the proposed venue, responding to the local and city context and is informed by the local consultations and site appraisal studies.

The proposed development will make a positive contribution to the neighbourhood and ongoing Campus development to support Manchester as a thriving and sustainable city for residents and business. The venue design supports the ambition to achieve a Net Zero Carbon City by 2038 and will be the most sustainable entertainment venue in the UK.

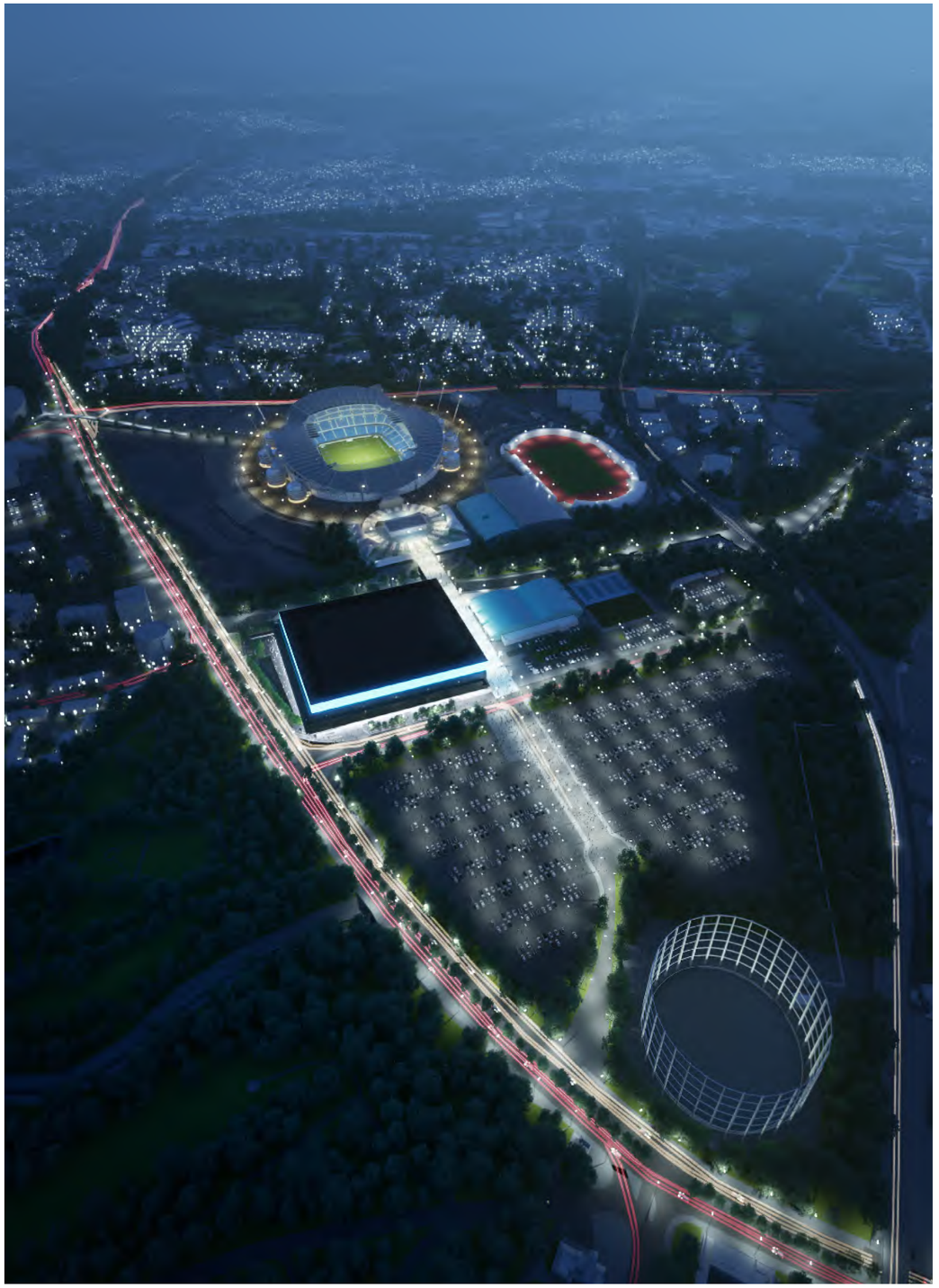
Located in East Manchester, 2.1km from the city centre, the proposed site for the OVG Manchester Venue is on the eastern side of the Etihad Campus boundary, to the north of the Etihad Stadium. The 5.5 acre plot of currently unoccupied land is occasionally used as an overspill carpark for major events at the Stadium. The site approaches are highly accessible by bus and tram, with existing walking routes from the City Centre, and with cycle route connectivity on Alan Turning Way, Ashton New Road, City Link and the Ashton Canal Towpath. On the southern side, the site benefits from adjacency to the Ashton Canal, which offers potential for waterside landscaping and day-to-day activation for the new venue overlooking the tow path, enhancing the character of the site.

The OVG Manchester Venue is designed to be the 'best in class' concert venue in Europe by creating a bespoke, intimate, flexible and acoustically exceptional auditorium space for the City of Manchester. With an audience capacity of up to 23,500, the venue will deliver an exciting and engaging experience for all visitors before, during and after the act to create a premier music destination, comparable in quality to other national and internationally acclaimed venues. The 'best in class' brief also means ensuring that the OVG Manchester Venue compliments Manchester as a destination for music and events and is the preferred city for performers and the touring community. This is to encourage promoters to select the city as the first choice on tour, every time, bringing world class headline events and performers to the region.

Respecting the Etihad Campus, the OVG Manchester Venue brings new investment and cultural activity to the developing campus scheme and provides new amenities and employment opportunities to the local area. The proposed building comprises the main auditorium - an intimate, compact hall suitable for concerts, sports and family entertainment events, supported by a range of concourse and lounge spaces, as well as the essential back of house service spaces and performers areas. Many of the front of house spaces could be hired on non-event days for meetings, conferences and parties, with the option to open the main atrium space for Manchester City match days and community events. On the Canalside, there is also the possibility to open the concourse food and beverage units to the landscaped podium space, to provide amenities to campus visitors and to local residents and businesses.

The visual concept for the venue acknowledges that the site is highly visible to all four sides, and responds by proposing a simple, contemporary form responding to the interior functions and unified by a restrained palette of materials and colour, creating a new landmark for the district.

Expressing the show business nature of the venue, large format LED screens are proposed in carefully selected locations on the façade. These are detailed to be seamlessly integrated into the façade system and architectural lighting to animate the building and inform visitors and passers-by. They are also designed to be visually discreet when not in use, allowing the pure form of the building to take precedence.



1.1 Project Brief

This planning submission captures both the client and contextual requirements of the client brief. It presents a unique and effective architectural design that responds to and integrates with the site parameters, local environment, city cultural context and will be the most sustainable entertainment venue in the UK.

The client's ambition for the new OVG Manchester Venue was to deliver the 'best in class' multi-purpose venue in Europe. To achieve this, the design needs to create a compact, adaptable and acoustically exceptional auditorium for all event configurations. Delivering an exciting and engaging experience for the whole audience before, during and after the act, is the key to making the OVG Manchester Venue the premier destination for all events. Opportunities for experiential touchpoints, such as food and beverage offers or local talent showcase events, will be tailored for the Manchester regional market for both standard guest concourse and premium lounge and suite spaces.

Close seat proximity to the event act space is essential to creating an intimate and engaging experience. In comparison to other flagship venues, the OVG Manchester Venue will express it's soul by bringing everyone significantly closer to the act, enhanced by the fact that it will be the largest standing capacity floor in the UK. This original design for a compact auditorium bowl offers greater opportunity for retractable seating units to switch the event configurations between seating and standing on the lower levels.

The 'best in class' brief extends to creating the preferred venue for performers and the touring community. Creating a suite of efficient, generous and visually appealing support spaces back of house will set a new benchmark for the event circuit, ensuring that the OVG Manchester Venue compliments Manchester as a city as a promoters' first choice on tour, every time.

The compact site requires an equally compact and efficient design response, one that respects the surrounding sport and entertainment campus parameters, and the existing neighbourhood residential and commercial activities. The venue also needs to become a landmark for the district, with an identity that acknowledges Manchester's rich heritage of live music and nightclub spaces, while bringing new opportunity and energy into the life of the city and music scene. Integration to the Campus requires a sensitive approach to merging the venue's hard and soft landscaped approaches to existing routes, creating new dwell spaces and activation opportunities where they take best advantage of aspect, outlook and connectivity.

The design also identifies opportunities to develop additional uses of the facilities that support the core auditorium, to create more activity and improve visitor experience. The atrium hall, concourses and lounges extend the potential utilisation of the building as a destination to boost tourism, culture, and leisure spaces to the local community.

The OVG Manchester Venue, will bring significant benefits and opportunities to the local community, with employment and training opportunities, generating wages and GVA, which will then be recirculated in the economy. Over a twenty year period, the operation of the Arenas in Manchester is estimated to generate between £1.34bn and £1.50bn of additional economic activity (GVA) in the UK economy including the direct, indirect and induced economic impacts, dependent on the level of annual ticket sales. Between £0.6bn and £0.8bn of this will be accrued in Manchester.

Statistics show that Manchester hosted more gigs per person than anywhere else in the UK with 87 gigs per 100,000 people between July and January 2016 – nearly double the number in closest rival Glasgow.

The majority of the economic benefits of a two arena scenario will be realised by (a) the two arena business, from ticket sales and on site food and beverage and event merchandise, and (b) city centre businesses where the majority of the hotels, serviced accommodation, food and beverage and retail businesses are based.





1.2 Purpose of Planning Document

This Design and Access Statement supports the planning application made by the client OVG Manchester Limited for the redevelopment of the site, which is part of the Etihad Campus.

The application seeks full planning permission for a new, state-of-the-art music-focussed multi-purpose arena venue as part of the developing sports and entertainment district of the Campus, in line with the opportunities identified in the 2019 update to the Eastlands Regeneration Framework.

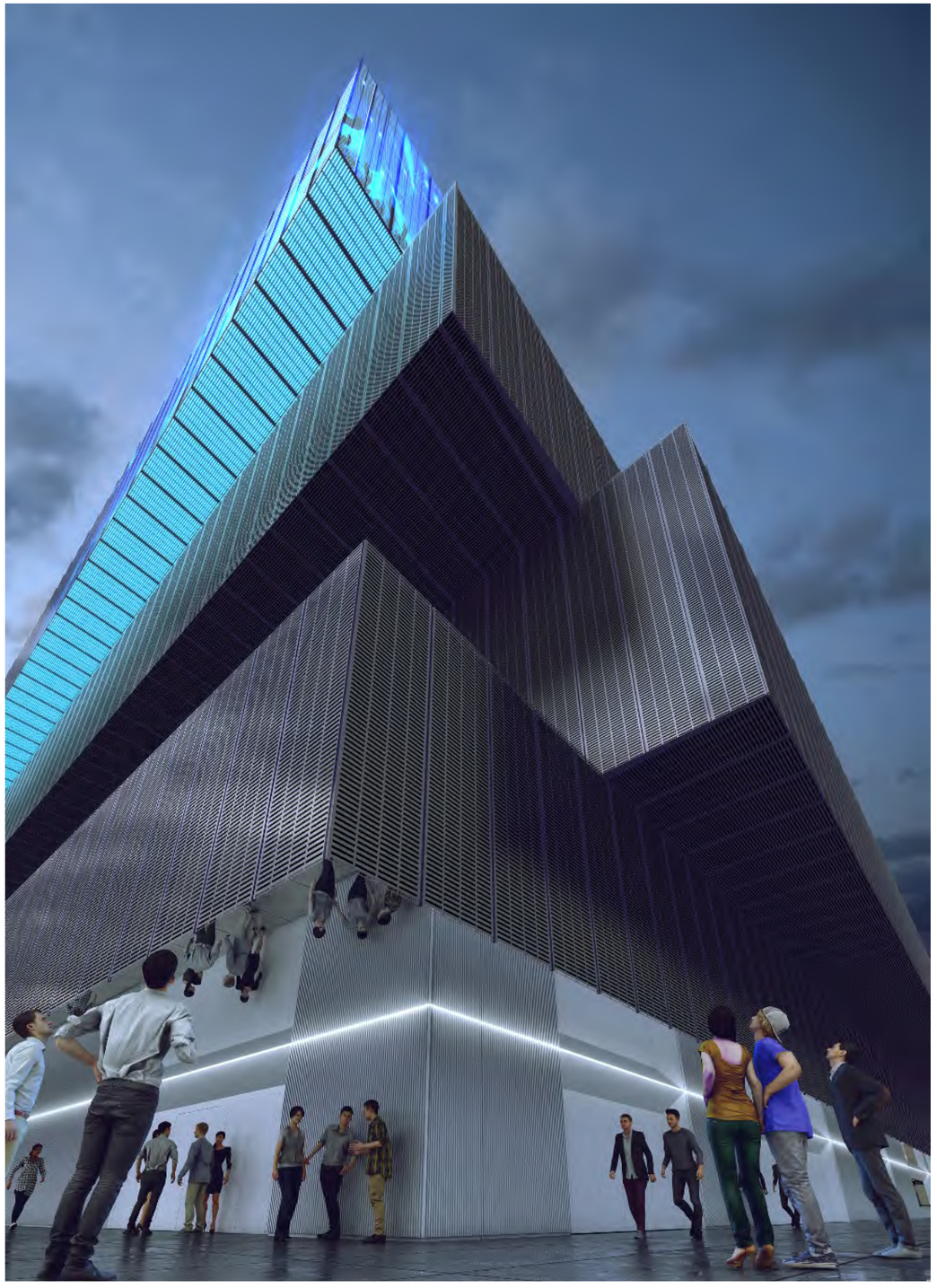
The application proposals have been prepared following extensive pre-application engagement with local residents, where several meetings and engagement sessions were held, alongside meetings with, stakeholders, including Manchester City Council, Greater Manchester Police, the Highways Authority, Canal & River Trust, GMEU and TFGM. In addition, local ward councillors have been briefed on the proposals in advance of the application.

This Design and Access Statement should be read in conjunction with the following comprehensive suite of documents as part of the planning application:

- Planning Statement
- Economic Assessment
- Statement of Community Involvement
- Sustainability Statement
- Blue Green Infrastructure
- Broadband Connectivity Statement
- Crime Impact Statement
- Daylight / Sunlight Assessment
- Ecology
- Energy Statement
- BREEAM Pre-Assessment
- Heritage Statement
- Local Benefits Proposal
- Operating Schedule / Event Management Strategy
- Tree Survey
- TV Reception Survey
- Waste Management Strategy

The application is also supported by an Environmental Statement and accompanying technical appendices which assess the following topic areas where there is likely to be a significant effect on the environment:

- Construction Management
- Air Quality and Dust
- Ground Conditions
- Lighting
- Noise and Vibration
- Socio-Economic Impacts
- Townscape and Visual Impact
- Traffic and Transport
- Water Quality, Drainage and Flood Risk
- Wind Microclimate
- Climate Change



1.3 Planning Policy Context

The Local Development Framework is a collection of statutory Development Plan Documents that together set out the vision and spatial strategy for the future development of Manchester. The relevant Development Plan documents comprise of:

- Manchester Core Strategy (2012) ('The Core Strategy'); and,
- Saved Policies of the Manchester Unitary Development Plan (2005) ('the UDP')

Manchester Core Strategy

The Core Strategy identifies broad development requirements and spatial locations for delivering new development over the plan-period.

In particular, it identifies that East Manchester has the potential to contribute strongly to a number of Manchester's key strategic policy objectives. It also identifies the potential for leisure development which has a regional-scale catchment at Eastlands, offering an extremely accessible location with land available to support large-scale development.

Saved Policies of the Manchester UDP:

The Unitary Development Plan was adopted in July 1995. Coinciding with the adoption of the Core Strategy in 2012, significant portions of the UDP have been replaced. However, a number of polices were saved on 11 July 2012 and remain extant.

Material Consideration - National Planning Policy Framework (2019)

National Planning Policy is contained within the National Planning Policy Framework ('NPPF'). The document sets out the Government's planning policies for England and how these are applied. It requires planning policies to meet objectively assessed needs, with sufficient flexibility to adapt to rapid change.

The Government emphasises that Planning should operate to encourage and not act as an impediment to sustainable growth. Therefore significant weight should be placed on the need to support economic growth through the Planning system.

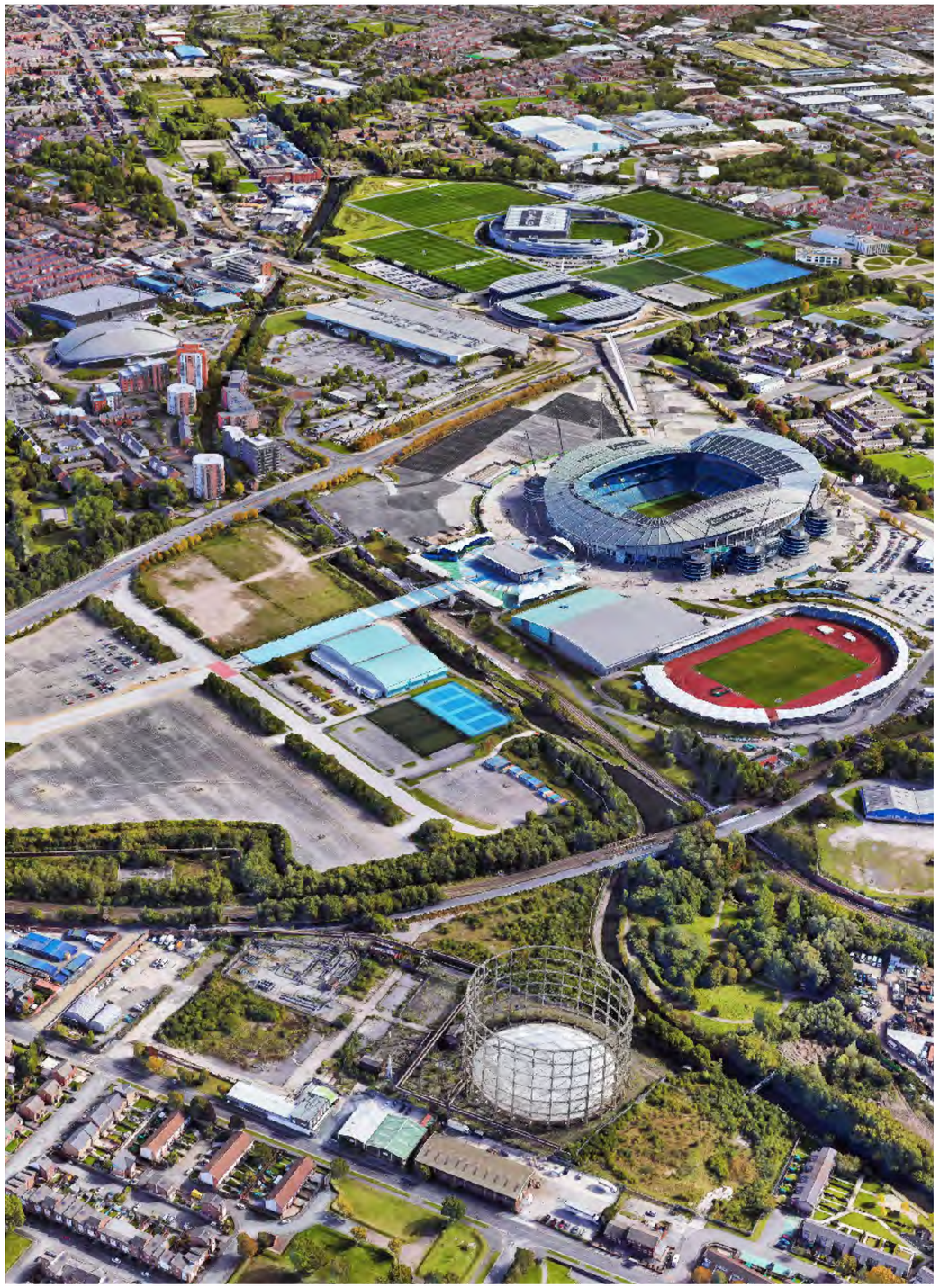
Regeneration Guides

Since March 2010, the Council has worked in partnership with the owners of Manchester City Football Club to develop a transformational plan for East Manchester that is focused on the area around Etihad Stadium. This work has been guided by the Eastlands Regeneration Framework (ERF), which was approved by the Council's Executive Committee in July 2011.

In December 2017, the Council's Executive Committee approved a further version of the Regeneration Framework for the Eastlands area, which encompassed both the Etihad Stadium environs and along the Ashton Canal into both Holt Town and into the Lower Medlock Valley. It set out the intent to create a new economic focus around Etihad Stadium and developing a business park with a focus on sport, leisure and recreation.

In July the Executive Committee resolved to delegate authority to the Strategic Director – Growth & Development, in consultation with the Leader of the Council and the Executive Member for Housing & Regeneration, to approve the ERF once certain matters have been addressed, including the requirement for the ERF to reference the recently announced Carbon Reduction targets.

There is an ambition to maximise the Campus, as a destination for driving investment and job creation. As part of this, there is an identified opportunity to develop a new Sport Tech cluster and create an enhanced leisure offer. This offer includes the provision of a new large indoor venue (with a capacity in excess of 20,000 spectators), a multiplex cinema, hotel development and an expanded food and beverage offer.



1.4 The Team

The client for the OVG Manchester Venue project is OVG Manchester Limited, part of Oak View Group (OVG), supported by a multi-disciplinary consultant team.

Populous is the lead consultant and project architect for the new venue, also delivering the interior design, brand and commercial activation elements, wayfinding and landscape design services for a cohesive scheme proposal.

The consultant team includes engineers and other built environment specialists with international experience of contemporary entertainment venue design and delivery.

ME Engineers
- MEP / Environmental Engineer
- Architectural Lighting
- Vertical Transportation Consultant
- IT / Security Infrastructure

BuroHappold
- Structural Engineer
- Civil Engineer
- Facade Engineer
- Fire Engineering
- Accessibility Consultant
- Transportation Consultant / Crowd Movement
- Geotechnical Engineers
- Security Consultant
- Wind Engineer
- Waste Consultant
- Drainage Engineer
- Utilities Engineer
- BREEAM

Turner and Townsend
- Quantity Surveyor / Employers Agent
- CDM Principal Designer
- Health and Safety Consultant
- Project Management

Vanguardia
- Acoustics / Audio - Visual

Satore Studio
- Architectural Lighting

Deloitte
- Planning Consultant

Client

OVG Manchester Limited

Lead Architect

Populous

Lead Consultants



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SITE CONTEXT

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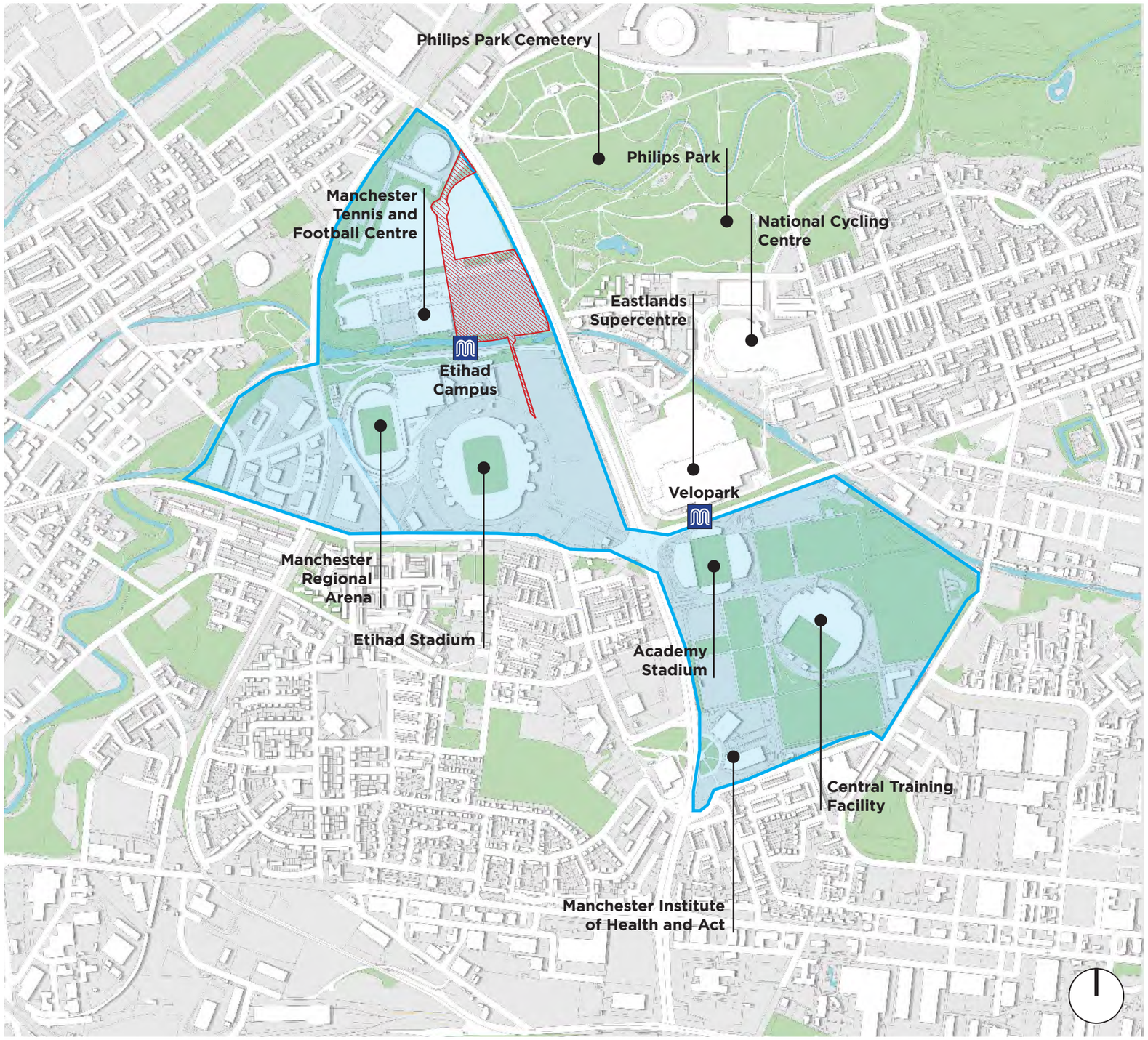
2.0 Site

The site is located within the Regional Centre of East Manchester, which is the focus for economic and commercial development, retail, leisure and cultural activity, alongside high quality city living, an area that has been a long-term regeneration priority and has witnessed significant positive physical, economic, social and environmental transformation over the last three decades.

At the heart of the renaissance of East Manchester has been the Etihad Stadium (formerly City of Manchester) and the range of sporting facilities on the Etihad Campus which were developed for the 2002 Commonwealth Games. Since this time, the Etihad Campus has consistently acted as a major economic driver and successive regeneration frameworks have identified it as a place to drive forward the development of a globally competitive sport, entertainment, leisure and recreation offer.

To the north of the Stadium is City Square, Manchester City Football Club's (MCFC's) Spectator zone, and immediately beyond this is the Metrolink line. The Metrolink connects the site to the city centre in under 10 minutes and extends out to Ashton-under-Lyne. To the east of the Stadium is an area currently used as a car park, beyond which is a dual carriageway. On the opposite side of the road is a large supermarket with associated car parking. Immediately to the south of the site is Ashton New Road (A662). The opposite side of this road is two storey brick-built mid-twentieth century housing at the centre of which sits a playing field serving a brick built primary school. To the south east of the stadium site is the City Football Academy youth development and first team training facility.

For further heritage information please refer to the Heritage Statement.



Tram Stop

Planning Boundary

Etihad Campus Sports and Innovation Zone

2.1 Site History

Until the mid-1800's the site was a block of agricultural land with the River Medlock meandering through its north western quarter. The Ashton Canal and lock formed its southern boundary, Mill Lane its eastern boundary, and Victoria Gardens were located to the north, encroaching on the boundary of the existing site.

In 1848 the River Medlock was straightened and diverted further north, away from the proposal site. This activity was driven by the ongoing industrialisation of the site and the expansion of the Bradford Collieries.

During the early 1900's a shift in industrial focus led to the development of the Bradford Road Gas Works on the site. This sizeable development included tanks, gas holders, tramways and large ancillary buildings. Simultaneously, the River Medlock was diverted into a culvert and Forge Lane was built, running centrally south to north through the site.

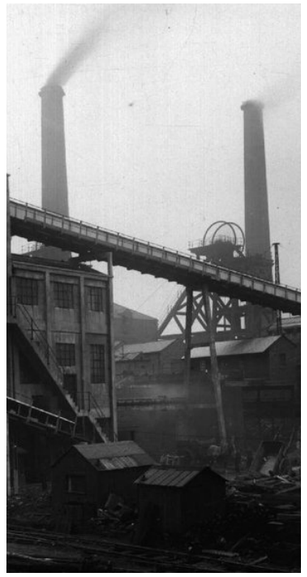
The early 1930's saw yet further development of the existing gas works and new industrial development on the southern portion of the site - beyond the canal, where the stadium now stands. Little then changed until the 1970's when the majority of these works were cleared, including buildings associated with the gas works. In more recent times significant changes to the site include the 1995 expansion of Mill Lane into Alan Turing Way and the 2002 construction of the Etihad Stadium. By 2010 the remainder of the site was fully cleared.

This brownfield site has had temporary use as a BMX track for the Commonwealth Games in 2002, and since partial remediation had seen occasional use as an overspill car park for stadium events, whilst awaiting re-development. The proximity to the Ashton Canal creates the potential to become part of the landscaped 'Green Ribbon' improvements through urban east Manchester.

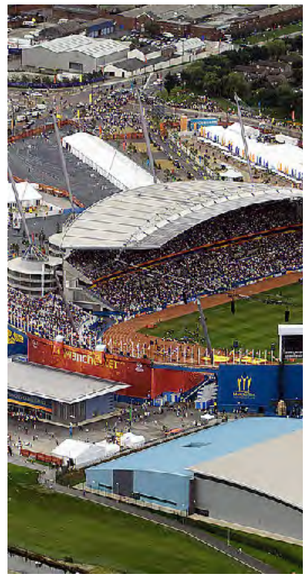
There are many opportunities for the site to be developed to achieve a successful public realm, which will not only form a link to the surrounding urban fabric but will also provide an extraordinary outdoor experience for the proposed event venue.



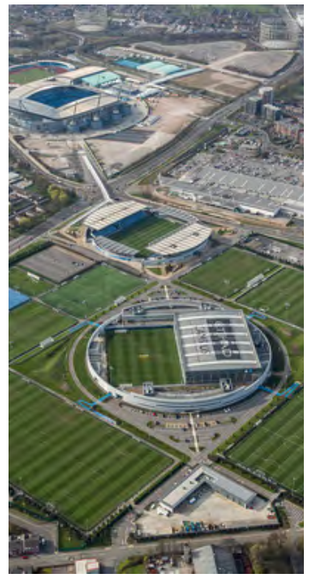
Agricultural
Pre 18th Century



Industrial
1797 - 1968
Bradford Colliery



Regeneration
Early 2000s
Commonwealth Games



Expansion
Early 2010s
Etihad Campus



International Destination
2023
OVG Manchester

2.2 Site History (Continued)

The site and nearby stadium sit on the site of the former Bradford Colliery, a coal mine and gas works which was closed in 1968. The land was subsequently cleared as a part of the stadium development, initially built to host the 2002 Commonwealth Games held in Manchester. In 2003 it was then converted into the home of Manchester City Football Club with a capacity of 48,000.

Culture & Historic Context

Etihad Stadium is a significant landmark in Manchester, as both the host of the Commonwealth Games and the home of Manchester City Football Club. The site has strong connections to Manchester's industrial heritage, as the site of a former coal mine.

Current Use

The site is previously developed land which now lies vacant.

Connectivity

The proposed site is served by a Metrolink station, is on numerous bus routes and is only approximately 25-30 minutes walk from Manchester Piccadilly station and the City Centre (or a 7-10 minute journey time via Metrolink services). The site is easily accessed by car from the M60 which signposts drivers to the Etihad Campus. More detail about transport can be found in the Buro Happold Transport Assessment Chapters.

Site Topography

A topographical survey of the existing site has been undertaken. The area of the site which is to receive the extended footprint has a slow fall from one end to the other.

Existing Ground Investigation Date and Site Geology

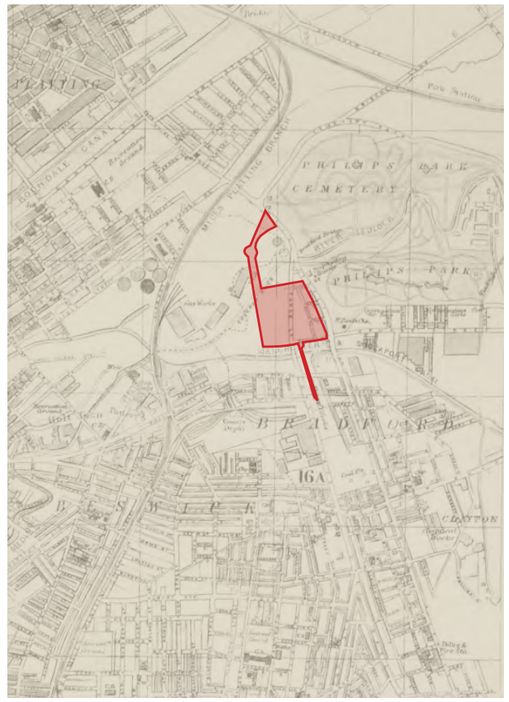
The ground conditions comprise of variable thicknesses of made ground (fill), ranging between 1.3m up to 17.5m thick. Typically, made ground was recorded to greater depths in the north and western parts of the Site. The variations can be attributed to the development history (e.g. Bradford Road Gas Works), treatment to mine workings and numerous phases of enabling works across the site.

The historical uses of the site present the potential for ground contamination. Numerous site ground investigations have been carried out and are complete. This includes an investigation issued by BWB consulting Ltd in 2011. These investigations have been reviewed and are summarised in the Desk Study report.

These works identified visual and olfactory evidence of contamination confirmed by chemical analysis. Elevated concentrations of heavy metals, total petroleum hydrocarbons, polyaromatic hydrocarbons and asbestos containing materials were recorded. Elevated concentrations of hazardous gas/vapours were also recorded. Although, it should be noted that the site has been significantly modified by remedial and construction activity since this time. Available archive information has been assessed and used to scope a further ground investigation which is reported within this application. A dedicated section of the Environmental Statement assesses the likely ground condition impacts of the proposed development upon the site and surrounding area.



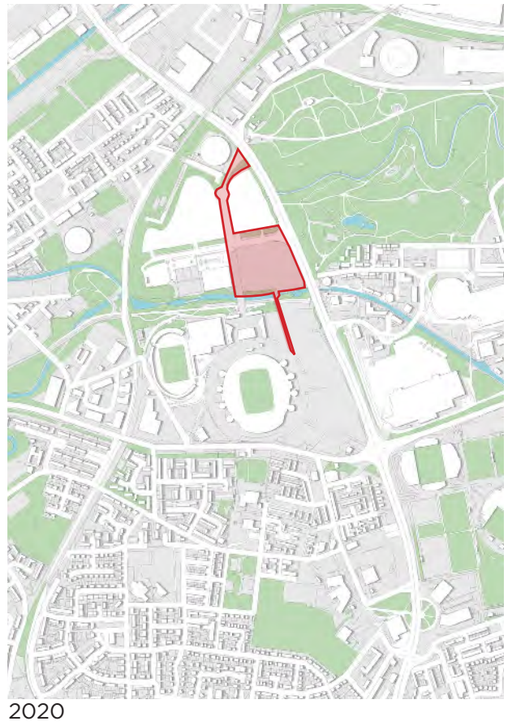
1900



1920



1960



2020

2.3 Local Heritage Assets

Assessment of Significance

The scheme will have a less than substantial impact on Phillips Park, Phillips Park Cemetery, Entrance Lodge to Main Entrance to Phillips Park Cemetery, Lock 7 and Lock Keepers Cottage.

Please refer to the Heritage Assessment for further information.



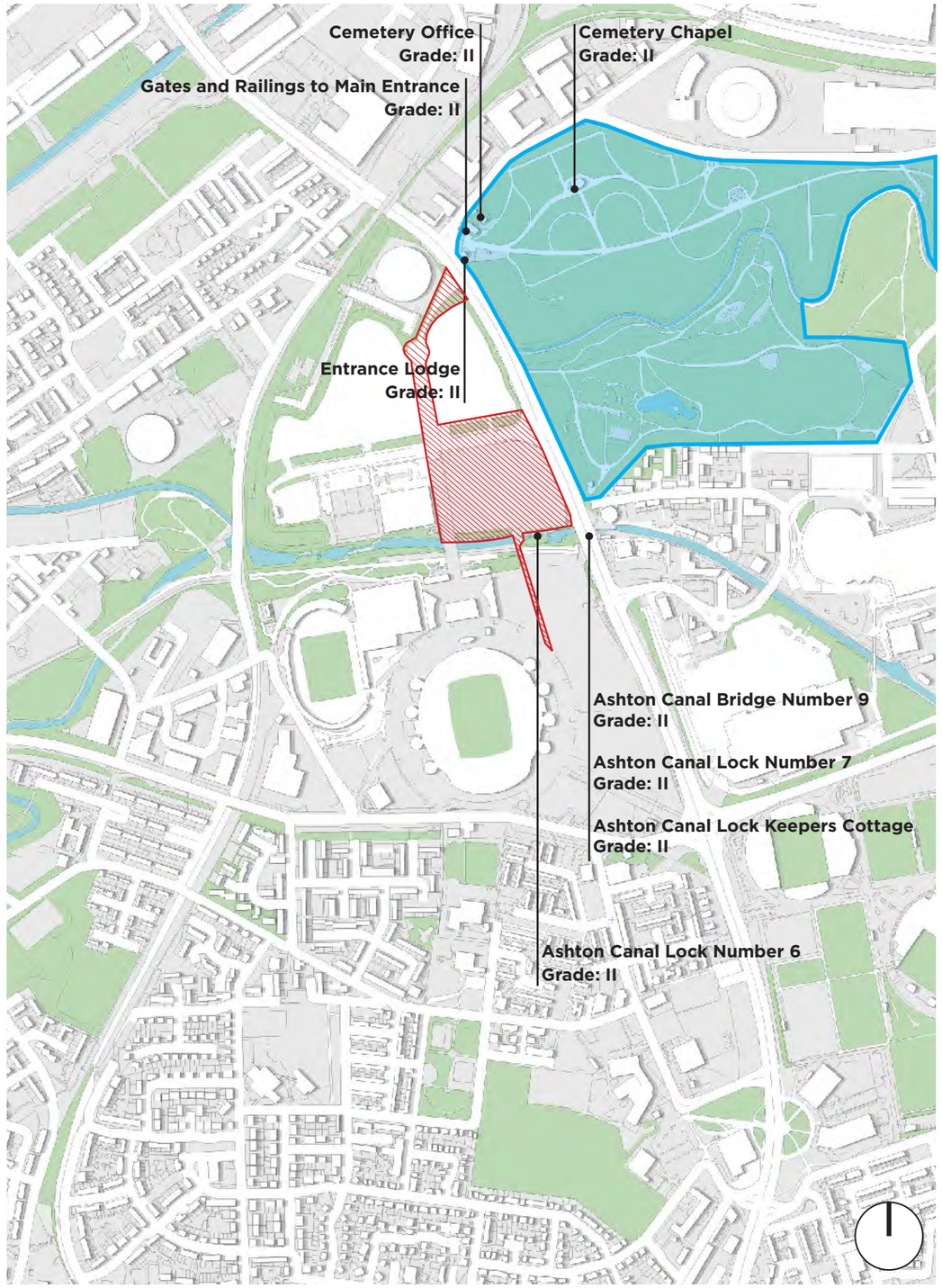
Ashton Canal Lock Number 6



Ashton Canal Lock Keepers Cottage



Philips Park and Cemetery Chapel



Planning Boundary

Philips Park and Cemetery
Grade II

2.4 Public Transport

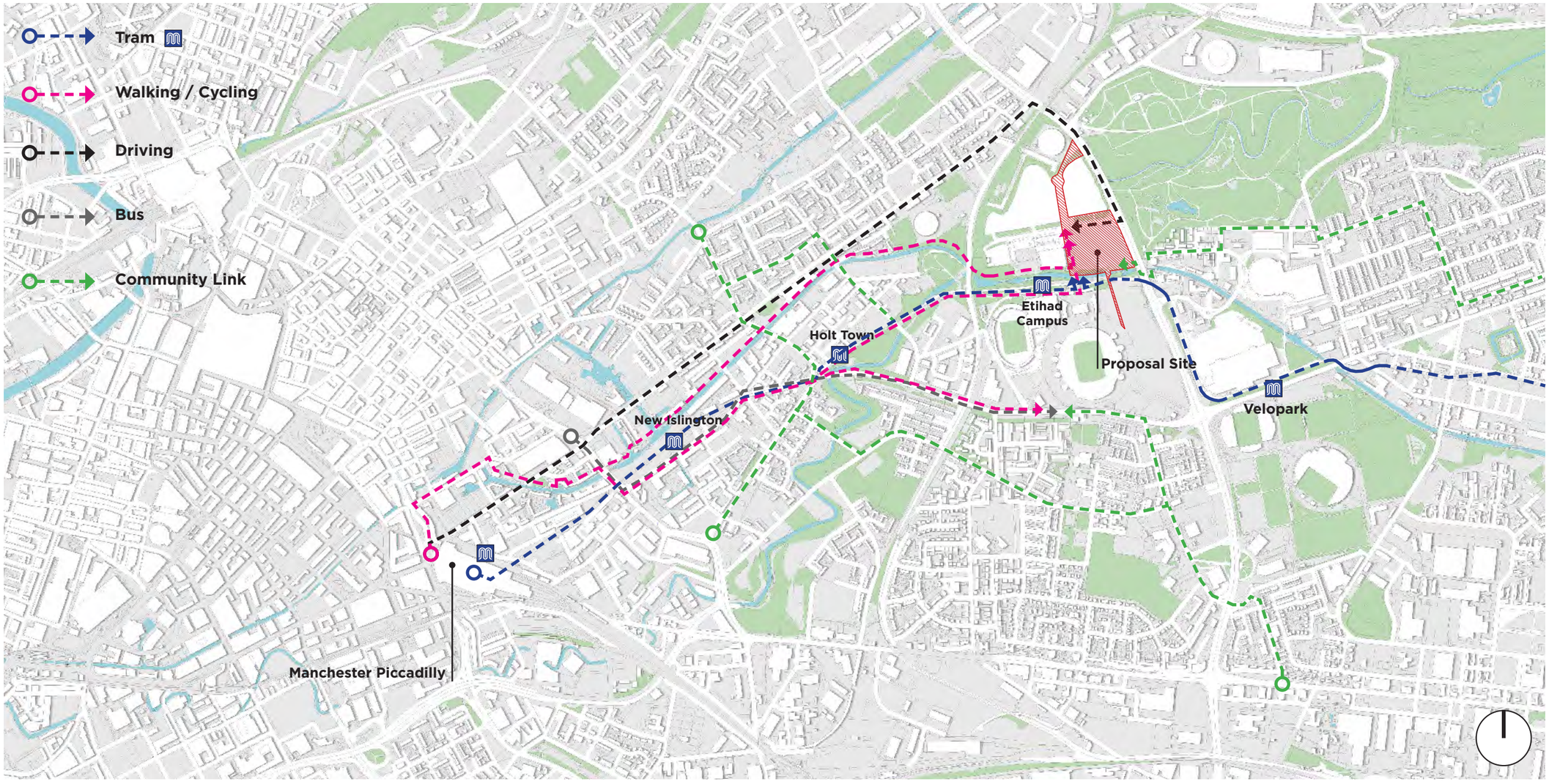
The application site is an established public transport visitors destination and on a typical stadium match day, over 20,000 visitors use public transport and sustainable transport to travel to the Campus.

The most attractive public transport to the area is Matrolink, with the the Etihad Campus (tram) stop, located in immediate proximity to the venue. This Metrolink stop is served by the Ashton-under-Lyne Line (Eccles to Ashton-under-Lyne) and provides a direct route to Manchester Piccadilly station in 8 minutes. Currently, this line has a frequency of 10 trams per hour providing a six-minute headway per direction. It is to be noted that currently on match days or other stadium events Holt Town and Velopark stations, which are the next closest stops, are closed for at least an hour after an event at the stadium. This is to avoid trams filling up before arriving at Etihad Campus, which would create additional queuing and safety issues.

Multiple bus routes also serve the Etihad Campus, all within 10 minutes' walk to the Venue.

A Movement and Transport Strategy has been produced for the wider Etihad Campus and provides a framework for the future development of the Campus, by Arup. This includes improvements to walking and cycling routes between the Etihad Campus and the City Centre, including Pollard Street, Ashton New Road and the canal towpath. This also highlights an additional enhanced Metrolink service on event days (subject to demand) before and after events.

Public transport is covered further within the attached Transport Assessment.



2.5 Local Amenities

The OVG Manchester Venue contains a variety of spaces and amenities inside and outside the venue to attract a diverse range of visitors, increase dwell times and create memorable and positive experiences. The proposal aims to enhance the local amenities, including those visiting the Park, addressing the current lack of options in the area.

The aim to create the next generation venue considers the following aspirations to fulfill the client's vision:

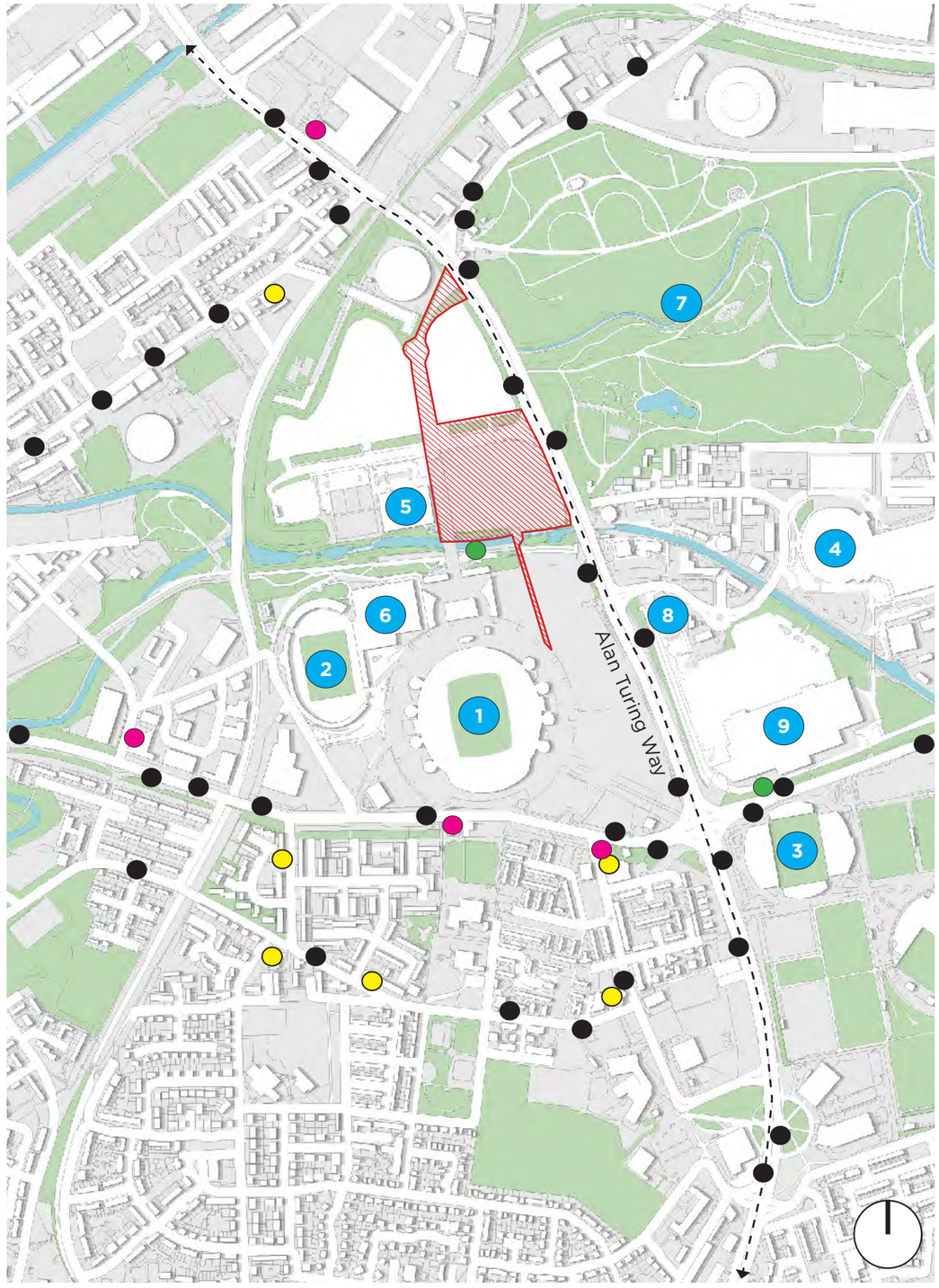
- Optimise utilisation of food courts, bar and concessions before, during and after events / throughout the day (i.e. not just for event intervals).
- Activate the canal frontage.
- Create attractive retail spaces for event and non-event times.
- Explore opportunities to balance Etihad Stadium and venue facilities to optimise Campus utilisation.
- Uplift spectator comfort and satisfaction and increase chances for re-visit.
- To provide a fully inclusive and accessible venue that caters for all potential user groups.

Our crowd flow study concluded that the following design considerations will help achieve the above aspirations:

- Activation of concourses to increase utilisation, footfall and comfort around bars and concessions, and likely increase in dwell times.
- Optimal access and visibility to food and beverage (F&B) offerings during events and non-event times, resulting in increased numbers of spectators and site visitors wanting and able to use the facilities.
- Optimal provision of concessions and toilets to ensure minimal queues and increased opportunities for spectators to make purchases during event intervals.
- Slowing down mass egress by encouraging spectators to mill around and spend time at F&B outlets. Slowing down egress alleviates pressure on adjacent egress routes and transport nodes.
- Improvement in site visitor comfort and delight with increased diversity of facilities through opening up direct canal frontage.

1. Etihad Stadium
2. Manchester Regional Arena
3. Academy Stadium
4. National Cycling Centre
5. Manchester Tennis and Football Centre
6. National Squash Centre
7. Philips Park and Cemetery
8. McDonald's
9. Eastlands Supercentre

- Public Houses / Bars
- Restaurants
- Bus Stops
- Tram Stops



2.6 Site Context



2.7 Site Context (Continued)


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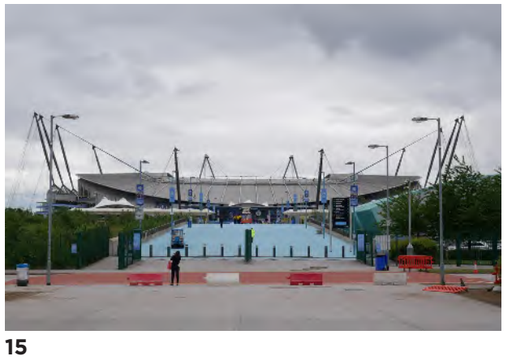

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2.8 Site Constraints

The site for the new venue is located within the Etihad Campus. There were therefore a number of site constraints that had to be identified and respected in order to maintain the existing access and egress routes to and from the existing stadium.

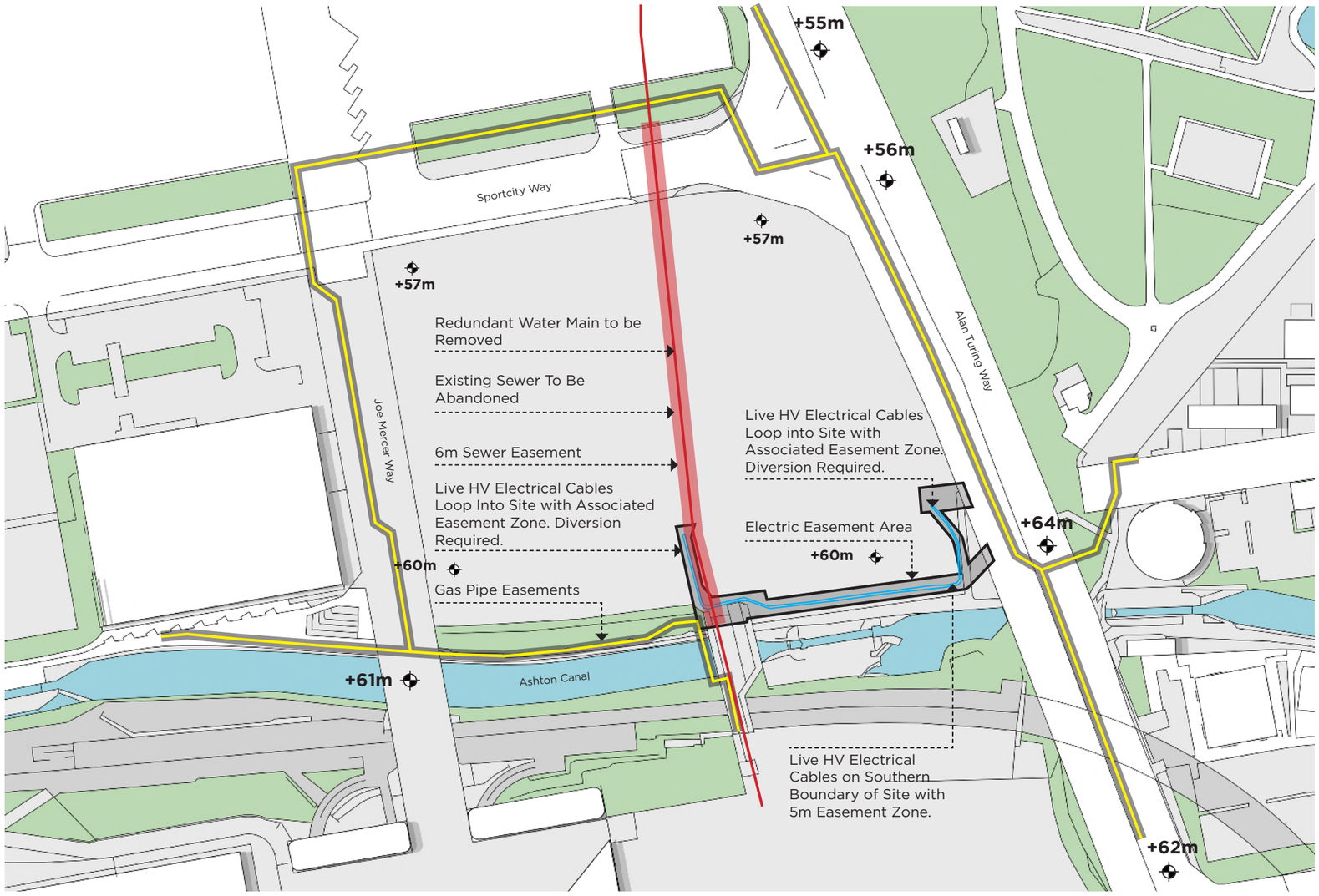
These included:

- Retention of the existing pedestrian boulevard Joe Mercer Way which connects the visitor car parks to the north to the stadium and runs along the west boundary of the site.
- Retention of the main access road to the visitor car parks, Sportcity Way, which also serves the Tennis Centre and runs along the north boundary of the site.
- The dual carriage way, Alan Turing Way, that runs along the east boundary of the site was to be retained to have minimal disruption.
- Ashton Canal that runs along the south boundary of the site and provides a walking route to the Campus along the tow path.

There were also a number of existing below ground services infrastructure and wayleaves easements that had to be maintained:

- Existing services in the south-west corner - 5m easement.
- Existing gas main running along the canal tow path – 3m easement.
- Land Registry easement in the south-east corner which inhibits any build over.
- The existing Forge Lane Bridge needed to be retained for access and egress onto the site.

All of the above constraints influenced the design of the building and its location within the site.



2.9 Environmental Site Analysis - Wind Exposure

A Computational Fluid Dynamics (CFD) wind assessment was undertaken by BuroHappold for the proposed development. This assessment reviews the impact of the proposed development on pedestrian comfort and safety in terms of wind microclimate effects, in relation to the proposed site and immediately surrounding areas of public realm. Scenarios were assessed for the existing site, the proposed development, the proposed development with mitigation measures, and the proposed development with future scenarios taking into account other committed developments within an agreed vicinity of the site. Below is a summary of the key findings of the assessment.

Four separate scenarios were modelled to consider the effects of the proposed development. An area of wind acceleration was determined at the southeast corner of the Level 01 podium area, where conditions could be uncomfortable for pedestrians during winter. In addition, areas exceeding the safety threshold were determined at the southeast corner of the Level 01 podium, just to the south of the proposed development and to the east of the site.

Mitigation measures were suggested to improve the conditions on parts of the Level 01 podium area. In addition, existing landscape was also modelled to determine its effect on improving conditions in the areas surrounding the proposed development. The mitigation measures and existing surrounding landscape were shown to improve conditions significantly, and remove all safety issues observed, ensuring that all areas of the proposed development and its immediate surroundings are considered suitable for intended pedestrian use.

Comfort Category on Imported Annual Wind Conditions

10 Pedestrian Business Walking

9 Pedestrian Walking Around Buildings

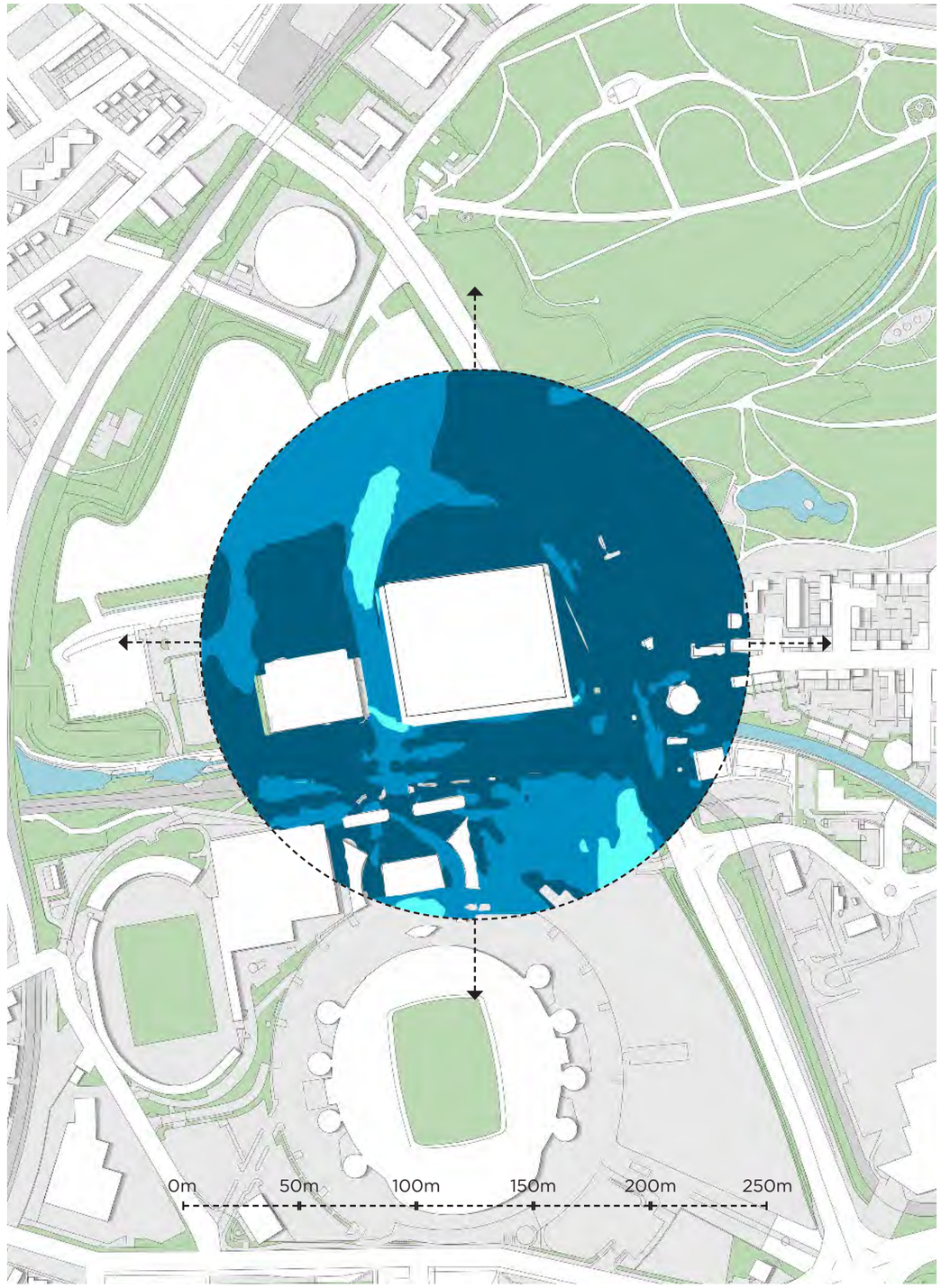
8 Pedestrian Walkthrough

7 Pedestrian Walkthrough

6 Standing / Entrances

5 Sitting

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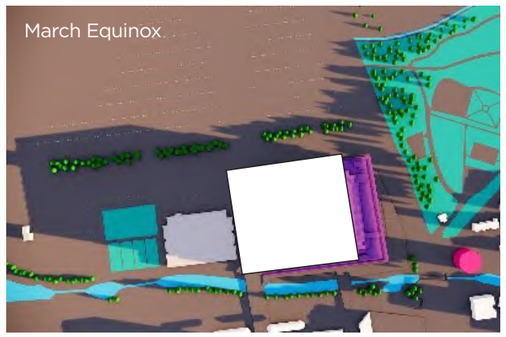
2.10 Environmental Site Analysis - Daylight and Sunlight Assessment

The assessment of the impact of the proposed OVG Manchester development on existing adjacent dwellings and amenity spaces concluded it will have a negligible detrimental effect on access to daylight and sunlight.

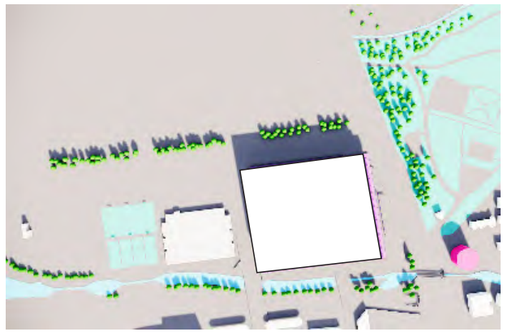
Overshadowing from the proposed development is transient, with adjacent buildings and amenity spaces remaining generally unshaded with the proposed development in place.

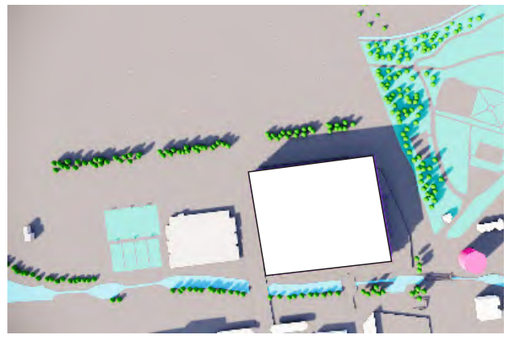
The cumulative impact of the proposed development in combination with committed future developments will also be negligible due to separation distances between the sites.

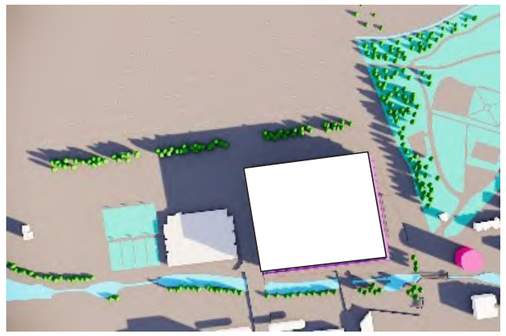
The hours of assessment reflect the methodology of BR209 for the assessment of sunlight on the ground, which considers only sunlight at solar altitudes of above 10°, on the basis that lower angle sunlight is likely to be blocked by low level planting.

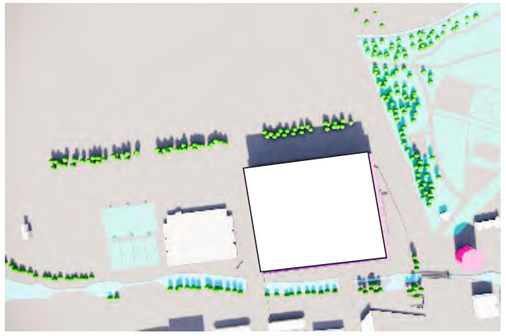


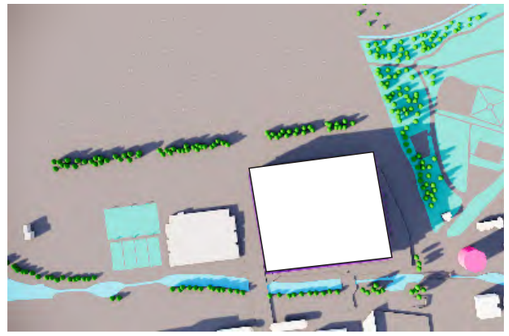
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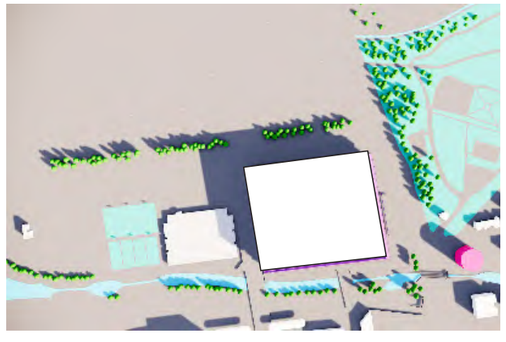

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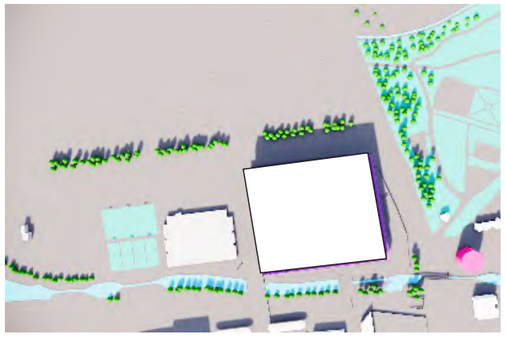

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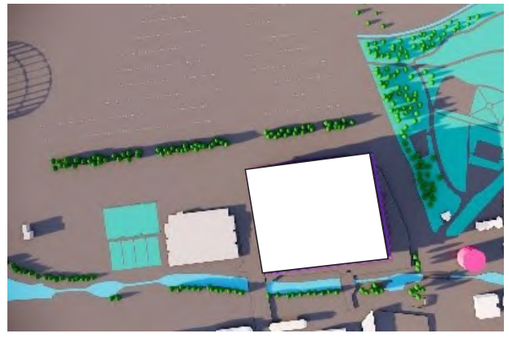

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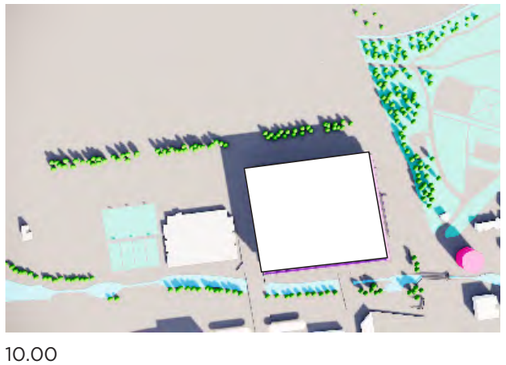

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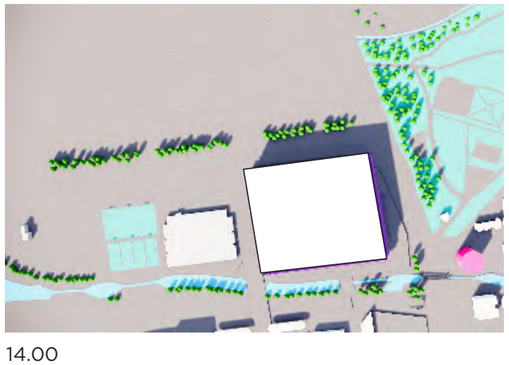

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DESIGN PRINCIPLES

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3


POPULOUS

3.0 Design Approach

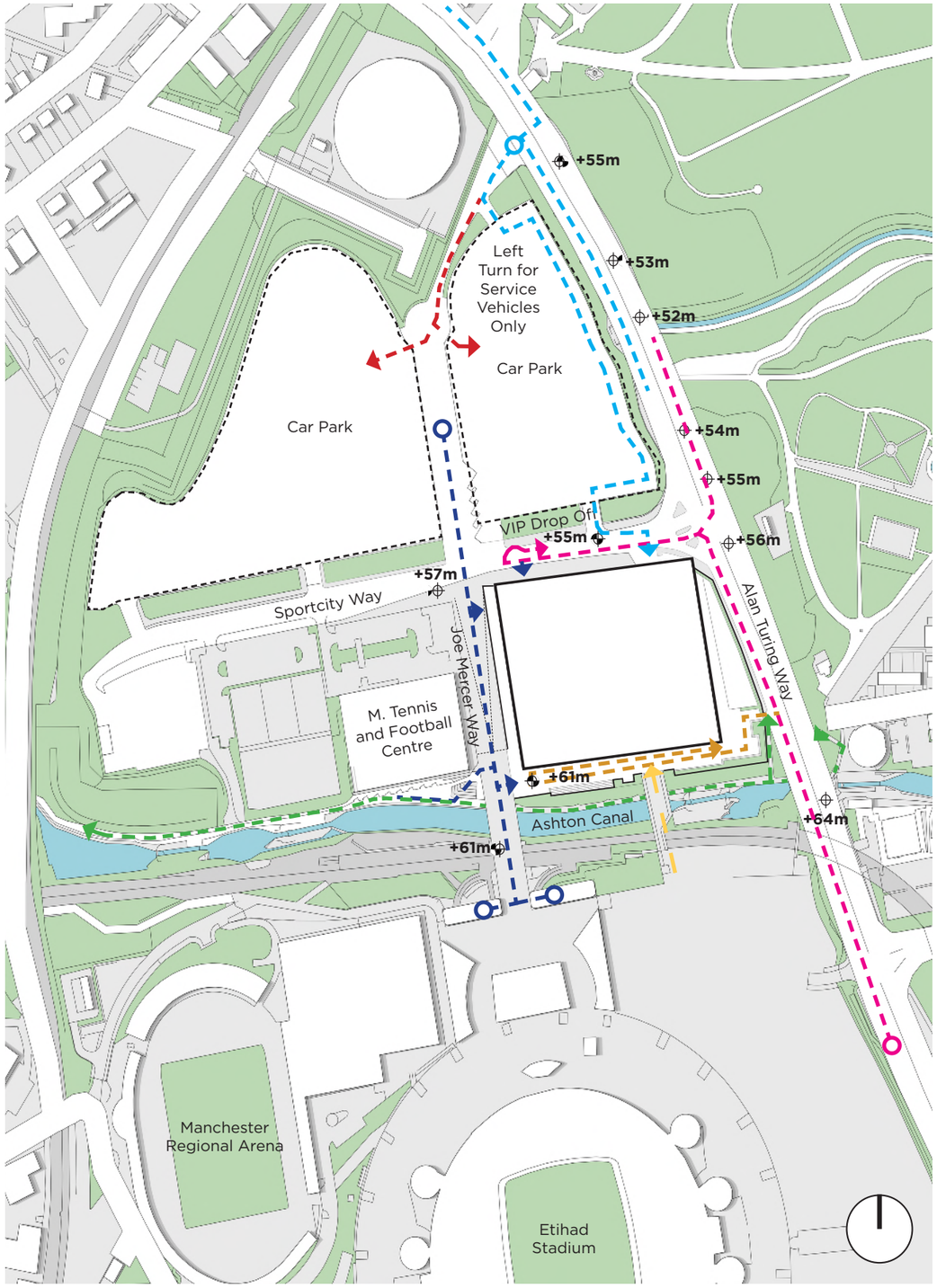
This chapter of the Design and Access Statement describes the design evolution of the OVG Manchester Venue. The design has been driven by a number of important factors:

- The ambition of the client and the design team to create an exemplar venue in efficiency and sustainability, with function, materiality and public realm landscaping all working cohesively to minimize CO2 emissions, waste, water consumption and energy use, while making employment opportunities and entertainment contributions to the culture and life of the district.
- Site access
- The facility aims to be the best in class across all areas of the design. The proposal brings together disciplines such as event, commercial activation, wayfinding, lighting, landscape, audio design, accessibility, and structural and services design into a scheme that will deliver unique experiences for everyone who visits the venue. The OVG Manchester Venue will become a key destination in the city.

The design principals section intends to examine the site in the context of Manchester, redefine the arena based on key functional requirements and develop a design appropriate in scale.

Access and Circulation

- The site benefits from the existing Campus infrastructure, particularly adjacency to the main pedestrain boulevard of Joe Mercer Way for visitor entrance. This walking route connects to the tram stop to the south of the Ashton Canal and provides a broad thoroughfare linking many of the Campus venues.
- There will be no increase in parking capacity within the existing campus, with a greater emphasis placed on sustainable transport, utilising tram and bus links and encouraging access to and uptake of walking and cycling routes.
- The cross-city connection of the Ashton Canal and tow path is maintained, with the landscaped podium to the south of the venue building as a highly visble destination space overlooking the waterway.
- Adjacency Sportcity Way enables back of house tour truck access and artists' drop off in the secure service yard. The near proximity of the north car parks allow for both VIP and disabled parking close to the venue.



Waste and OB Access
Emergency Access
Maintain Existing Towpath Access
VIP Car Drop Off Access
Pedestrian Access
GA Car Parking
Servicing Access


POPULOUS

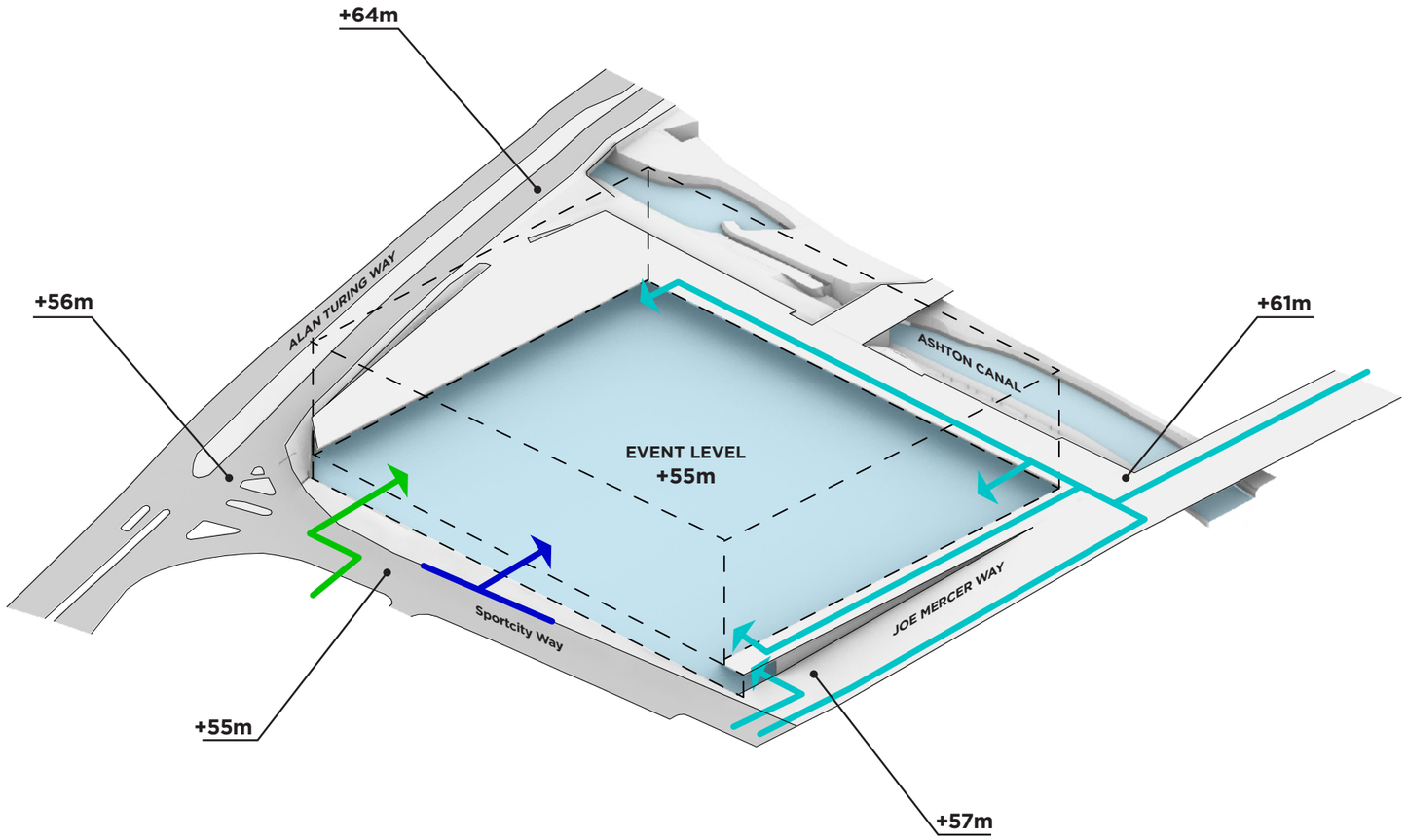
3.1 Site Context Response

The arrival experience of each visitor was a major influence on the design of the venue. The primary arrival points are the car park north of Joe Mercer Way and the tram stop south of Joe Mercer Way. Joe Mercer Way is the main route between these two arrival points and therefore becomes the key frontage of the building. The design had to carefully consider how the upper and lower concourses connect to this route to allow smooth level access for people into the building.

The design of the building optimises the existing site levels to give level access to the main entrances at Level GF and 01. The upper podium connects the building to the site by providing level access at the highest point along Joe Mercer Way. The site has a considerable change in level from north to south (6m) which is reflected in the pedestrian boulevard which connects the north car park and the stadium (Joe Mercer Way). The design maintains Joe Mercer Way as the main access route to the stadium and to tie in the lower concourse level (Level 01 +61.620m) with the high point of Joe Mercer Way and the event floor level and loading bay entrance with the low point of Sportcity Way (+55.00m). The loading bay has direct access from street level on Sportcity Way which is enclosed by roller shutter doors allowing for a high level of security and best possible venue functionality.

The positioning of the building within the site was driven partly by the site constraints and partly by the crowd flow requirements of the building. Buildings of this type are required to be a certain size to be viable in terms of the events that they must attract. The venue capacity of the building has to be large enough to contend with the existing venues on the touring route within the UK.

The venue capacity therefore determines the size of the concourses and the hospitality spaces. These spaces in turn drive the requirements of plant, catering and staff facilities for the building. The queueing zones around the main entrances drive the distance between the façade and the site boundary.



Spectator Entrance

Hospitality Entrance

Service Vehicle Entrance Off Street

3.2 Design Development

The shape of the site is very linear and has tight constraints on all sides. As a result every square metre of the site has to be optimised for the proposed development, whether for internal accommodation or emergency egress.

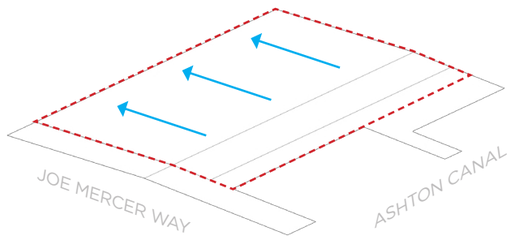
A benefit of the site is that it slopes from the South (Level 01) down to the North (Level 00). This affords the opportunity to provide ingress and access on two levels making for a more efficient venue design, including direct access for service vehicles from Sportcity Way to the north.

A series of form studies were carried out to determine the best venue design for the site, beginning with a traditional European seating bowl design.

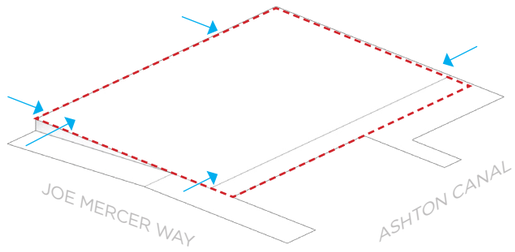
A traditional bowl designed is curved with the building accommodation and circulation offsetting it. It was found that to get the minimum requirements of a venue of this size, this traditional shape would create problems with circulation both internal and external and create awkward redundant spaces on podium level.

After various iterations it became apparant that a bespoke orthogonal bowl design would suit the site much better, with most of the building accommodation in the east and west and access/egress and internal circulation happening in the corners of the building.

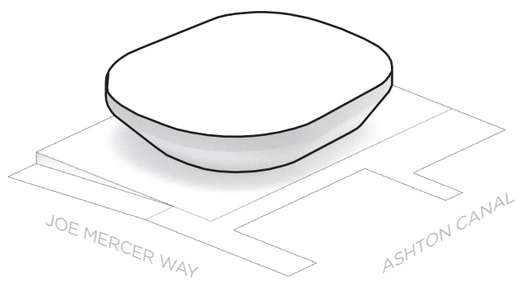
The site is highly visible from all sides, both from within the Campus and from the eastern Alan Turing Way approaches. This informed the parameters in that the venue needed to have equal ‘presence’ to all sides.



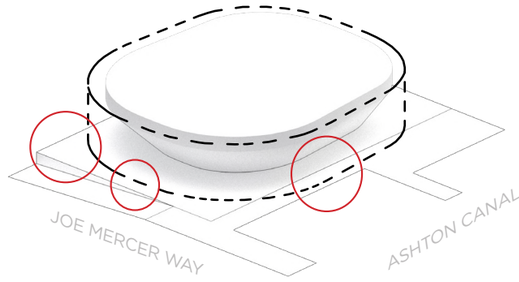
Existing Site Downhill Slope on Linear Site



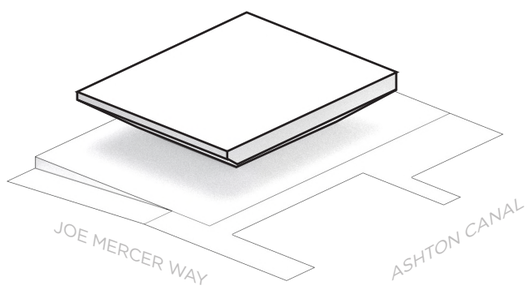
Create Podium for Public and Service Entrances at Two Levels



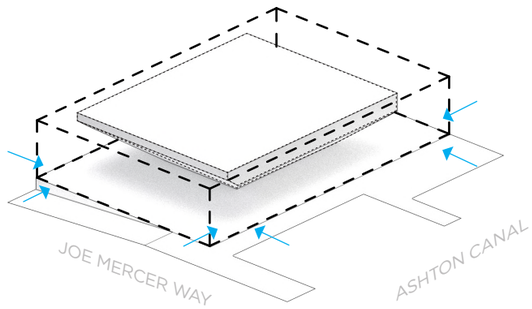
Traditional European Seating Bowl



Adding Internal Requirements to a Traditional European Seating Bowl to this Site Creates an Inefficient Design



Siting a Bespoke Linear Bowl to Align with Site Form



Adding Internal Requirements to Fit Linear Site Form

3.3 Design Development (Continued)

A variety of responses were investigated to test the relationship with the site constraints, views of the building and programme efficiency of the venue's design.

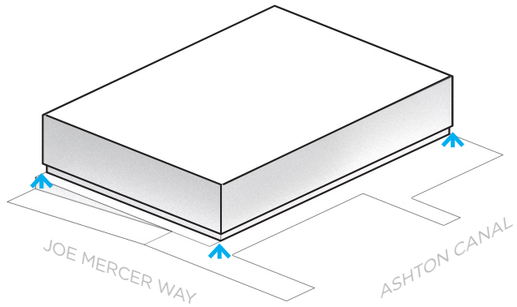
The initial form of the building was kept very simple and linear to create a strong identity. The 'linear box' concept was lifted above the main pedestrian routes around the lower concourse level giving a dramatic contrast in scale between the figure and form.

The large flat facade surfaces are intended to be a viable display area for potential sponsors, brand activation and event activation. The linearity of the design acts as an ideal canvas for such activation.

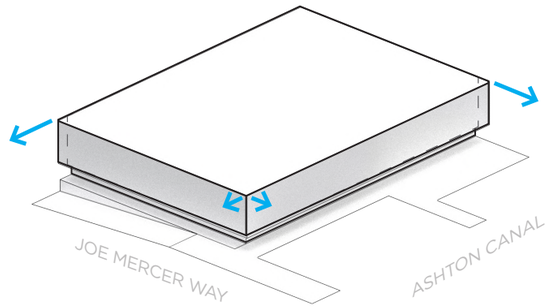
The form of the box was then pushed out and up to respond to some of the pragmatic needs of the building, also creating partial canopies over external pedestrian spaces where event goers would be queuing. This will give prominence to the main entrance of the building adjacent to Joe Mercer Way, the central boulevard linking the Campus and the car parks.

The building form was therefore pushed to respond functionally to the interior spaces. In turn, the form steps in or out responding to where space is required inside the building therefore creating a stacked box aesthetic.

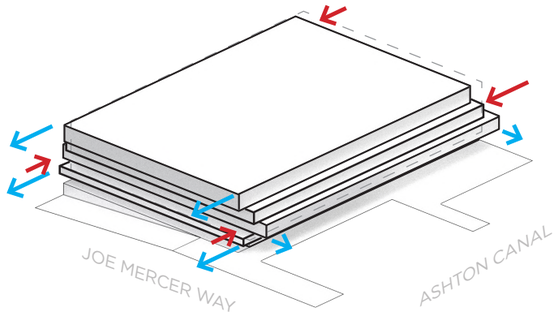
The stacked box form has a strong relationship with the interiors of the building, providing shelter, a unique identity and allows for dynamic facade activation. The horizontal layering of the stacked form contrasts strongly with the solid form of the plinth that grounds the building to the site.



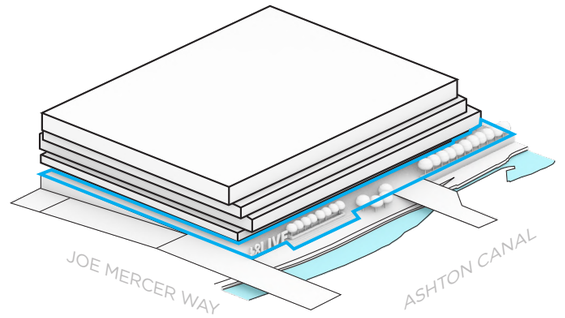
Lifted Mass to Define Venue Entrance



Covered Area for Visitors



Venue Functions Create Identifiable Form



Activated Public Realm

3.4 Key Functional Requirements

The base level of the venue, Level GF, is broadly divided into three functions;

- To the east and south sides are the essential back of house support spaces for event activities.
- On the north and west are the main public and service entrances to this level and the front of house facilities.
- All of these essential functions support the main auditorium hall floor in the centre on the building.

The base of the venue is vital to ensuring effective event operation. To the rear of the building, the Level GF east service yard manages all the preparation and staging for touring events. This yard is fully enclosed and has level access from Sportcity Way in the north eastern corner of the building, for vehicles to drive straight in and back up to the stage area, and also access the bulk storage facilities and main kitchen loading dock spaces in a generous, discrete and secure area.

Event performers and teams can also be driven into this service area and dropped off discretely, adjacent to the internal entrance to the back of house suite of dressing rooms and event support spaces on the south side of Level GF. The service yard, auditorium floor, storage, support and dressing room spaces all have level access for ease of operation and management.

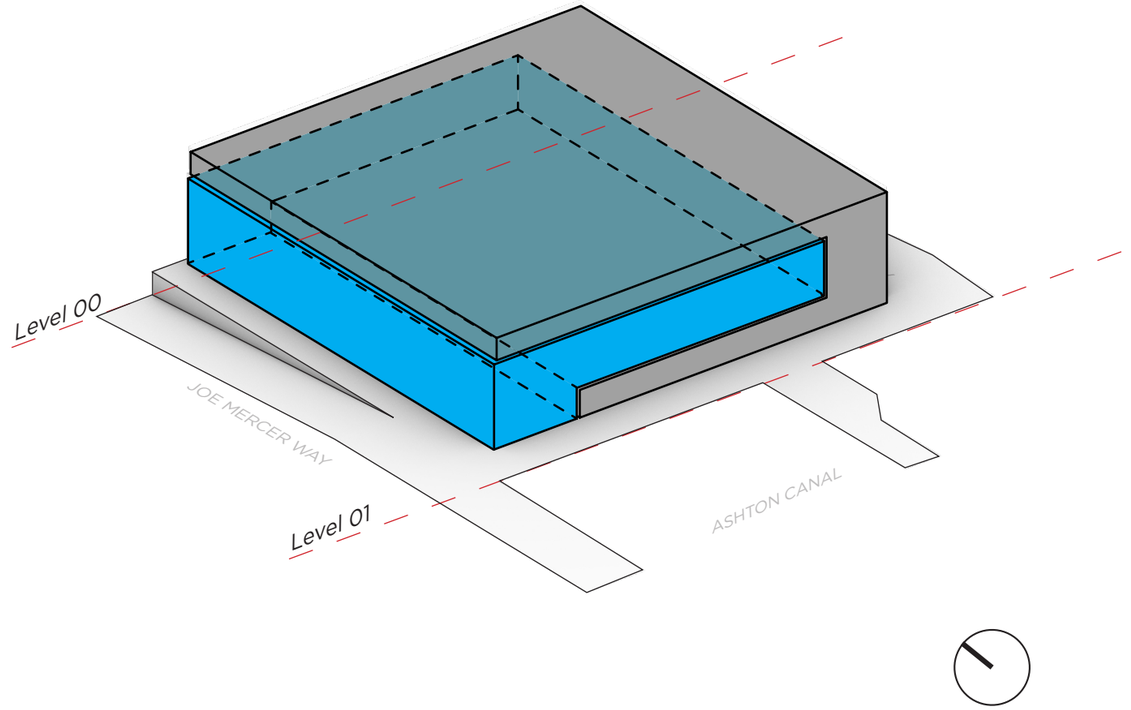
On the north side is the main hospitality entrance, with internal links to the floor level premium spaces and lifts and escalators to the upper levels. A designated accessible entrance is situated at one end of this entrance space, connected to a priority route to the auditorium floor and through to both internal standard guest and premium guest facilities on the upper levels via the main lift cores. The main atrium floor entrance is located on the northwest corner, from Joe Mercer Way. This entrance brings people directly into the main atrium base concourse space and then through to the auditorium floor.

At Level 01, primary audience entrance is on both the south east and north west corners. The northwest entrance is accessed via a level platform route parallel to Joe Mercer Way, and the south east entrance has level access from the Canalside podium space. The south concourse has the capability to open to the landscaped Canalside podium, creating additional opportunity for waterside activation.

Both Level 01 entrances allow visitors to circulate to all sides of the building to access the back of the lower tier and to rise to Level 03 via escalator and lift links to access the upper concourse and upper tier seating. In addition to this, compartment enclosures through the concourse and lounge levels allow for sectors of the building to be activated for non-event use, whilst still allowing the auditorium to be set-up for the next event.

Back of house provisions are to be provided on the same basis as front of house provisions, ensuring that there are accessible facilities including sanitary accommodation. To achieve this;

- Campus cycle parking is available and venue staff facilities for cyclists is designed to include accessible showering, changing, locker and drying spaces.
- Box office facilities are designed to accommodate as wide a range of users as possible. A single height counter at 850mm will allow choice for all users and accommodate seated and standing users alike.
- Facilities such as reception desks or concession counters are designed to meet the needs of people standing, wheelchair users and people of short stature, including the needs of disabled staff.
- Sound enhancement systems are included in reception desks/counters with appropriate signage to identify it to visitors.
- A quiet room/sensory room with a view of the venue bowl, is proposed at Level 01, which will be developed in conjunction with the operator.
- Additional facilities include a multi-faith room located back of house at Level 02, the design of which will allow for two separated areas if required to accommodate separate-sex prayer facilities.
- Accessible toilets including changing place facilities.






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NOW
LETS
PLAY

3.5 Redefining the Arena Design Approach

The building design responds to a multi-layered brief which requires the venue to operate in a variety of different modes, both for event and non-event activities.

The standard approach to arena design centres the auditorium to the volume of the building. Audience concourses and lounges are plugged into the auditorium bowl at different levels, creating a series of spaces that are very similar in terms of shape, proportion and scale. The visitor experience can be quite monotonous, with little expression of spatial hierarchy and unique spaces.

To address the brief to create a 'best in class' multi-purpose venue, we have reconsidered the design norm to create unique spaces which provide more entertainment, and build on the gradient of expectation leading to the auditorium event to encourage Spectators to arrive earlier and enjoy the range of facilities, food and beverage offers available at the venue. Increased dwell time is an important factor in boosting quality of experience.

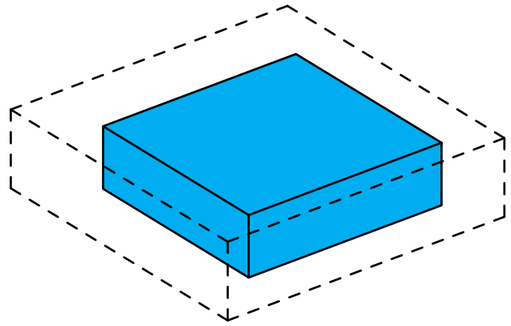
The auditorium or 'Hall' has been custom designed for a much more compact, flexible and intimate configuration compared to comparable capacity venues. The seating bowl has been designed with the lower tier having a series of retractable seating units that can be configured in many ways facilitating a broad and varied event schedule.

The upper tier has been brought forward and lowered to provide a much more intimate environment. The negative effects of separate bands of hospitality suites on the cohesion of the auditorium has been kept to a minimum, increasing spectator engagement and involvement. This combined with the minimal seat losses due to production overlay provides a visually unbroken wall of Spectators when viewed from the stage, with the tiered seating being up to 20m closer to the Performers than in comparable sized traditional multi-purpose arenas. This is an auditorium design that puts the Spectators first.

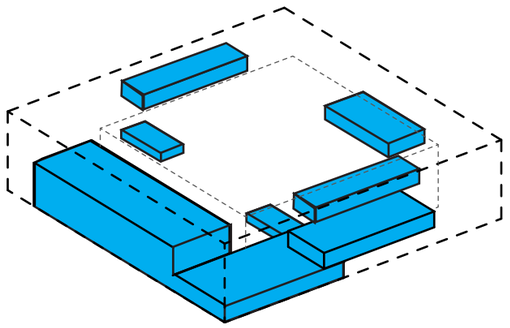
The auditorium has been pulled away from the western side of the building to enable a generous atrium space to be inserted from Level GF to Level 02, linking all three floors of the front of house spaces. Connected by open escalators and stairs, this atrium space is the heart of the building for the Spectators, with feature bars and a food court overlooked by concourses and lounges on the upper levels of the building. Innovative concepts for the catering service are in development to increase the range of offers and speed of service to spectator concourses compared to traditional arenas. Sanitary fixtures are proposed to to be installed to higher levels of provision for the key event modes, up to 140% of the audience capacity, to allow for fluctuations in the audience profile.

Level 02 comprises a full level of premium suites and lounges, which either have excellent and close proximity views to the auditorium stage, or dramatic views down into the main atrium foyer space.

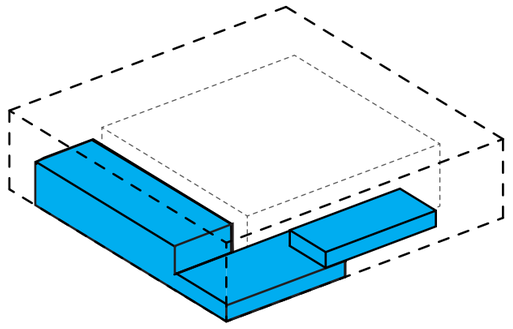
The upper tier is surrounded by double height concourse spaces at Level 03 creating the spacious and airy 'Loft' experience, Finally, slim open bar lounges on the north and south sides of Level 04 are set at the back of the upper tier for dramatic 'in the gods' views down to the stage.



The Hall
Ultimate Spectator Experience



Event Day
Multi-Experience Venue



Non-Event Day
A New Destination






MARKET
COOK
HOT
COLD
HOT FOOD


EXIT
AND ON THE SIXTH DAY, GOD CREATED MANCHESTER

3.6 The Auditorium

The aim of the OVG Manchester Venue is to deliver the best performer and spectator experience of any large scale venue in the world and to have maximum flexibility in order to host performances and events of all types.

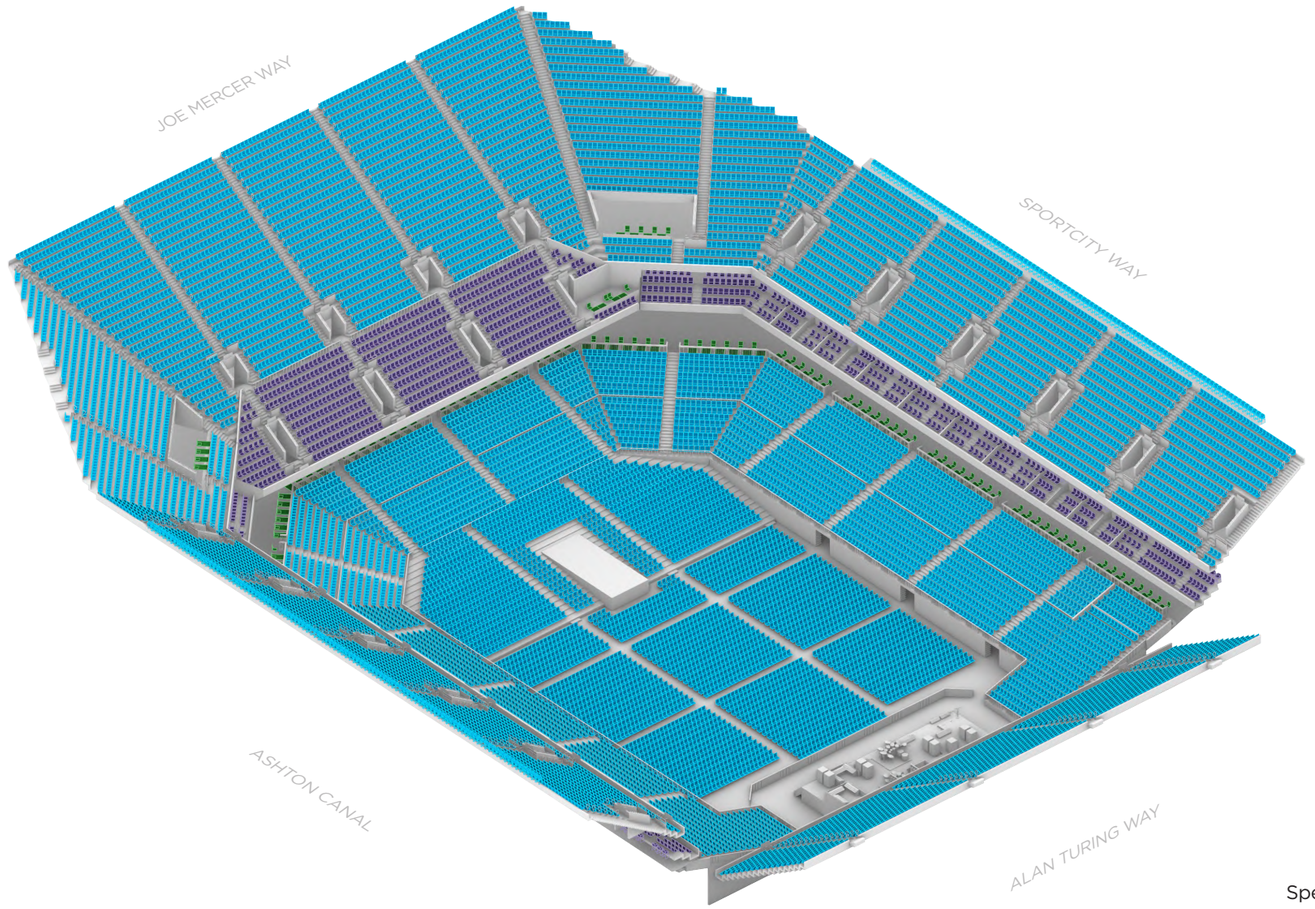
The compact seating bowl brings spectators closer to the performance. While the design of the lower tier and floor seating eliminates the majority of seat kills due to production overlay, maintaining high capacities in an area much smaller than comparable traditional arenas.

Extensive use of mobile and recessed retractable seating creates a very large event floor and standing decks over a number of levels that can be used to hold concerts with standing capacities larger than any other venue in the UK.

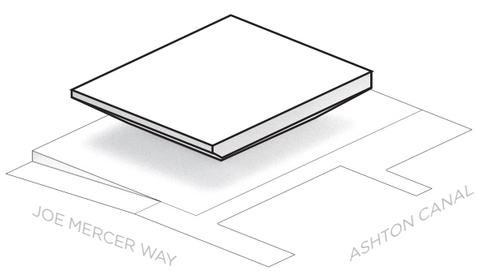
An open colonnade concourse and in-bowl bars reduce the distances to F&B and facilities, ensuring spectators do not miss part of the performance. Seating for VIP's is designed to be within the main seating area, minimising the disconnect between 'hospitality' and 'general admission' that is often seen in traditional arenas.

A small tier positioned behind the stage increases the capacity and feeling of enclosure for sports and centre stage performances. Positioned low over the stage and with a relatively steep angle, this can also be used for end stage concerts that utilise seating behind the stage, offering higher seating capacities.

The acoustics in the bowl will be designed to avoid any audible reflections from surfaces into any audience areas. This will include the use of absorptive and diffusive materials. The use of materials will provide a tonal balance in the bowl to ensure minimum setup times and quality of sound. The rear of the venue will incorporate deep bass traps to control any excessive low frequency reverberation and the sound system design will be coordinated to allow maximum flexibility of the Venue.



Spectators
Premium
Accessible Seating



Similar Arena Comparative Statics:

First row of tiered seating-	19m closer
Last row of lower tier-	16m closer
First row of upper tier-	24m closer
Last row of the upper tier-	10m closer
Height to underside of roof-	8m lower

3.7 Example Venue Modes

The venue will have the capability to successfully hold a varied array of different event types. Flexibility and scalability has been built into the design of the Hall to allow for a multitude of different modes to ensure the venue is constantly in use. Extensive use of retractable seating allows for simple efficient changes between modes while offering the best possible viewing experience for Spectators.

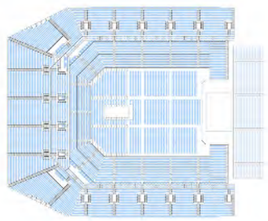
The event floor can be used for standing concerts, international touring acts, Electronic Dance Music (EDM) events or for large dining areas.

A number of different sports events can be accommodated including ice hockey, basketball, boxing, esports, tennis, handball and Ultimate Fighting Championship (UFC).

Reduced capacity concerts can be carried out in either of two ways. Half house involves moving the stage forward within the venue and curtaining off the area behind the stage. Alternatively, not utilising the upper tier allows for operational flexibility and options for the performers.

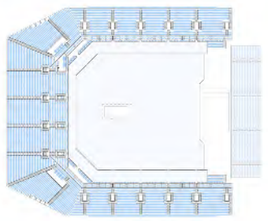
Further accommodated acts include family spectaculars such as Disney on Ice, Walking With Dinosaurs or any other touring event that utilises an international standard ice hockey pad sized floor.

The majority of the event modes hold a comparable capacity in comparison to other traditional multi-purpose venues, however with greatly improved seat proximity to the event activity.



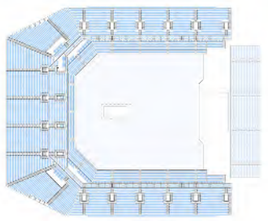
End Stage Concert 220°

All Seated



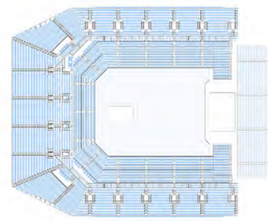
End Stage Concert 220°

Full Standing



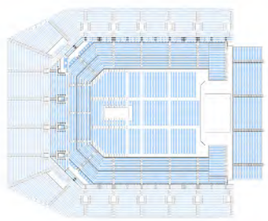
End Stage Concert 220°

Part Standing 01



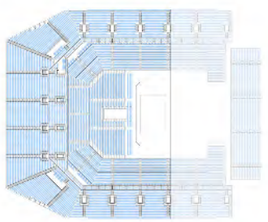
End Stage Concert 220°

Part Standing 02



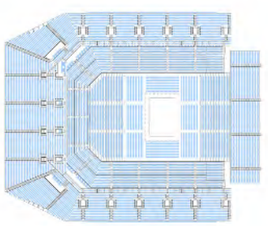
End Stage Concert Reduced Capacity

All Seated



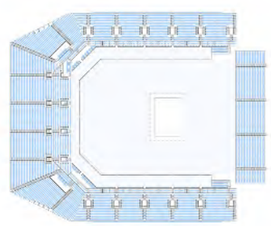
Short Hall Concert 180°

All Seated



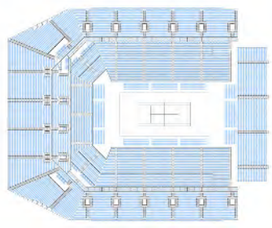
Centre Stage Concert

All Seated



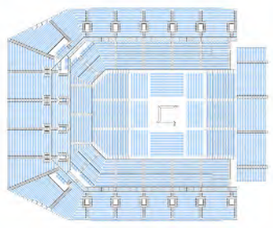
Centre Stage Concert

All Standing



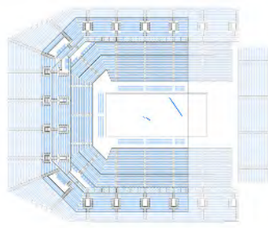
Tennis

All Seated



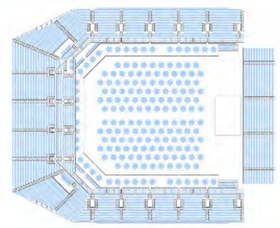
Boxing

All Seated



Family Spectacular

All Seated



Banquet / Awards Show

All Seated



POPULOUS

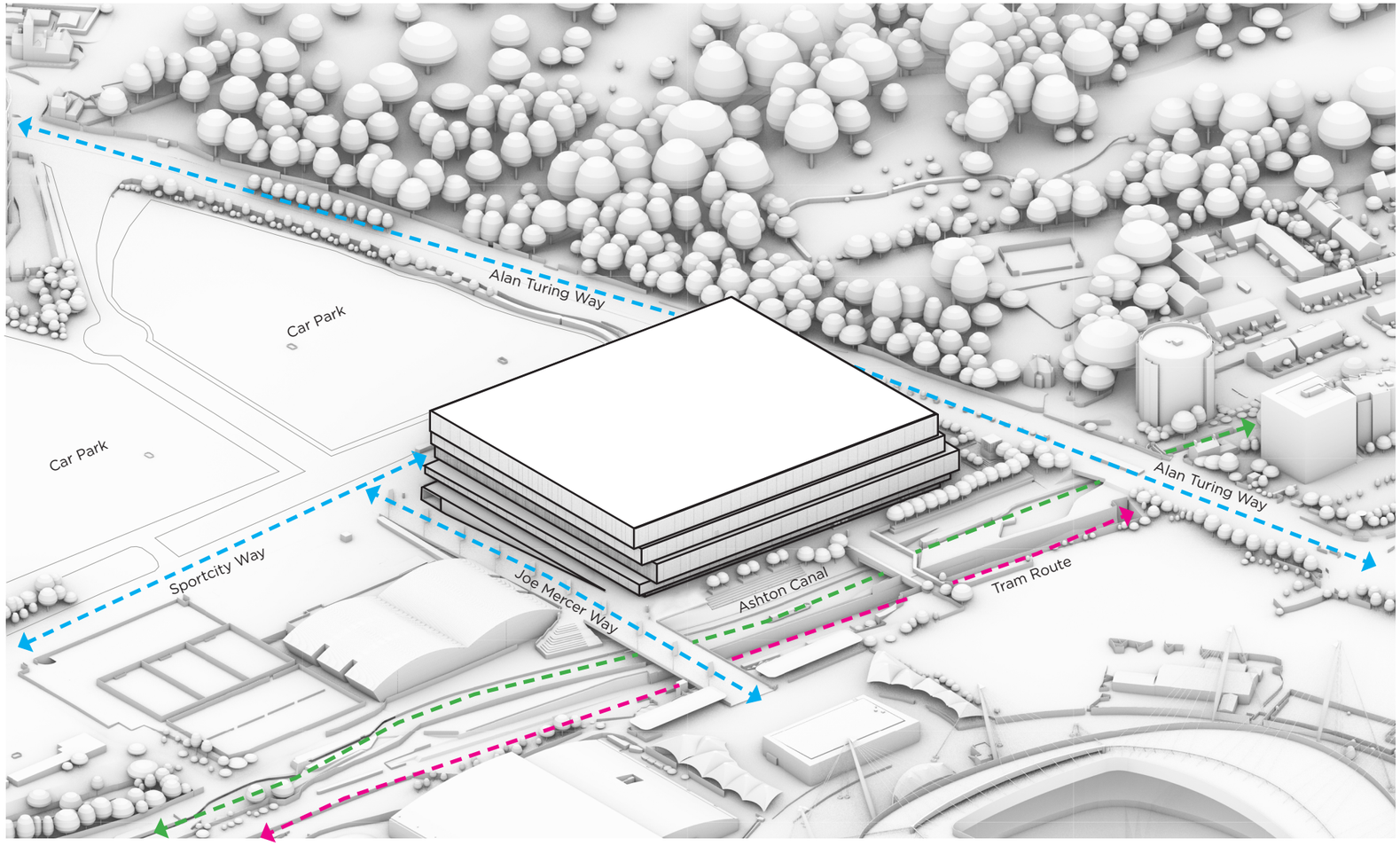
3.8 Venue Form

The form of the OVG Manchester Venue has been designed to suit the city, a modern, cosmopolitan and vibrant place that has seen a wave of bold architecture emerge in the early 21st century.

One of the architectural responses to the client's brief of the 'best in class' venue in Europe was to create a building form that provided a key identity to the venue. The venue's functional requirements were one of the key drivers for the form of the building.

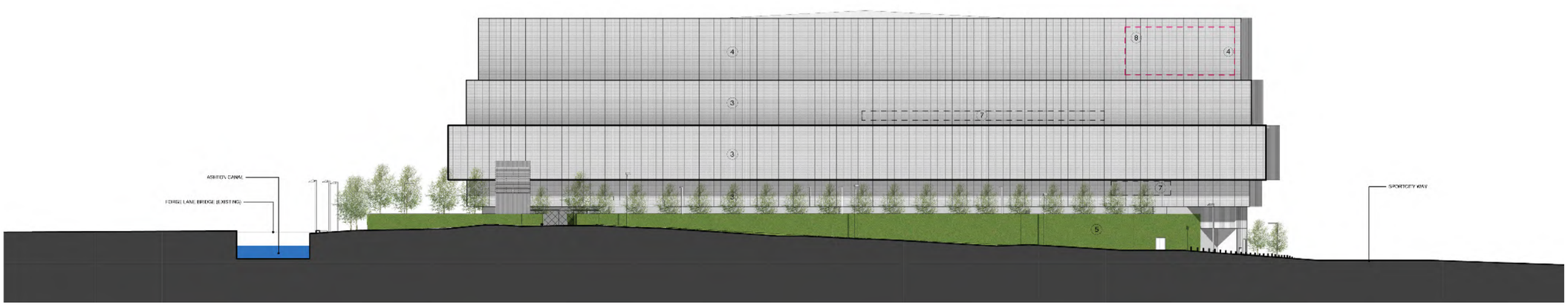
Our architectural response has been to curate the arrival sequence and consider the approach views. The event experience relies on the smooth ingress and egress from the venue, people need to easily find their way and without long and slow queues. To combat this, the team has undertaken extensive crowd modelling studies to ensure that people flow easily into and out of the venue.

The venue requires large volumes of pedestrian access and vehicle services access. Event production trucks need to be able to quickly leave the venue after an event. Pedestrians need to be able to access and egress the building smoothly. These crowd flow requirements were another key driver for the design of the building.

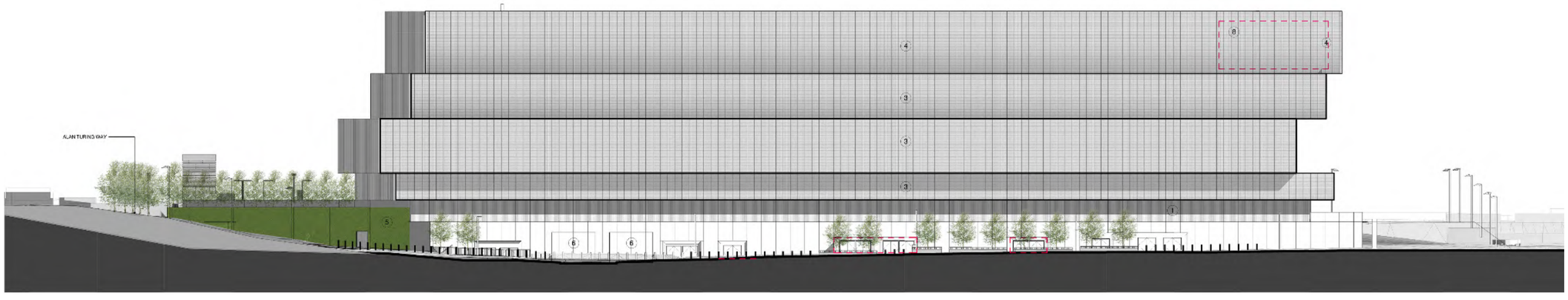


3.9 Elevations - Alan Turing Way and Sportcity Way

Alan Turing Way Elevation

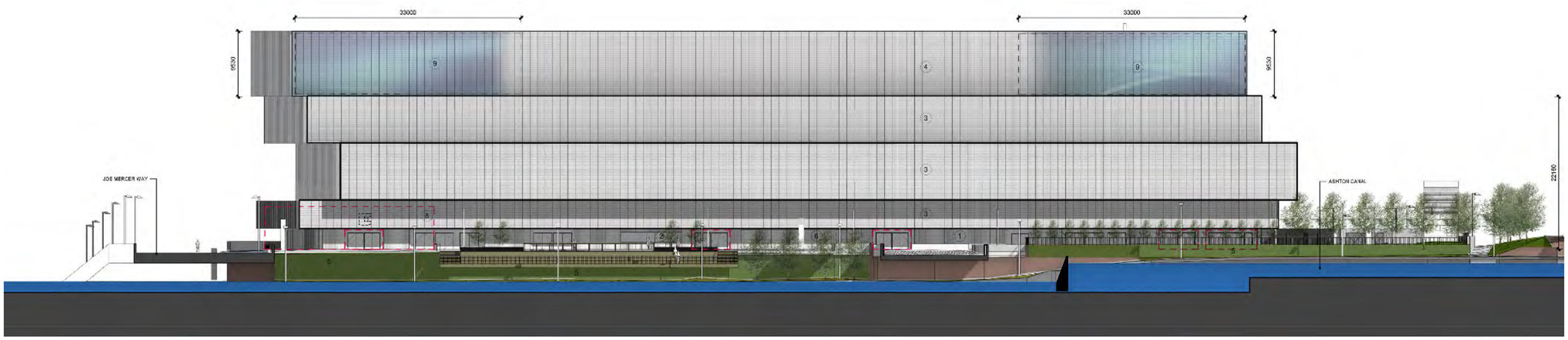


Sportcity Way Elevation

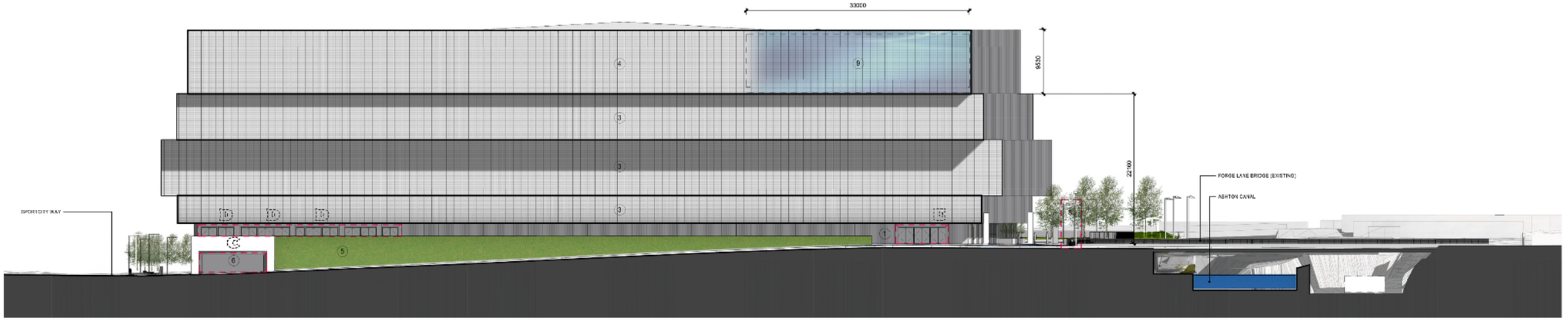


3.10 Elevations - Ashton Canal and Joe Mercer Way

Ashton Canal Elevation



Joe Mercer Way Elevation

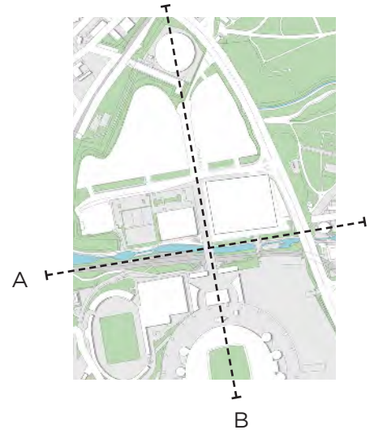


3.11 Scale

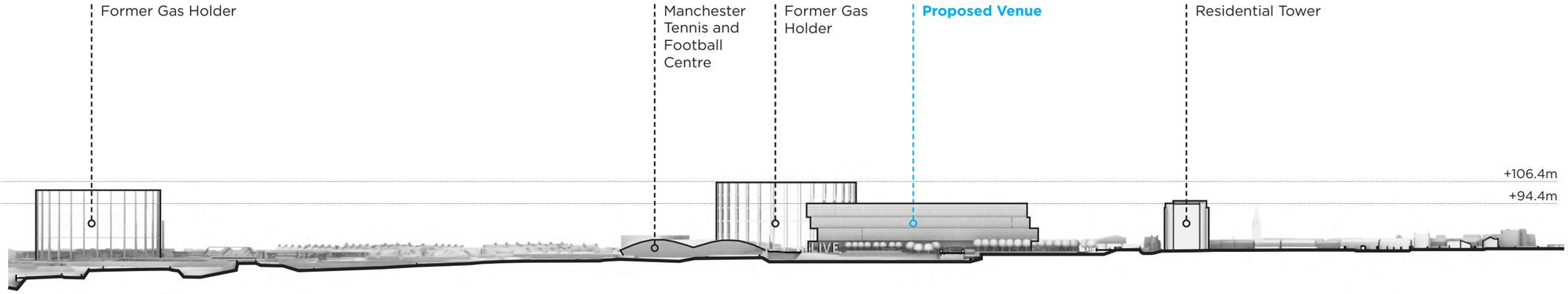
The proposed development sits within the framework plan for the Etihad Campus, bringing new life and activity to a currently under-used site.

The venue respects the site context by ensuring it does not exceed the height of the existing adjacent buildings as illustrated below, becoming part of the developing family of facilities. Also, the proposed venue acknowledges the view corridors to all sides, the apparent symmetry of the design presenting a recognisable identity to all approaches.

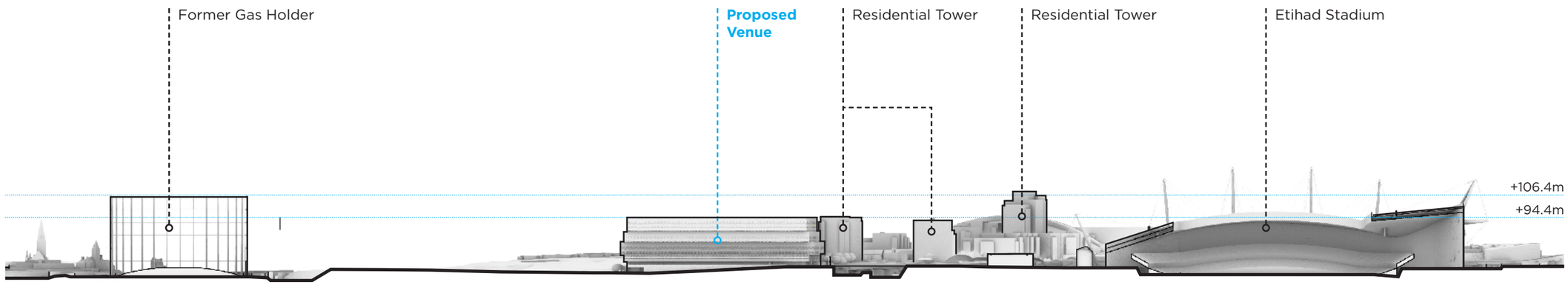
The simple and distinctive design of the proposed OVG Manchester Venue enhances the environment and character of the northern Campus , whilst ensuring that the unique form of the Etihad Stadium remains the 'jewel in the crown' to the south.



A. East to West Site Section



B. North to South Site Section



FACADE DESIGN

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4

4.0 Design Principles

Design Form and Massing

The venue design compromises of two principal elements, a grounded lower masonry plinth and an upper lightweight stepped box. The lower plinth connects to Sportcity Way and Alan Turing Way and forms a series of terraces along Joe Mercer Way and the canal edge. The stacked boxes are enveloped in a reflective perforated metal to mirror it's surroundings both at day and night, highlighting the adjacent greenery, lights, people and weather conditions.

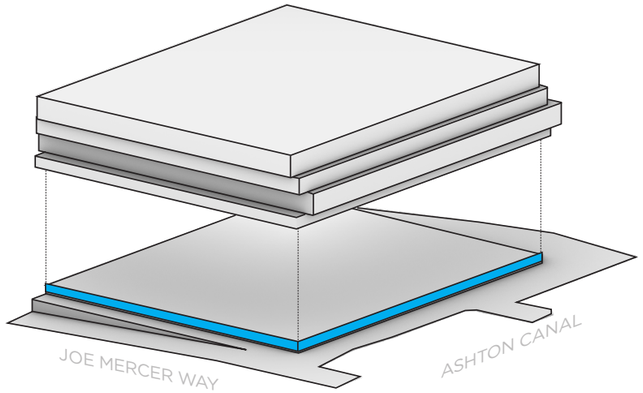
The aforementioned stacked reflective forms sit on a seemingly solid concrete plinth which gives an element of weightlessness to the forms above. There is no desire to provide glazed views out of the building or allow daylight into the internal spaces since these are essentially sound boxes that are designed to create an immersive experience.

The form of the building is simplistic, yet iconic, to giving the venue a strong identity.

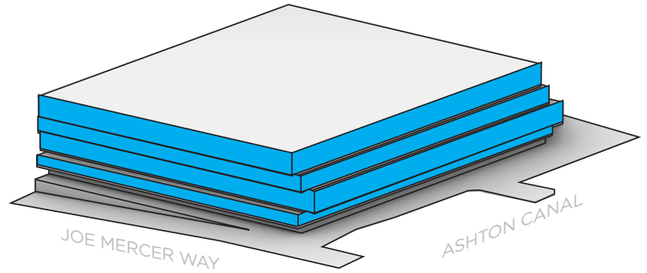
Because of the form and materiality of the building, it creates a highly efficient thermal structure which reduces the need for energy consumption required for heating and cooling.

The facade design brief highlighted two criteria relating to the venue as a place of entertainment. These criteria were to bring the building to life by considered use of architectural lighting and incorporating large format screens to showcase the events.

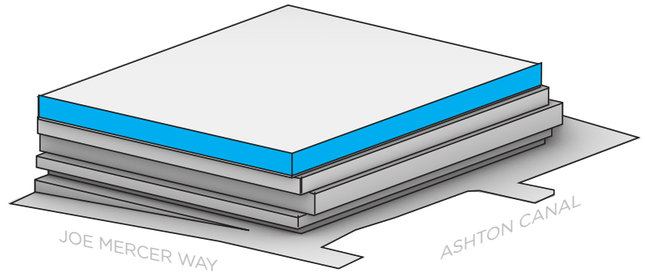
Researching current technology identified that 'big screens' could be seamlessly integrated into the facade of a dark material. This would mean that in daylight hours the black LED panels and elements would merge discreetly into the facade system and the building would present a simple and contemporary architectural identity to the neighbourhood. The LED system includes a potentially programmable architectural lighting concept to cast a glow across the top stacked box, bringing the venue alive into the evening, and then merging into the screen activation to bring the dynamic imagery and information to the fore in key locations.



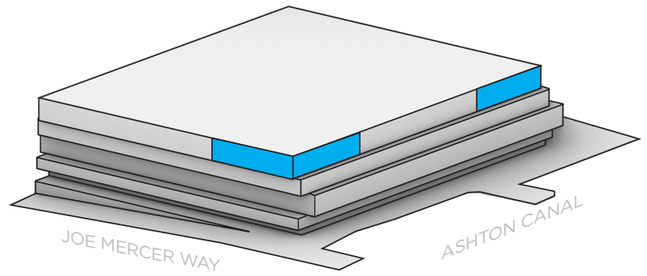
Stacked boxes on activated plinth



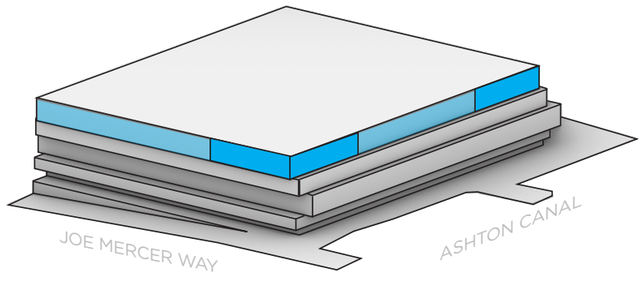
Uniform facade materiality which creates an architecturally compelling design



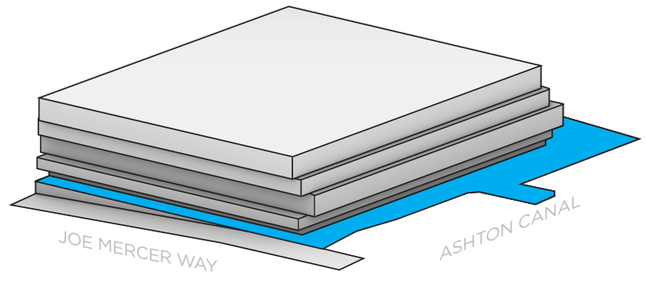
Architectural lighting gives the top box an identity



LED screens for event activation and naming rights strategically located



Architectural lighting and LED screens integrated for seamless effect

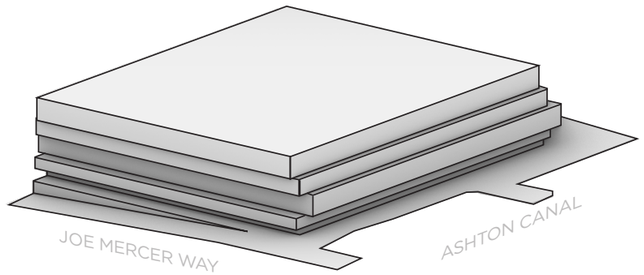


Public realm designed to compliment building

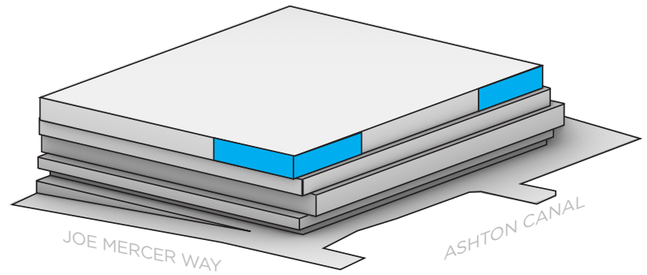
4.1 Facade Modes

In principle, there are four modes of activation for the building facades:

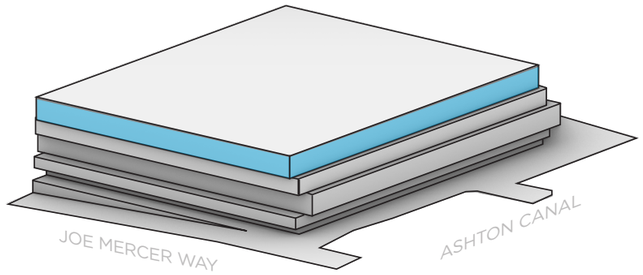
- **LED screens and architectural lighting switched off –** This mode is the standard daytime configuration, without utilising either the facade lighting or screen elements, leaving the facade as a series of dark coloured stacked boxes wrapped with a universal skin to all sides.
- **Architectural lighting activated –** The architectural lighting within the top box of the facade panelling is switched on, casting a subtle glow across the dark surface. The lighting system has the potential for dynamic control of light intensity and colour, which would allow the system to be programmed to gently pulse and shift, introducing a fluid and visually engaging animation to the simple box forms.
- **LED screens activated –** Promoting current or upcoming events and information, the big screens located in key positions on the building form are switched on and focus attention to these locations.
- **Architectural lighting and LED screens activated –** best seen after dusk, and building on the anticipation of event commencement, the lighting and big screens can be programmed across the facade to seamlessly merge the pulsing illumination and colour to the content of the big screens, drawing the audience in from all approaches.



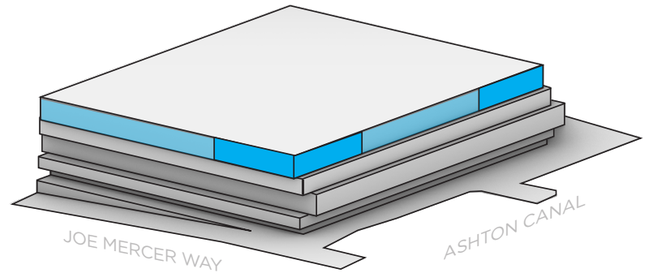
LED screens off



LED screens on



Architectural lighting on



Top box architectural lighting and LED screens on


CANALSIDE
COFFEE
113
POPULOUS

4.2 Facade Inspiration

The OVG Manchester Venue sits on the site of the old Bradford Colliery and stands as a monument that celebrates the city's past. The black facade is a tribute to the industrial past that allowed Manchester to become the vibrant city it is today. The colour black is also seen as a representation of longevity, elegance and timelessness as the building aspires to accommodate for a diverse and wide range of events and people.









4.3 Facade Material Locations

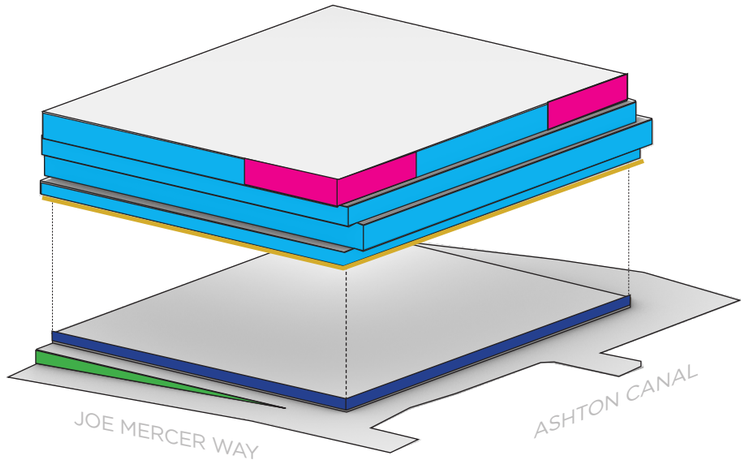
In keeping with the simple massing of the venue into a series of stacked boxes, a controlled palette of materials is proposed to unify the four elevations that the venue presents to the adjacent neighbourhood.

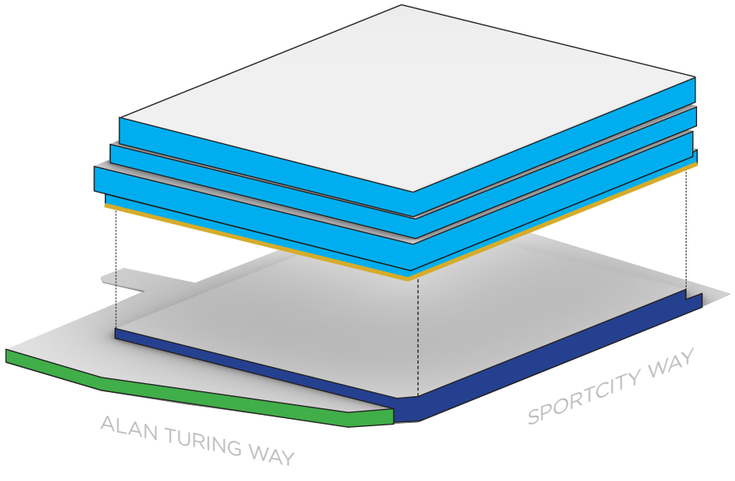
The base of the building is considered in the context of the existing public realm and landscaped approach, with light coloured, textured and smooth concrete panelling framing the main entrances and giving visual contrast against the dark paving to the venue approaches. Sections of green screen wall are inserted into the vertical concrete plinth facing the slope of Joe Mercer Way to the west and also to the landscaped site perimeter wall to Alan Turing Way to the east, softening the approaches.

The upper facades of the building are clad in a regular array of perforated black metal panels, so that the stacked boxes appear to float above the solid base. Creating this illusion, the base concrete panelling is capped by a reflective soffit installed to the base of the lowest of the boxes, to further animate the event arrival ambiance and boost illumination as guests approach the entrances.

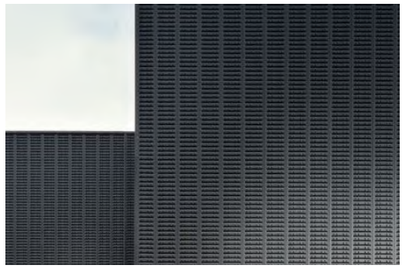
The architectural lighting system is proposed to be installed on all four sides of the venue of the top stacked box only, creating a uniform aesthetic from each adjacent road. However, the LED screens are proposed to only be located on the top box and in key locations – the south west and south east corners on the south side, and the south west corner on the west side – relating to the primary audience pedestrian approaches across the wider Campus site.

The roof of the building and the projecting box elements are proposed to be a combination of black standing seam and membrane roofing systems, sympathetic to the dark box cladding concept.

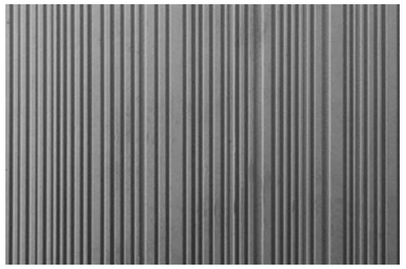




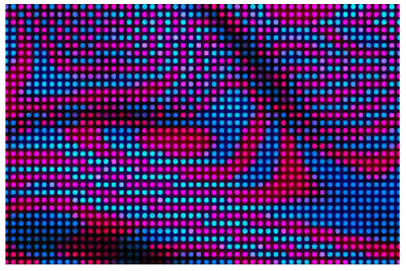
Black Perforated Metal Panel



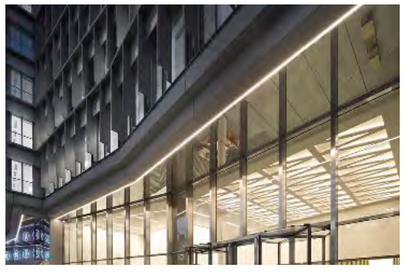
Ribbed Pre-Cast Concrete



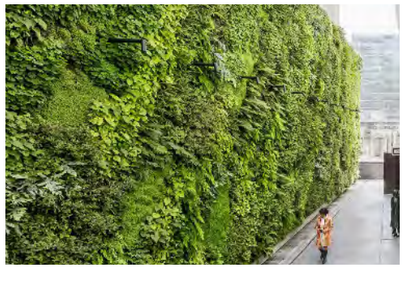
Facade Integrated LED Screen Location



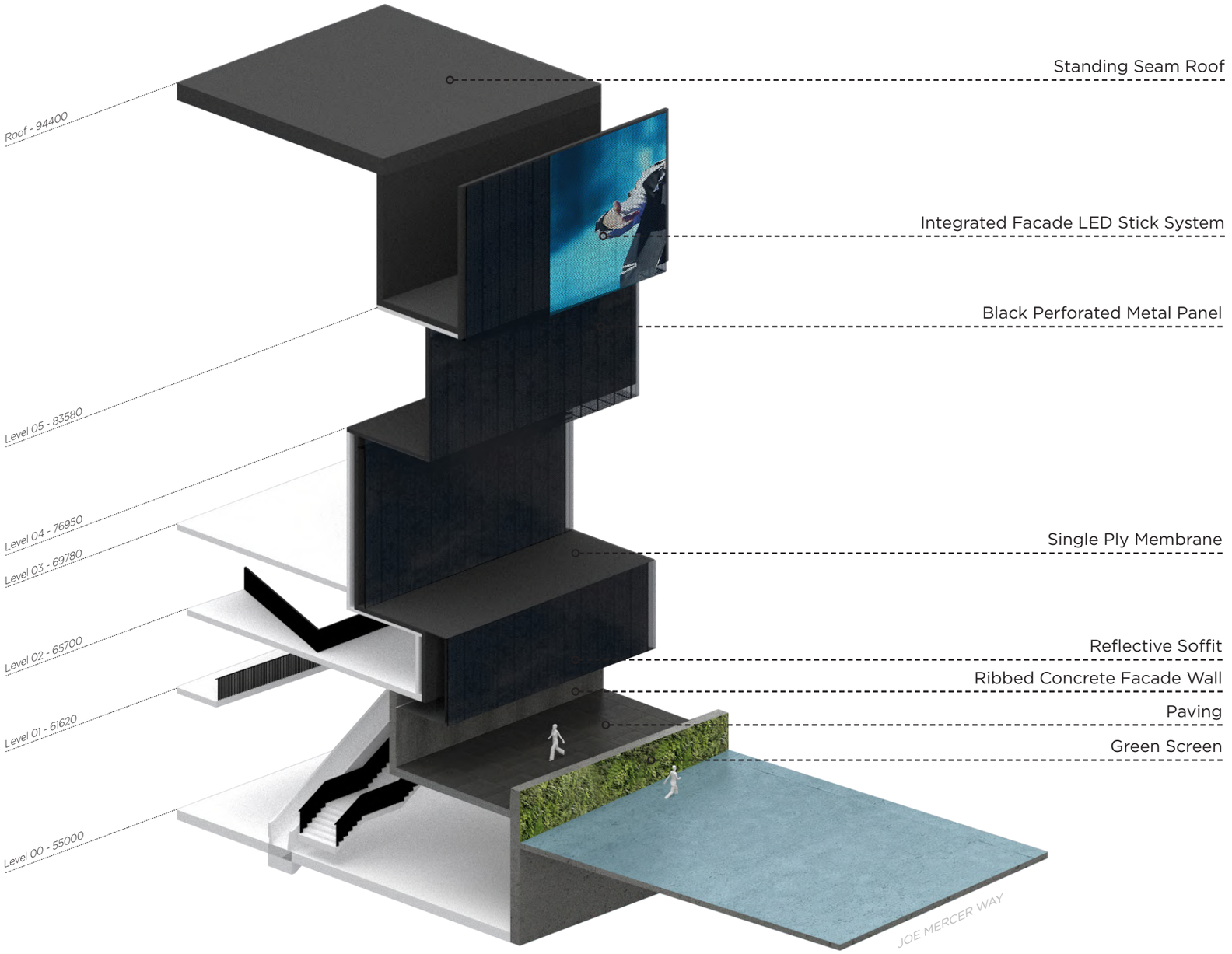
Reflective Soffit

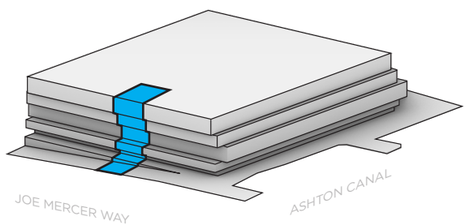


Green Screen



4.4 External Appearance





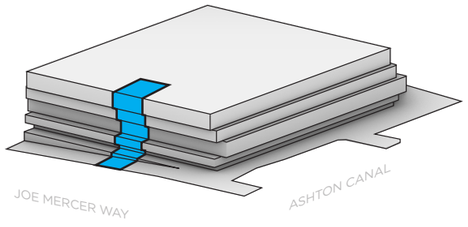
4.5 Facade Panellisation

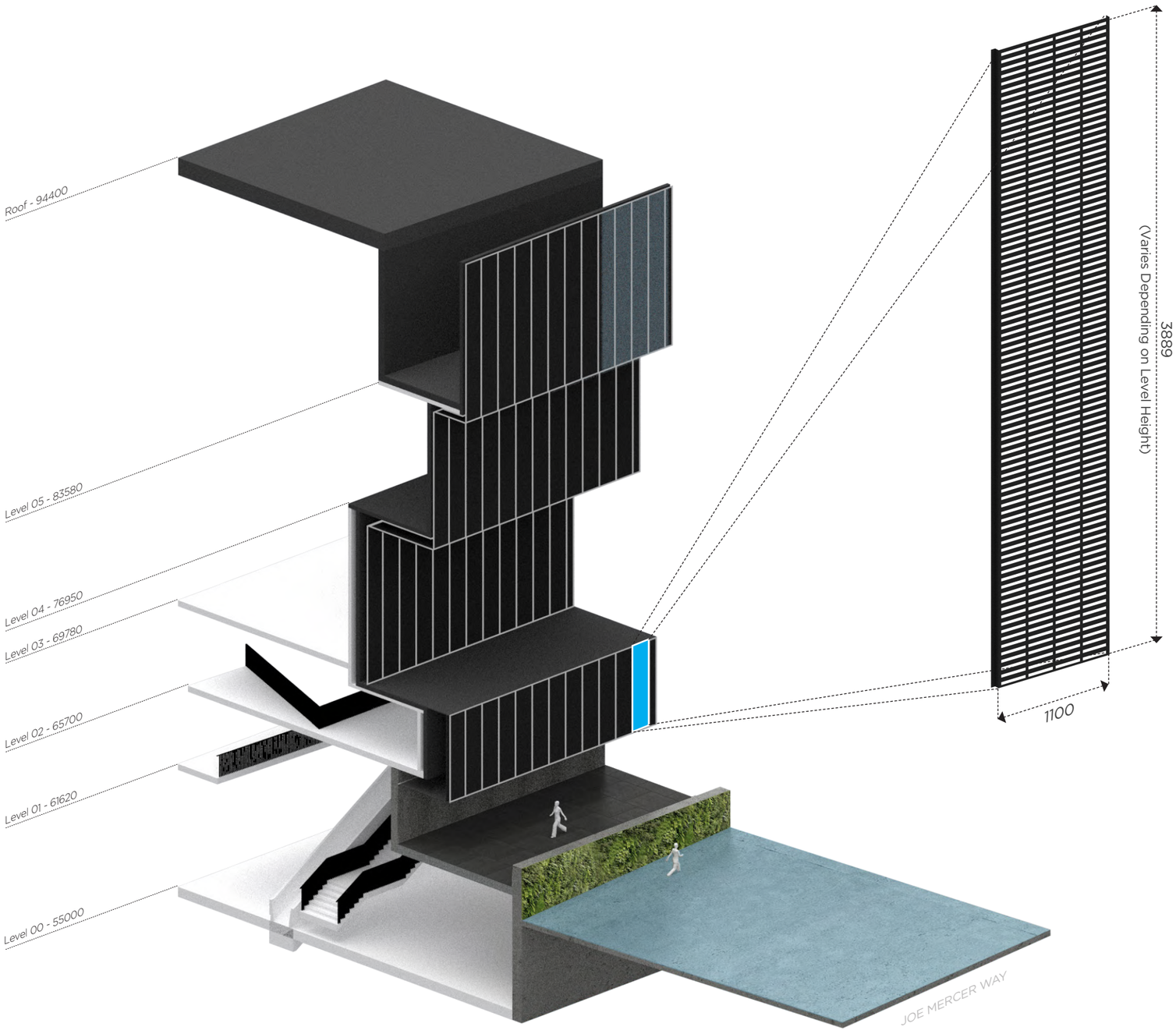
When viewed at a distance, the perforated black metal facade unifies the simple stacked boxes of the venue. Upon approach, the facade is revealed in more detail the closer you get, and the pattern of the perforation, the integration of the architectural lighting and LED screens become visible. These elements are complemented by the panellisation grid that emphasises the verticality of the facade against the length of each elevation, heightening the dramatic overhangs of the stepped boxes.

Studies were undertaken in design development to consider the modularity and scale of the upper metal panelling and the lower concrete panelling. The studies concluded that the tonal contrast of the two materials, along with the dark external paving emphasises the entrance levels to approaching visitors.

As a result of the internal grid used for both the main auditorium structure and the arrayed banks of entrance doors, the grid has been subdivided further to create a uniform facade design. With large concrete facade panels and double doors for the Level GF and Level 00 treatment, and a width of half those for the perforated metal panels.

The narrow format of the metal panel module suits the nature of the material, improving the stability of each unit when considered against the efficient thickness of the metal and the extent perforation cut-out required to enable the facade to meet all of the pragmatic requirements for incorporation of the lighting and LED screen systems, as well as achieving the necessary open area for ventilation and similar functions.





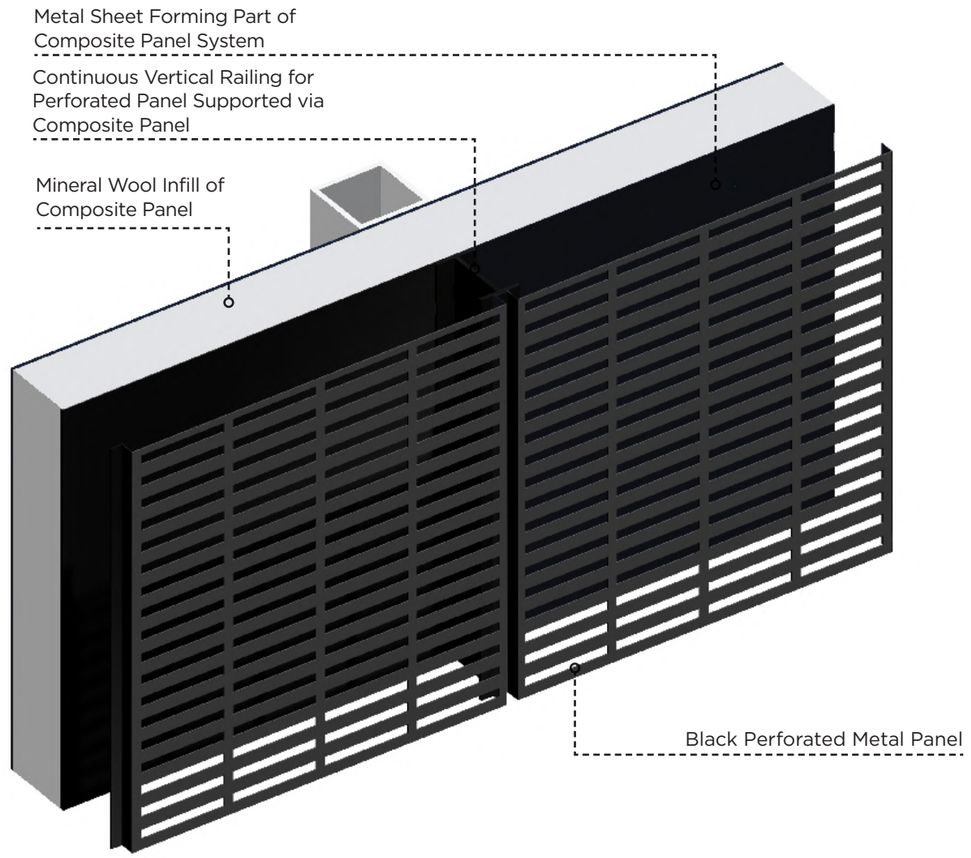
4.6 Typical Facade Build Up

The facade system addresses multiple criteria:

- 90-minute fire integrity
- Acoustic enclosure for the venue
- Thermal enclosure
- Weather tightness
- Wind loads and whistling
- Blast resistance
- Ease of construction
- Ease of cleaning and maintenance

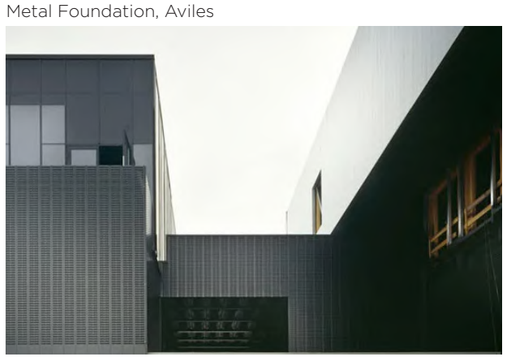
The composite panel system is the primary element to meet the required standards for the majority of the above criteria, and also provides a robust, flat surface onto which the LED architectural lighting can be shone to achieve the subtle glowing effect. These composite panels are proposed to be installed horizontally for ease of construction and to improve buildability, this eliminates the need for secondary steelwork. The panelling is not visible as it is concealed by the overlay of vertical perforated metal panelling.

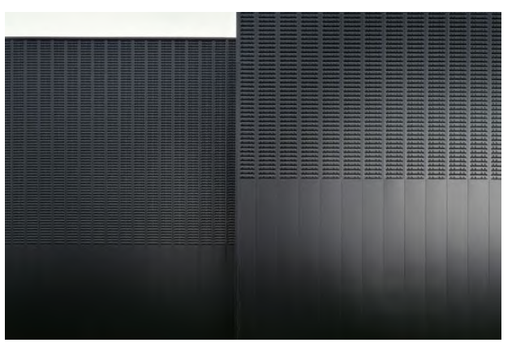
To achieve the aesthetic aim of the building, it was important to minimise the number of fixings for the perforated metal panels back to the subframe. This not only simplifies construction, but also maximises the spread of the architectural LED lighting across the facade, further minimising the number of luminaire fittings required to deliver the desired illumination. The offset distance of the perforated panels to the composite panel surface has been standardised to facilitate the lighting system and improve act to wind loads.

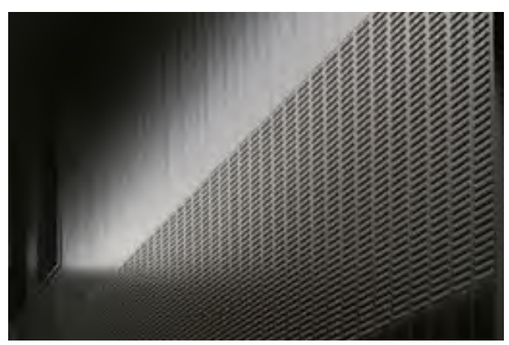


Precedents Image of Facade Material

Metal Foundation, Aviles








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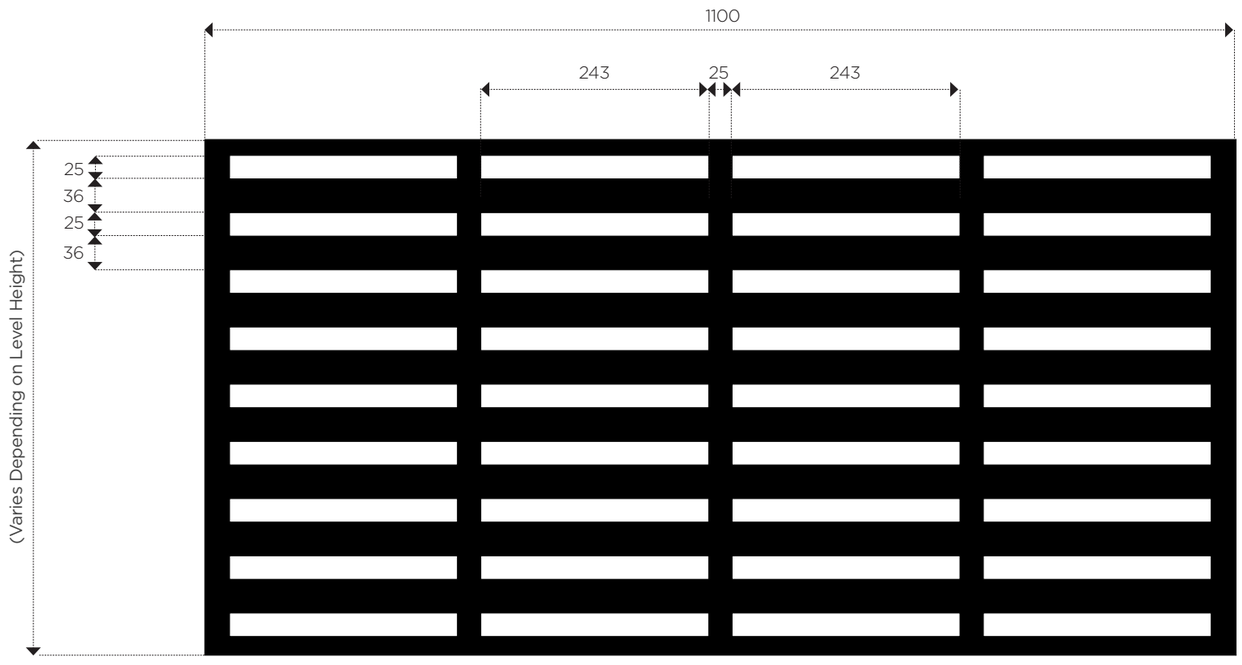
4.7 Typical Facade Treatment

The facade design has evolved to address the aesthetic desire for simple and uniform materiality and detailing to the upper levels of stacked box forms, and to deliver a creative and appealing architectural lighting solution for the venue as a place of entertainment within the Campus environment.

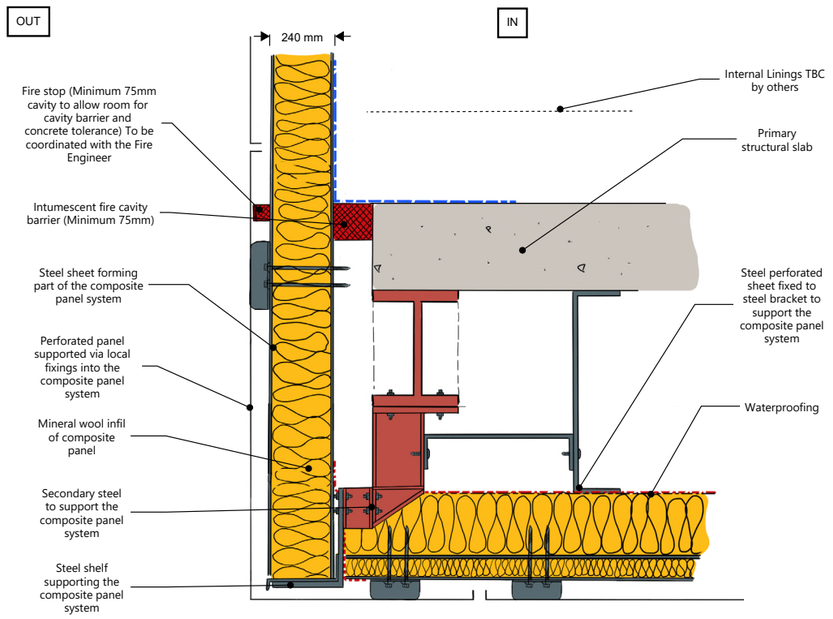
Through a series of design studies, the conclusion was reached that a concealed system of linear luminaires to wash the dark facade would be the most sympathetic integration of lighting to the building. Prototype studies resulted in a proposal for a 225 mm offset of the perforated metal panels from the composite panel face to ensure an even spread of light onto the face of the composite panels from linear the luminaire fittings and to avoid any dark spots across the facade. This spacing also enables easy maintenance access to the luminaires and associated infrastructure fittings. The luminaire system will be IP (ingress protection) rated, suitable for external use and is unlikely to require frequent maintenance access.

The perforated panels are designed to be removed should access be required for any reason and are fixed to the facade composite panel using concealed local fixings to ensure a safe, secure and aesthetically pleasing design.

Blast studies for the facade recommend that the steel sheet for the composite panels is a minimum of 0.7mm thick and that it is thoroughly fixed to the main structure. The perforated panels are regarded as a tertiary skin to the building.



Example Panel Format



Composite Panel Base Corner

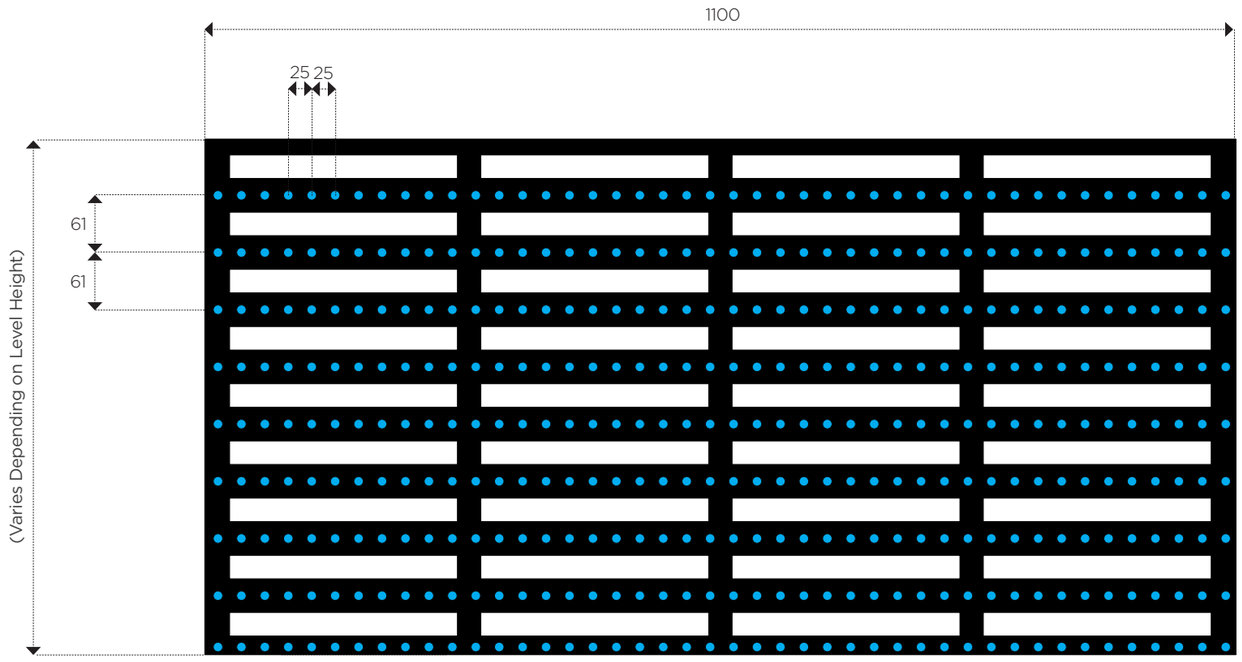
4.8 LED Integration

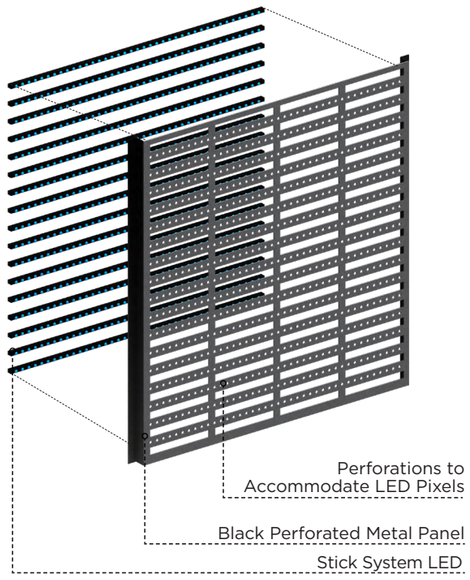
Working closely with specialist facade and lighting consultants as well as leaders in the big screen industry, the integrated LED system has been developed to work seamlessly with the panellised facade proposal. As noted in section 4.2, the intention is for the screens to 'disappear' within the facade appearance when not in use.

Pragmatic criteria for the effective installation of the screens such as the pixel pitch, which determines the resolution of the image at a given distance range, and open area for the architectural lighting visibility have informed the pattern and spacing of the perforations on the facade panels. This system was then tested against the ventilation requirements for air intake and exhaust, which sit within the composite panel facade. The required free area for ventilation was estimated as between 40% and 50% in the necessary locations, and this has been aligned with the screen requirements to provide a standard 45% open area to each panel.

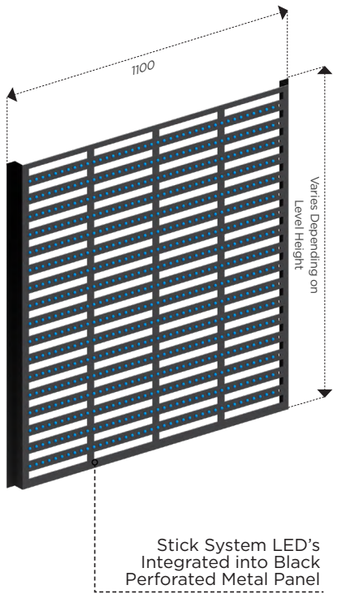
OVG Manchester will be a respectful neighbour, with the LED screens not being turned on between midnight and 7am and only taking on a more dynamic lighting expression during pre and post show periods.

The has been careful consideration given to ensure that drivers on Alan Turing Way are not impacted by either the LED screens or the facade architectural lighting which is explained in section 4.13.





LED Sticks Exploded Away from Facade Panel



LED Sticks Integrated into Facade Panel

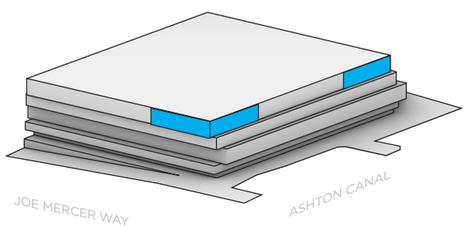


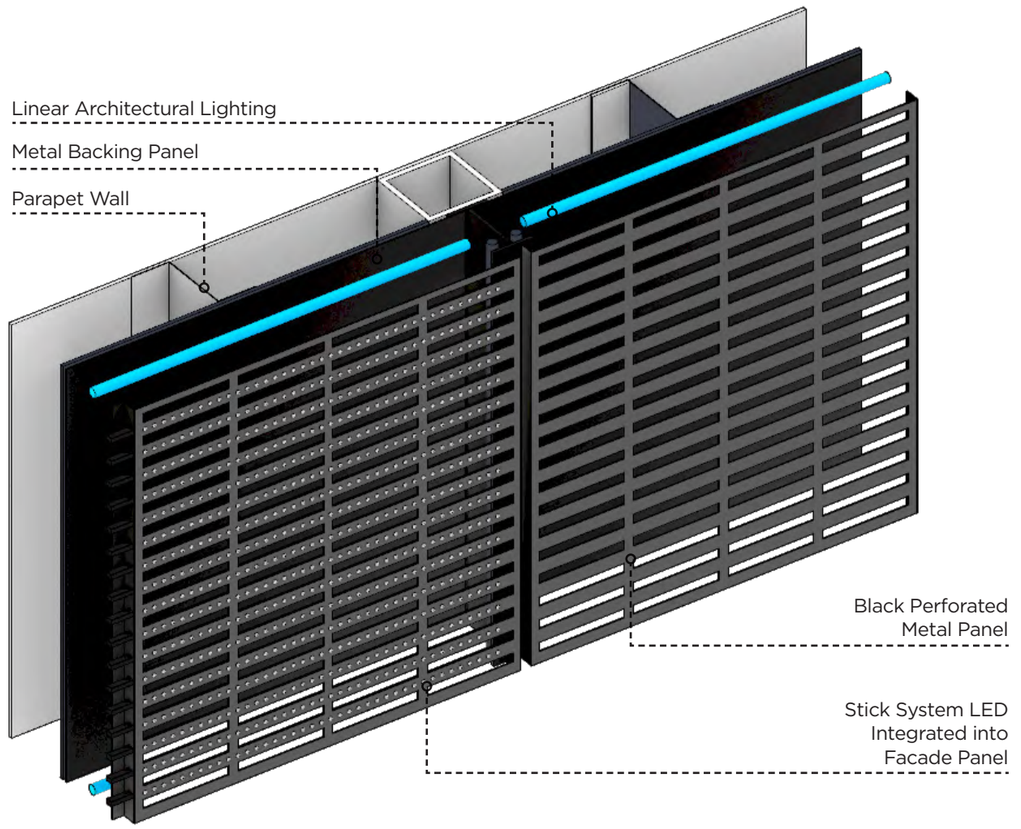
4.9 LED Integration (Continued)

The design studies also considered where the LED screens would have the most beneficial impact to activate the venue facades and provide information to visitors. Vantage point studies exploring the predicted arrival sequence for visitors concluded that the upper level corners of the building would be the best location for the screens to be viewed from the pedestrian approaches.

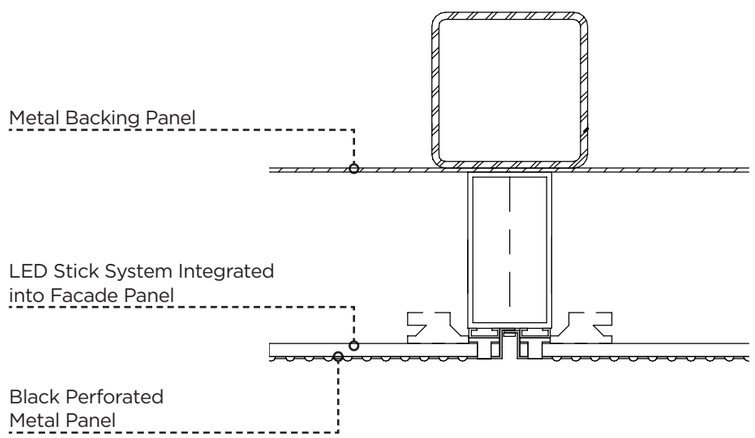
To ensure that the proposed lighting and LED screen do not adversely affect the neighbouring developments, and in particular the residential blocks on the east side of Alan Turning Way, the venue has been located as close to Joe Mercer Way as possible, creating a 100m offset distance to the residents. In addition, LED screens have not been located on the east side of the building, and instead positioned on the upper facade box on the south and west, where they address the primary pedestrian approaches to the venue.

Further consideration of the materiality of the dark facade in daylight looked at the options for the surface treatment of the composite metal panels and the overlay of the perforated metal panelling. The composite metal panels are proposed to be finished in a medium dark ‘slate grey’ low sheen finish, to spread the lighting wash across the surface, but will be largely shadowed in daylight and appear closer in tone to the black perforated panelling. By contrast, the black perforated panelling will have a higher gloss level, so that the facade reflects the surrounding environment and skyscape, bringing a further level of animation to the appearance of the building in daylight.





LED Screens Located on Level 5 Only



4.10 Field of Vision

The vertical field of vision is measured from the average eye height using an equal part 30º vertical viewing angle either side of the centre point.

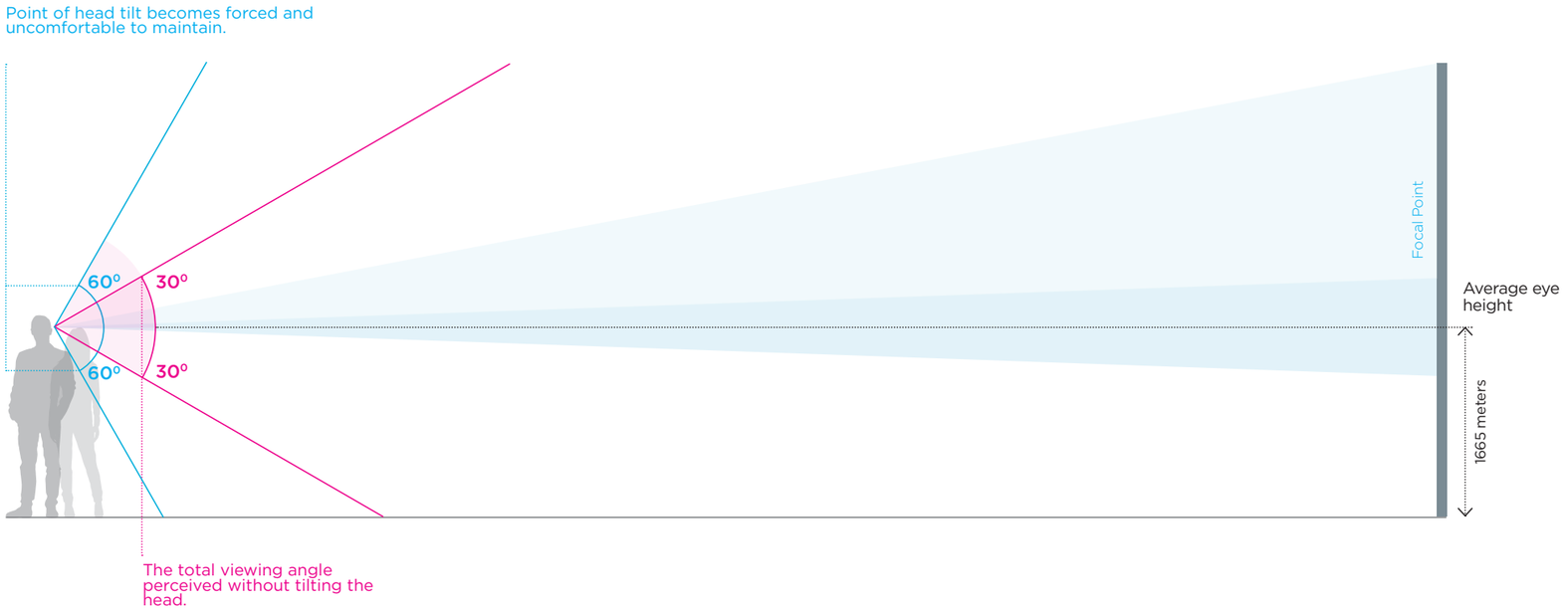
The eye has a natural tendency to focus on the upper half of the visual cone. Ultimately there is rapid eye movement followed by additional head movement to fully absorb content. Both Dorsal (Backward movement) and Ventral (forward movement) are limited to a 60º angle.

The design principle of information sizing and visibility is to evaluate the environment and how many factors compete for the user group's attention. If the environment is very busy and the visitor is easily distracted, for example by talking to others, it will be important to provide ample large information display.

Sizing should be large and provide clear focal points with considerable white space (non-information space) around the core message.

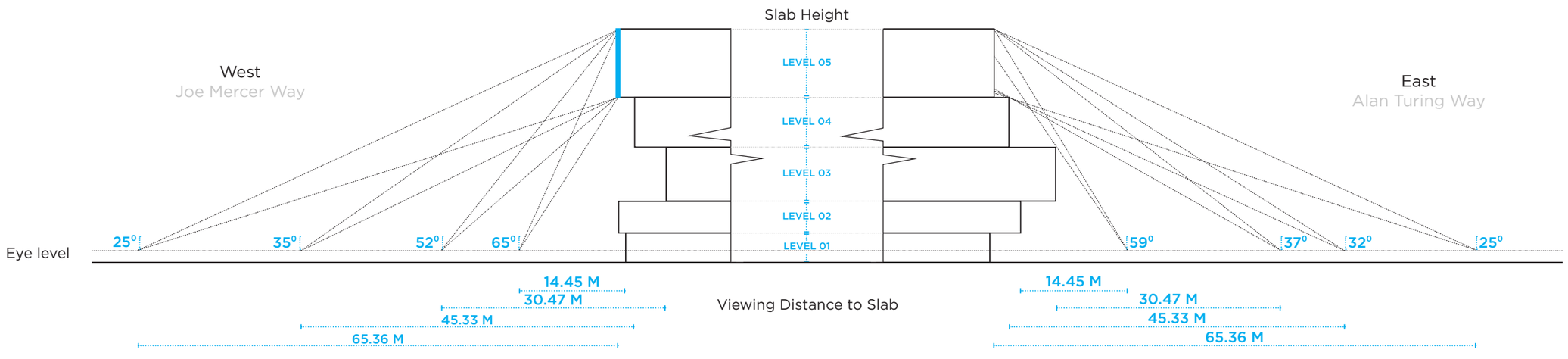
In order to provide coherent reading distances and text heights are considered within the confines of the environment's scale and context.

To enable content to be viewed it should sit with in the visible cone. The 60º cone follows the rotation of the head.

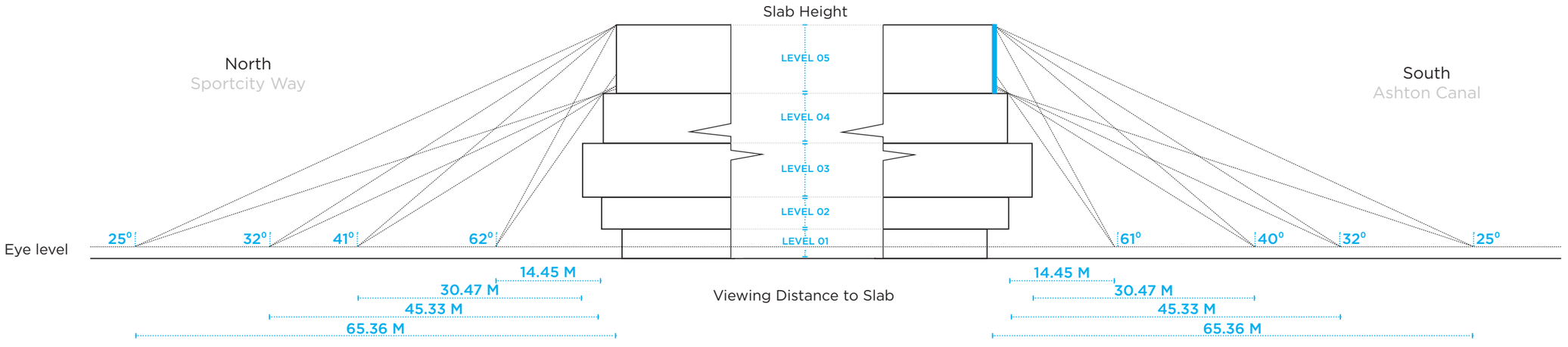


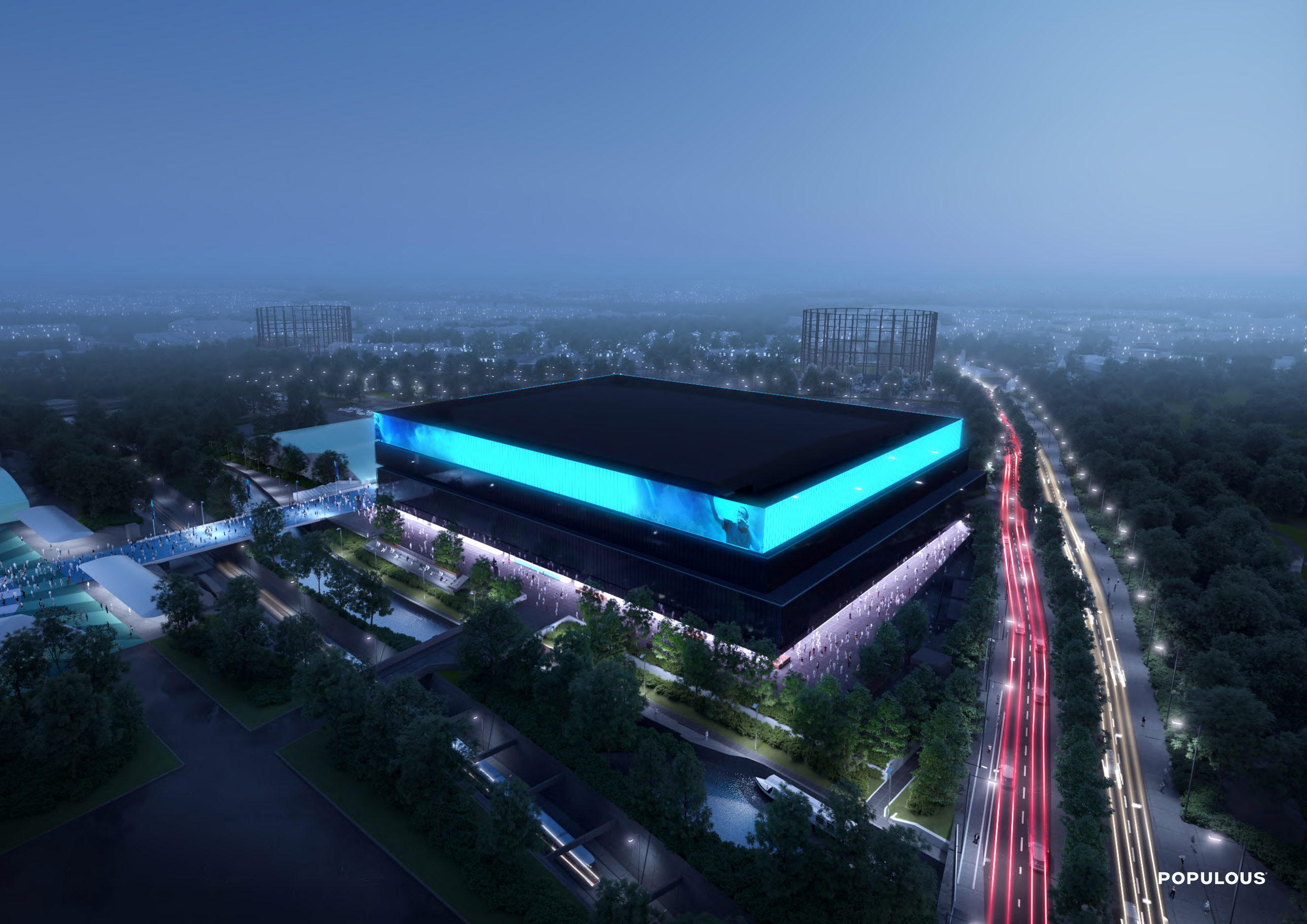
4.11 Screen Viewing Distances and Angles

South Elevation



West Elevation




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4.12 Facade LED Screen Information Table

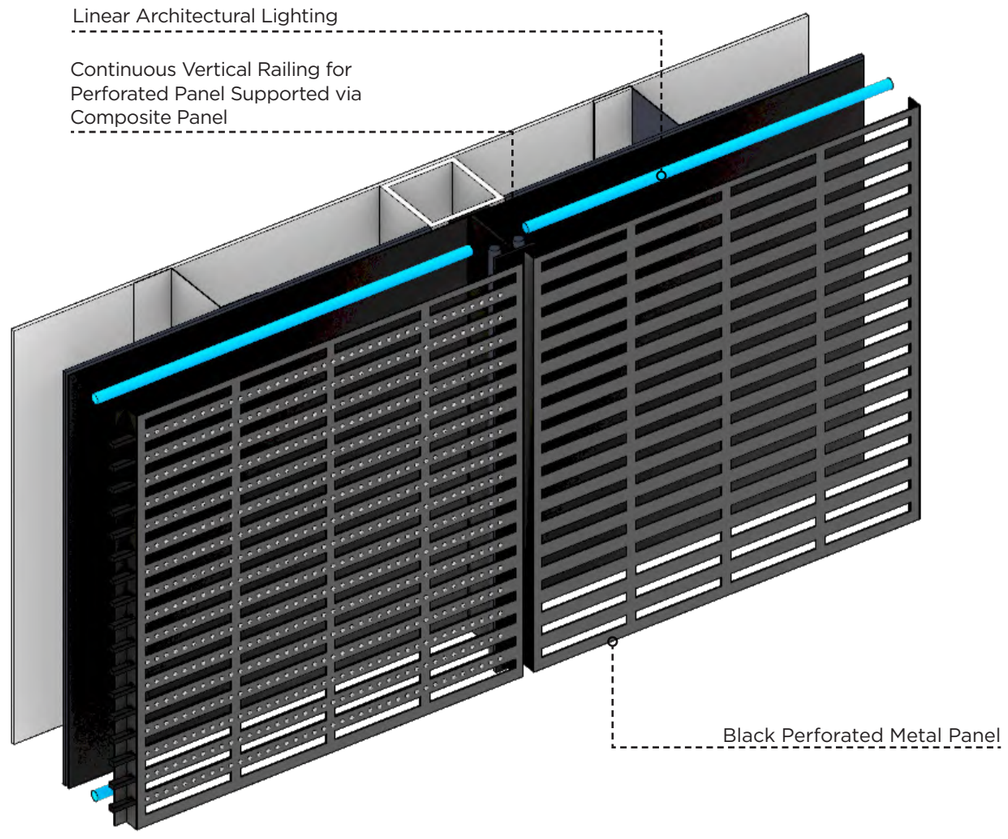
Facade LED Screen Information Table

Criteria	LED Screens
Plan Reference	BRA-POP-XX-ZZ-DR-A-0624 and BRA-POP-XX-ZZ-DR-A-0623
No.	3 Screens. Including one corner screen to the corner of the south (Ashton Canal) and west (Joe Mercer Way) elevations
Height From the Ground to the Base of the Advertisement(s)	22100 (From Level 01)
The Dimensions of the Proposed Advertisements (h x w)	9500 x 33000
The Maximum Height of Any Individual Symbols and Letters	N/A
The Colour of the Text and Background	Black panels. Colour of advertisement varies.
Material of the Proposed Sign	The LED nodes are integrated into the black perforated metal facade so when the screens are turned off they will not be visible
The Maximum Projection of the Advertisement From the Face of the Building	0 mm
Internal / External Illumination	Internal
Illumination Levels/Pixel (cd/m)	4,000 cd/m
Static or Intermittent	Intermittent
Times of Use	The screens are likely to be in use between 07:00am an 00:00am, with increased activation during pre and post event.
Additional Info	The LED's are dimmable with control of up to 64 different levels

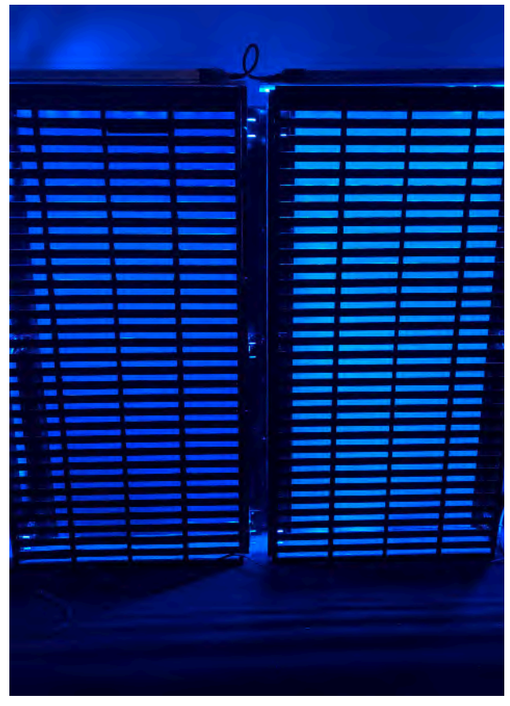
4.13 Architectural Lighting

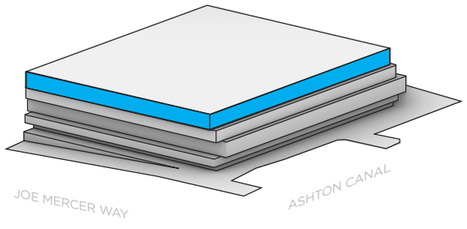
The architectural lighting proposal has been developed in collaboration with a specialist lighting design team that has considerable experience in the entertainment industry.

The principles of the luminaire type, location and integration into the facade have been tested through prototyping studies to assess the effectiveness of the proposal against the selected material, colours, reflectance levels and open area of the outer facade. These prototypes were also assessed in daylight to ensure that the luminaires could be discretely installed behind the perforate facade panelling, and that colour of the composite facade backing panel and the black perforate panel would achieve the appropriate uniformity to maintain the integrity of the simple stacked boxes. The luminaire system has the capability for colour change, and these effects have also been tested, as shown in the adjacent illustrations.



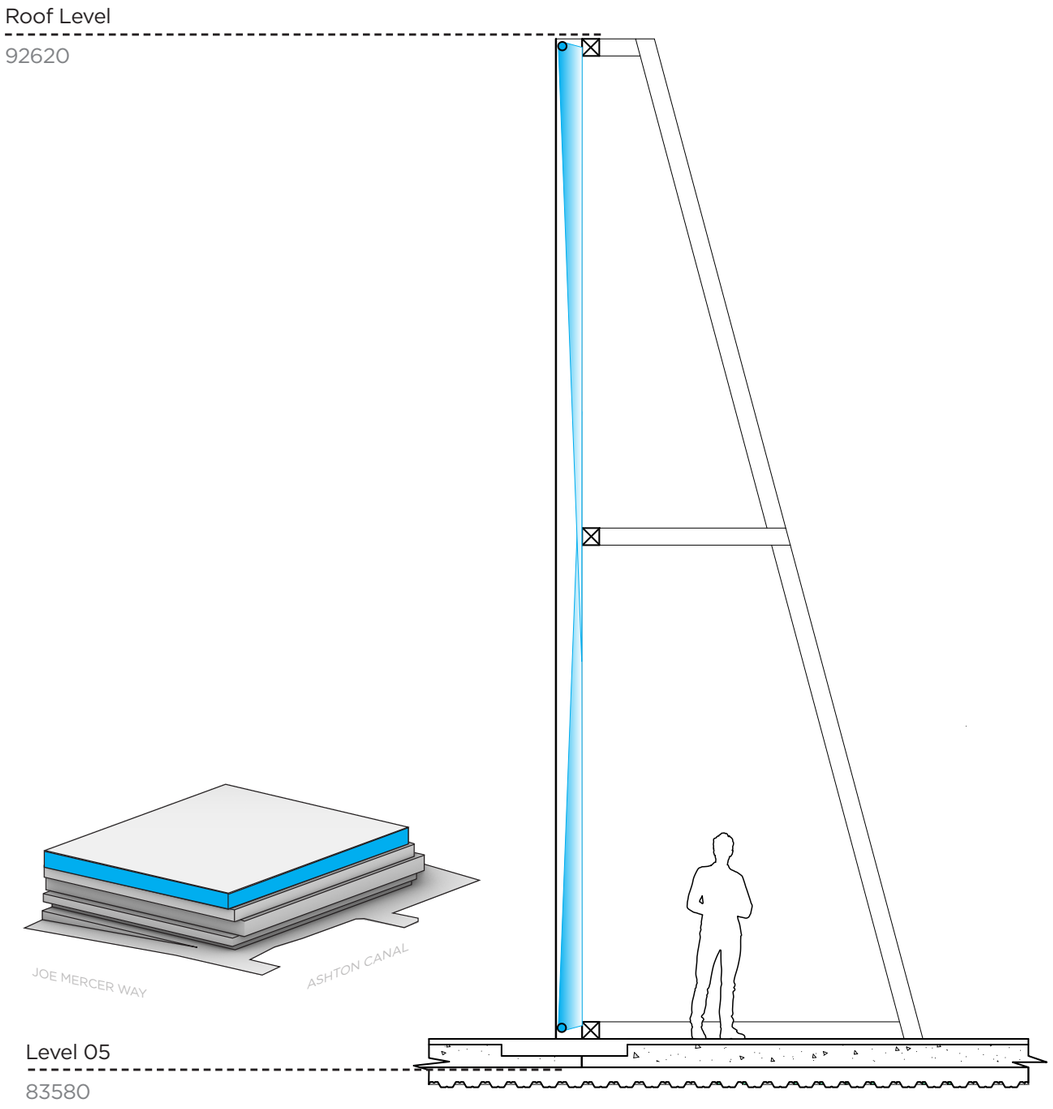




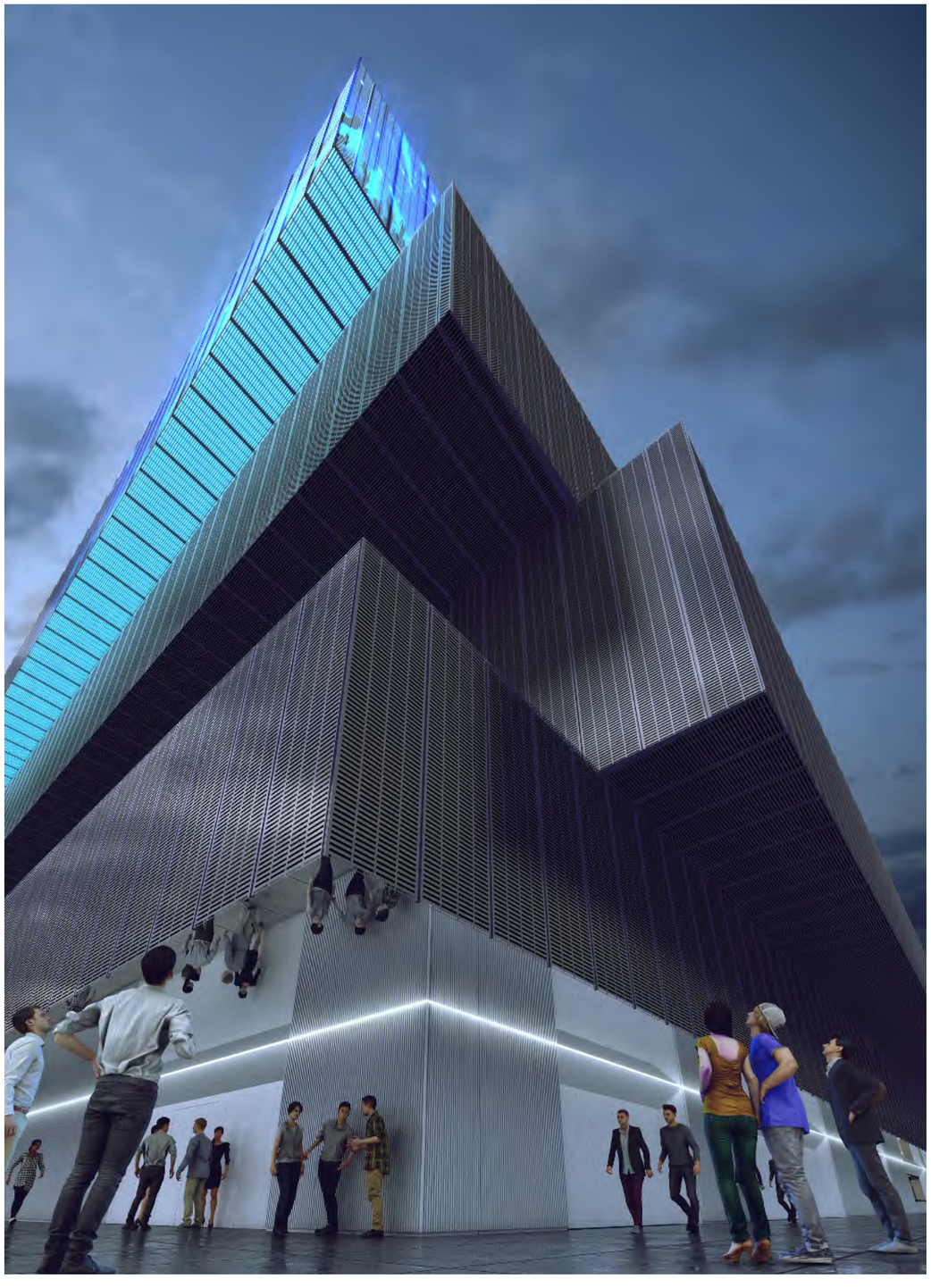


4.14 Architectural Lighting (Continued)

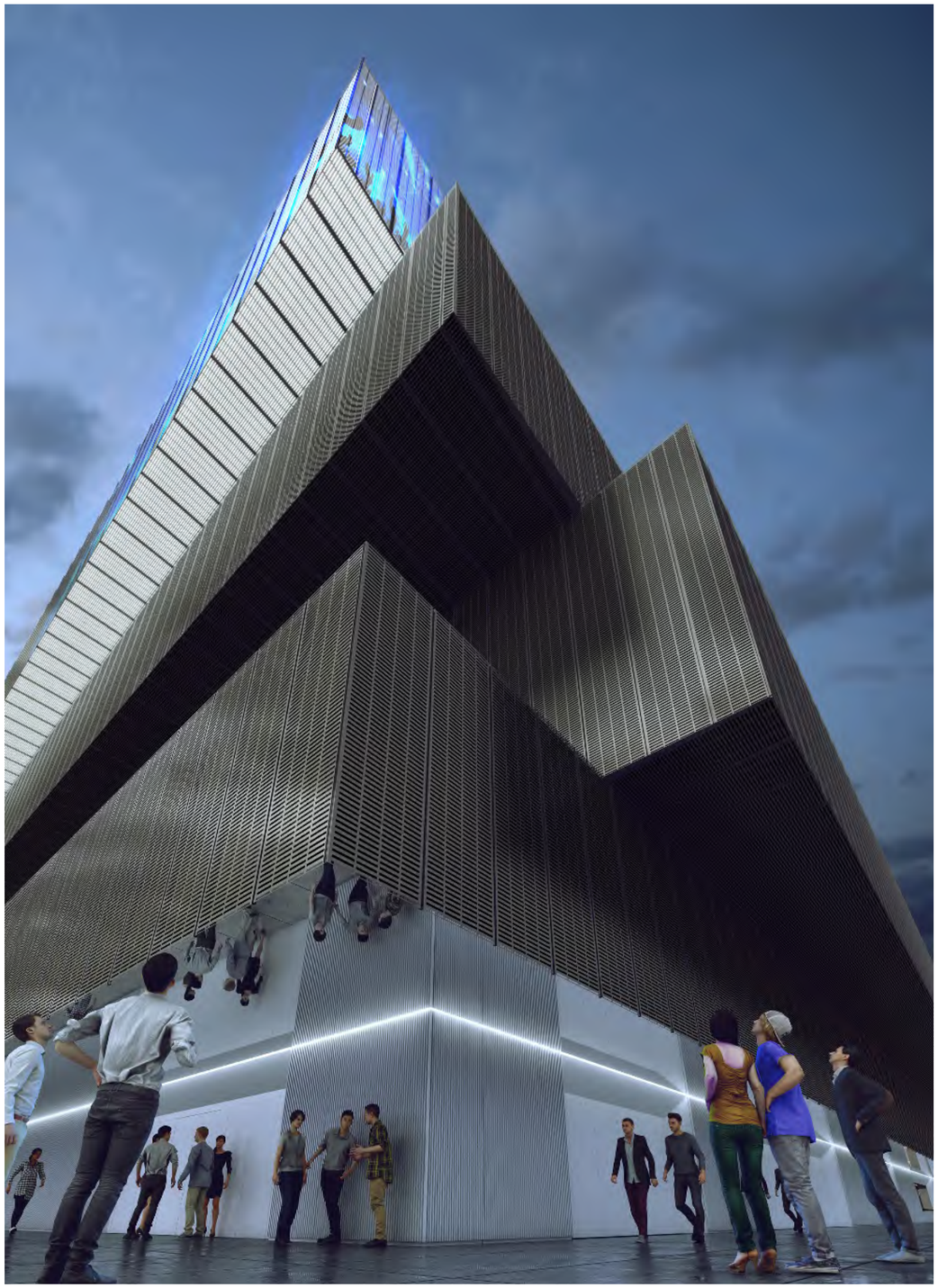
The top box will be the only box to be architecturally lit behind the perforated panel. There will be a linear LED fitting that will be placed at both the bottom and the top of the box to ensure there is an even spread of lighting throughout the entire height. This will be explored in more detail in the developed design stages.

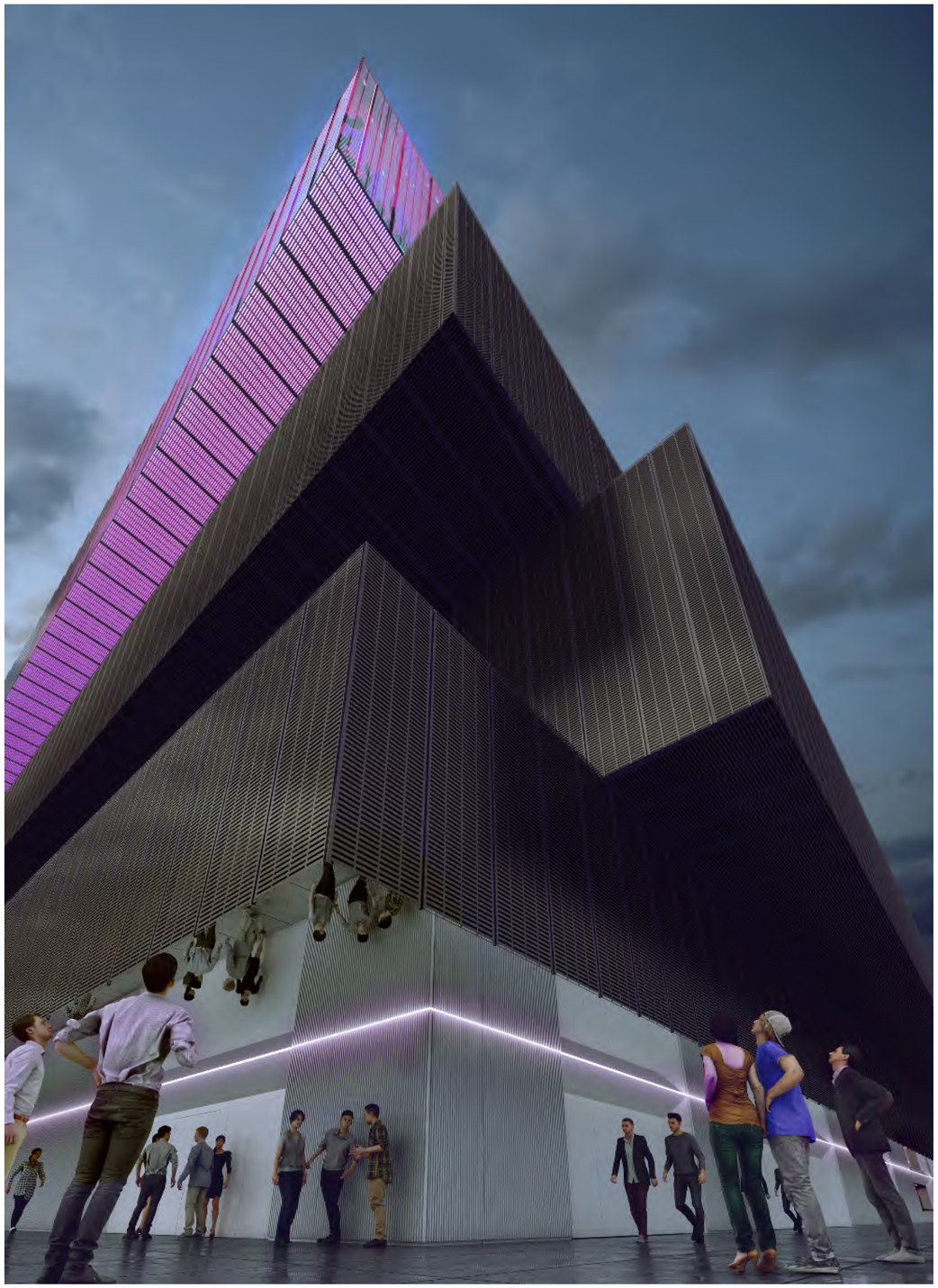


Facade Architectural Lighting Section

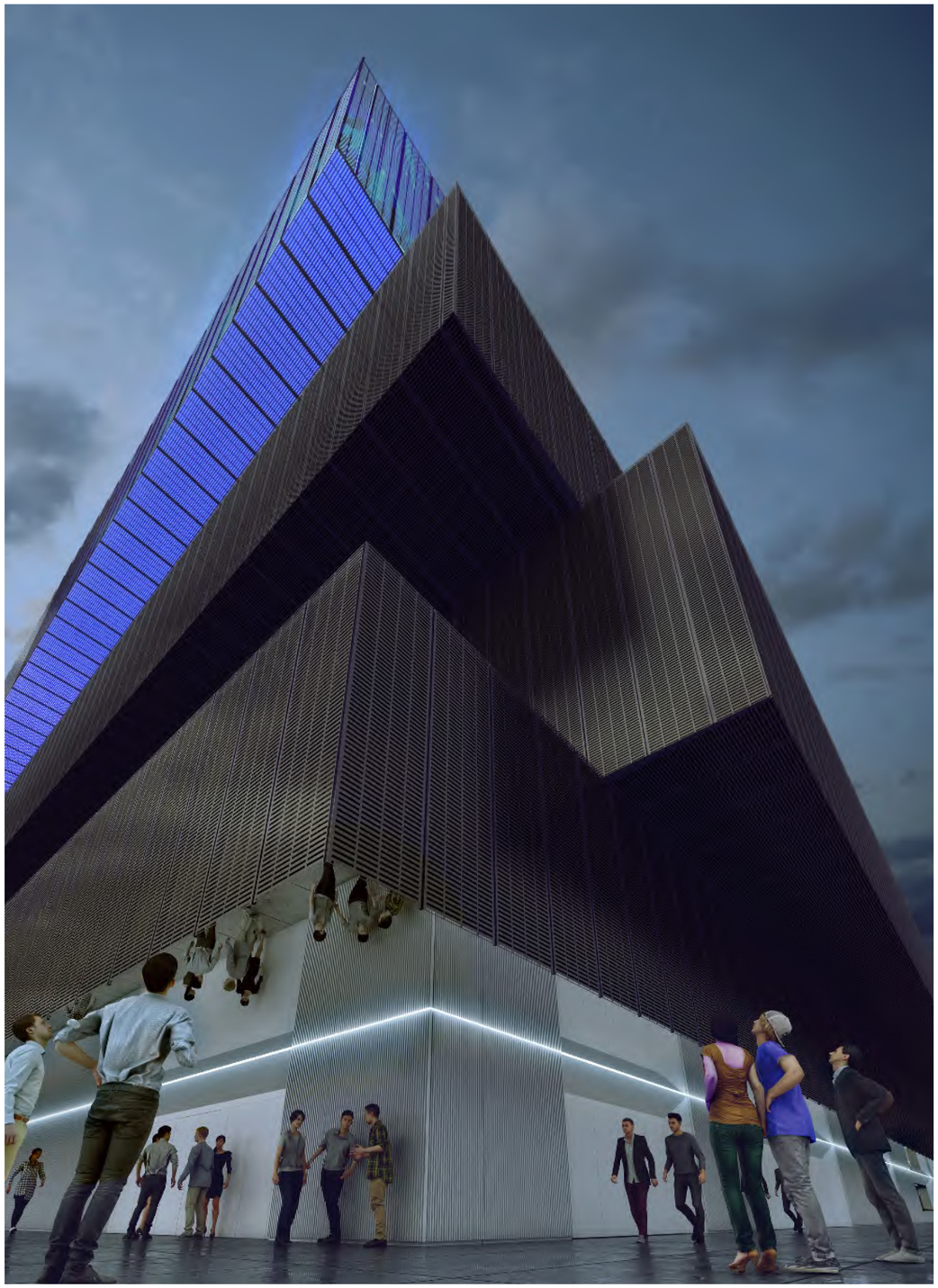


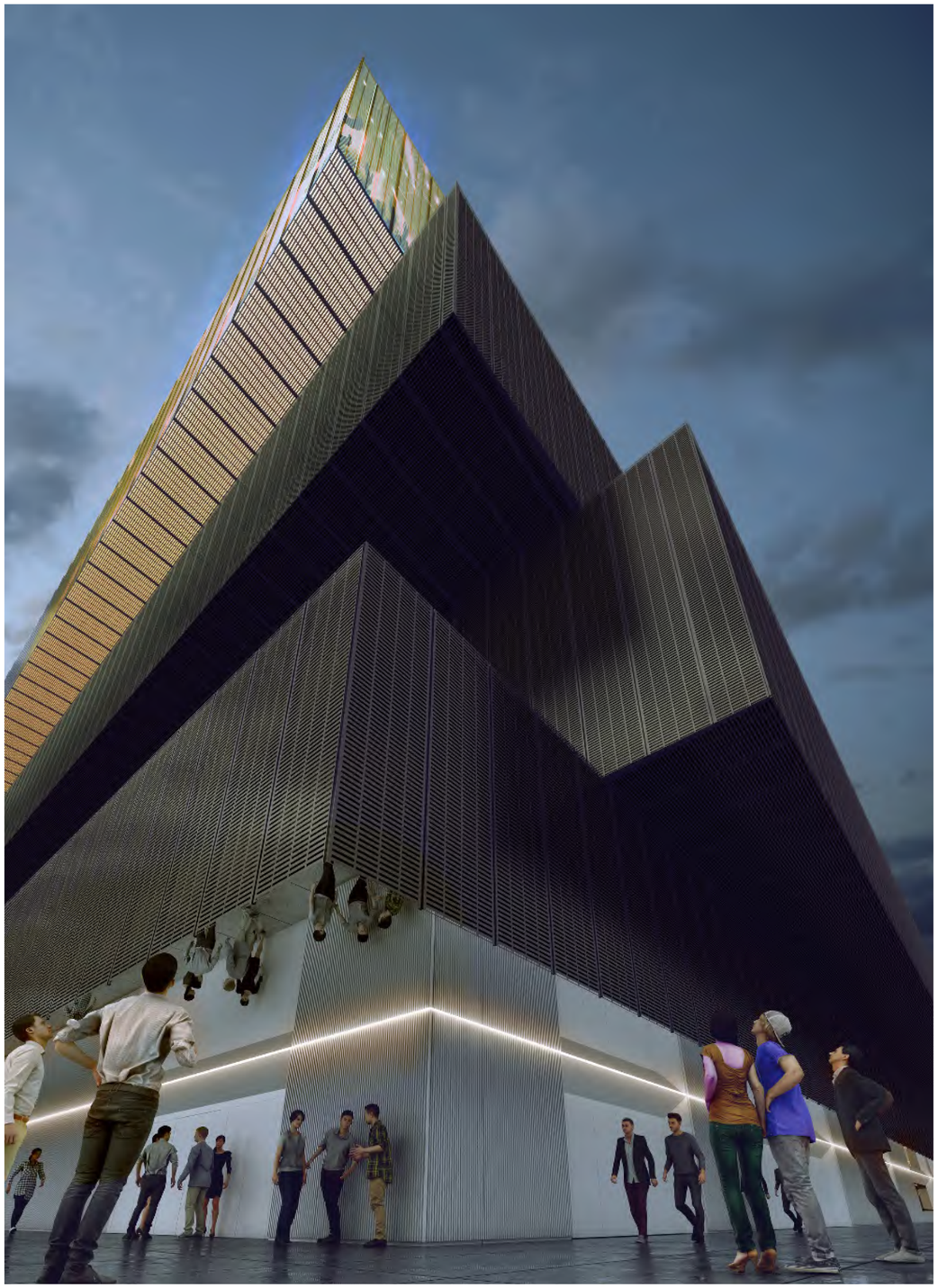
4.15 Versatile Architectural Lighting





4.16 Versatile Architectural Lighting (Continued)



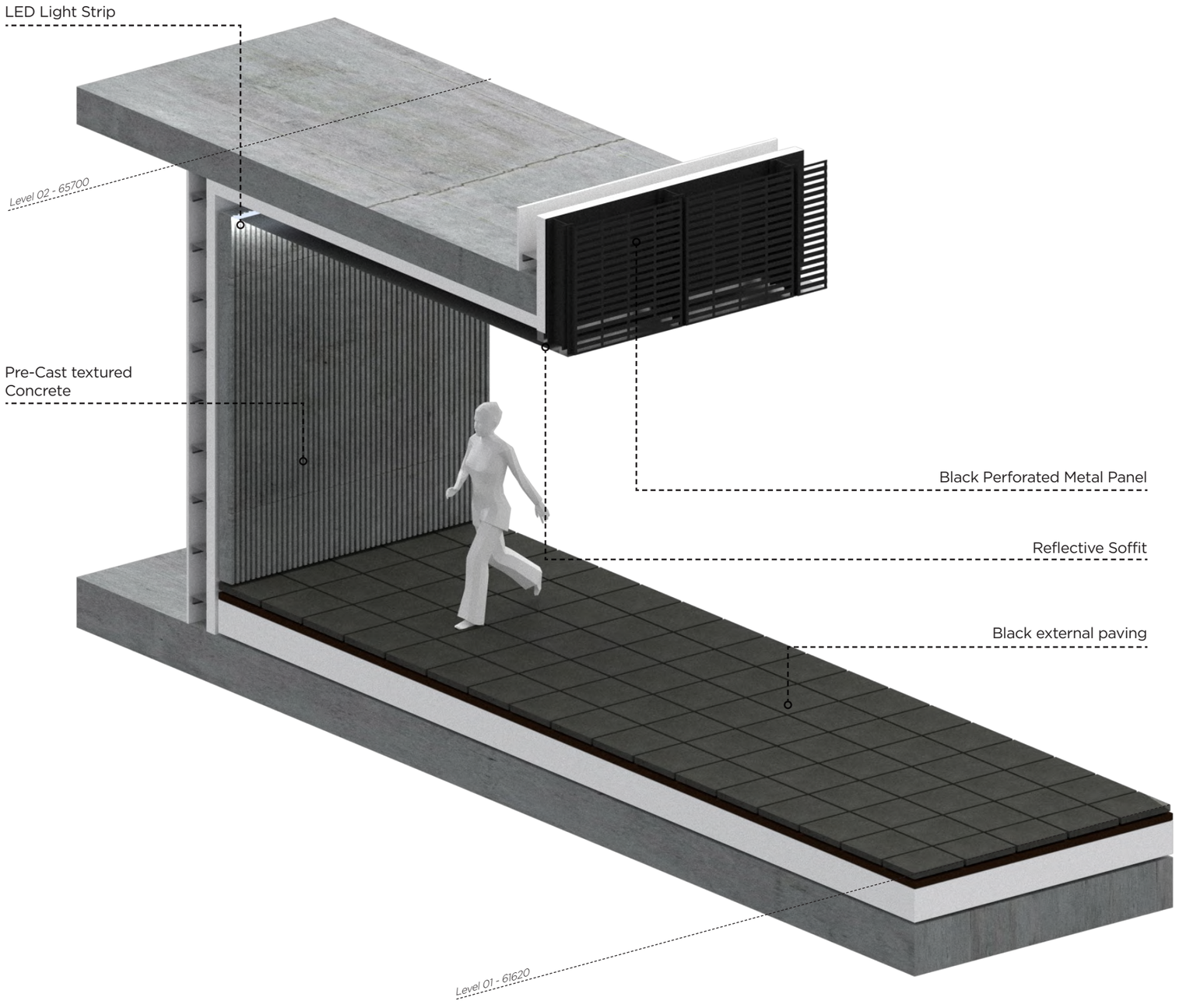


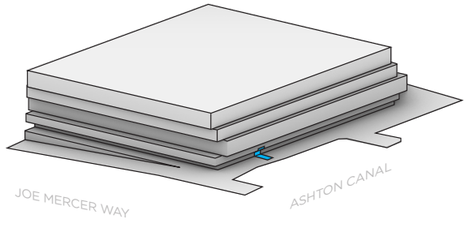

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4.17 Level 01 Typical Facade Interface

As described in section 4.3 Facade Material Locations, the visitor approach level at the base of the building is proposed to be clad with light coloured, ribbed and smooth concrete panelling, framing the main entrances and giving visual contrast against the dark paving to the venue approaches. This concrete panelling is capped by a reflective soffit installed to the base of the building's lowest box, to allow the upper metal-clad boxes to visually float above the base.

In addition to this reflective soffit, a zone of linear lighting is recessed into the soffit at the junction to the concrete facade to create a wash of light and boost illumination as guests approach the entrances.

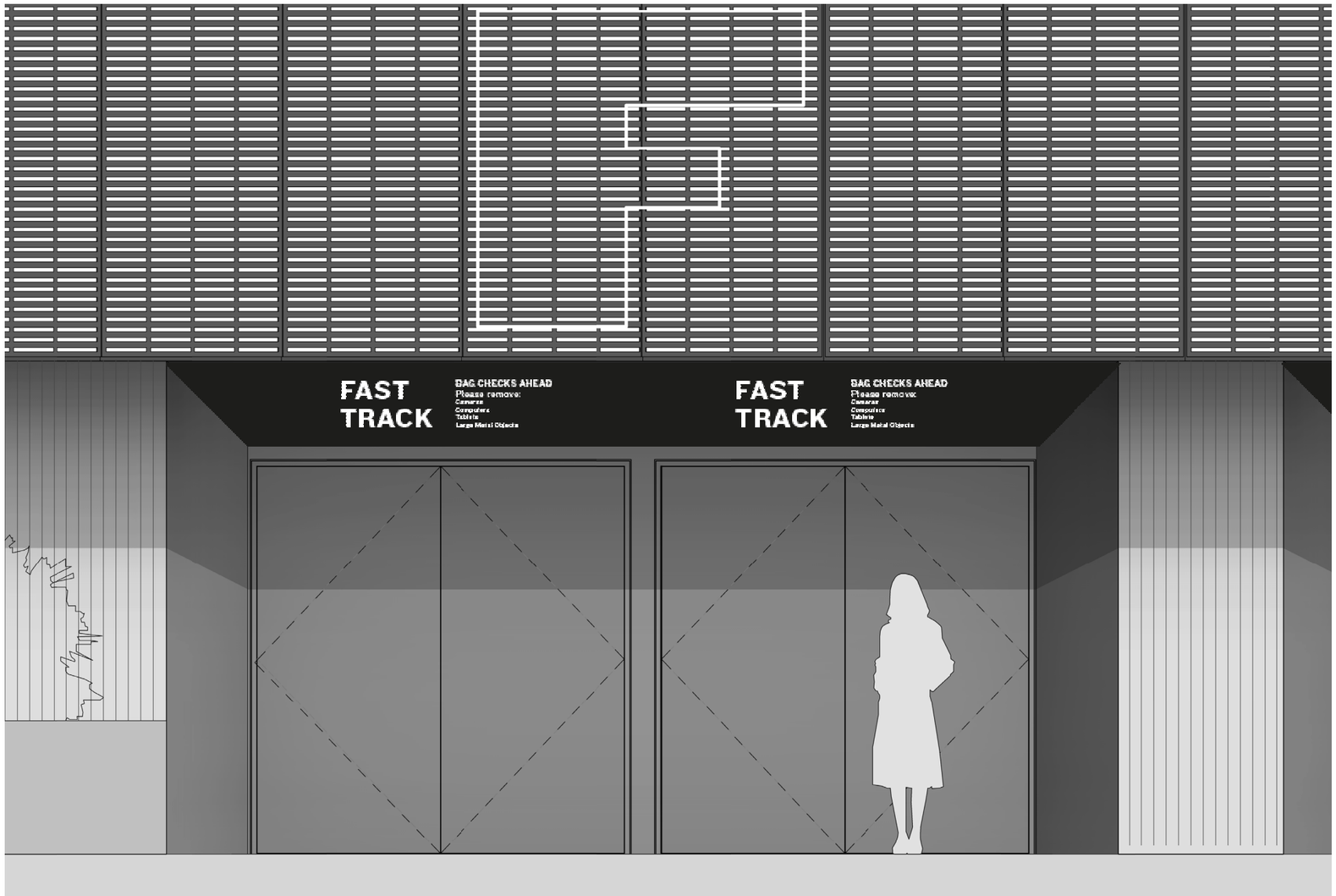


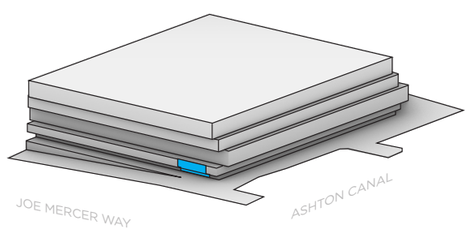


4.18 Level 01 Doors and Openings

All visitor entry is located at the base of the venue within the solid form of the ribbed concrete panelling that unifies and grounds the building. The grouped entrance and exit doors are recessed into the facade both to assist in simplifying the wayfinding strategy, and to store door out of travel when opened.

Larger groups of doors for the entrances are clustered together to rationalise entrance points and efficiently manage the security and ticket check processes on arrival. When the venue is closed, these doors recede into the facade treatment as they will be finished in a colour tonally similar to the surrounding concrete panelling. When the venue is open, the doors will be held open, allowing light and colour to spill out into the arrival points.



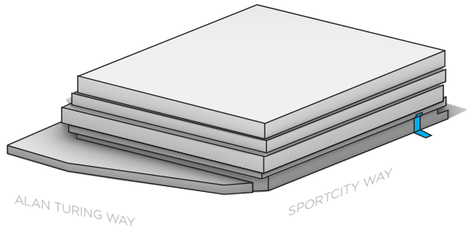


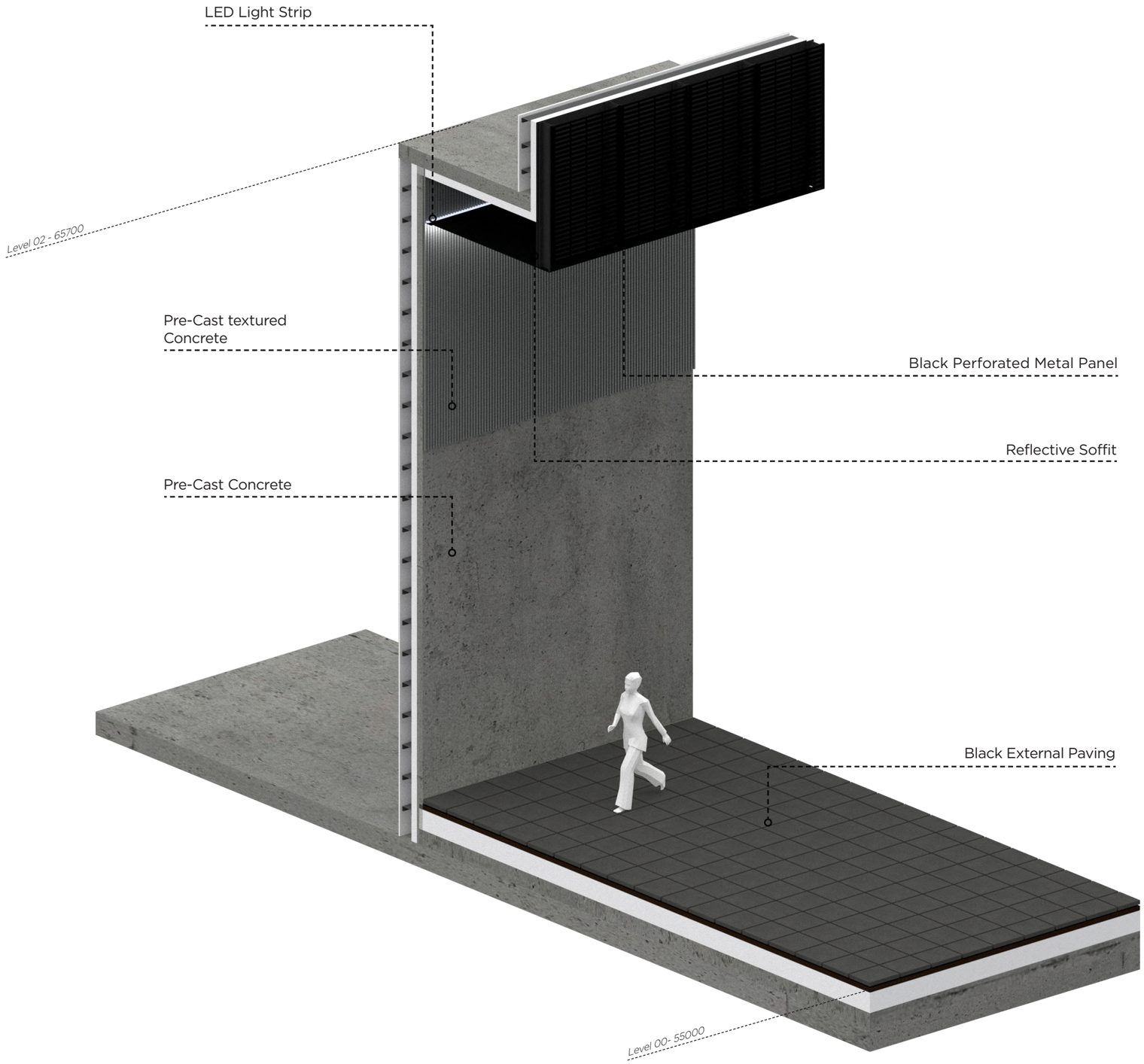
4.19 Ground Floor North Elevation Treatment - Sportcity Way

Facing Sportcity Way, the north elevation is the only street facing side to the venue. The base finish of concrete panelling extends across this facade and picks up on the horizontal datum heights of Level 01 above as the road drops away from the interface with Joe Mercer Way to structure the panelling system for this tall elevation. Combinations of smooth and ribbed panelling will be used to relate this elevation to the other three sides, maintaining the integrity of the facade system.

Functionally, this elevation houses the vehicle entrance to the venue located at the north eastern corner, where it provides discrete and level access for all vehicles into the backstage service yard. A pair of roller shutter doors will be installed to this entrance, recessed into and finished in a colour similar in tone to the surrounding concrete panelling.

Above the high concrete base panelling on this side, the reflective soffit to the underside of Level 02 continues the visitor approach lighting and ambiance strategy as noted in section 4.23, unifying the entrances on all sides of the venue.





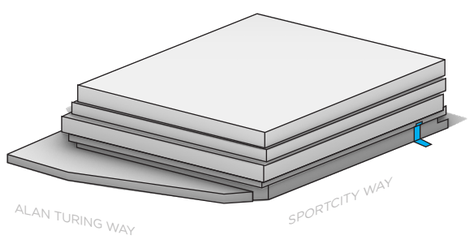
4.20 Ground Floor North Hospitality Entrance

In the centre of the Level GF North elevation is the premium hospitality entrance. This will be treated in the same way as visitor entrances on the other sides of the venue, with large doors recessed into the surrounding concrete panelling, and will have more presence in the 9 metre double height base facade.

Above the high concrete base panelling on this side, the reflective soffit to the underside of Level 02 continues the visitor approach lighting and ambiance strategy as noted in section 4.23, unifying the entrance proposals on all sides of the venue.

In addition to this, a further lighting proposal is to recess narrow beam downlights into the soffit to feature the hospitality entrance, casting slim blades of light to the facade and approaches referencing stage spotlights used during events.



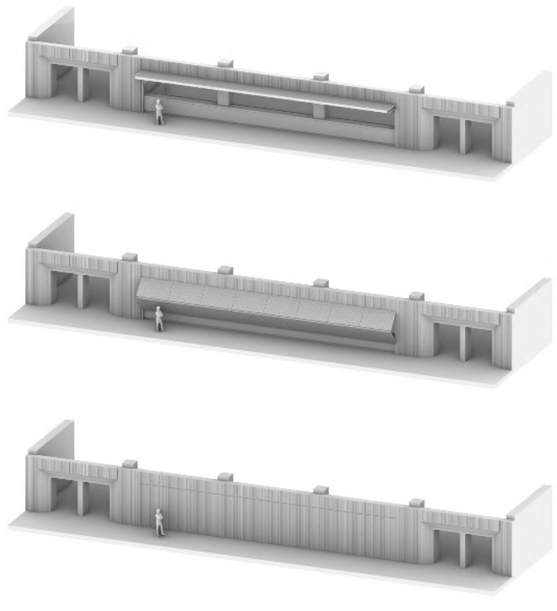


4.21 Canalside

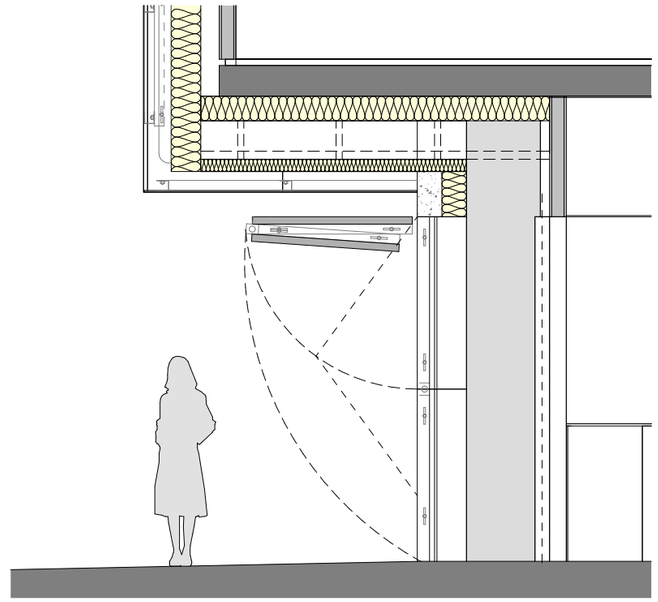
The south side of the venue benefits from close proximity to the adjacent and historic Ashton Canal and Lock. The new landscaped area is a primary approach for all visitors to the Level 00 main entrances, with the patterned black pedestrian thoroughfare bordered by canalside seating decks, planters and soft landscaping.

To facilitate the use of the south facing deck, the central portion of the Level 01 facade is proposed to incorporate a large hydraulic 'up and over' bi-fold shutter backed by a long double-sided bar to allow the venue to open to the landscape in fine weather. On either side of the bar are pairs of doors which could be opened to allow for the concourse to be utilised in non-event hours, allowing passing visitors to use the food and beverage offers within the venue, and further activating the public realm. Internal compartment doors at either end of the south concourse on Level 01 will secure the space for event preparation to continue elsewhere in the venue.

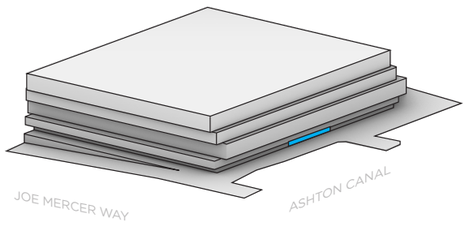
The detailed design of the bi-fold shutter will be integrated into the overall strategy of entrances for the concrete panelled facade, and the thermal integrity of the building will be maintained by the inclusion of sliding window panels to the facade side above the bar counter.

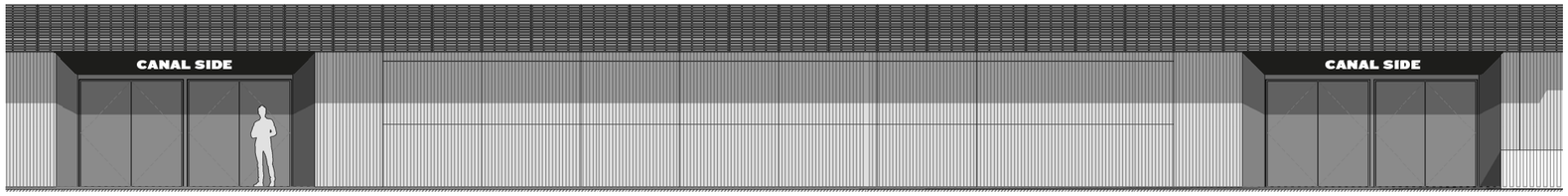


Canalside Bi-Fold Door Opening Sequence



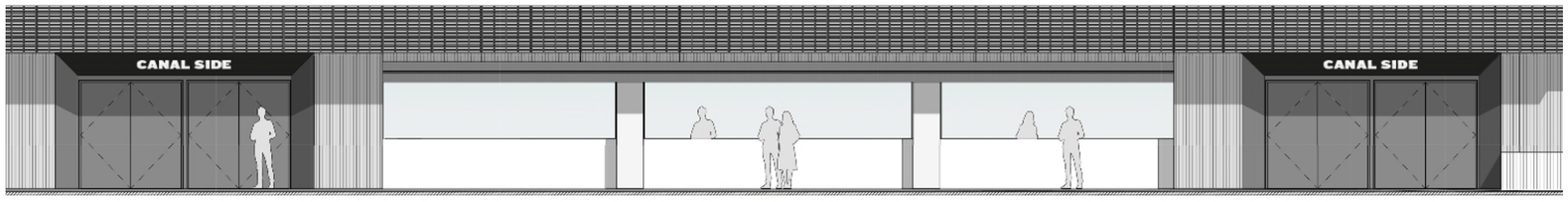
Canalside Bi-Fold Door Opening Sequence





Canalside Elevation (When Bi-fold Doors are Closed)

Canalside bi-fold doors match the materiality of the rest of the level 01 facade concrete panels



Canalside Elevation (When Bi-fold Doors are Open)

The Canalside bi-fold doors open up to reveal an open concessions which can be accessed from both sides of the bar during fine weather

4.22 Green Screen

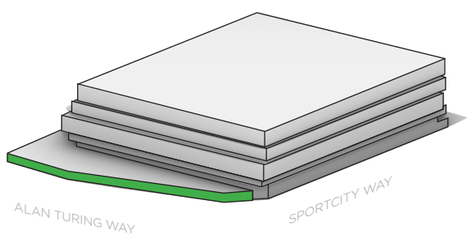
There was an aspiration from the Client to introduce a series of green corridors throughout the Etihad Campus.

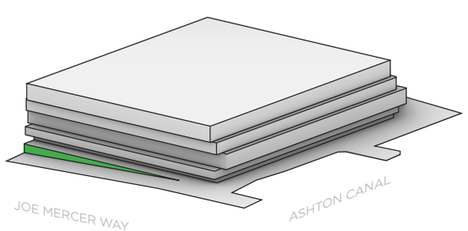
There was the opportunity to maximise the green infrastructure along the canal edge and Philips Park by protecting, extending and enhancing the local wildlife corridors that currently exist.

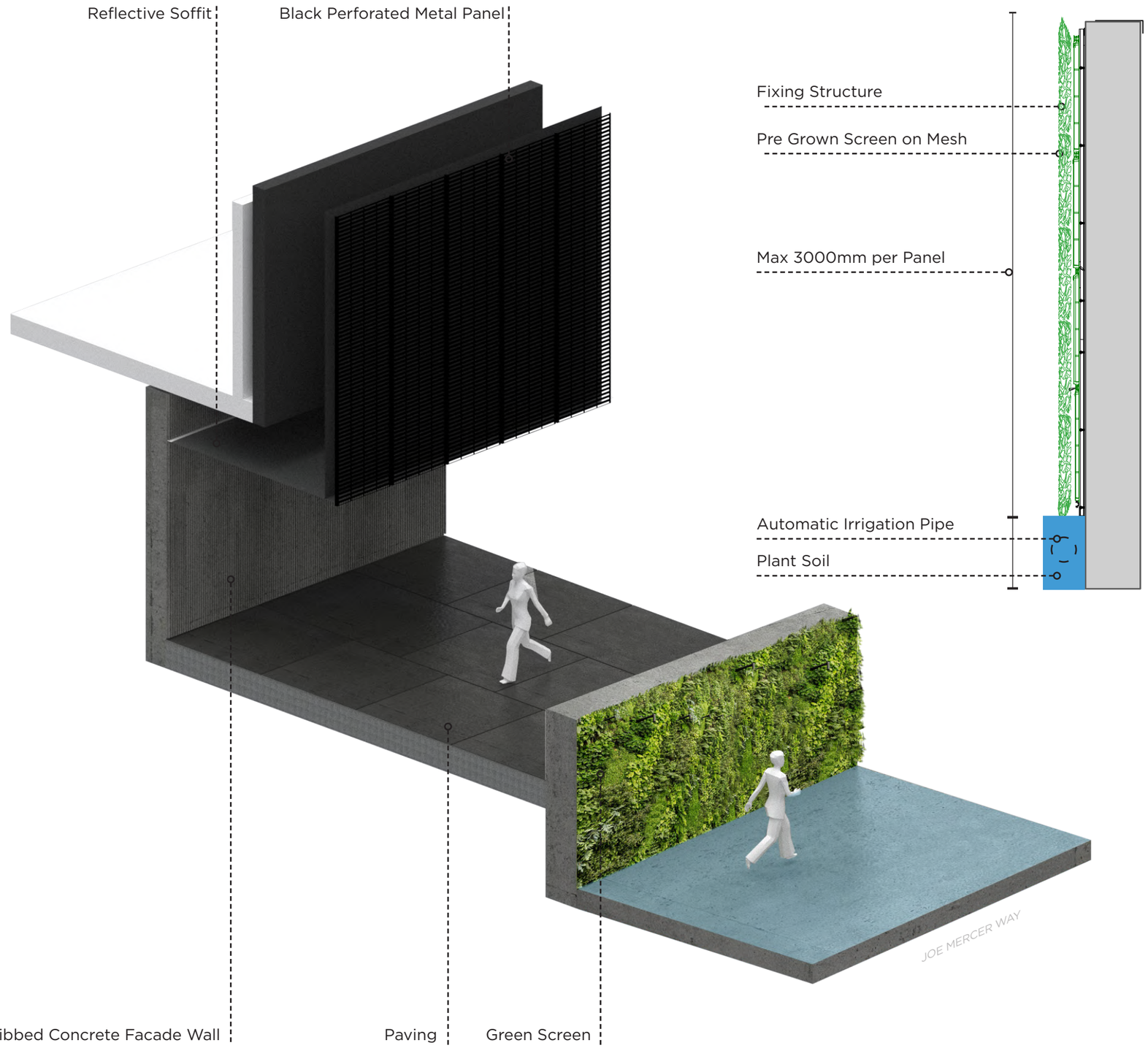
The landscape proposal aims to extend the green boundary between the canal, Philips Park and the venue to open up the vistas from the site across the canal and down these new green corridors.

As an extension of the green space along the canal and Philips Park we have designed a series of green screens around the building that serve to ground the building further within the site context and give direct relevance to the extension of the green infrastructure along the canal and Philips Park.

There will be an efficient maintenance and management strategy put in place for the green screens to ensure that they are well looked after and retain their quality.







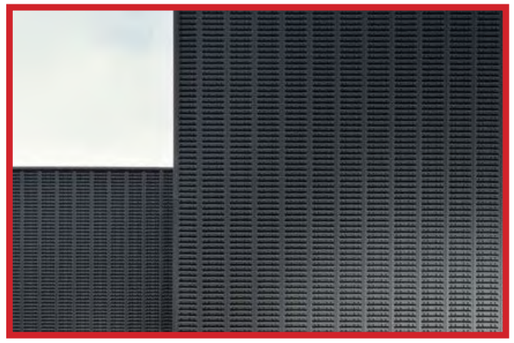
4.23 Soffits

The podium soffit, the underside of the Level 02 black metal facade box, is lined with mirror reflective panelling and edged with recessed linear lighting to emphasise the flow of visitors arriving and circulating around the building. As the venue opens, light spills out from the entrances adding more colour and movement to the space, attracting visitors to the portal spaces. On this page are several examples of where mirrored soffits have been used in public spaces and public buildings to emphasise it's surroundings.

The soffits of the upper facade boxes from Level 03 to Level 05 are clad in the same perforated black metal panelling as the vertical surfaces to complete the image of the box enclosures.

The top box will be illuminated as well as the soffits with architectural lighting acting as a beacon for the venue.

Black Perforated Metal Soffit Panel



Level 01 Entry Reflective Soffit Panel



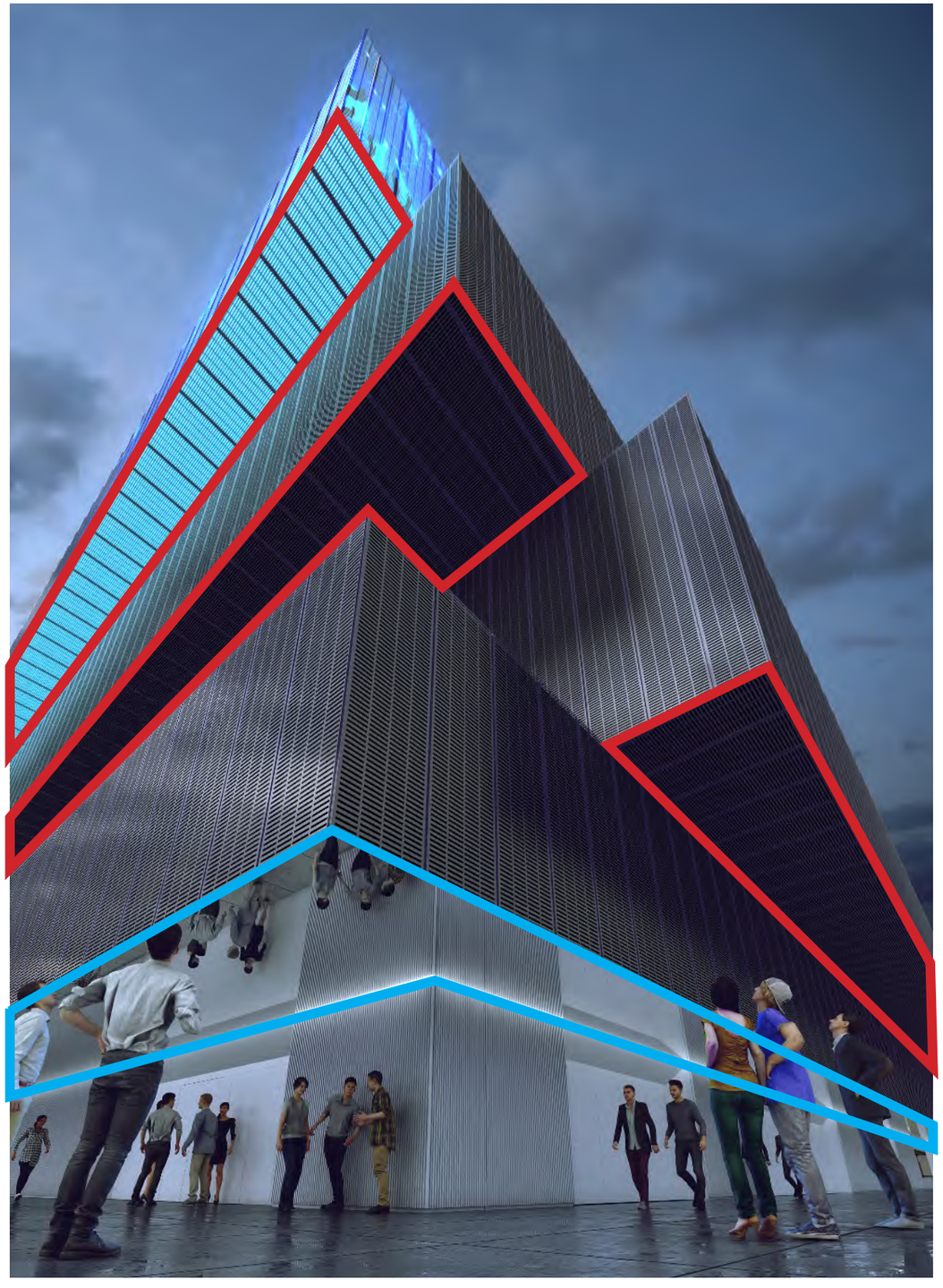
Vieux Port Pavilion,
Marseille, France



Serpentine Pavillion,
London, UK



Verandah Walk,
Townsville, Australia



4.24 Photovoltaic Application

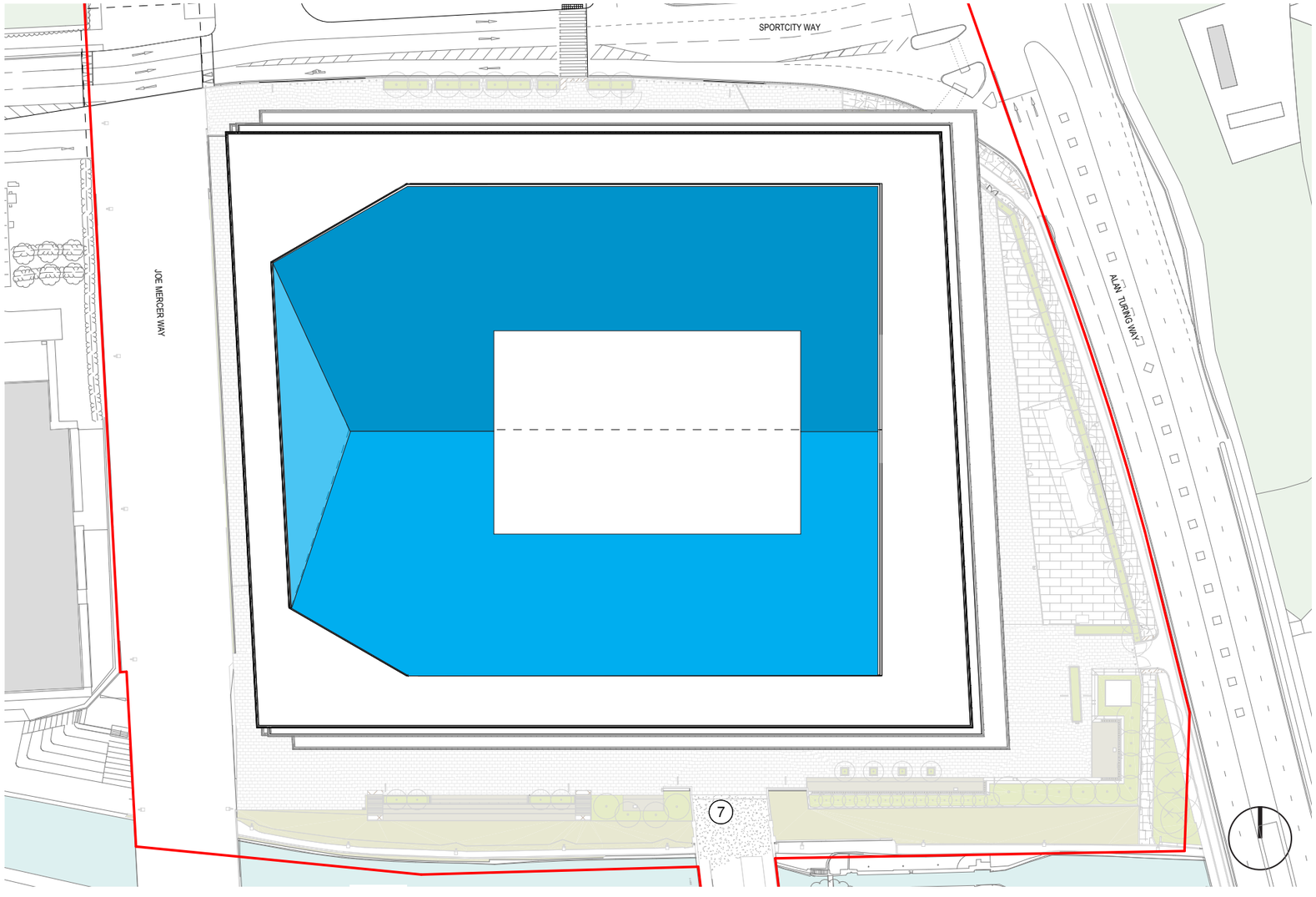
In line with Manchester's ambition and commitment to become one of the first carbon neutral cities in the world by 2050, OVG share a common goal with the city in the prioritisation of a sustainable and a green urban future and the design of OVG Manchester is consistent with the design brief to be the most sustainable entertainment venue.

As a key part of the sustainable attributes of the proposed venue, the roof has been designed to house a large array of photovoltaic panels.

These photovoltaics will utilise the extensive roof area, which is essential to acoustically enclose the building , providing an ideal 'open to sky' platform for generating electric power from solar energy. This transforms the building into a power generator, making a significant contribution to the reduction of its CO2 footprint.

Photovoltaic technology is a rapidly developing field of sustainable engineering, as each generation of panels improves in efficiency and weight. With this in mind, the exact photovoltaic system will be determined nearer the time of installation to ensure the best and most appropriate product is used.

Area designated for photovoltaic application



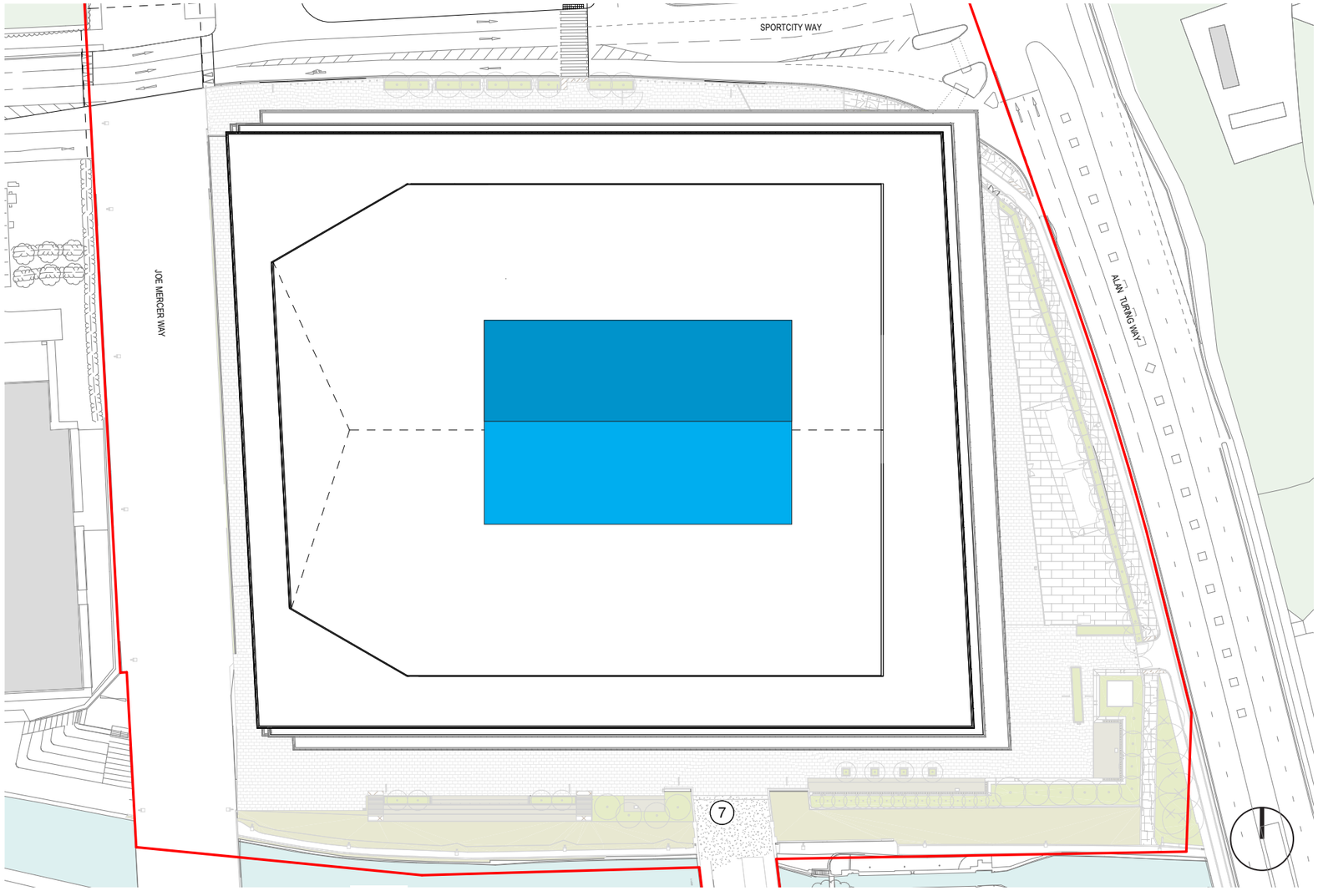
4.25 Roof Activation

The roof branding fixed activation has a set perimeter allowing a naming rights partner access to feature at the largest scale available, maximising both broadcast and landmark exposure.

The naming rights partner brand mark will align flush on the pitched roof and will not alter the architectural aesthetic or be visible from ground level.

Branded activation will be developed post planning in conjunction with the client and future naming rights partner.

Area designated for possible naming rights



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PUBLIC REALM

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5


POPULOUS

5.0 Public Realm Concept

The public realm of the proposed development aims to be a landmark design which will provide a sense of place where people spend time together. The landscape strategy integrates with and connects to the surrounding community while drawing locals, visitors and tourists together. The public realm has been designed to be fully accessible, with a range of seating solutions, from simple benches to stepped terraces overlooking the canal, to ensure that the public realm and venue can be enjoyed by every visitor.

The development introduces a well-designed place that enhances the local character and makes a positive contribution to the health, safety and wellbeing of the community by connecting with its history. The created space brings opportunities for a wide range of activities to generate a comfortable and lively micro climate that interlinks users.

Moreover, one of the most important principles of the public realm is to connect to its surroundings, opening views towards Ashton Canal and providing a safe relationship with the Etihad Campus scheme and Philips Park. The podium level connects the canal and bridges to make the development part of a cohesive wider scheme. The connection to Philips Park is enhanced by providing greenery towards the area and connecting flows of visitors to experience every part while linking with the city's blue and green infrastructure. Therefore, the proposed public realm acts as a junction between Ashton Canal and Philips Park.

The link to the existing surroundings is also considered by the enhancement of biodiversity with the proposed vegetation which upgrades the quality of nearby green infrastructure, improving the act of its functions and creating connections with them. The public realm surrounding the venue serves a number of different functions and varies in character to reflect these requirements.

Sportcity Way to the north provides vehicle access into the site from Alan Turing Way. The existing route is heavily vehicle dominated with five traffic lanes flanked by footways. The venue proposals include re-allocation of road space along the northern side of the building to:

- Reduce the number of traffic lanes
- Widen the footway adjacent to the arena to provide sufficient safe space for pedestrian crowd flows before and after an event
- Provide a temporary VIP drop-off layby area for hospitality guest use
- Provide secure, physical segregation between vehicles using Sportcity Way and pedestrians entering/exiting the venue. This includes for protection from hostile vehicles
- Provide a mechanism for physical closure of Sportcity Way to traffic, when required, at the Joe Mercer Way crossing

The proposed alterations to Sportcity Way can be provided within the existing road corridor and involve the adjustment of finished levels and resurfacing of pavements.

Joe Mercer Way to the west is a wide pedestrian route providing the main link to the north from Etihad Stadium. The route rises on an embankment from Sportcity Way to pass over the Ashton Canal and Metrolink Tram just south of the arena site.

A new podium area to the south and east of the venue will provide pedestrian access and egress routes for visitors at Level 01. The area will also provide a screened compound area used for waste management and occasional vehicle parking for outside broadcast of other specialist vehicles.

As well as adopting the inclusive design principles set out above, our landscape scheme minimises physical barriers and visual clutter, seeking to contribute to the delivery of a functional and aesthetically pleasing public realm.

In developing the public realm, we have adopted the following principles:

- Trees cover a wide range of functions such as wind mitigation, shade, shelter, buffer zones, etc. Therefore, they are proposed to be installed in tree pits rather than planters and semi-mature size to achieve a fully functional landscape from the beginning of the development.
- Circulation routes are to be step-free routes

All footways, footpaths and floor surfaces are to:

- Be installed with any necessary joints closed and flush to prevent small wheels, walking sticks and canes becoming trapped
- Have consistent use of tone and surface when paths are used as a wayfinding tool
- Use visually contrasting surfaces to indicate level differences
- Not have highly patterned surfaces
- Not incorporate highly reflective materials
- All principal routes to approach, enter and use of the building and their facilities are to be accessible. The shallowest possible gradients are to be used on all routes Gradients on primary circulation routes are less steep than 1:21
- Materials used within the external environment will be installed to provide a level and even surface: Access routes are to have a firm, slip-resistant and reasonably smooth surfaces
- Resting places with suitable seating will be incorporated to limit travel distances to less than 50m
- Where seating is provided within the external landscape, there will be a mixture of accessible seating and based on guidance set out in BS 8300-1. Seating will feature some backrests and armrests as well as space for wheelchair and scooter users
- The design of external stairs, indicative nosings and associated handrails will be designed to meet the objectives of AD M
- External stairs are to have a 'corduroy' hazard warning surface at the top and bottom landings of a series of flights to give advance warning of a change in level in accordance with AD M Diagram 4

5.1 Public Realm Design

The proposed development has addressed seven considerations: site access, crowd flow within the site, place-making factors, historical references, green ring strategy, wind mitigation and vertical green strategy. These considerations contribute to creating a safe attractive, high quality, inclusive and legible public realm; it will contribute positively to local character and identity and encourage the appropriate level of activity and social interaction

Site access is important as pedestrian and vehicular routes have been identified around the site. Based on that, the public realm brings clear connections to relocate flows and provide an active frontage towards Ashton Canal as a big opportunity generator.

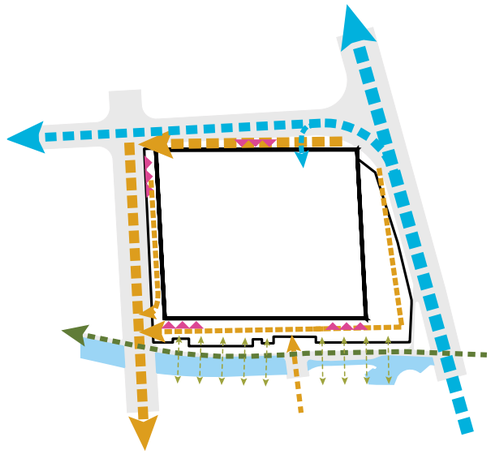
Crowd flows have been integrated in the design to ensure a balanced relationship between spaces and path widths on event days. Therefore, egress hierarchy has been considered to ensure an efficient evacuation and a sequence of spaces which provide different needs for the users.

Place making strategy brings an additional value to provide attractions for users and ensure that numerous character areas suit both event and non-event day. The public realm presents various materials and formal/informal seating to give an extra layer of complexity. Historical references are present in the design through the paving materiality; dark paving represents the local coal mining history while complementing the geometry of the building.

A green ring is provided to link with existing green infrastructure and complement its biodiversity value. Together with an attractive asset for the outdoor experience, the proposed native vegetation supports local wildlife and brings a softer feeling to the relaxing/seating areas.

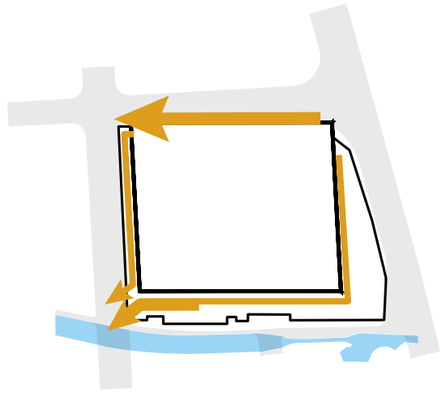
Strong winds coming mostly from the south need to be screened. Vegetation is placed in strategic areas to create comfortable zones and places to remain, acting as a shelter for place-making corners, stating a strong relationship between green areas and activation points.

Green screens utilize vertical surfaces to incorporate more vegetation into the scheme and reinforce the green component of the site.



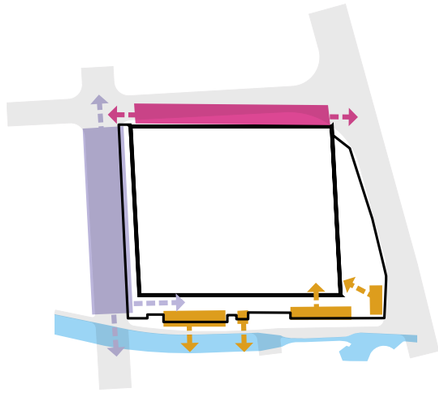
Site Access

Pedestrian movement and vehicular circulation around the site have been studied to provide an active frontage towards Ashton Canal.



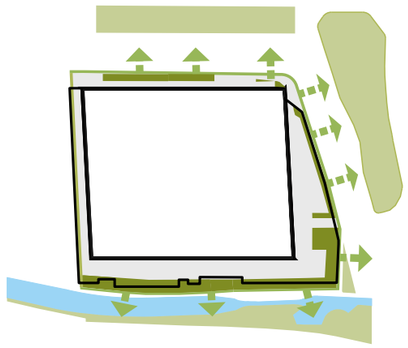
Crowd Flow

Egress flow hierarchy considered for relationship between outdoor spaces and surrounding opportunities.



Place Making

Public realm character areas suit both event and non-event day as part of visitor experience strategy.



Biodiversity Green Ring

The proposed development incorporates a green outdoor area that enhances the existing surroundings and increases biodiversity.

Wind Mitigation

Vegetation is placed in strategic ally to create comfortable zones and protect users from the wind.

Vertical Green

Green screens are used to complement user experience and reinforce the green component of the site.

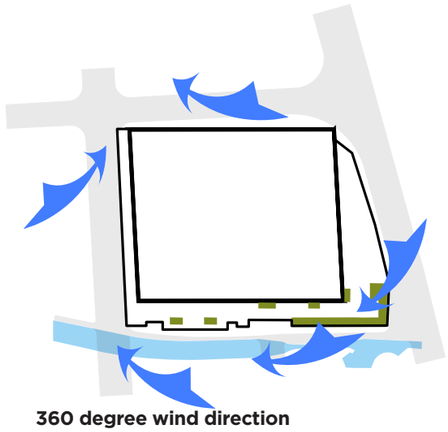
5.2 Wind Mitigation

Wind mitigation is one of the key factors driving the soft landscape strategy and design. Wind studies indicate that wind approaches the proposed venue from the north east traveling at a low height, and from the south west approaching the building at a high level and drops towards the south east corner.

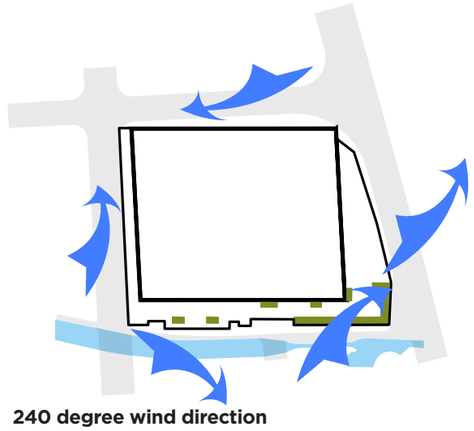
Evergreen trees and shrubs are proposed along the southern edge to create a strong wind buffer. This shelter will provide a comfortable seating and gather area next to a green background. Raised planters are proposed along the southern edge of the podium to provide an opaque wind barrier at the base complemented by the vegetation on top. The planters also provide seating to welcome users and give an extra function to this feature.

Trees and shrubs are also used in planters attached to the façade to help the mitigation at a high level through the south podium from the west. The strategy for the vegetation incorporates the mitigation factor by combining species which reach different heights, like groundcovers, grasses, shrubs and trees, working together as a barrier.

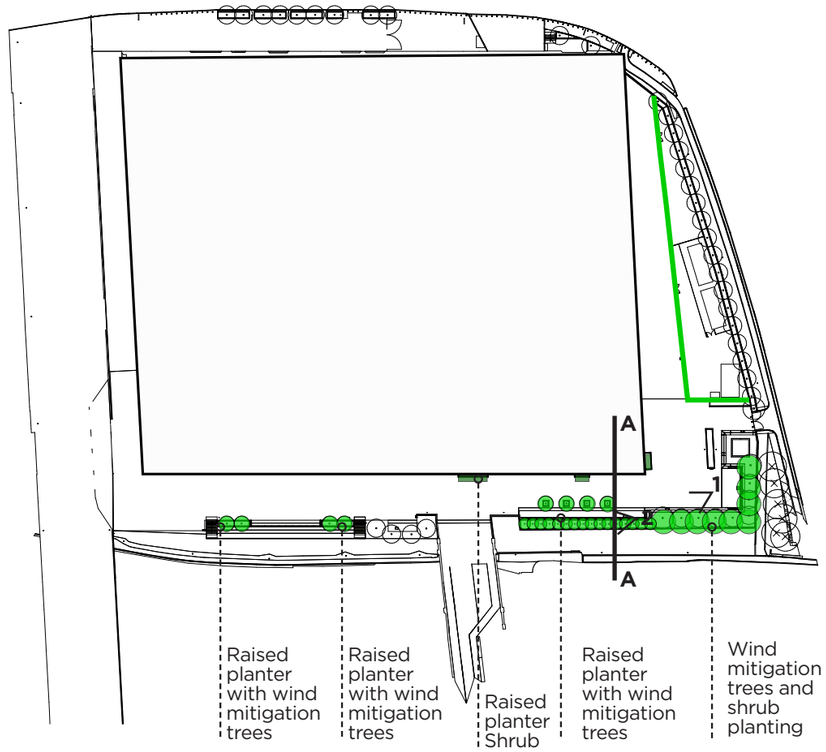
The green screen attached to the 3 metre high fence on the eastern side of the podium provides a porous surface that reduces the wind speed while emphasizing the green value of the proposed development. The selected vegetation aims to achieve the effect all year round and collaborates with the other areas focused on wind mitigation.

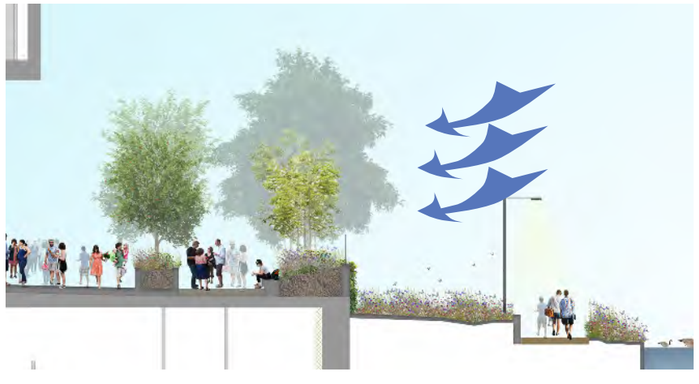


360 degree wind direction



240 degree wind direction

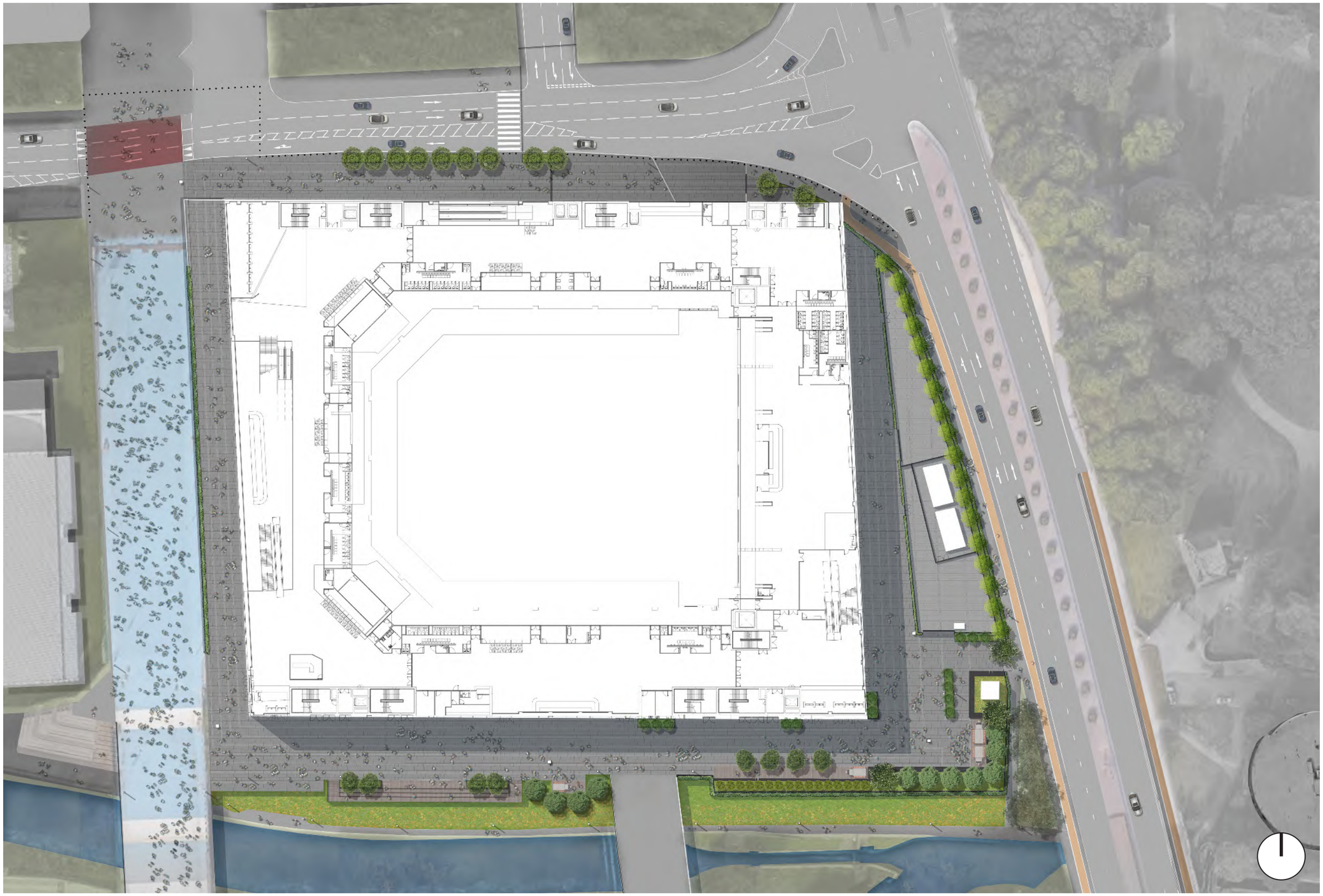








5.3 Landscape Plan



5.4 Boundary Treatment

The site is bound by Sportcity Way to the north, Alan Turing Way to the east, Ashton Canal to the south and Joe Mercer Way to the west. Based on the different characters of boundaries, the strategy followed by the proposed development reflects various approaches. As a general aim, all boundaries have been softened by the proposed landscape design as much as possible by the introduction of planting, barrier free access and buffer zones while keeping a visual connection with the existing surroundings.

The Joe Mercer Way boundary is treated with a green screen to provide soft landscape materiality and a welcoming link to the surroundings. The vertical element is also using the difference in levels as an opportunity to improve the user experience.

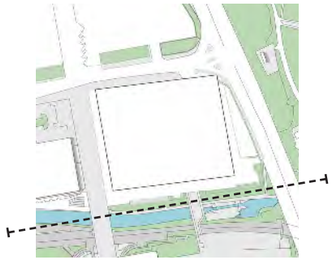
The interface between the podium and Ashton Canal is approached by introducing native wildflower planting and timber tiered seating looking towards the canal. Trees are also introduced to visually connect both areas as part of the same scheme and a green screen in the southwest interlocks the green spaces on both levels whiled addressing essential wind mitigation.

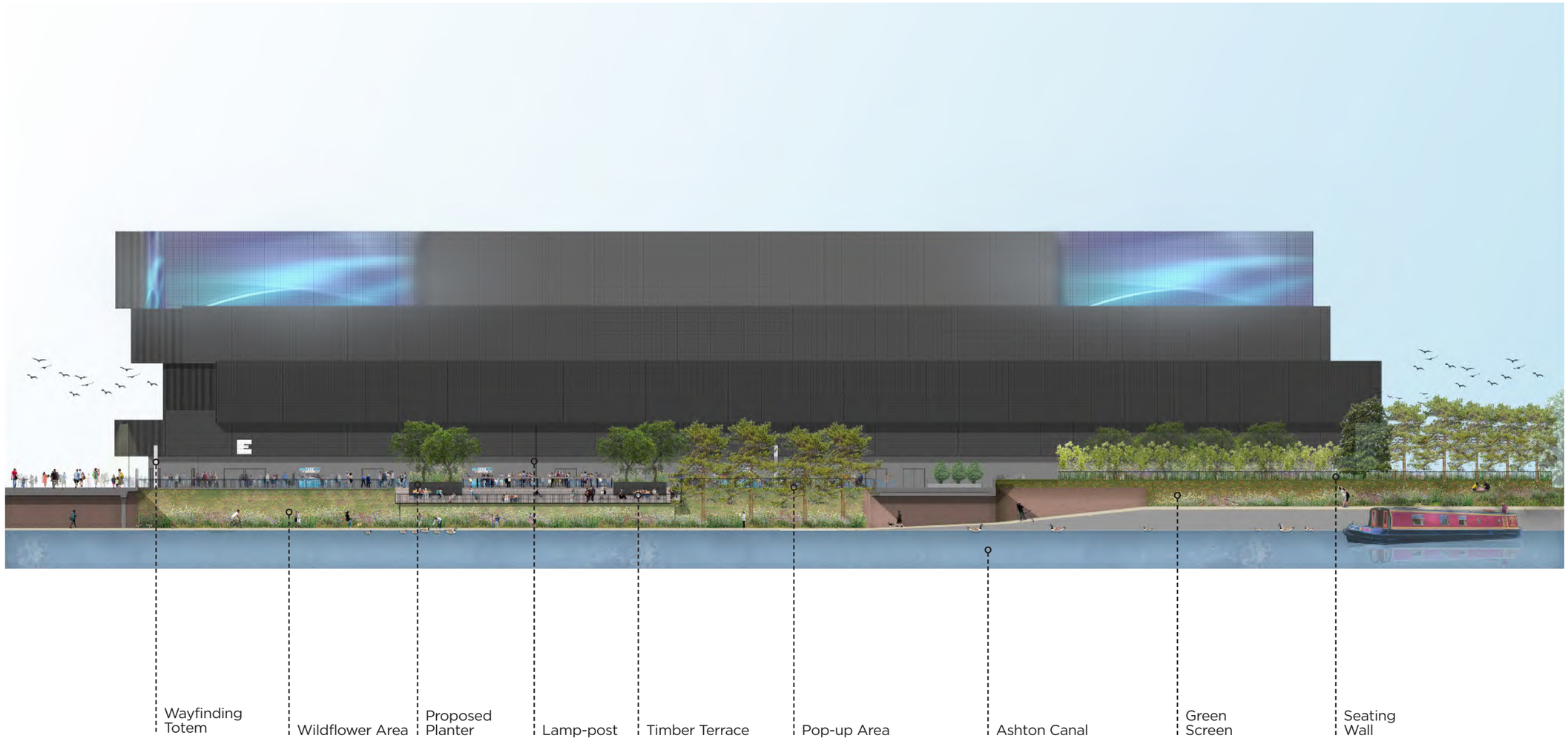
Alan Turing Way is treated with a green buffer to separate the podium from heavy traffic. This also helps to keep a communal green space between both by linking with the green screen next to the existing footpath. An integrated gate allows fire access and an integrated green screen covers the compound fence introducing comfortable spaces and easy access for technical support.

Sportcity Way incorporates a temporary VIP drop-off and raised planters with understory planting and trees. The steps and shared surface ramp access to the north-eastern corner also links to the Alan Turing Way side and complements the proposed planting areas as both elements relate to the existing green around the site.

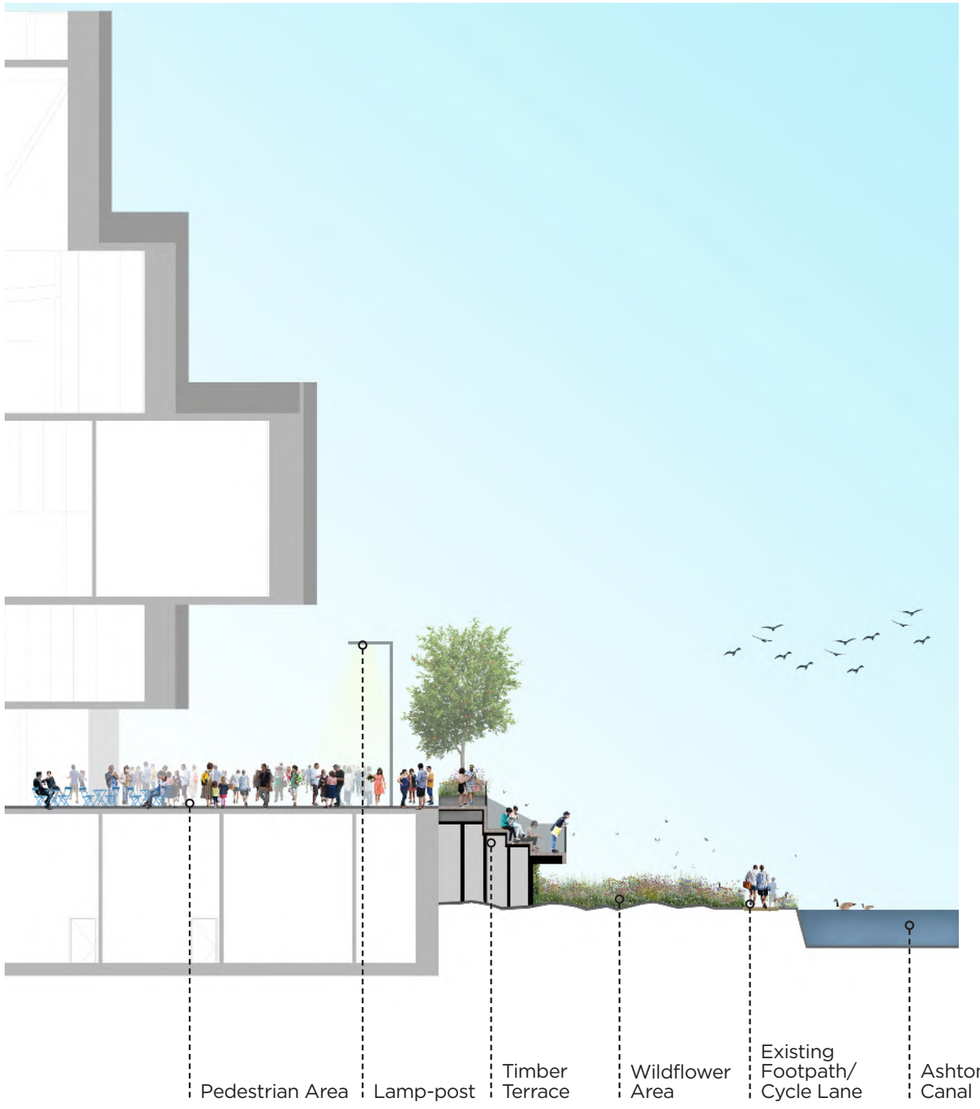


5.5 South Elevation

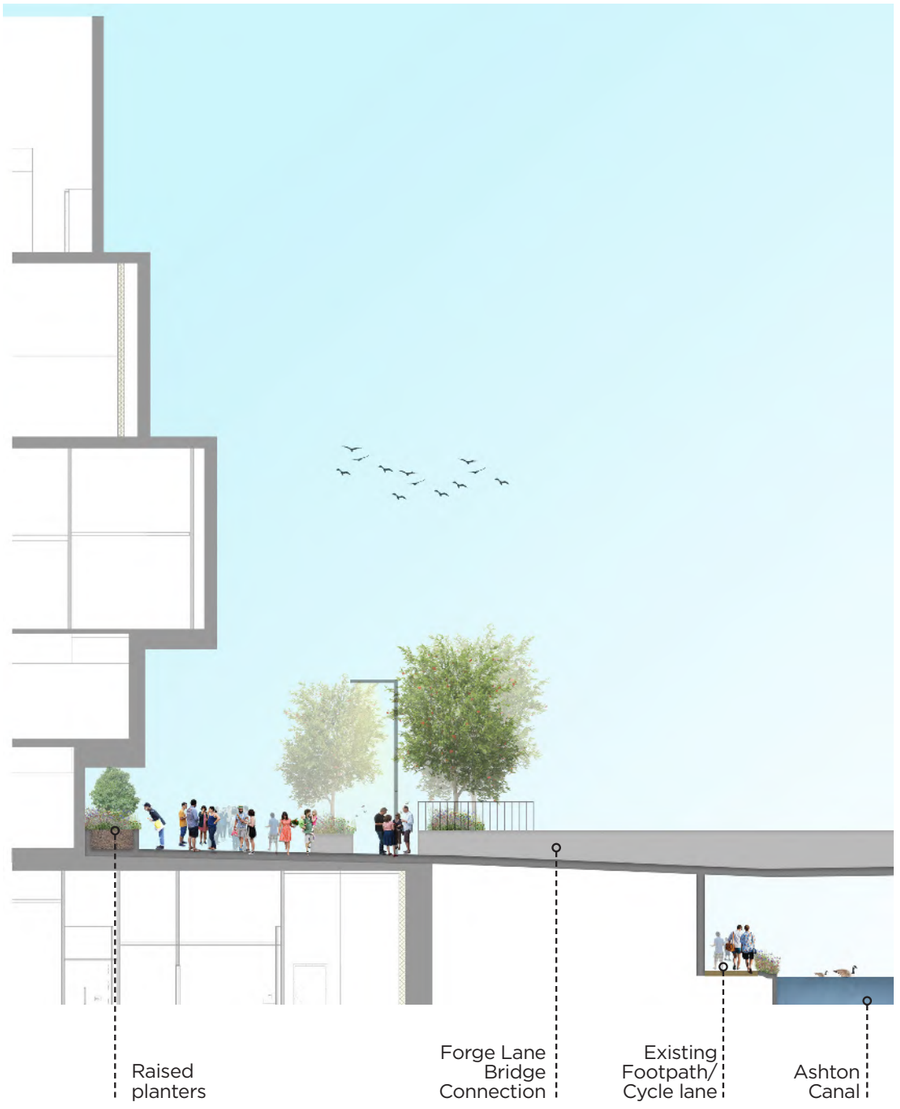




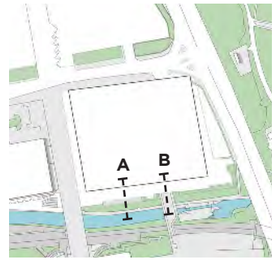
5.6 South Sections



Section A - Timber Tiered Seating



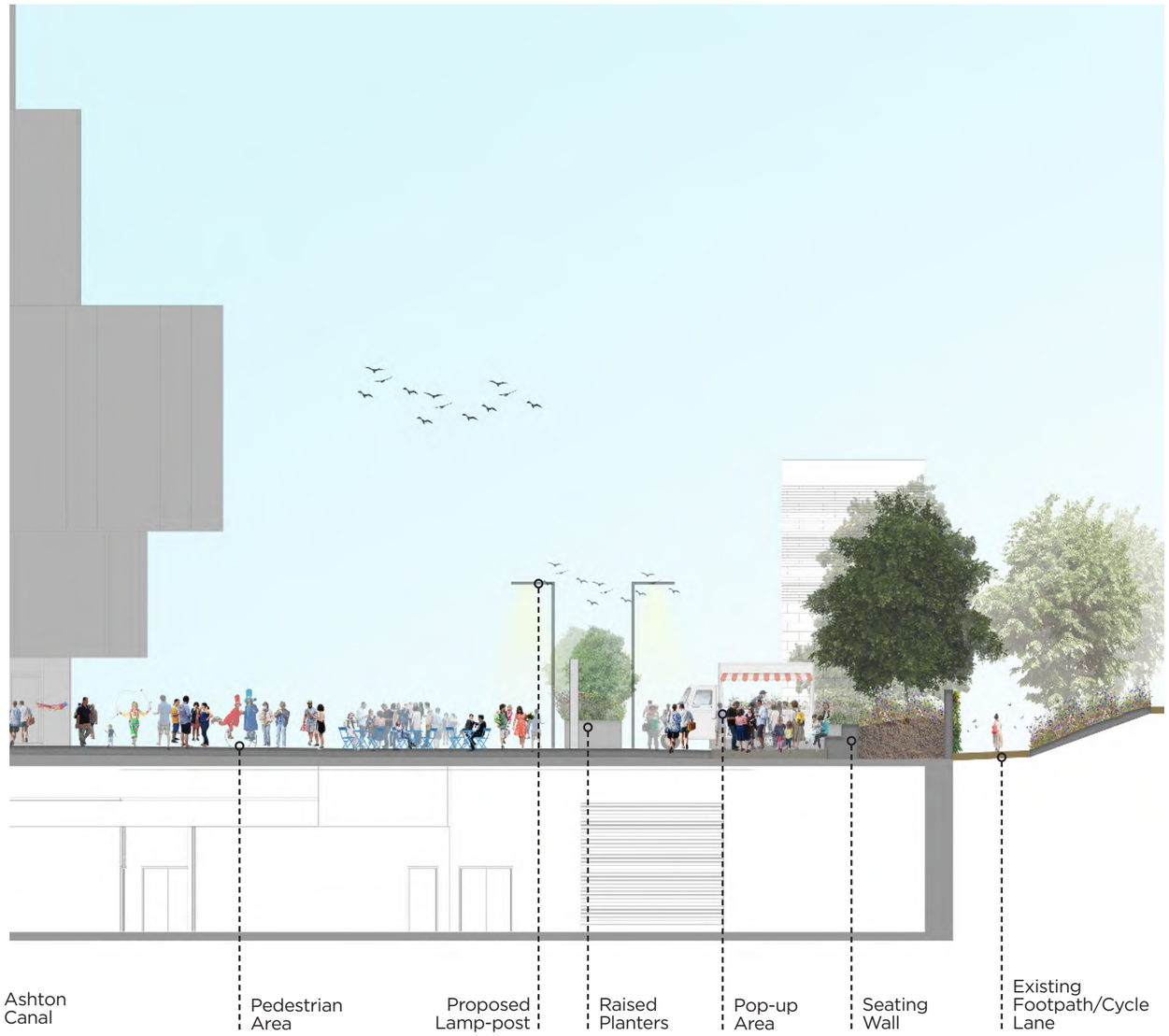
Section B - Forge Lane Bridge



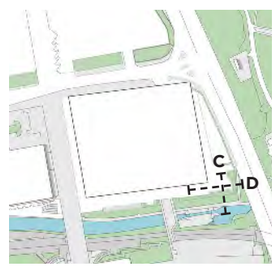
5.7 South and East Sections



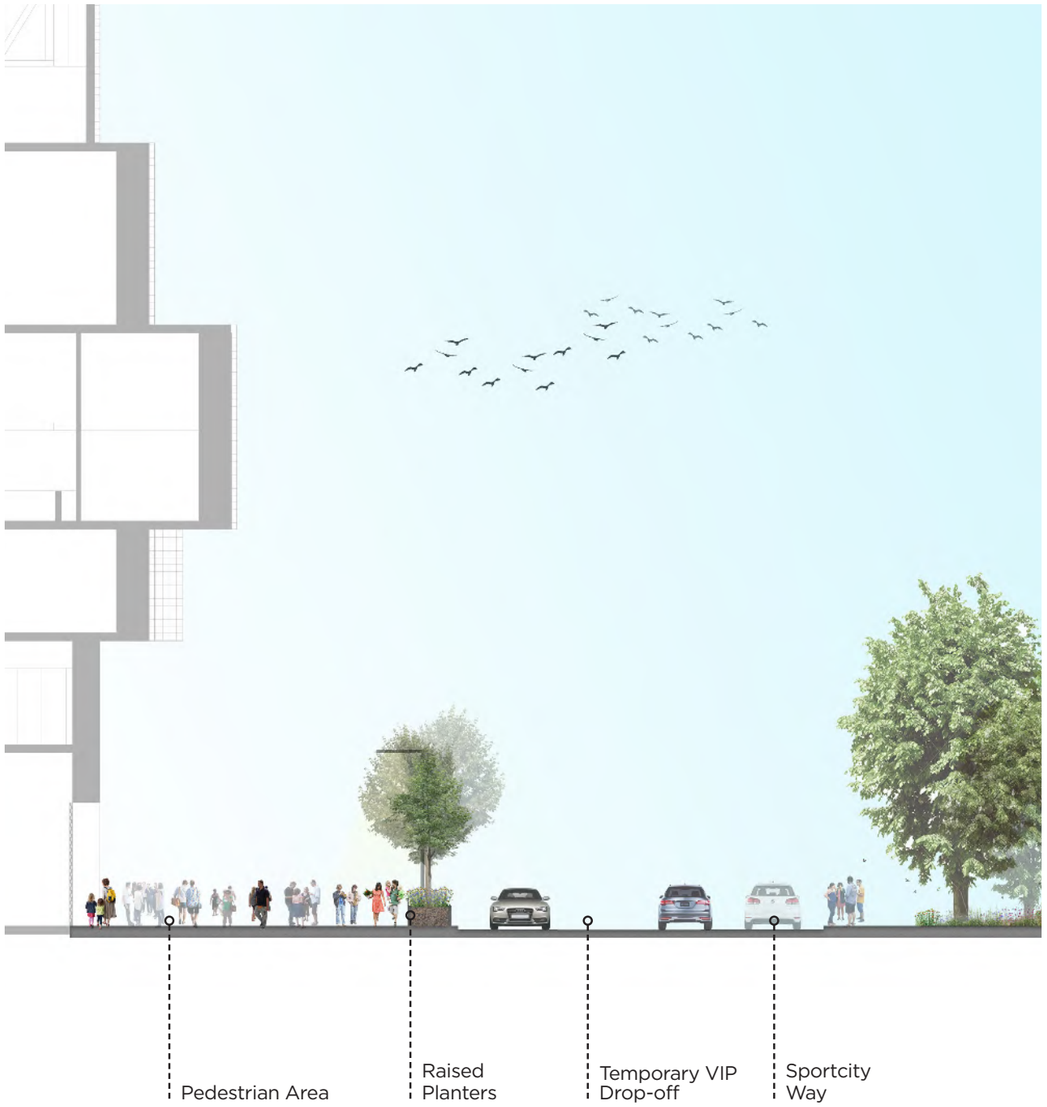
Section C - Green Buffer



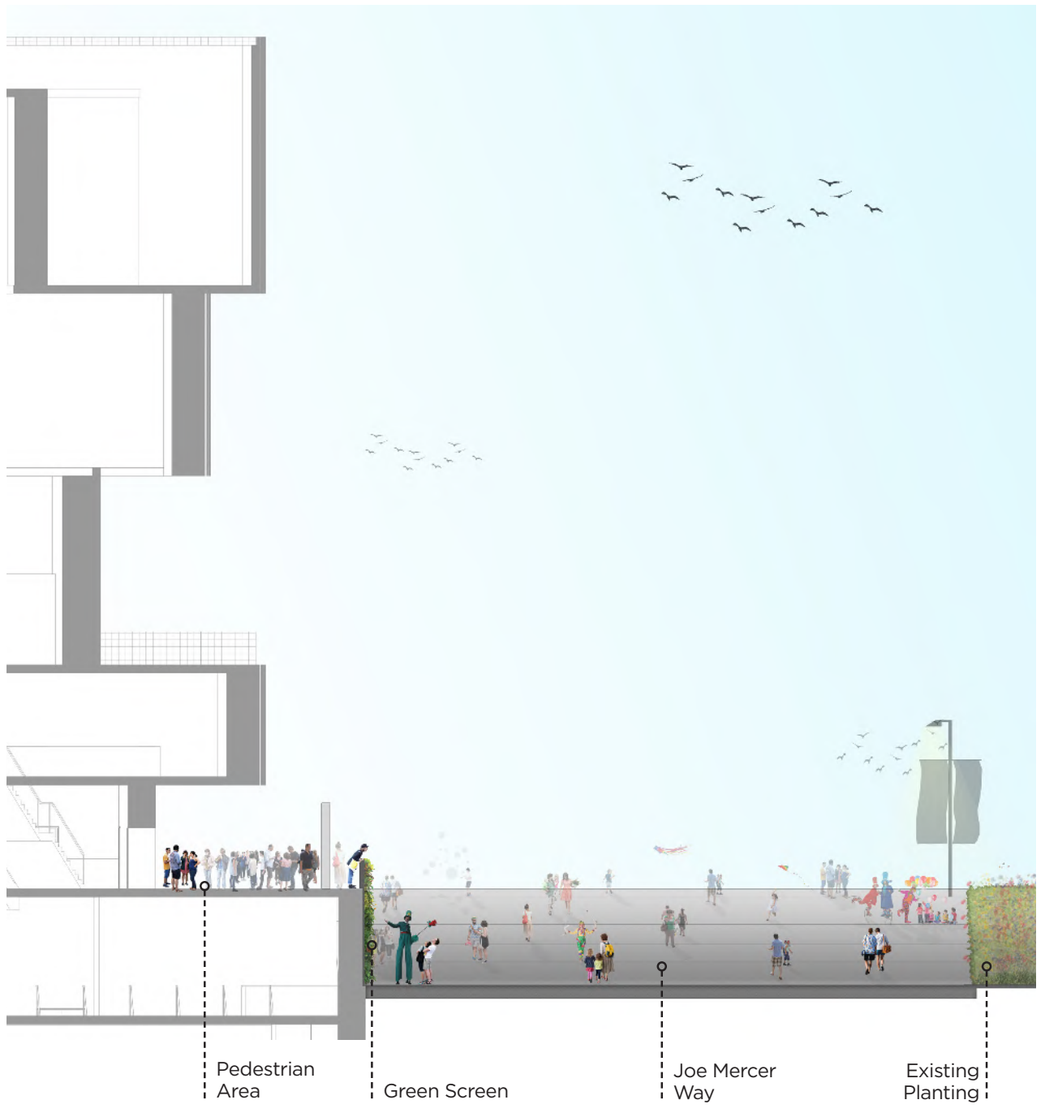
Section D - East Plaza



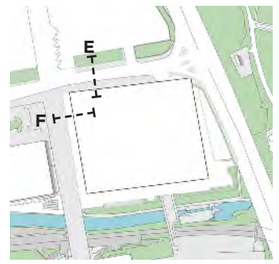
5.8 North and West Sections



Section E - VIP drop-off



Section F - Joe Mercer Way

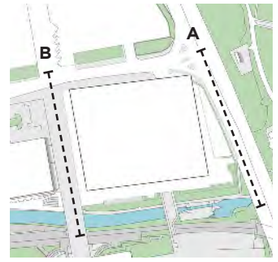


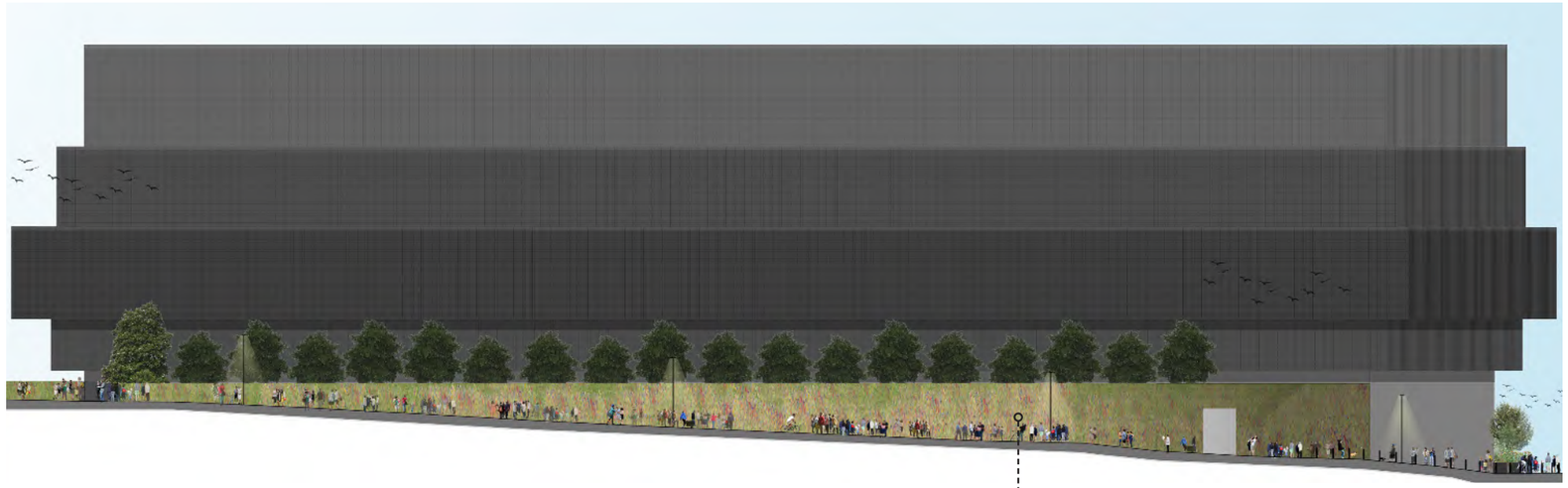
5.9 Green Screen Strategy

One of the key elements to consider in the landscape design is the ecological value of the site and the green infrastructure that can be enhanced by the proposed development. Therefore, as part of boundary treatment, a green screen strategy has been introduced to soften the interface between the site and its surroundings. The proposed green elements will contribute to the 'green factor' of the proposed development while enhancing user experience, attracting local wildlife and supporting the biodiversity policy.

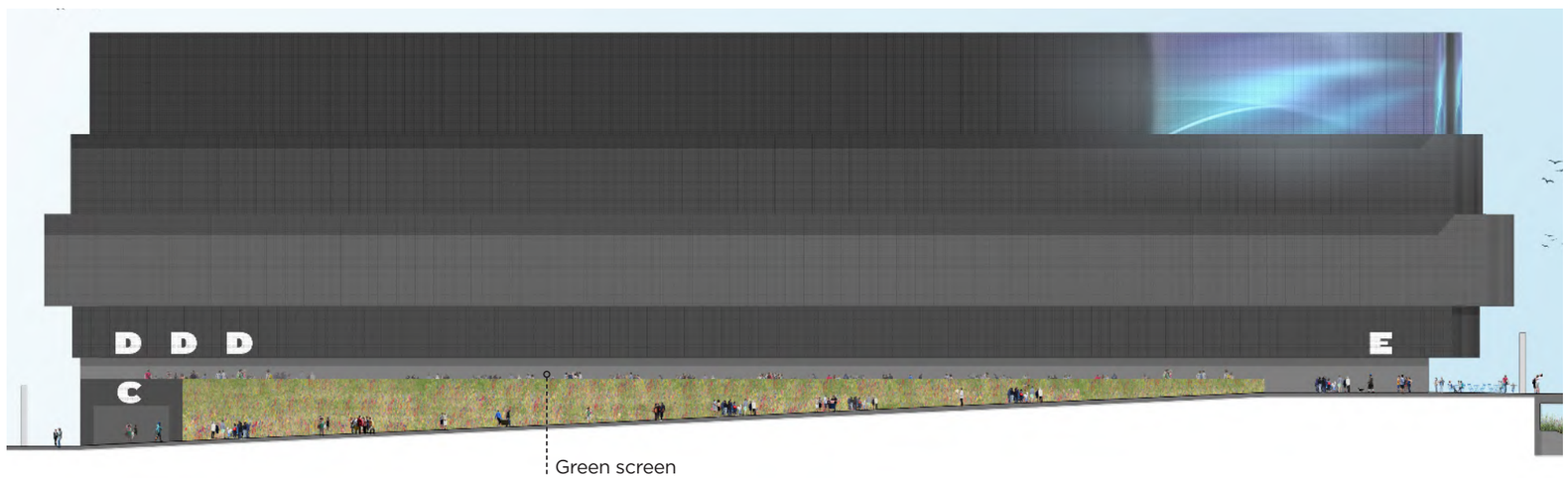
Green screens are present in three different boundaries including Joe Mercer Way, Ashton Canal and Alan Turing Way to bring a sense of unity to the overall development.

The system used for the green screens consists of pre-cultivated individual plant screens covered in various species of climbing plants which are supported by a metal frame and grown in potting soil. By applying this system, a range of climbing species will give extra layers of colours and an instant green effect, adding interest to the visitor experience. The screens link the planting on the podium with the vegetation on Level GF, supporting the concept of a public realm that can be fully experienced along the entire boundary.





East Elevation A - Alan Turing Way



West Elevation B - Joe Mercer Way

Pre-cultivated Green Screen Modules



5.10 Hard Landscape Palette

Paving and Furniture

The hard landscape proposed for the public realm reflects the coal mining history of the area. Materials have been chosen to represent the colliery history and complement the identity of the building achieving a holistic approach.

Block paving is proposed as the main paved area to give a dark canvas that hosts general flows, movements and connections. Two textures are proposed to introduce a second layer of interest guiding users through the space and creating a contrasting pattern when wet.

Seating walls of the same materiality are introduced to retain the soil and vegetation in resting/activation areas. These similar materials strengthen the relationship between both levels and linking them as a single space.

Block paving is also utilised in the compound area to preserve a visual connection with the rest of the paving while fulfilling technical needs.

Timber decking is introduced in resting/ activation areas to provide an extra layer of interest. The softer decking also invites users to sit and relax while partially disconnecting from the crowd flow in darker areas.

Timber tiered seating is also introduced as seating steps with a supporting structure towards Ashton Canal. An inviting viewing point is presented to provide opportunities for formal/informal seating, being able to be used in many ways. The tiered element will play a major role in the scheme as a result of its location, orientation, materiality and use opportunities.

Finally, metal and concrete planters are introduced next to the timber areas, facade and edges to keep a connection with the paving and the building while providing a connection to the rest of green spaces.



Block Paving



Seating Wall



Block Paving





Pre-weathered Timber Decking and Tiered Seating



Metal Planters



Concrete Planters

5.11 Soft Landscape Palette

Trees and Planting

The soft landscape strategy aims to provide a range of native planting species with different purposes such as providing shelter, seasonal interest, dense screening, wildlife attraction and a softer feeling. The robust nature of the proposed species reflects the demands of large crowds moving across space. The planted trees will be planted in a semi-mature or mature state as early as possible during the construction, so when the building officially opens there will be a mature landscape already in place.

The chosen vegetation for wind mitigation features mature, robust and wind tolerant trees and shrubs. Evergreen trees are selected to provide shelter and create comfortable experiences suitable for the proposed uses of space. Shrubs and short trees will play an important role in creating pockets of character and shelter from wind on site as well.

Strategic placement of deciduous trees will allow winter sun through denser planting and provide a second layer of interest displaying sculptural multi-stem species. Seasonal interest is also marked by flowering species which will introduce a second layer on top of the solid colour of evergreen trees.

Due to all the considerations explained, trees are proposed to be installed as semi-mature in order to fulfill a fully functional landscape from the beginning of the development. Moreover, trees will achieve a better effect and performance if planted in tree pits rather than planters, which also supports the current design.

The biologically diverse meadow and wild flower species connect with existing surroundings by introducing native species, attracting wildlife and reflecting seasonal change while providing a lush look to the visitors walking along Ashton Canal. The southern podium will present understory planting mixes to match the wildflower colours, while the northern side of the site, next to Sportcity Way, will introduce shade tolerant vegetation due to the shadow that the architecture casts on the public realm.

A selection of proposed species can be seen on the right.



Acer Campestre



Betula Pendula



Magnolia Grandiflora



Pinus Sylvestris



Sorbus Aria



Tilia Cordata



Achillea Millefolioum



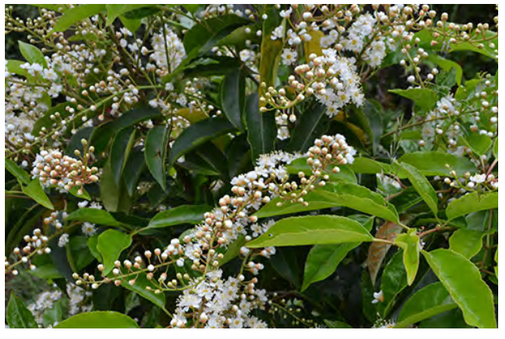
Linaria Vulgaris



Liriope Muscari ‘Monroe White’



Melica Ciliata



Tanacetum Parthenium



Viburnum Tinus

5.12 Soft Landscape Maintenance

OVG will maintain and manage the landscaping and public realm associated with the proposed development, including the wildflower landscaping adjacent to the canal towpath.

OVG is committed to improving the sightlines and attractiveness of the Canal route, which includes through cutting back shrubbery and vegetation. OVG actively support future maintenance in conjunction with relevant stakeholders.

Management of the towpath will continue to be undertaken by the CRT.

Planting Maintenance - General

In order to achieve a fully functional landscape planting maintenance needs to be carried out as follows:

- Maintain planting areas in a substantially weed free condition at all times by mechanical or suitable selective chemical methods.
- Apply selective, translocated herbicide control to any persistent perennial weeds that are present, particularly any with deep persistent roots such as bindweed and couch grass.
- Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows, taking care not to reduce depth or effect of mulch.
- Ensure that trees and shrubs are not damaged by the use of mowers, nylon filament rotary cutters and similar powered tools.
- Every quarter check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Cut back any damaged bark.
- Spray crown of trees when in leaf during warm weather. Carry out in the evening.
- Wildflower meadow requires an annual maintenance programme to allow flourishment and reduce the vigour of the more rampant species. Mowing and weed control are required.

Planting Maintenance - Pruning

Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape:

- Prune trees to favour a single central leading shoot, unless specified otherwise.
- Trim hedges to encourage desired growth form.
- Cut back straggly shrubs to encourage more bushy growth form base.

Planting Maintenance – Cutting Back Herbaceous Material

- As stems mature and die back, remove only those that flop untidily or which are detrimental to the appearance of the scheme. Otherwise it is generally intended that dead stems be left standing over the winter.
- In February cut back all herbaceous plants to just above ground level, removing any accumulated dead leaves and debris.

Planting Maintenance - Watering

Automatic irrigation system will be provided for the planted areas, it will provide the right amount of water for trees, shrubs and understory planting, ensuring a successfully growth for all the new plants.

The irrigation system is designed in accordance with minimum standards of the previous British Turf & Landscape Irrigation Association (BTLIA). A cold-water system will provide irrigation to new trees, shrub and hedge planting within the landscaped areas of the development through automatic watering equipment. Therefore, the maintenance carried out will:

- Ensure that the full depth of topsoil is thoroughly wetted.
- Use a fine rose where appropriate to avoid damaging or loosening plants.
- Water as necessary to ensure the establishment and continued thriving of all planting.

Final Mulching

At the end of the period stated above:

- Ensure that the soil is thoroughly moistened prior to re-mulching, applying water where necessary.
- Re-mulch the whole surface of planting beds as specified above to restore original depth of mulch.

Weed Control

All beds are to be kept clear of weeds by cultivating and using accepted herbicides. Beds will be forked over as necessary to keep soil loose, with accepted cambers and no hollows.

Cutting Formal Clipped Shrubs

The tops and sides of shrubs are to be clipped using hand or mechanical shears as required to maintain box shape and to encourage dense growth.

Re-firming

Trees and shrubs are to be regularly checked, particularly after high winds, and re-firmed and reset to proper grades or upright positions as necessary.

5.13 Proposed Lighting Scheme

Artificial lighting for the site supports evening social and commercial activities. Although amenity lighting is often necessary, it can cause annoyance by unwanted light spilling on adjacent streets, intruding into homes or adversely affecting wildlife. Careful design of the lighting installation can ensure appropriate light levels where it is really needed and guaranties social and ecological benefits.

The proposed public realm lighting design for the new development is largely influenced by the framework plan of the area. The architectural aspiration is to minimise the visual clutter and rely on building mounted lighting to 'fill-in' illumination between the venue and the adjacent Joe Mercer Way, canal waterway, A6010 and access roadways. Where functional lighting in the form of lighting columns is required, particularly along the Canalside of the venue and the east compound area, this will be provided by light fittings that relate visually with the architecture of the venue. The lighting scheme will look to minimise the impact of energy use, promoting lighting design principles and technologies that improve lighting quality, energy efficiency, and environmental sustainability.

Recommended Light Values

The lighting levels have been designed in accordance with the site requirements and to mitigate as much as possible the site's impact on its surroundings and on local wildlife.

Amenity lighting aims to provide a safe and secure environment for pedestrian circulation. The lighting values selected are based on the SLL Code for Lighting and the design is carried out according to SLL Lighting Guide LG6: The exterior environment. Reference is also made to BS EN 12464-2.

Recommended luminance levels for signs are provided in the ILP Guidance note PLG 05 – The Brightness of Illuminated Advertisements. The luminance limits are expressed in cd/sqm and are dependent on the size of the proposed signage. Measurements for the external illumination of the signs is provided for both the illumination level and as a measurement of the building Luminance at the signage positions.

Good lighting is crucial in ensuring that partially sighted people and people with sensory/neurological processing difficulties are able to use external environments and buildings conveniently and safely. Lighting design will accord with BS 8300, as these recommendations now generally align with the recommendations of the SLL Code for Lighting.

Visual Impact, Obtrusive Light and Effect on Wildlife

Careful consideration has been given to reduce the visual impact of the lighting installation during the day, whilst maintaining an adequate level of illuminance on the site. The perimeter of the building will be illuminated by luminaires recessed on the underside of the soffit. Amenity lighting will be supplemented by lighting columns. Additional illumination will be provided by low-level lighting incorporated in landscape elements such as benches.

Particular attention has been paid to minimise any obtrusive light, glare or sky glow produced by the artificial lighting installation. Wherever possible, luminaires are orientated towards the site or mounted on the underside of the building soffit. The luminaire types with sufficient light beam control have been chosen to reduce light spillage. The facade is lit by luminaires located in an enclosed metal perforated panel. Light spill from the architectural lighting will be minimal as the lit effect is a result of the contrast between the dark exterior panel and the illuminated back surface.

With regards to wildlife, best practice guidance from the Institute of Lighting Professionals, in conjunction with the Bat Conservation Trust, is to avoid lighting on key habitats, and to implement buffer zones between the development and the corridor. At the site, therefore, light levels will need to be kept to a minimum adjacent to the canal corridor. This means that any increase above existing light levels should be minimal. Consideration has been given to CIBSE Lighting Guides, SLL Code for Lighting 2006 – Obtrusive Light Guide, Guidance Notes on Reduction of Light Pollution, and BS 5489.

Luminaire Types

The recommended lighting columns for this type of amenity lighting are 6m high. This is the lowest level possible to reduce visual impact whilst being high enough so that vehicles can safely access the site. Luminaires with sufficient light beam control and Colour Rendering of at least Ra80 shall be utilised throughout the site, to mitigate the impact of the lighting scheme on the surrounding area and the local wildlife. Using this type of lamp provides an energy efficient solution compliant with Part L of the Building Regulations. All the luminaries shall have an appropriate ingress protection and impact resistant rating depending on their installation type and location.

All luminaires used for amenity lighting shall have 0% upward light output ratio. The column mounted luminaires have been chosen to be as inconspicuous as possible. Arm brackets shall have 0º tilt and shall be fitted with flat glass to reduce the visibility of the light source.

Landscape lighting will be kept to a minimum on the Canalside and will aim to create a few destination points for the visitors.

Lighting Controls

Photocells and programmable time clocks shall be used to control the exterior lighting so that no luminaries will be left on during daylight hours or when they are not required.

To minimise the light impact on surrounding areas as much as possible a part-lighting strategy will be adopted.

Low Level Lighting

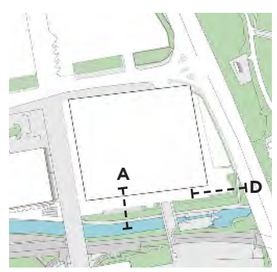
5.14 Proposed Lighting Scheme - Sections



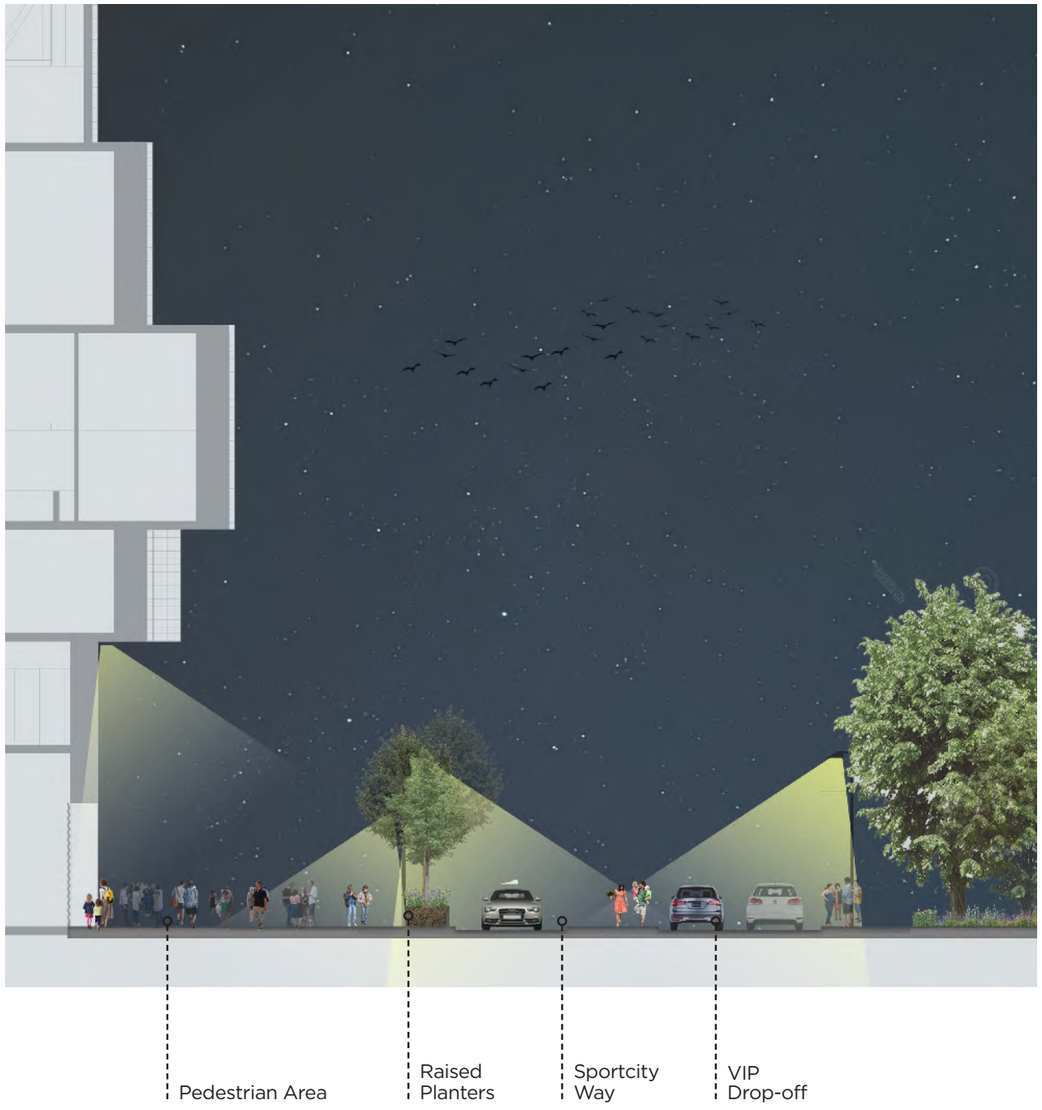
Section A - Timber Tiered Seating



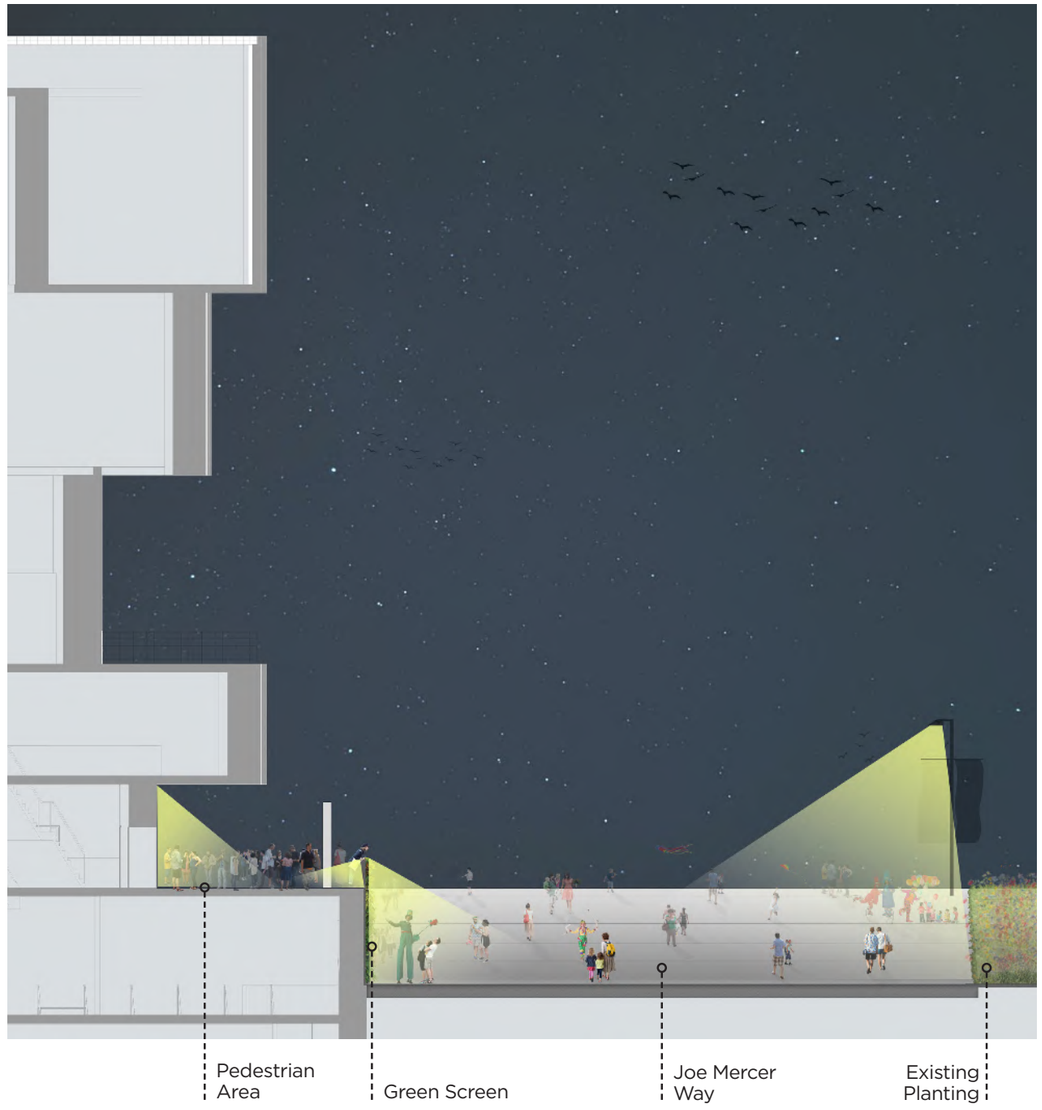
Section D - East Plaza



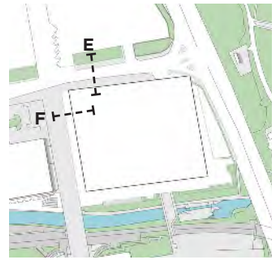
5.15 Proposed Lighting Scheme - Sections



Section E - VIP drop-off



Section F - Joe Mercer Way



5.16 Summary of Canal and River Trust Report

Given the adjacency of the Site to the Ashton Canal, early consultation has been undertaken with Canal and River Trust (CRT), who issued a formal pre-application response on 5 February 2020.

Overall, CRT welcomes the proposal, which will deliver a positive edge to the canal corridor and open up views. The proposed activity generating uses along the canal facing edge will bring vibrancy to the canal corridor, and the proposed wildflower meadow adjacent to the towpath is acknowledged as a real enhancement to the canal corridor and biodiversity.

The CRT response included some detailed comments or recommendations. The applicant's response to these is set out below:

CRT Comment / Recommendation	Application Response
Heritage Recommendation that impact of building scale and mass on setting of listed locks is considered within the planning application.	• The application submission is accompanied by a Heritage Statement which fully considers the impact of the proposed building on the setting of the listed locks. • The Heritage Statement concludes that there will be no harm to these assets as a result of the proposals.
Canal Facing Terrace Arrangements of access to the terrace seating should be reviewed to encourage use of its whole length rather than the ends (i.e. a central access to seating should be explored).	The layout of the Canalside terrace will be explored further to ensure it allows for the maximum, efficient use of the seating area as possible. However, the current proposed design maximises the seating area and supports social engagement by displaying the access on the sides and creating a big central space to enjoy the canal. The layout also follows crowd movement strategy, which requires pedestrian barriers between the planters on the podium level to avoid accidents and obstacles on event days.
Litter Issue raised of litter created from the seating areas overlooking the canal - how litter impact on the canal/corridor from the site can be positively managed needs to be understood.	Litter management will build on the existing regime in place at the Campus. Details of how this will be managed are included in the supporting Operating Schedule and Event Management Plan.
Planting An appropriate scheme of landscaping using native species of planting should be used to protect and enhance the existing ecological network.	The proposed planting mix is set out within section 5.11 Soft Landscape Palette. This mix has been selected to provide as much native species planting along the canal towpath as possible, to enhance the existing ecological network.
Landscape Management Plan Recommendation for a robust landscape management and maintenance plan for the meadows and the green walls along the canal to be included in the planning application documents.	OVG will maintain and manage the landscaping and public realm associated with the Proposed Development, including the wildflower landscaping adjacent to the canal towpath. We suggest that this is controlled via planning condition requiring the submission of a detailed management and maintenance plan for approval by the Local Planning Authority.
Management of Canal Side Landscaping Suggested that there could be potential for CRT to take on the management of the canal side landscaping as it could give an opportunity for volunteering projects.	As set out above, this will be managed and maintained by the Applicant, as it falls within their land ownership. The Applicant is committed to improving the sightlines and attractiveness of the Canal route, which includes through cutting back shrubbery and vegetation. The Applicant will actively support future maintenance in conjunction with relevant stakeholders. The Applicant will explore opportunities for community volunteers to have involvement with management of the proposed canal side landscaping, but overall responsibility needs to sit with the Applicant as land owner and to ensure regular management. It is noted that management of the towpath will continue to be undertaken by the CRT.
Additional Landscaping Recommendation to landscape the area on the Etihad Stadium side of the Ashton Canal as it provides the backdrop to the seating area.	This area forms part of the wider Campus Masterplan. As these plots come forward for redevelopment, the design will include landscaping along the Ashton Canal Boundary, which will form part of the comprehensive landscaping masterplan across the Etihad Campus.
Canal Access CRT would welcome the inclusion of the access steps to the west being included within the application site and reviewed to see if they require any sort of refresh/enhancement. The recommendation was made on the basis that it will be a significant pedestrian route to the arena and should be read as part of the place in the planning application. The treatment of this access needs to be addressed and included in the proposals.	The steps to the west of Joe Mercer Way do not fall within the application boundary. However, these steps will form a key pedestrian access to proposed arena and will be enhanced through the installation of cycle wheeling channel to side of existing steps between Joe Mercer Way and towpath in order to facilitate cycle accessibility.

5.17 Summary of Canal and River Trust Report

Towpath Lighting The existing towpath lighting should be upgraded and considered as part of the scheme. For example removing the existing tall light columns and using low level lighting bollards would provide more appropriate low level lighting and be better for bats and for pedestrians.	Lampposts are proposed to be used as a safety and wayfinding tool for pedestrians and cyclists, which would the design team do not think could be achieved as effectively with low level columns. OVG is committed to working to improve key walking routes between the City Centre (Great Ancoats Street) and the Etihad Campus (subject to relevant approvals), in order to further promote walking to the Proposed Development as an attractive option. On the Ashton Canal Corridor the proposals will include: • Providing art / lighting improvements where the route passes beneath bridges; • Using paint, graphics and lighting on lamp posts to create markers, which clearly designate routes, give information about walking distances and incentivise active travel; • Cutting back scrub / vegetation at strategic points to improve sightlines and attractiveness of route; and, • Actively supporting future maintenance in conjunction with relevant stakeholders.
Construction Management Plan (CMP): CRT recommends that the CMP includes the following • A plan showing the areas of storage of plant and materials used in constructing the development; • Include the steps to be taken to prevent the discharge of silt-laden run-off, materials, wind blow or dust or any accidental spillages or seepage entering the waterway; • Details specifying how the waterway corridor and its uses would be protected during the works and include any details of proposed protective fencing to be erected to safeguard the waterway infrastructure during site clearance / construction.	Management Plan). The potential construction impacts on the canal are addressed within this Outline CMP. We suggest that this is controlled via planning condition requiring the submission of a detailed CMP for approval by the Local Planning Authority
Canal Corridor The canal corridor on the approach to the arena should be enhanced to maximise its usage. For example, lighting of the bridge holes. Given the anticipated uplift in usage on the towpath we would welcome a financial contribution / commitment towards public realm improvements.	The proposed transport interventions set out within the supporting Transport Assessments and Travel Plan include the following improvements to the Ashton Canal towpath route to enhance its use: • Installation of cycle wheeling channel to side of existing steps between Joe Mercer Way and towpath in order to facilitate cycle accessibility • Use paint, graphics and lighting on lamp posts to create markers which clearly designate routes, give information about walking distances and incentivise active travel • Installation of signage at Great Ancoats Street to better signal walking and cycling routes between the city centre and the Etihad Campus • Cut back scrub / vegetation at strategic points to improve sightlines and attractiveness of route. Actively support future maintenance in conjunction with relevant stakeholders • Art / Lighting improvements where route passes beneath bridges.
Wayfinding: Is there the potential for the totems, when the events are not on, to be used to promote canal corridor use?	The digital totems have the capability to promote the use of the canal and towpath, especially to promote walking or cycling into the city centre, rather than taking an unsustainable travel option. As set out above, the proposed transport interventions within the supporting Transport Assessment and Travel Plan include proposed signage at Great Ancoats Street as wayfinding to the Campus along the canal towpath.
Surface Water Discharge CRT need to see further information in relation to SUDs, soakaways, water attenuation, swales etc. and geology for any proposed infiltration, to avoid any detrimental impact on the canal corridor.	Surface Water Drainage proposals are included in the application submission – see Chapter 13 of the Environmental Statement and associated technical appendices (13.1 Flood Risk Assessment and 13.2 Drainage Strategy). This assessment concludes that there will be no detrimental impact on the Ashton Canal Corridor.
CRT Maintenance Skip CRT seek confirmation of whether the Proposed Development would affect CRT's use of Car Park J for the location of their skip.	The Proposed Development will not affect any existing arrangement with CRT on Car Park J.

5.18 External Signage Overview

Digital Totems

- Variable screens provide live ingress and egress information for a better quality user experience.
- Signage to be crowd loaded to 3kn at 1.1m.
- Footing set below the final finish level to avoid trip hazards.
- Signage to be constructed of non-corrosive material and built to an agreed external specification.
- To maintain a consistent level of clarity and visibility, all external signage is to be illuminated.

Approx Size: 760mm x 760mm x 4560mm
Total: 5

Static Totems

- Wayfinding beacons verify and progress user journeys.
- Signage to be crowd loaded to 3kn at 1.1m.
- Footing set below the final finish level to avoid trip hazards.
- Signage to be constructed of non-corrosive material and built to an agreed external specification.
- To maintain a consistent level of clarity and visibility, all external signage is to be illuminated.

Approx Size: 760mm x 760mm x 3040mm
Total: 1

Entrance IDs

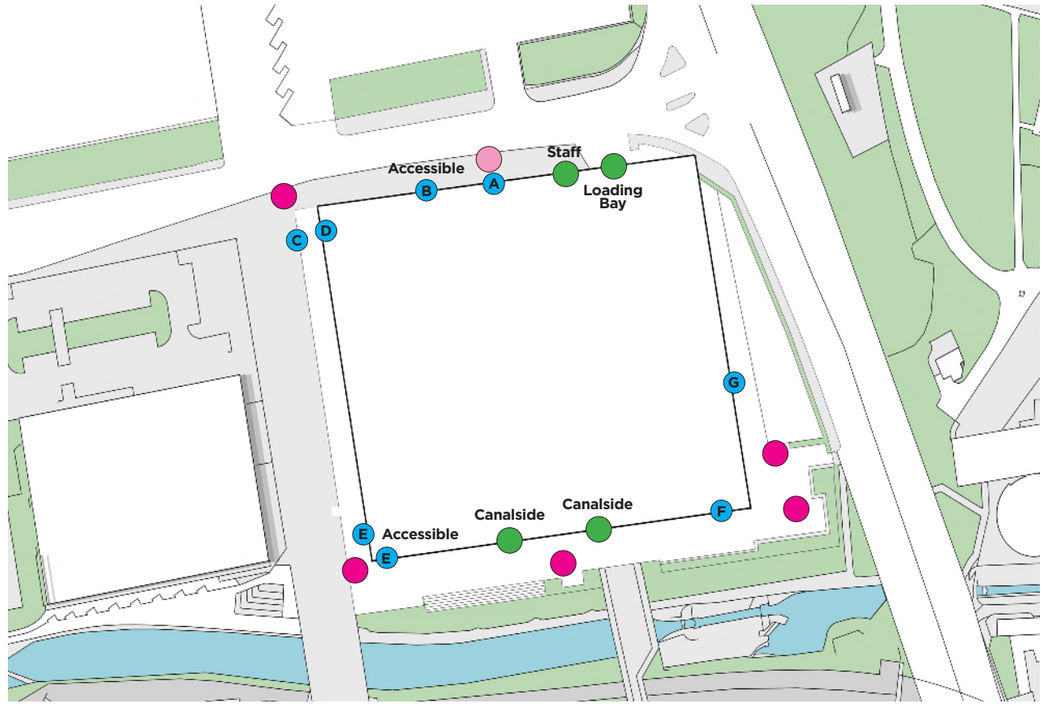
- Venue entrances are highlighted using high-level, impactful signage that can be seen from a distance to aid navigation.
- The signs are applied using the same technology and look and feel as the facade screens to maintain continuity of product types. This will also allow the Entrance IDs to be turned off when not in use and maintain the building form.
- Signage to be constructed of non-corrosive material and built to an agreed external specification.
- To maintain a consistent level of clarity and visibility, all external signage is to be illuminated.

Approx Size: 1850mm height
Total: 13

Static Door ID

- Static Door signage gives additional information on arrival at a destination.
- Signage to be constructed of non-corrosive material and built to an agreed external specification.
- To maintain a consistent level of clarity and visibility, all external signage is to be internally illuminated.

Approx Size: 700mm height
Total: 9



Facade Entrance IDs

Digital Totem

Static Totem

Static Door ID

5.19 Entrances

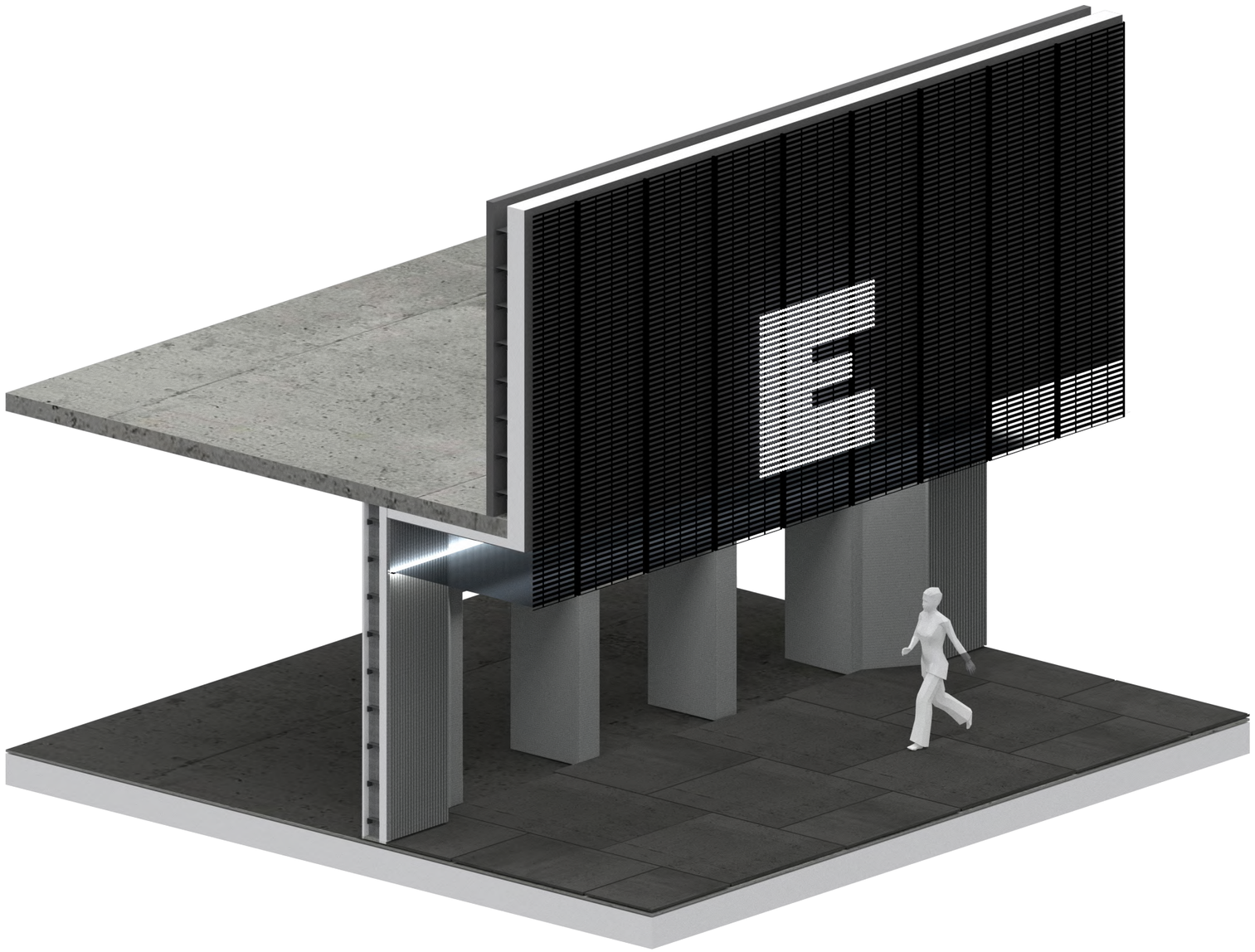
In order to manage crowds and simplify journeys, the public entrances have been named alphabetically as A-G. From these entrances the users will circulate internally to their respective vomitories. Canalside has been given a name as this is a destination rather than concourse access.

By labeling entrances A-G we are able to simplify the journey and use progressive disclosure to supply onward journey information in manageable parts, rather than overloading users with unnecessary, complex information. Using non-specific naming for the entrances also allows for flexible and multiple modes.

Users will enter the venue at Ground Floor Level north or from Level 01 south podium (see section 7.5). The hospitality entrance is on the northern face of the venue. To facilitate access for disabled patrons and patrons that require step-free access there will be two accessible entrances, one located at Ground Floor Level adjacent to the hospitality entrance and one at the southwest corner on the Level 01 podium. Accessible entrances will be clearly signed.

The parameters used as part of design development are:

- All doors are to be clearly identifiable within the facade of the development through the use of signage and lighting.
- Entrance doors should to conform to AD M and BS 8300-2 and provide 1000mm effective clear widths as per AD M Diagram 9.



5.20 Fixed Activation

Our fixed activation concept features 3D forms and lettering for place making. The 3D letters will be large in scale, similar to the adjacent reference images. The size of the letter or forms creates a captivating statement providing a backdrop for social media images and a marquee activation opportunity.

Constructed from mirrored glass and polished steel, the letters will appear solid and reflect their surroundings. The letters will also have a level of transparency on the front and rear facades. Light at night will appear to be semi transparent and will emit light from the internal LED fittings complementing the overall venue lighting system and strengthening the venue's brand identity.

Scale and materiality are key drivers in creating a captivating statement.

Venue Placemaking/Naming Rights

The fixed activation is a key location for maximum footfall and focus in event and non-event mode. Our strategy considers the substantial foot fall from Etihad Stadium along Joe Mercer way.

Instagram Moment

In the digital age it is important to create a moment or place where the content is abstract or unique enough, that it captivates the audience and compels them to capture and share the moment.

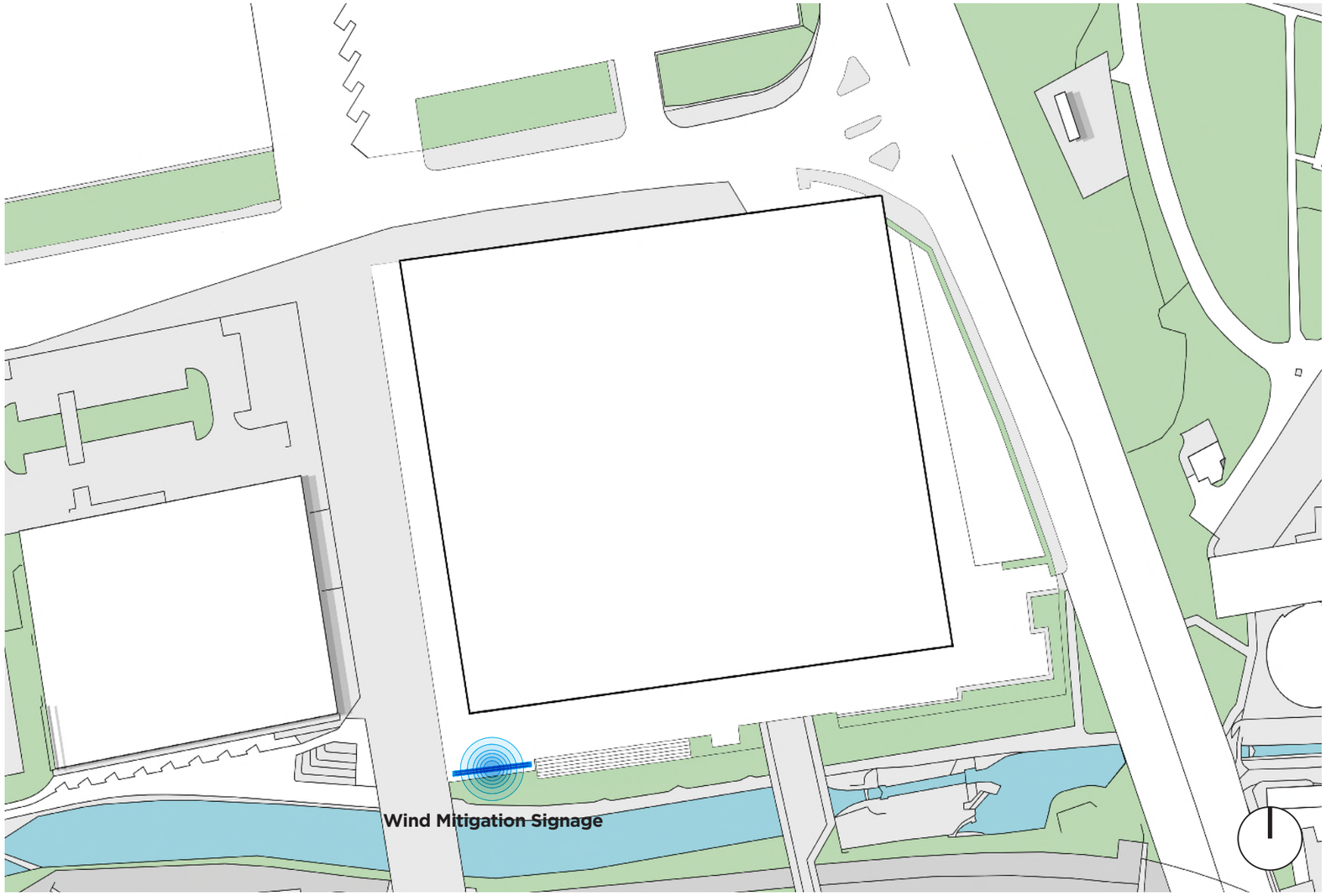
Wind Mitigation

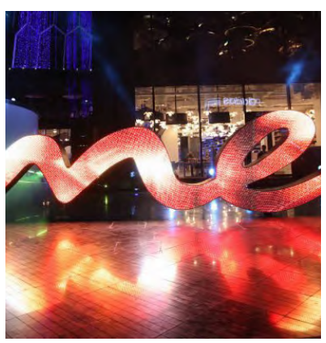
The fixed activation adds to the wind strategy mitigating air flow along the southern podium.

Please see Section 5.2 for wind mitigations

AR Discovery

Augmented reality overlay that brings the naming rights partner brand to life. Unlocking unique content that is aligned to the event.











Reference Images

5.21 Digital Totems

The digital totems provide both variable and static information to help verify and progress user journeys. The variable section of the totem would be able to provide live ingress and egress information. Digital signage also can be used to redirect users in the event of an emergency or build ups of people in one place. Digital and variable signage improves accessibility, venue adaptability and overall user experience. As the venue is to be used for a wide range of events in a variety of different modes, digital signage becomes necessary for smooth operation. There are also opportunities to use the variable screens for commercial content.

Basic Specifications:

Freestanding 4-sided structure. Steel frame construction. Toughened glass fascia panels with masked-out back painted graphics and internal illumination to lower section. LED digital display modules to top section. Recessed floor lighting in paving and 200mm aluminium kick-plate coated black.

Upper section: LED digital displays on up to 4 sides made up of exterior rated 250x500mm modules with 4mm pixel pitch, each screen size approx. 760mm (w) x 1520mm (h).

Power supply and drivers to be contained within lower section of totem. All construction to be exterior rated.

Approximate Size:

760mm x 760mm x 4560mm

Lighting:

Top of totem - Intermittent Internal lighting

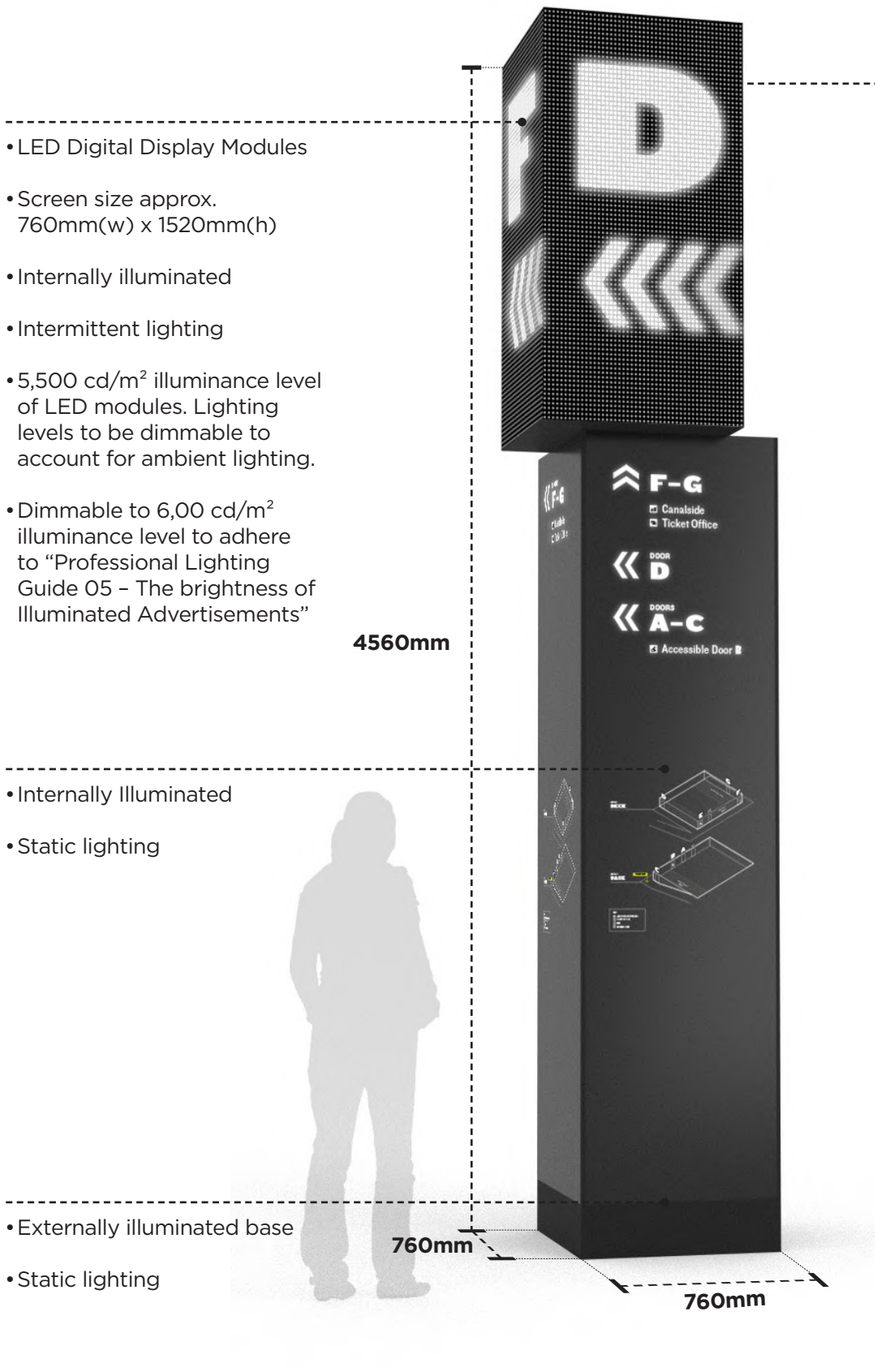
Bottom of totem - Static internal lighting

Base of totem - Static external lighting

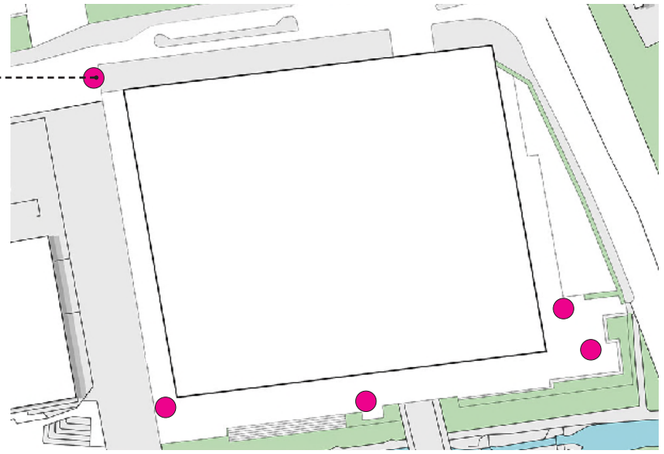
The siting / level of lighting is designed not to adversely impact visual amenity and safety.

Total:

5



Totem Locations



Technology Reference



5.22 Static Totems

The static totems provide permanent information to help verify and progress user journeys.

Basic Specifications:

Freestanding 4-sided structure. Steel frame construction. Toughened glass fascia panels with masked-out back painted graphics and internal illumination. Recessed floor lighting in paving and 200mm aluminium kick-plate coated black.

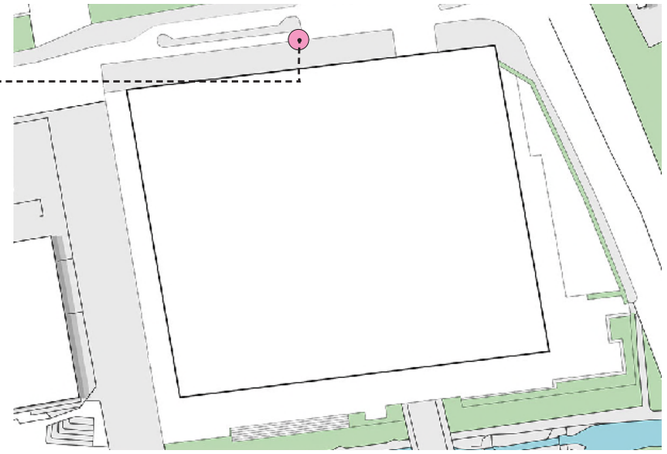
Power supply to be contained within totem. All construction to be exterior rated.

Approximate Size:
760mm x 760mm x 3040mm

Lighting:
Totem - Static internal lighting
Base of totem - Static external lighting
The siting / level of lighting is designed not to adversely impact visual amenity and safety.

Total:
1

Totem Locations



5.23 Totem Information Tables

Digital Wayfinding Totem Information Table

Criteria	Digital Wayfinding Totem Signs
Plan Reference	BRA-POP-XX-XX-DR-YW-0660-00
No.	5
Height From the Ground to the Base of the Advertisement(s)	0 mm
The Dimensions of the Proposed Advertisements (h x w x d)	4560 x 760 x 760
The Maximum Height of Any Individual Symbols and Letters	760mm
The Colour of the Text and Background	Masked out back painted black graphics. White internally illuminated text.
Material of the Proposed Sign	Steel framed construction with toughened glass fascia panels.
The Maximum Projection of the Advertisement From the Face of the Building	N/A – Freestanding four-sided structure.
Internal / External Illumination	Internally illuminated totems. Externally illuminated at the base = recessed floor lighting in paving.
Illumination Levels (cd/m)	Maximum 4,000 cd/m illuminance level of LED modules. Lighting levels dimmable to account for ambient lighting. Dimmable to 600 cd/m illuminance level to adhere to “Professional Lighting Guide 05 – The brightness of Illuminated Advertisements”
Static or Intermittent	Lower section: Static. Upper section: Intermittent.
Additional Info	LED screen display modules size (upper section): Width 760mm; Height 1,520mm; with 4mm pixel pitch. Signage to be crowd loaded to 3KN at 1.1m.



Static Wayfinding Totem Information Table

Criteria	Static Wayfinding Totem Signs
Plan Reference	BRA-POP-XX-XX-DR-YW-0660-00
No.	1
Height From the Ground to the Base of the Advertisement(s)	0 mm
The Dimensions of the Proposed Advertisements (h x w x d)	3040 x 760 x 760
The Maximum Height of Any Individual Symbols and Letters	200mm
The Colour of the Text and Background	Masked out back painted black graphics. White internally illuminated text.
Material of the Proposed Sign	Steel framed construction with toughened glass fascia panels.
The Maximum Projection of the Advertisement From the Face of the Building	N/A – Freestanding four-sided structure.
Internal / External Illumination	Internally illuminated totems. Externally illuminated at the base = recessed floor lighting in paving.
Illumination Levels (cd/m)	600 cd/m illuminance level to adhere to “Professional Lighting Guide 05 – The brightness of Illuminated Advertisements”
Static or Intermittent	Static
Additional Info	Signage to be crowd loaded at 3KN at 1.1m.



5.24 External Smart Wayfinding

There are opportunities to develop smart wayfinding through the use of bespoke apps and app/technology partnering.

This platform could provide:

- Accessible wayfinding support
- Live locations
- Live queue information
- Live egress and transport information
- Location sensitive push notifications

As well as wayfinding this platform could also provide:

- Loyalty schemes
- A contactless cash alternative
- Pre-loaded offers/discounts
- Syncing with other platforms to scan for recommended events

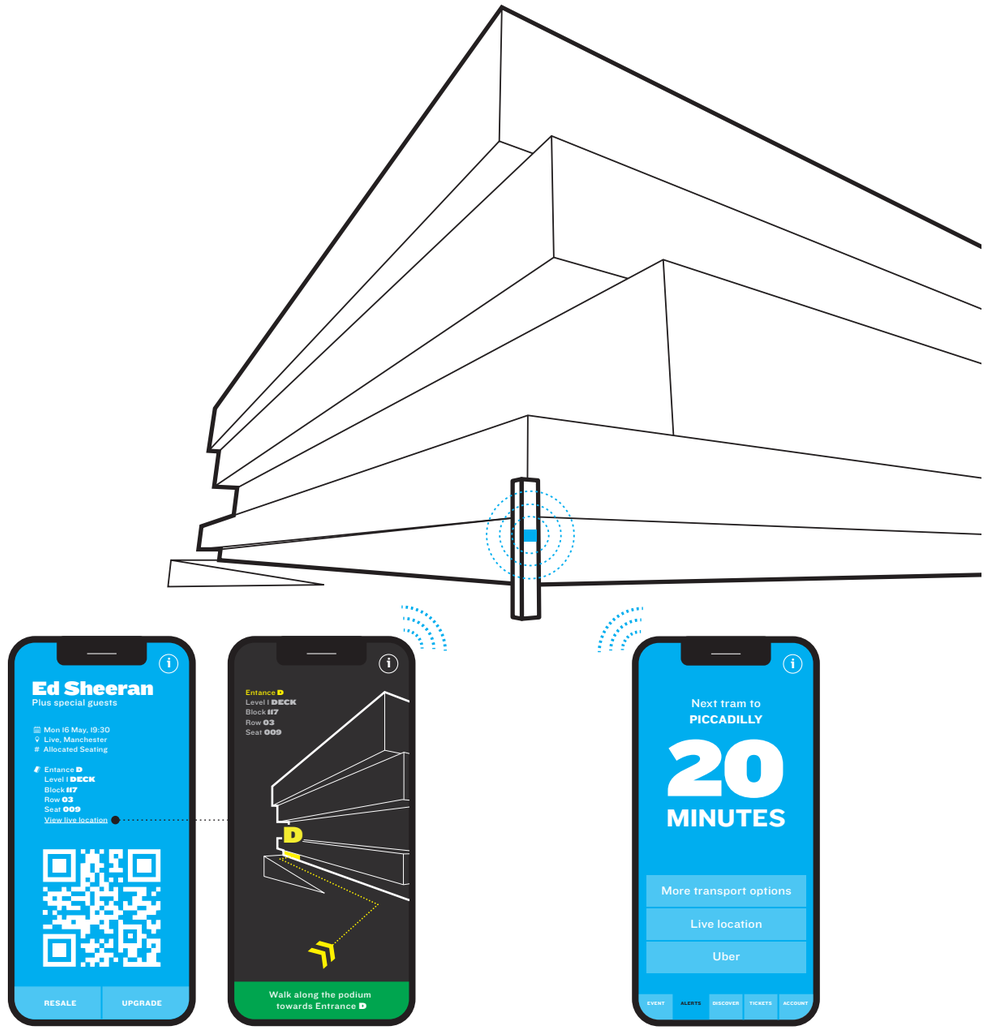
NaviLens Technology

Smart wayfinding could be provided using technology such as NaviLens, which would enhance the user experience by providing a personal, connected and holistic offer throughout the building.

NaviLens Features

- Reading markers with NaviLens is almost instantaneous.
- Capable of reading the labels from long distances, depending on the size of the marker.
- No need for focusing, which is essential for people with visual impairments.
- NaviLens algorithm detects the tags when the user is walking or in motion while the cell phone is pointed up.
- NaviLens accurately detects the distance between the user and the tags. In addition, NaviLens provides the relative angle of the user with respect to the tag.
- It detects multiple tags simultaneously, efficiently communicating them to the user.

*NaviLens has been used as a benchmark technology and there are other technologies available for possible use.



Personalised Wayfinding

NaviLens markers located around the site supply live location data. This could then be translated into a personal wayfinding solution.

Live Egress And Transport Information

By partnering with third-party transport apps, live transport information can be sent via push notifications.

5.25 Internal Smart Wayfinding

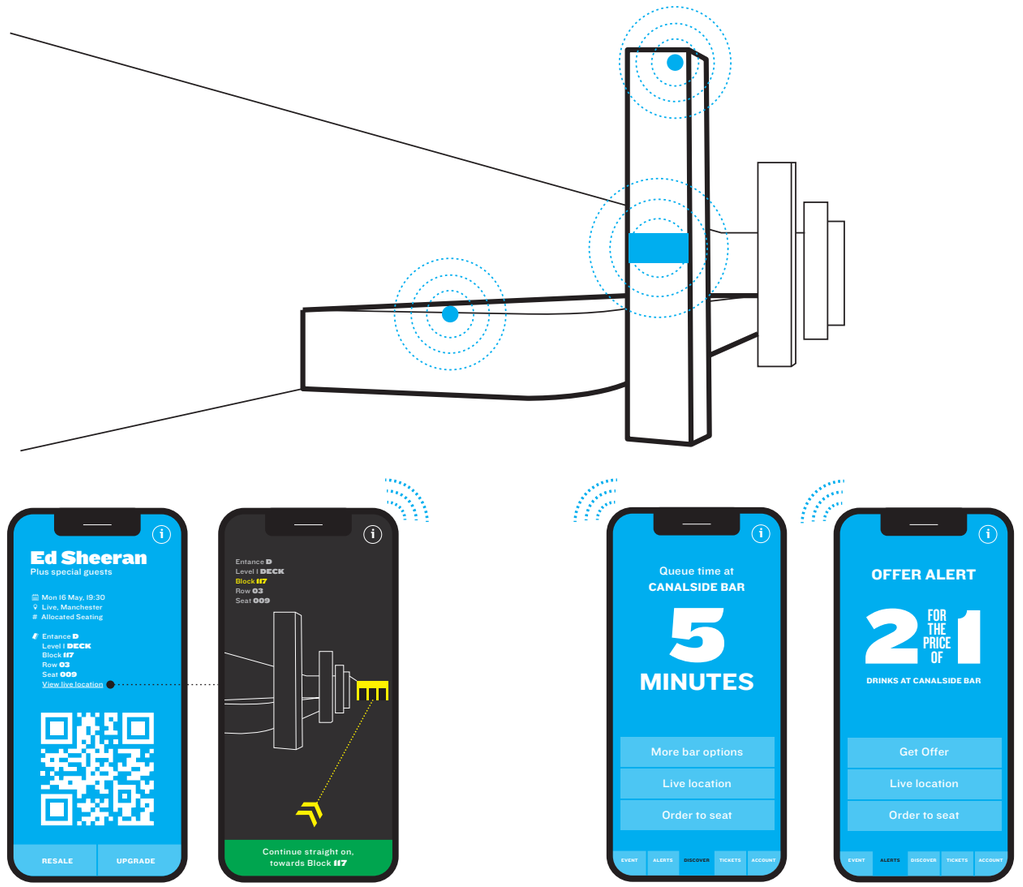
CrowdVision Technology

The user experience could be further enhanced using a technology such as CrowdVision. CrowdVision's pedestrian analytics solution processes live video input from commercial off-the-shelf cameras. The system detects pedestrian movements automatically and outputs live data about everything from flows, queues and wait times to processing times, occupancies, and asset utilisation. As it is video based it captures every user, not relying on just people using or having a phone.

CrowdVision Features

- Creates a dashboard of information and insights for operations staff to help them make informed decisions that can improve the movement of people through spaces.
- Works reactively (real time conditions) and pro-actively (predicting future conditions based off past experience).
- Data generated can be used to automatically control other systems.
- Can also be used to monitor the effectiveness of retail outlets and how people interact with the environment, useful for activated spaces and selling spaces to brands/concessions.

*CrowdVision has been used as a benchmark technology and there are other technologies available for possible use.



Personalised Wayfinding in Venue

NaviLens markers located around the site supply live location data. This could then be translated into a personal wayfinding solution.

Live Queue Information

CrowdVision technology can be used to generate live data about queues and wait times. This can then be combined with other technologies to provide live directions to other facilities

Location Sensitive Push Notifications

Push notifications relevant to your location can be used to provide offers and deals and generate more spend.

SECURE BY DESIGN

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6.1 Summary of GMP Report 107

6

6.0 Secure by Design

Introduction

Safety and security has been given the highes priority throughout the design and operational planning for the venue. The security strategy for the OVG Manchester Venue will provide a safe and secure environment for staff, visitors and public clients, reducing the opportunity for crime, the fear of crime and ensuring the confidentiality and privacy of venue business functions. The security strategy has been discussed and agreed with the appropriate bodies.

Furthermore, the security design helps planners and planning applicants deliver the venue with a compliant security strategy within the revised National Planning Policy Framework (NPPF) 2019, Green Guide 2018 and CPNI Counter Terrorist and Design out Crime advice and recommendations.

Thus the context against which security is prepared:

- NPPF (February 2019 - Chapter 8 (Promoting healthy and safe communities) and paragraphs 95(a)
- The Green Guide – 2018 6th Edition paragraph 3.1 allowing the security design to assist with Safety and security planning, Counter Terrorist plan, security overlay, communications and control (24/7 control room and event control room), CCTV provision, CCTV assessment of need through the security Risk and Threat Assessment
- Greater Manchester Police (GMP) Counter Terrorist Security Advisor (CTSA), Design Out Crime and Architectural Liaison Officer (ALO) recommendations.

The strategy takes account of the two core periods of activity for the venue, event and non-event periods. It is during the event periods that security mitigation measures are increased in a scalable and proportionate manner.

During event periods, the OVG Manchester Venue will be classed as a Crowded Space and so counter terrorism (CT) measures are essential; and as such, protection from hostile actors has been identified as requiring key mitigation measures.

NPPF 2019 does not make specific note on the above; this is a CPNI statement. However, it reflects that premises may be subjected to a wide range of malicious threats and that such locations (similar to this site) attract high densities of users which may be targeted by terrorists. NPPF 2019 has improved matters significantly over the NPPF 2012 framework for references to crime prevention. It now contains a section dedicated to promoting healthy and safe communities. It goes on to stress the importance of appropriate and proportionate security.

As NPPF is a material consideration, its effects are immediate and not dependent upon a local authority. In this, it is important that this report forms part of the planning submission which addresses the OVG Manchester venue security issues.

Integrated Approach

The principal objective of this report is to demonstrate that all aspects of security have been given the highest consideration and that qualified security consultants have informed the design from the earliest stages resulting in appropriate, agreed and effective mitigation measures and strategies. The security strategy includes, but is not limited to, pedestrian and vehicle access control, hostile vehicle mitigation measures, surveillance, intruder detection, lighting, pedestrian and vehicle screening/ validation, search as appropriate, and security control facilities as well as an overview of the key threats and vulnerabilities identified in the Threat and Risk Assessment.

Liaison with the Counter Terrorist Security Advisors (CTSA) and ALO from GMP was established early during RIBA Stage 3. The involvement of the CTSA & ALO will remain through the development of the security strategy, including the production of the Crime Impact Statement (CIS) submitted by GMP ALO to assist in that crime prevention concerns are discussed and addressed where possible. The security strategy will progress through to project completion in accordance with approved standards; assurance will be maintained through the identification of security products and contractors and project management of installation.

Environment Quality and Structure

Externally, during non-event periods, security will be maintained as appropriate, accompanied by integrated lighting and CCTV coverage of the immediate surroundings. Etihad Campus maintains a fence and gate secure line, which effectively closes off the campus as required. The introduction of the OVG Manchester Venue will see this secure line maintained within the campus. During the lead up and including event periods (threats dependent and as an operational matter), the scalable security measures of Hostile Vehicle Mitigation (HVM) measures will be active. These measures are aimed to prevent non-authorised vehicle activity into the delivery area and the pedestrian areas along Sportcity Way (SCW) and to provide a protective stand-off from organised crime and / or terrorist activity, whilst also ensuring a safe environment for pedestrian movement.

The minimal ground floor and other accessible glazing should be to a minimum of EN 1627 and EN 356 for curtain wall façade and windows (definition is RC 2 (resistance class 2 EN 1627), P4A (EN 356) both meeting an attack time of 3 minutes to reduce the risk of theft and vandalism.

The opportunities for crime have been minimised through careful design, with few places hidden from observation; those that remain will be treated with lighting, CCTV and landscaping. Places to congregate will be limited to those where it is desired.

Access, Ownership and Surveillance

Access points to the venue have been kept to a number to allow for mass event entrance, evacuation and emergence exit. There are separate access points for General Admissions (GA), VIP, disabled and staff. All entrances will undergo search and screening. These shall be via Walk Through Metal Detectors (WTMDs). The Venue is expected to operate a no bag policy, except for bags that are no larger than A4. These bags as a condition of entry shall be searched via table ‘rummage’ search.

The venue internal layout has been designed to ensure that there is clear delineation between public and private areas Front of House (FoH) and Back of House (BoH) through vertical and linear separation; this will help enhance a sense of ownership and responsibility. The ‘internal street’ scene has also been designed to provide good natural surveillance, with clear lines of sight, and maximum staff activity, supported by high levels of lighting and where required, including CCTV coverage.

Access to BoH areas will be for authorised staff, performers and escorted visitors only. This separation has enabled the development of a clear security zoning concept for the main modes of operation (normal business hours, events use and fully closed down), which will be enforced through the deployment of technical security systems and a twenty four hour security presence via the day-today Security Control Room (SCR).

A separate service and delivery yard is designed at ground floor level in the north east quadrant to provide flexibility of use, and a safe and secure area in which to operate away from publicly accessible areas. In order to reduce ambiguity of movement and use; clear signage will direct visitors to the appropriate areas. There is a clear concept of defensible space during all modes of venue operation, albeit achieved through different physical measures, security systems and operational processes.

Crime Prevention and Physical Protection

Specific areas of security risk have been mitigated through careful design and the deployment of physical protection measures. The risk to staff from disgruntled visitors has been addressed through the location and design of an access controlled separation. The risk associated with cash handling will be addressed through the security of the cash rooms, however, the aim is for a cashless venue where practicable. Strong lighting and continuously monitored CCTV will provide additional reassurance to all areas.

6.1 Summary of GMP Report

A Crime Impact Statement has been prepared by Greater Manchester Police to accompany the planning application. This concludes that the proposals will enhance the existing offer at the Etihad Campus and the additional activity will help support policing and natural surveillance.

Below the CIS includes the following recommendations and the applicants response to each point:

6.1.1
Recommendation

Any planting should avoid creating concealed areas or hiding places, and should not obscure sight lines close to circulation areas. The position of trees should be devised in conjunction with lighting and CCTV proposals in order to avoid blocking effective coverage. Account should be taken of the likely growth characteristics and maintenance regime.

Applicants Response

The proposed planting scheme has been designed in accordance with this recommendation.

Immediate elevations/facades on all four sides will not have planting impeding views.

The main circulation routes and entrances are obvious and unobscured, leading people directly to where they need to go.

Careful consideration has been given to ensuring that the position of trees and lighting do not block effective CCTV coverage, with clear lines of sight.

The public realm spaces will be managed and maintained regularly to ensure the environment remains attractive and safe.

6.1.2
Recommendation

No long-term (over the course of an event) event user car parking should be provided within 30 metres of the building, to provide adequate standoff when considering vehicle borne IEDs.

Applicants Response

The nearest parking spaces are 44 metres from the northern façade and comply with this recommendation.

The VIP drop-off and pick-up area will be managed on event periods and no parking shall occur in this area.

Marshalling will also be provided to the dedicated private car pick-up and drop-off facilities to ensure that these operations can be managed effectively and efficiently without adverse effects on other modes.

Double yellow-lines, clear signage and manual management will also be in place to prevent long-term parking on Sportcity Way and within the pick-up and drop-off area.

6.1.3
Recommendation

Any glazing to proposed elevations along or in close proximity to crowded pedestrian routes should incorporate laminated glass.

Applicants Response

All glazing other than that with solid backing to the rear, such as glazing to spandrel panels and shadow boxes shall include laminate glass with a minimum 1.52mm thick Polyvinyl Butyral (PVB) interlayer for the inner pane.

For structural silicone glazing (SSG) systems, the bonding to façade frames shall be to the laminated panes of Insulated Glazing Units (IGU). Where the glazing retention is via pressure plates/caps, the bite of the pressure plate/cap shall be minimum 30mm. All other panes of laminated glass shall be either toughened glass or laminate with 1.52 PVB interlayer.

6.1.4
Recommendation

Consideration for safe bicycle storage should be embedded within the landscape design of the wider campus. Short stay cycle parking stands should be located where they can be readily observed. The location of cycle stores within the area should consider the position, inherent physical security, and safety of cyclists using the facility. Cycle stands should be located 30m from the building to provide adequate stand-off when considering IED's.

Applicants Response

A campus wide approach to bicycle storage is being undertaken and embedded within this is the need for storage to be secure and easily observed and located by users, at key entrances to the campus.

The application proposals will deliver another 240 secure covered spaces within the campus, and the expectation is that there will be a significant further enhancements to campus site storage by the time the arena opens.

No cycle stores are proposed within 30 metres from the building.

6.1.5
Recommendation

Given the high levels of graffiti within and around the site, it is important that external cladding materials at ground floor are sealed, protected and supports the removal of graffiti. Developments which contain graffiti can be an indication that the buildings management regime in respect of graffiti is a low priority. If graffiti is left on buildings/surfaces it can lead to further acts of graffiti and/or damage towards the building and creates a lasting impression of a lack of care towards the building and public realm. Overtime neglected buildings / public realm can instil a sense of insecurity towards the area. It is understood from the design team that a measurement above the plinth level, on exterior surfaces only, shall have anti-graffiti film applied.

Applicants Response

The design accords with this recommendation.

Anti-graffiti coating will be applied to the external materials at ground floor level. Above the plinth level, exterior surfaces only shall have anti-graffiti film.

6.1.6
Recommendation

Transport routes which dissect the area can form conduits for crime and anti-social behaviours. Movement along them (canal tow paths and tram lines), should be audited for the boundary security and suitability and a maintenance programme be implemented to ensure a lasting secure line against the canal towpath.

Applicants Response

A range of physical improvements to walking and cycling routes are proposed to improve the attractiveness and safety of these routes. These are outlined in the supporting Transport Assessment and Travel Plan.

In addition, the use of walking and cycling routes between the City Centre and the Etihad Campus will be facilitated through stewarding and management along the route. The need for and extent of stewarding and management will typically be evaluated on an event by event basis and will also be informed by experience obtained during an initial 3 month period, where stewarding will be in place for all events.

The venue will work with key stakeholders to ensure an integrated approach is taken.

6.1.7
Recommendation

The development of the public realm space will encourage further significant pedestrian footfall in the area. The aspirations of the plans also seek to extend the use of this space beyond event times. It is therefore recommended that planners, developers, and architects concerned with this development consult with Counter Terrorism Security Advisors (CTSA), throughout the planning and implementation of this development, with a view to ensure that protection from VAW attacks is as comprehensive as realistically possible. This engagement will also afford the opportunity to consider other attack methodologies and potential mitigations against them. The design team have on a number of occasions discussed the proposals with a GMP CTSA consultant and team leader

and most, if not all, public dwell spaces are within protected HMV ‘zones’.

Applicants Response

The Proposed Development has been designed from the outset through continued consultation with the Counter Terrorist Security Advisors (CTSA) and the Architectural Liaison Officer for GMP. This has been essential to understanding the latest crime information, the identification of appropriate design measures and the subsequent overall design of the Proposed Development.

The Applicant will continue to work with CTSA to ensure best practice.

6.1.8
Recommendation

Security measures carefully incorporated into the building design can ensure the building is reasonably secure, without visibly announcing that the design was concerned about crime. The Proposed Development provides the opportunity to include security features built into the design and construction of the building and avoid the need for obtrusive retro-fitted securing measures that can increase the fear of crime.

Applicants Response

Security measures have been built into the design of the Proposed Development from the outset based on the Threat and Risk Assessment (agreed with by the client and the client’s security adviser, Protect Advisors).

These have been presented to and agreed with GMP, including the Architectural Liaison Officer and CTSA.

ACCESS

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7.0 Accessing the Site

The Site is within a highly sustainable location as set out in Section 2.4, with sustainable modes of transport already being a favourable option for visitors and staff to the Etihad Campus. The Applicant will establish a Transport Management Group with key stakeholders including MCC, TfGM, the Police, local public transport operators and other Travel Plan Coordinators in the area (including Manchester City Football Club) to help develop ideas, overcome barriers and share best practice with regard to sustainable travel at Etihad Campus and in relation to this Arena Travel Plan.

To further support the Etihad Campus and the Site as a sustainable destination, the Proposed Development has been designed firstly to promote pedestrian and cycle movements and secondly to facilitate access to high quality public transport.

The pedestrian strategy will utilise the existing pedestrian routes towards the Etihad Stadium along Ashton New Road, Citylink and the Ashton Canal Towpath. The Applicant is committed to working to promote and improve these key walking routes between the City Centre (Great Ancoats Street) and the Etihad Campus (subject to relevant approvals), in order to further promote walking as a viable option to the Proposed Development. The Travel Plan will be in place to ensure users are aware of the appropriate routes to use during event days, including the use of stewards.

Notwithstanding the existing cycle parking capacity across the Etihad Campus, the transport interventions proposed to encourage walking and cycling include the provision of 240 covered cycle spaces at locations where cycle routes enter the campus to supplement these existing spaces.

In addition, Three Park and Ride facilities are also located on the line that serves the Site at Ashton Moss (200 spaces), Ashton West (195 spaces), Ladywell (450 spaces). In addition, there are a total of over 2,300 further Park and Ride spaces located across the remainder of the Metrolink Network.

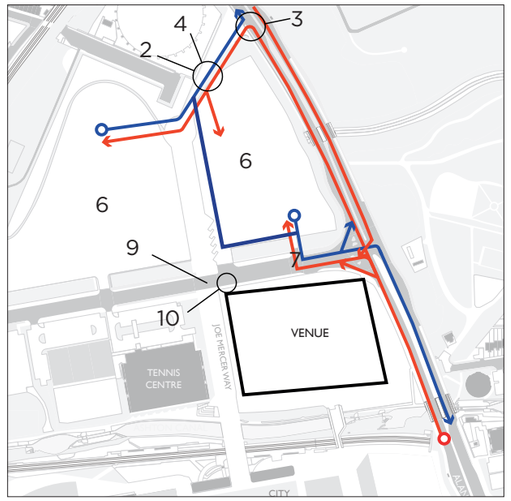
A Travel Information Pack and website information will include details on local Park & Ride facilities that are available on event days and non-event days. The Applicant will investigate discounts with local Park and Ride operators for employees and visitors. In addition, shuttle bus services will be provided between the Etihad Campus and the City Centre.

A Travel Plan has been prepared and is submitted in support of this planning application, which details the measures for the promotion and enhancement of sustainable transport modes for staff and visitors to the Proposed Development in addition to the other measures that the Applicant is committed to from a access and highways perspective.

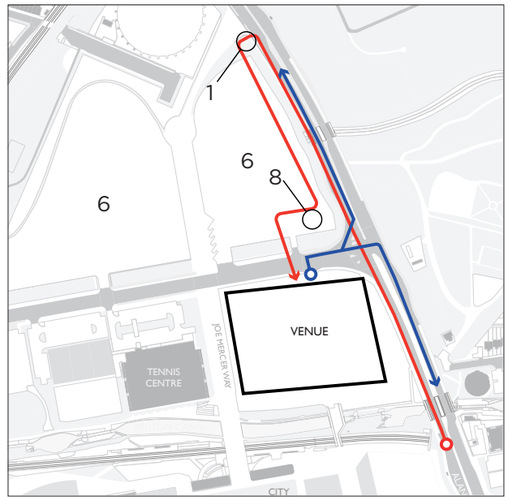
Access and how congestion and disruption is dealt with in the local area

- There will be no increase in parking capacity within the existing campus, with a greater emphasis placed on sustainable transport. The number of vehicles for an arena event is expected to be less than a stadium event and congestion on local roads will be reduced by a comprehensive residents parking scheme and will be introduced after consultation with residents.
- An additional entrance in the north of the car park is expected to reduce congestion on the public highway.
- Increased car park egress capacity for cars exiting onto Alan Turing Way – extra lane to the north and south respectively. Cars going north are encouraged to go to the north exit. This north exit was used in the past and deemed to have worked well for car egress. Improved pedestrian flow provision will also better manage the car/pedestrian interface at the north exit. This will provide a safer experience and will ensure the car parks and surrounding roads are cleared quicker, thereby reducing the impact on local residents.
- Temporary traffic management shall be adopted to help cars turn left out of the north exit and minimise impact on Alan Turing Way.
- Venue car parking expected to be managed using a pre-booking system.

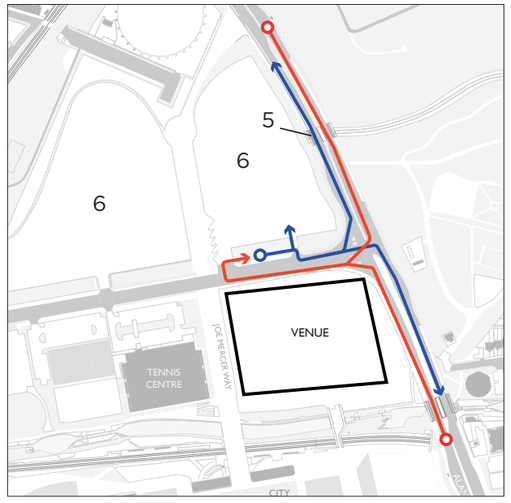
Car Access



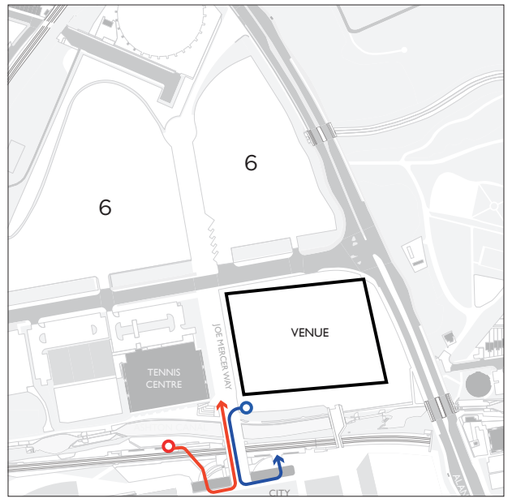
Service Vehicles



VIP



Tram Station Access



1 - New left turn access to be designated for use of service vehicles only.
2 - Existing route used to provide vehicle access to and from the Western car park.
3 - Realigned cycle path to suit new junction arrangement.
4 - 8m wide pedestrian route separated from vehicle traffic by kerbs.
5 - Venue service vehicles stacked within carpark as needed.

6 - Car park arrangements remain unchanged, however will be developed as the activity at the campus increases in a long term strategy.
7 - Existing access used for car park egress. Widened to provide two lanes directly to ATW junction.
8 - Venue Security screening area.
9 - Route closed to vehicular traffic after game or event.
10 - Footway widened for Venue visitors.

Entry
Depart

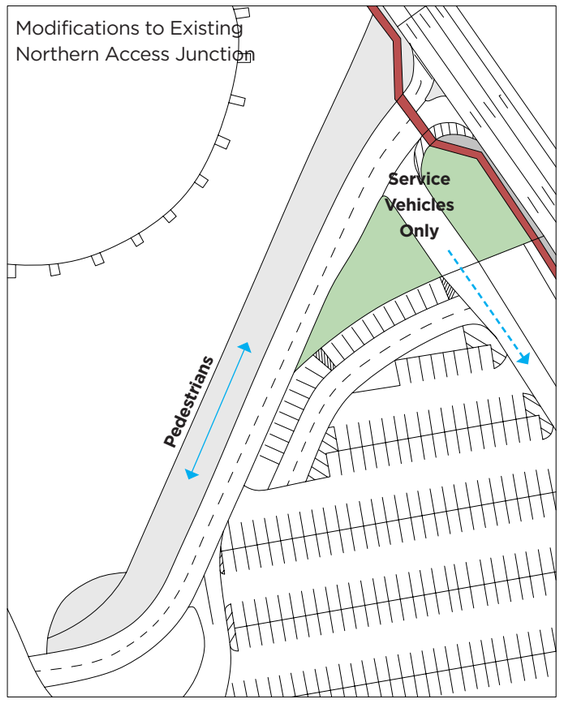
7.1 Existing Road and Pavement Modifications

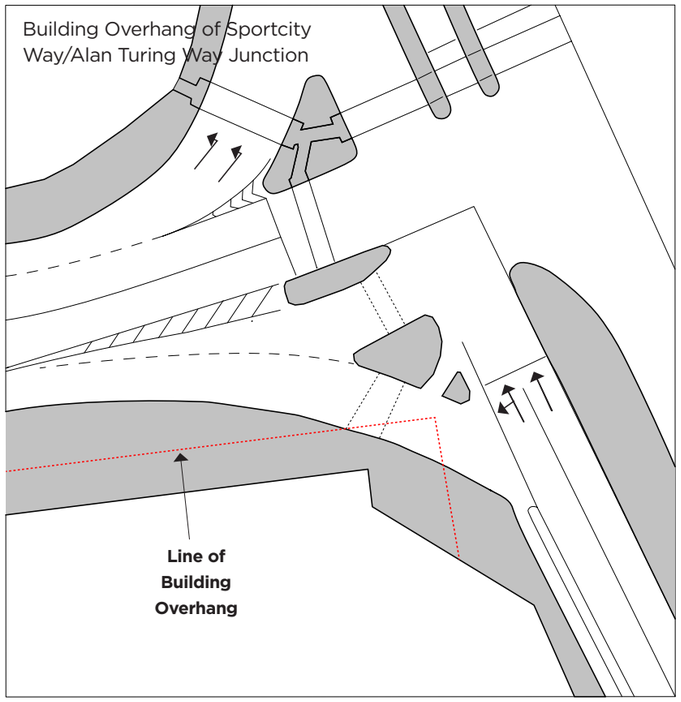
This access point also allows a separate, dedicated event vehicle access route to be provided. Large events at the arena will attract a significant number of trucks delivering equipment for the set-up of the show, including stage equipment lighting rigs etc.. It is proposed for these vehicles to be temporally marshaled in the car parks prior to entry to the arena service yard. This also provides an opportunity for security checks to be undertaken before vehicles are allowed to enter the building. The area will be provided by temporarily setting aside an area of car parking, delineated by barriers and cones. This replicates the arrangement currently in use on match days to park home team coaches in the same car park.

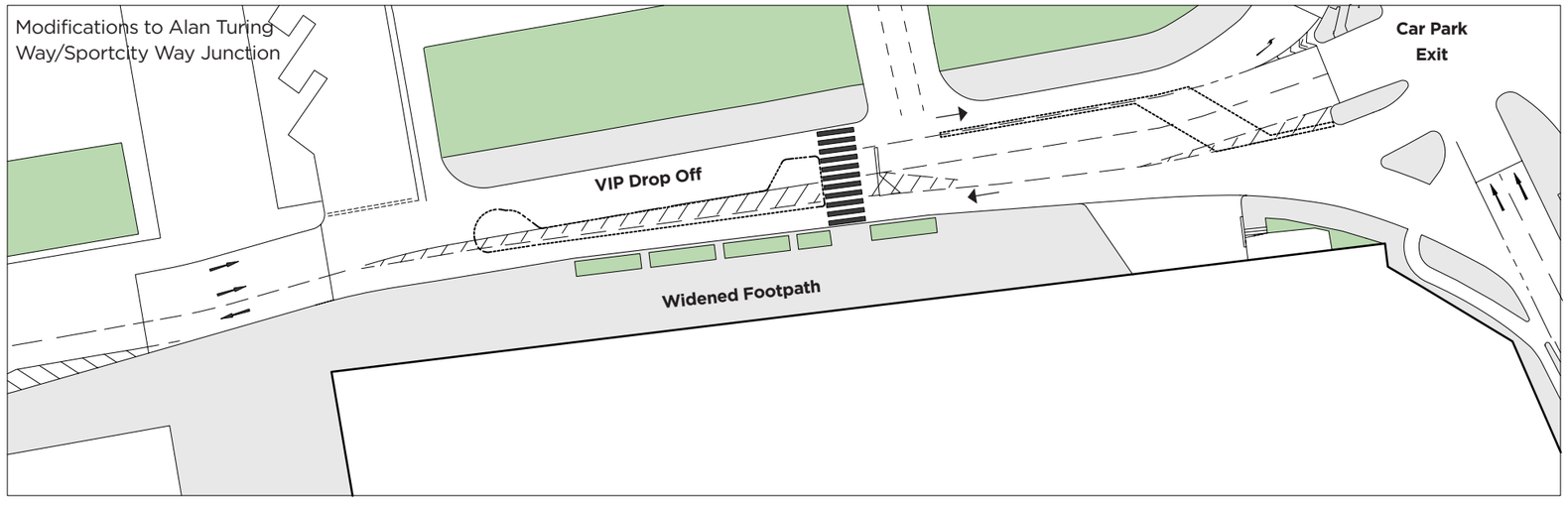
- Alterations to Sportcity Way

Sportcity Way currently provides five lanes of traffic and a narrow footway to the north of the arena site. It is proposed to widen the footway to provide sufficient safe width for crowds to congregate and enter the building before an event and depart afterwards. To the east, this achieved by widening the footway into the site, allowing the existing Sportcity Way/Alan Turing Way junction to remain unchanged. To the west this is achieved by narrowing the overall carriageway width and loss of a traffic lane.

The taxi and car pick-up/drop off facility will be done from Rowsley Street – which is where the existing taxi rank is for the stadium.







7.2 Parking

The OVG Manchester Venue will become a key visitor attraction within a wider campus of world-class sport and entertainment facilities.

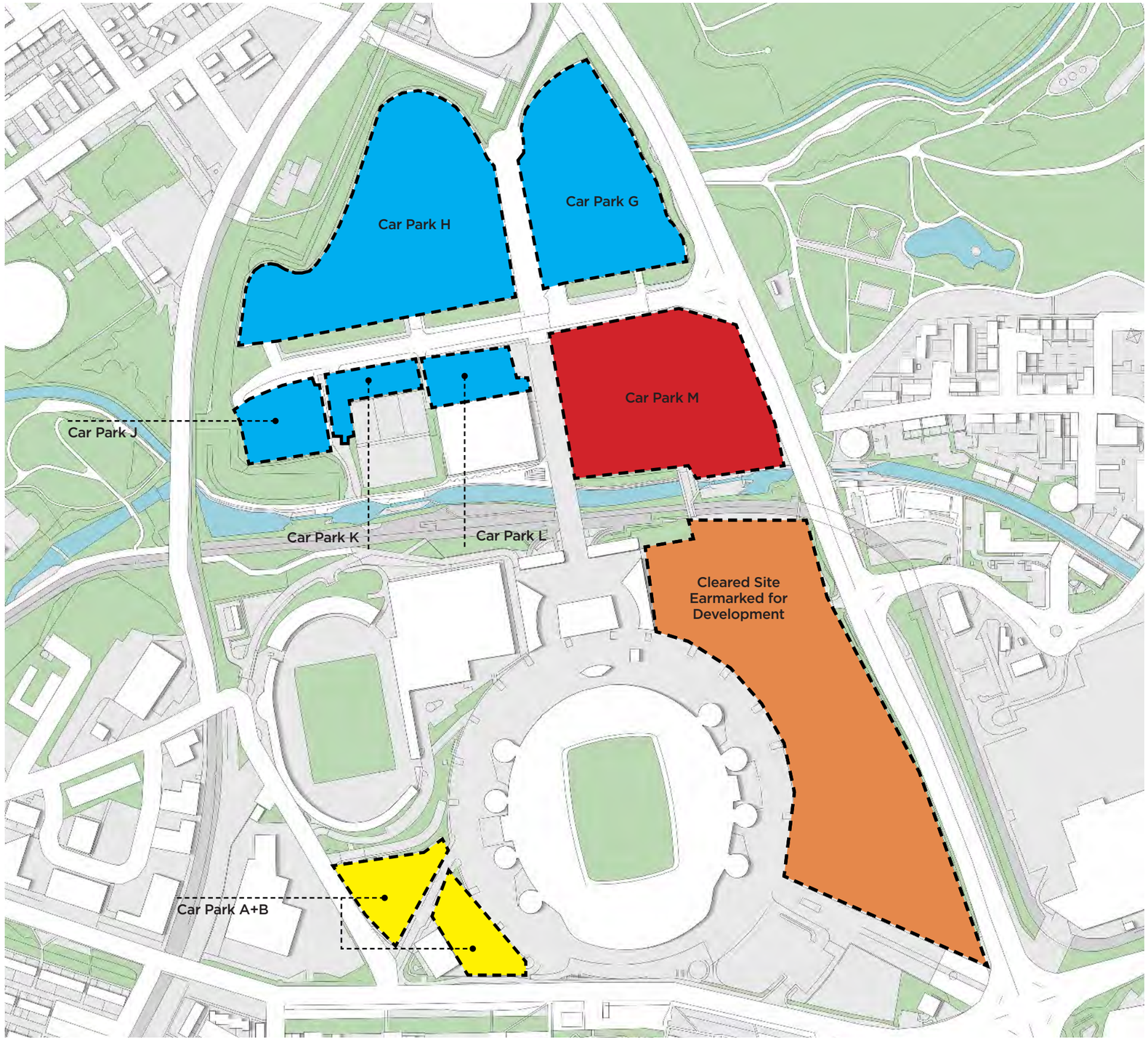
With Manchester's vision for a more sustainable city there will be a high encouragement to use a more sustainable mode of transport rather than by car. The parking provisions and strategies have been considered to ensure the campus can operate as a collective destination in the short term, however not all of these spaces will be available in the future, with a key focus on a more sustainable travel plan, including improved walking and cycling links and more frequent public transport options.

Existing parking is provided across the campus in a number of surface level car parks. The Venue site is currently an informal parking area. No additional car parking is being added, but approximately 3,700 spaces will remain available within the campus once the spaces provided on the Venue site are deducted. The majority of spaces are provided to the north of the Venue site, in car parks G and H, which are accessed via Alan Turing Way. Included in the figure of 3,700 are designated accessible parking bays which will be located in car park H, adjacent to Sportcity Way to provide easy access for visitors.

Parking provision for the Venue will be made available across the Campus spaces. The number of parking spaces available to Venue visitors will vary depending on the pattern of events taking place across the campus at the time. The two scenarios that result in the maximum and minimum allocation of parking spaces for the Venue are:

- When a Venue event is the only event taking place on the campus: Up to 3000 spaces will be made available to the Venue.
- When a Venue event runs in parallel with a football match in the Etihad Stadium: 500 spaces will be made available to the Venue.

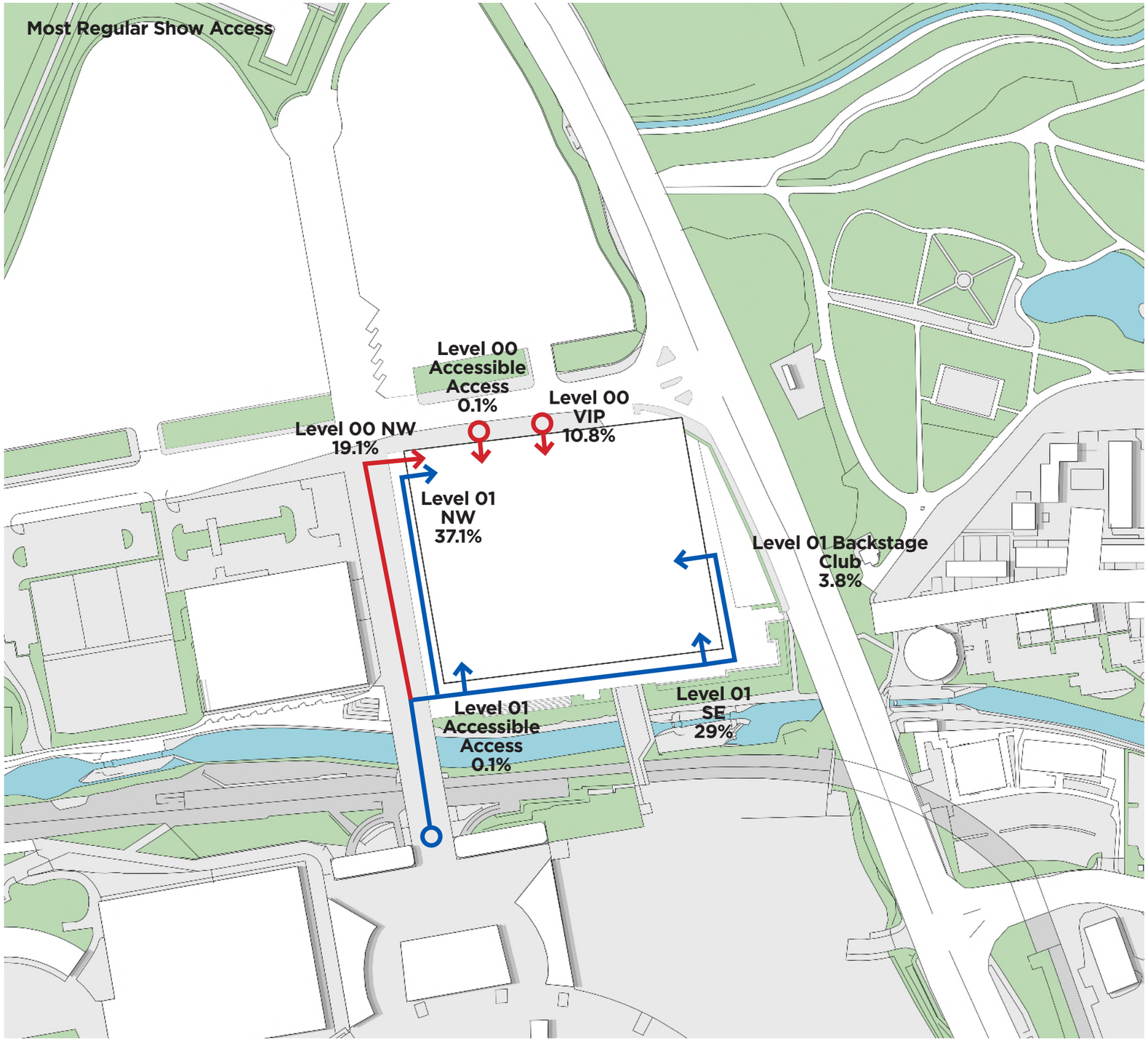
Car parking will be made available on a pre-booked basis only. This is to manage demand in advance and ensure the allocated parking numbers are achieved for each campus event combination. The details and provider of the booking system are to be agreed with the football club.



7.3 Access into The Venue

Accessing the Venue

The design of the building exploits the existing site levels to give level access to the main entrances at levels 00 and 01. The site has a considerable change in level from north to south (4m) which is reflected in the pedestrian boulevard which connects the north car park and the stadium (Joe Mercer Way). The current proposal is to maintain Joe Mercer Way as the main access route to the stadium and to tie in the lower concourse level (Level 01 +61.620) with the high point of Joe Mercer Way and the event floor level and loading bay entrance with the low point of Sportcity Way (+55.00).

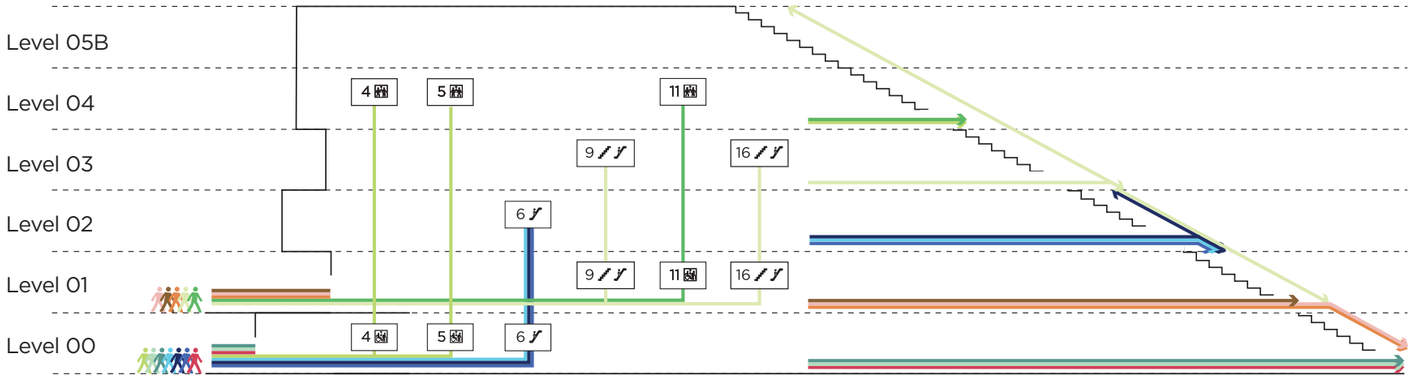


7.4 Venue Access

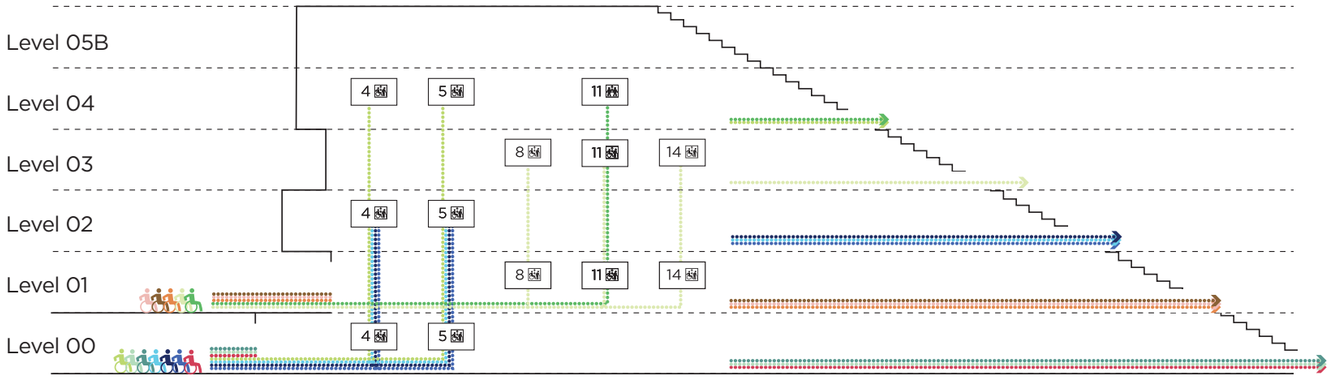
The natural site levels have been exploited further as the loading bay entrance and event floor is similar to the level of the junction between Sportcity and Alan Turing Way. The main VIP drop off entrance is approximately in the middle of the north elevation accessed from Sportcity Way.

The existing Joe Mercer Way is sloped (eg less steep than 1:21). As part of the campus-wide development, we will work jointly with the Manchester City Football Club to improve the ease-of-access on Joe Mercer Way through public realm improvements which may include the introduction of seating aligning with BS 8300-1 to provide resting points for OVG patrons and stadium spectators.

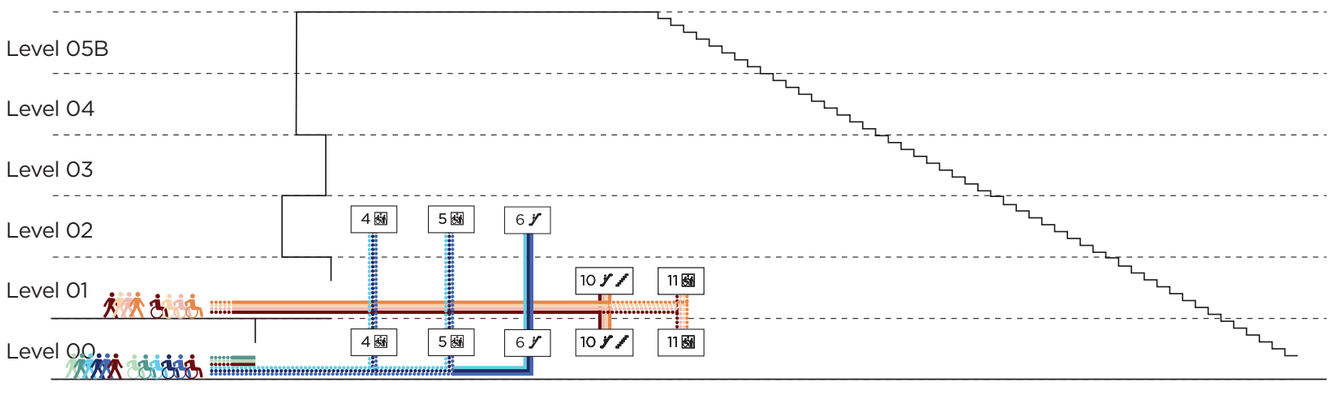
Event Mode



Event Mode - Accessible



Non Event Mode / Private Event Mode



- Level 00 GA
- Level 00 Hospitality
- Level 01 GA
- Level 01 GA+
- Level 02 Hospitality
- Level 03 GA
- Level 04 GA+
- Non Event Day User

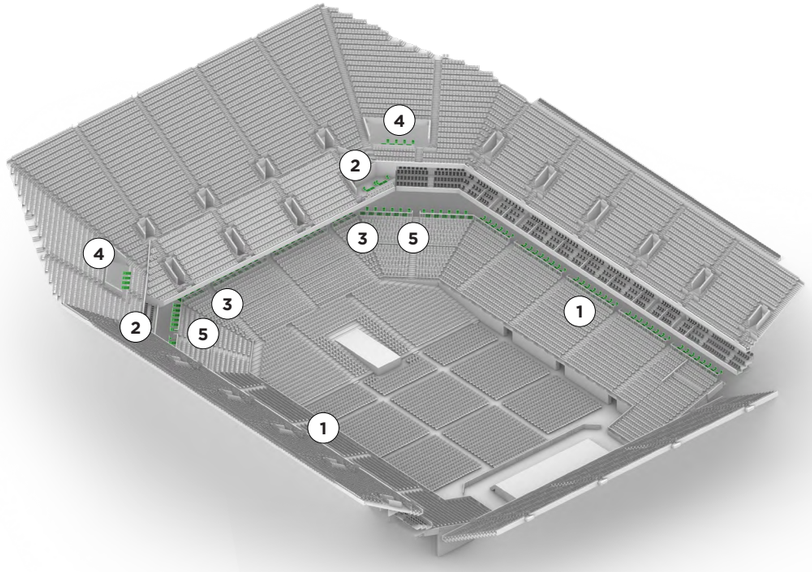
7.5 Wheelchair Accessible Seating

The approach to calculating the appropriate number of wheelchair viewing positions for the extensive variety of configurations set out in section 3.8 of this submission is based on two of those configurations – all seated with a capacity of 20,500 and all standing with a capacity of 23,500. As recommended by AD M and BS 8300, for larger capacities for spectator events the application of accessible stadia is appropriate.

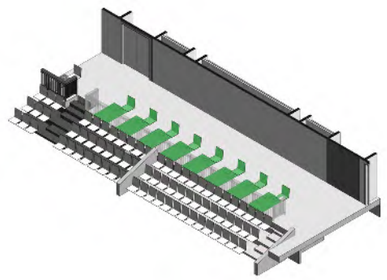
For a capacity of 20,500 the recommended number of wheelchair viewing spaces (plus companion seats) would be 151 positions: for 23,500 the number would be 154 positions. The 'permanent' complement of wheelchair viewing positions will be 118 positions at Level 01 and 8 at level 03. These would be proportionate for a capacity up to approximately 15,000. Higher capacities in the venue use the event floor: the balance will be on a mode-by-mode basis to make up or exceed the minimum recommended allocation of wheelchair viewing positions. Additionally, each of the suites will be able to accommodate at least one wheelchair user; each of the Loge Clubs should be able to accommodate at least two wheelchair users in each of the four clubs.

Wheelchair user viewing spaces and amenity seating is dispersed throughout the stadium. Permanent wheelchair viewing positions will provide a C60 (minimum) viewing. These positions will be generally within 40m of unisex wheelchair accessible WCs; in some instances distances may be nominally more than 40m; the routes to those WCs will be unimpeded by obstructions such as doors.

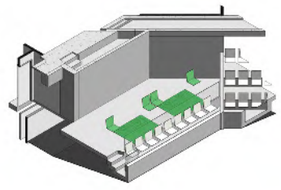
Wheelchair user viewing positions will be 900mm wide by 1400mm deep plus space for a companion seat (overall dimension will therefore be 1400mm x 1400mm) with a clear circulation space of 1200mm minimum behind these positions.



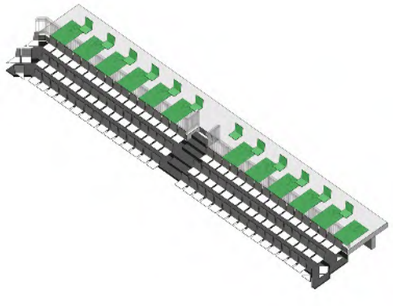
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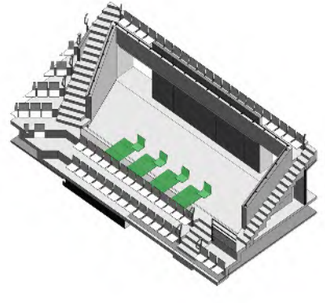
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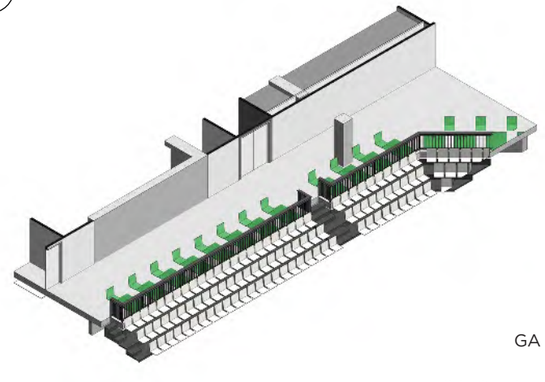
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3



GA

Accessible Seating

7.6 Inclusive Access

The applicants and their project team are committed to creating a new venue that will achieve world-class standards. We have adopted a people-centred approach that will manifest itself in the creation of a venue that is inclusive and accessible from the outset. Ease and surety of movement throughout and the ability to access all that the venue has to offer means that access in both a physical and experiential sense will help to create the 'next generation venue'.

Creating inclusive and accessible facilities starts with the simple premise that inclusion is embedded in the design process to remove barriers, promote equity of experience and continuously challenge and interrogate the design. Our strategic approach to access, inclusion and delivering a venue that exceeds minimum requirements will be to provide a venue that allows people to use the scheme safely, with dignity, comfort, convenience and confidence. The design of the scheme incorporates good practice guidance such as BS 8300:2018 Design of an accessible and inclusive built environment - Code of practice.

People should be able to make effective, independent choices about how they use the venue without experiencing undue effort or separation, and will be able to participate with equality in the activities that the scheme offers. The proposals not only consider those barriers that form physical constraints but also barriers experienced by people who are neurodivergent, have mental ill health issues, who are Deaf, deafened and hard-of-hearing and people or who are blind or partially sighted.

As part of Manchester's Core Strategy, there is an aspiration that by 2027 'Manchester will be a successful and accessible City in the front rank of cities in Europe and the world'. This scheme is an opportunity to meet and exceed that aspiration through the adoption of the following four principles, which incorporate CABE's 'Principles of Inclusive Design'. These principles are embedded as part of design deliberations and output to ensure that all parts of the built environment:

- Can be used safely, easily and with dignity by all regardless of disability, age, gender, ethnicity or economic circumstances.
- Are convenient and welcoming with no disabling barriers, so everyone can use them independently without undue effort, separation or special treatment.
- Are flexible and responsive, taking account of what different people say they need and want, so people can use them in different ways.
- Are realistic, offering more than one solution to help balance everyone's needs, recognising that one solution may not work for all.

No matter how physically accessible a venue is, without clear operational policy mechanisms, the accessibility of the venue will be compromised and over time, diminish. Therefore, sufficiently robust provision, criterion and practices must be established by the building management and operators including the development of active management plans.

For this reason, the applicants are seeking to obtain Attitude is Everything's (AIE) Charter status. AIE's Charter is a combination of physical provision, service offering and operational practice designed to guide venue and event organisers through a wide range of topics. The Charter sets out 21 criteria such as the provision of information, booking disability equality training to provision within the physical site looking at viewing platforms, toilets (including Changing Places facilities) and emergency evacuation plans. There are also requirements for staff training, consultation and engagement.

There is also an aspiration that the venue becomes the touring communities' favourite venue. As the design develops, the development of back of house and performers' facilities will address disabled and non-disabled users, in order to ensure that every effort is made to allow the programming of deaf and disabled Performers to operate freely and to make as many act areas as possible accessible. As part of our drive to achieve AIE Charter Status we will look at removing obstacles in all areas from rehearsing, recording and performing, to attending industry events. As the design develops we will continue to look at how operational and management policies, procedures and practices might create unintended barriers and work to remove them.

Planning Policy and Legislation

The following sets out the planning context and statutory provisions of the Equality Act that have been considered in regards to delivering an accessible and inclusive environment.

Equality Act 2010

The Equality Act 2010 provides the legal framework that protects people from discrimination. The act is anti-discrimination legislation across nine 'protected characteristics'. These are:

- Age
- Disability
- Gender reassignment
- Marriage and civil partnership
- Pregnancy and maternity
- Race
- Religion or belief
- Sex
- Sexual orientation

The act applies to all providers of services, public authorities carrying out their functions, associations and employers. It applies to all services, whether or not a charge is made for them. The reasonable adjustments duty within the act imposes a duty on employers, service providers and public functions to make reasonable adjustments to any physical feature which may put a disabled person at a substantial disadvantage compared to non-disabled people. The is not a minimalist policy of simply ensuring that some access is available to disabled people; it is, so far as is reasonably practicable, to approximate the access enjoyed by disabled people to that enjoyed by the rest of the public. The act does not place a duty to make reasonable adjustments for other protected characteristics but reasonable adjustments will be required to any relevant provisions, criteria or practices.

The National Planning Policy Framework (2019)

The NPPF highlights that planning policies and decisions should ensure that developments create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

Manchester Planning Policy

The Local Plan is the spatial strategy for the local authority and comprises development plan documents with policies on the development, use of land, allocations of sites for particular types of development and development management policies, of which the Core Strategy, adopted in July 2012 forms one part.

The revised Local Plan will replace the Core Strategy and the Unitary Development Plan policies and will be set in the context of the emerging Greater Manchester Spatial Framework (GMSF) which will provide a vision and strategic policies for development across Greater Manchester.

Manchester City Council Planning Policy: Core Strategy 2012

The scheme addresses Policy SP1: 'Spatial Principles: core development principles in that the needs of all members of the community have been considered regardless of age, gender, disability, sexuality, religion, culture, ethnicity or income. The proposals also responds to Policy DM 1: 'Development Management' that the built environment is accessible to disabled people.

Draft Greater Manchester Spatial Framework (2019)

The Greater Manchester Spatial Framework is an ambitious vision for the future of Greater Manchester. The 2019 consultation draft sets out an aspiration for a 'Greater Manchester for Everyone' which promotes greater inclusion in a variety of ways: such measures including:

- Achieving the high quality, inclusive design of places and developments
- Supporting greater inclusion through the design and implementation of individual development proposals

Inclusion is also a component of sustainability. Policy GM-E-1: Sustainable Places indicates the

7.7 Inclusive Access

following key attributes for all development, wherever appropriate, should be consistent with being socially inclusive; and respond to the needs of all parts of society; enabling everyone to participate equally and independently; providing opportunities for social contact and support; and promoting a sense of community.

Inclusive Design Guidance and Standards

Inclusive design issues are to be reviewed in accordance with the objectives of the following:

- Building Regulations 2010 and associated Approved Documents
- Equality Act 2010
- Greater Manchester Planning Policy
- Manchester City Council Planning Policy
- National Planning and Policy Framework, 2012
- Planning and Compulsory Purchase Act, 2004

Reference is to be made to the following documents during design development for this project:

- Access for All, UEFA and CAFÉ Good Practice Guidance to Creating an Accessible Stadium and Matchday Experience for All, 2011
- Accessible Stadia, FAIF and FLA, 2003
- Accessible Stadia, Supplementary Guidance, Sports Ground Safety Authority, 2015
- Accessible Sports Facilities, Sport England, 2010
- Attitude is Everything, Venues: Charter of Best Practice
- BS 6465-1:2006, Code of practice for the design of sanitary facilities and scales of provision of sanitary appliances
- BS 6465-2:2017, Sanitary installation
- BS 8300-1:2018, Design of an accessible and inclusive built environment; Part 1 External environment – Code of practice
- BS 8300-2:2018, Design of an accessible and inclusive built environment; Part 2 Buildings – Code of practice
- BS EN 81-70:2018. Safety rules for the construction and installation of lifts: Part 70: Accessibility to lifts for persons including persons with disability
- Building Regulation Approved Document K – Protection from falling, collision and impact 2013
- Building Regulation Approved Document M – Access to and use of Buildings Vol 2: Buildings other than dwellings, 2015
- Design for Access 2, 2003
- Guidance on the provision of spending facilities for guide dogs and other assistance dogs, The Guide Dogs for the Blind Association, 2015
- Guide to Safety at Sports Grounds (the Green Guide), Sixth Edition, Sports Ground Safety Authority, 2018
- Technical Standards for Places of Entertainment 2015 (Revised 2019).

Inclusive Design Provision

The following commentary describes the inclusive and accessible features incorporated into the scheme. In addition, there are high-level parameters which follow in each section, outlining a recommended approach to delivering an inclusive environment and establish a working framework to inform further design development.

Parking

- Location and numbers of designated accessible parking bays; distances to principal entrances
- Cycle parking

Approach/ Public realm

- Commentary on public realm proposals and how people arrive at entrances (general admission/hospitality/staff)

Entrances

- What the entrance spaces encompass and what they lead onto

Circulation

- How people move through the space

Horizontal

- Description of concourse spaces
- Gradients

Vertical
- Gradients
- Stairs/lifts/escalators

Facilities

Seating provision (location and number of wheelchair viewing positions/ future approach to providing amenity/easy access seating.

- Quiet/sensory rooms
- Multi-faith rooms

Approach to concessions (eg will there be an operator's guide to concessions designs to ensure appropriate counter heights, accessible PoS and induction loops.

Sanitary Accommodation

- Male/female/gender-neutral/wheelchair accessible toilets
- Changing Places facility
- Baby changing
- Back of house sanitary accommodation including showers

Assistance Dog Spending Area

A dog spending area will be located on level 01 , towards the north east, to provide relieving stations for assistance dogs.

While people with sensory impairments primarily require an assistance dog, people with mobility impairments and wheelchair users may also have an assistance dog with them. It is essential to provide suitable areas for assistance dogs to be watered and relieve themselves. This will be designed in accordance with the RNIB's 'Guidance on the provision of spending facilities for guide dogs and other assistance dogs'.

Internal Finishes, Fixtures and Fittings

Visual contrast is defined in the Approved Document M as 30 points difference (minimum) between light reflectance values. BS 8300-2 Annex B indicates that if lighting levels are greater than 200 lux, then 20 points difference (minimum) in light reflectance values establishes contrast.

- Particular attention should be paid to visual contrast, lighting and materials for features such as walls, ceilings and floors.
- In areas where clear communication is required particular attention must be paid to the reverberant nature of materials.
- Fixtures and fittings, including ironmongery and controls are to visually contrast with their surrounds, be usable by people with limited dexterity and reachable by those who are seated or standing.

Communication

- Signage and Wayfinding
- Sound reinforcement and hearing enhancement systems

Emergency Egress
The responsibility to provide access means that suitable egress strategies must be developed for disabled people. Safe evacuation of people with physical disabilities or impairments relies on a combination of physical features and management procedures plus the development of a robust evacuation strategy developed by building management.

The 118 wheelchair users and companions expected to be located at the rear of the lower tier will have step-free access to external, limiting vertical movements. Wheelchair users and companions will be located on the upper tier and other wheelchair viewing areas will be provided throughout the building where required, including hospitality areas, the event floor and at the rear of the upper bowl in the bar areas.

The number of disabled people who could be present within the hospitality areas, not just the bowl, will also be considered in the requirement for provision of refuge spaces.

The evacuation strategy will incorporate the use of evacuation lifts throughout with designated refuge areas provided to accommodate the number of users on each level. However, subject to layouts, a progressive horizontal evacuation might be feasible in order to reduce the number of refuge spaces required.

Additionally, there will be a number of ambulant disabled people that may need assistance and will need to be considered as part of the evacuation strategy.

7.8 Level 00 Ingress

All circulation routes (both front and back of house) are to be accessible; plant areas are excluded. Where routes are not step-free, adjacent means of making level changes will be provided, such as with slopes, ramps or lifts. Where corridors are formed that will meet the provisions of AD M and provide at least 1800mm in width; where this cannot be provided corridors will not be narrower than 1200mm and require suitably placed turning spaces of 1800mm by 1800mm.

As the design develops the following considerations will be made:

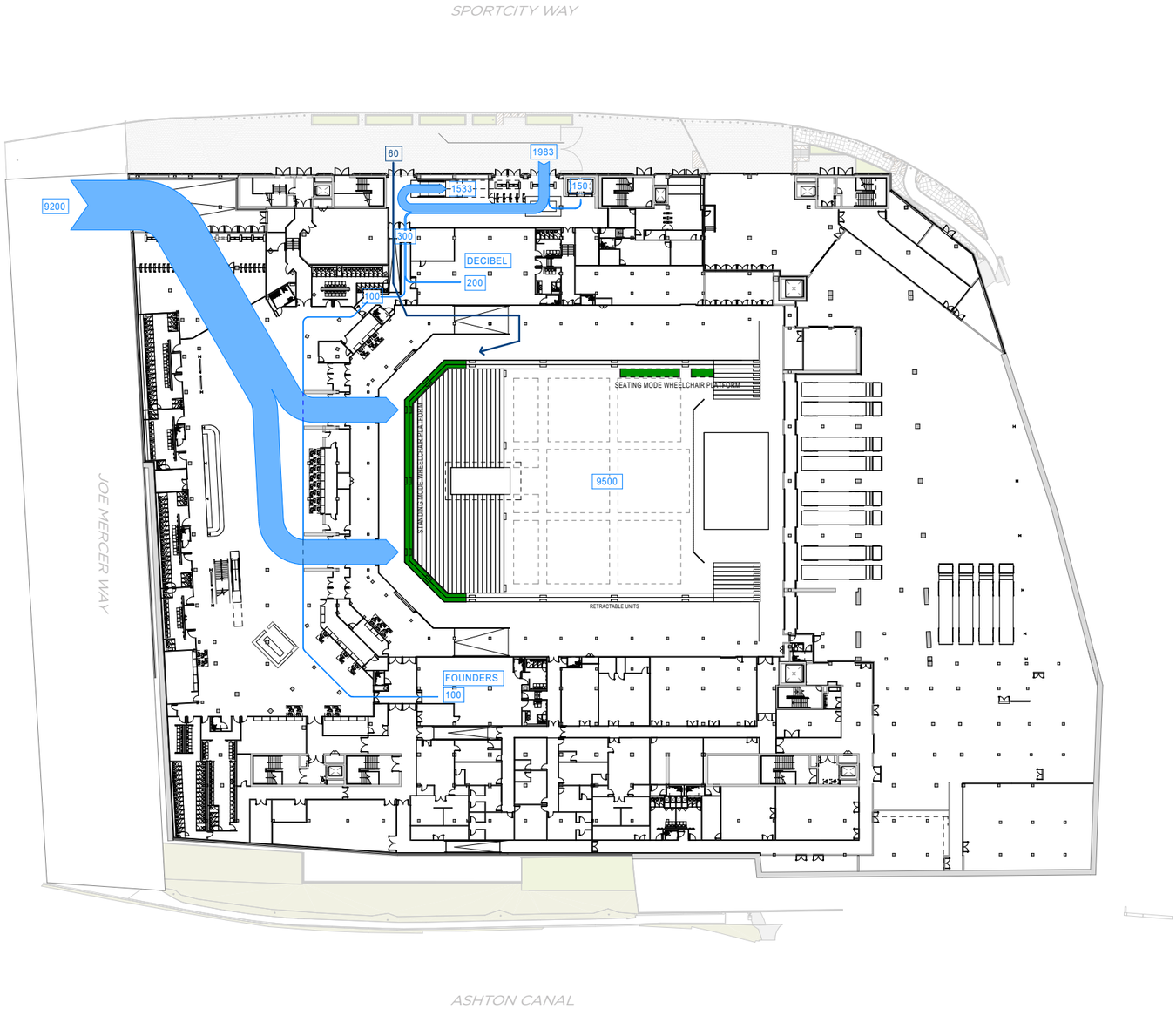
- All doors are to be made clearly identifiable within their immediate environment.
- The opening force of manual doors, when measured at the leading edge of the door, should be not more than 30 N from 0° (the door in the closed position) to 30° open, and not more than 22.5 N from 30° to 60° of the opening cycle.
- Ironmongery is to meet the provisions of AD M and BS 8300-2
- Glazed doors will meet the provisions of AD K or guidance of BS 8300-2

Stairs

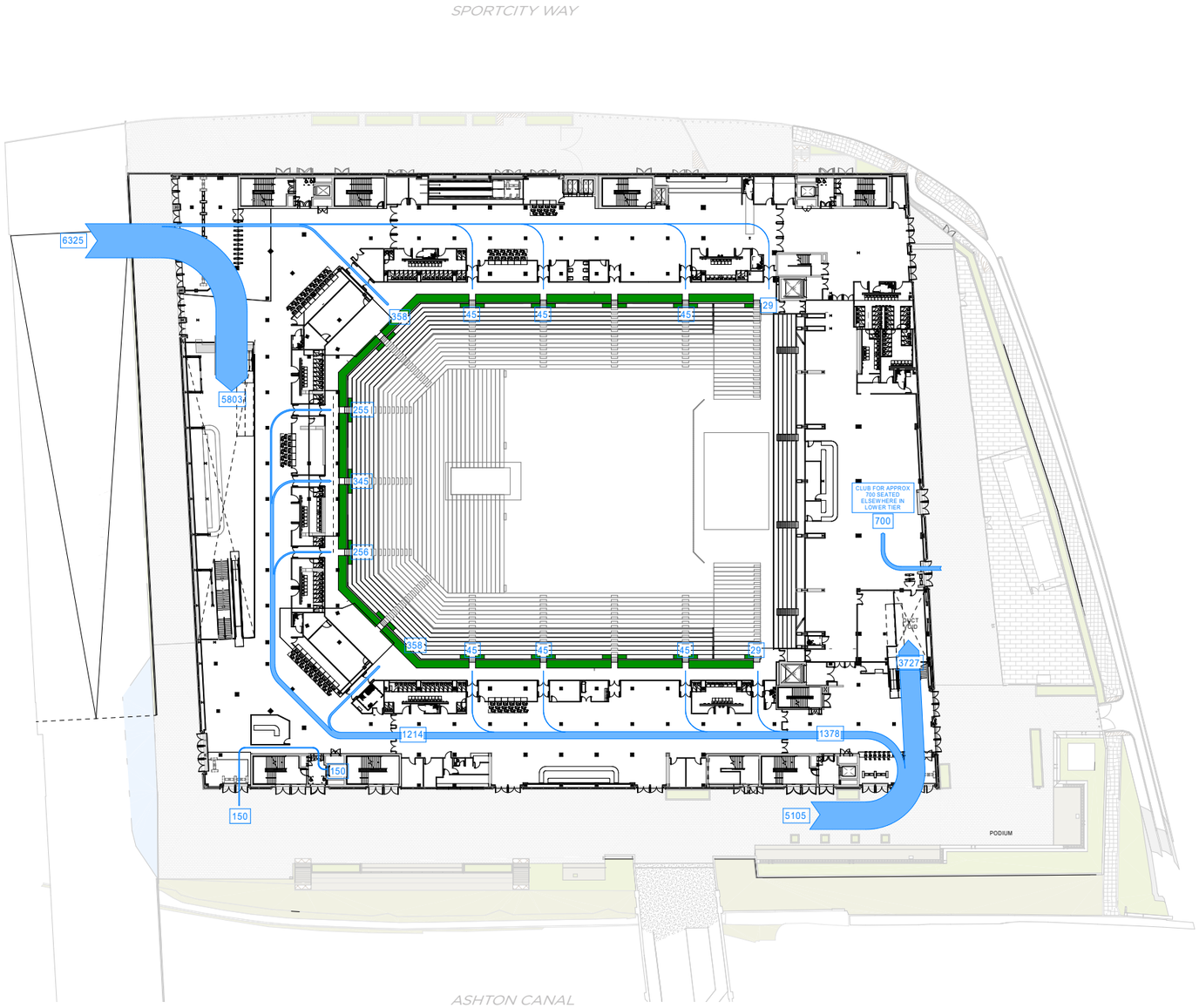
- Internal stairs will be designed to accord with AD M and BS 8300; these also generally accord with the Green Guide sixth edition whereby a going at least 300mm deep is adopted with a riser height of between 150-170mm (although with the deeper going a riser height of up to 180mm is allowed). Utility stairs, for example for egress in stair cores, will accord with AD K. Gangway steps (as defined by AD K) will be designed to accord with AD K, and Green Guide.

In the detailed designing of stairs the following parameters will be adopted:

- All stair risers are to be closed
- Stepped routes and associated handrails shall be designed to meet the provisions of AD K and AD M; on wide stairs (greater than 1.8m width) channeled routes will provided on sections of the stair
- Visually contrasting nosings must be included on all stepped routes, to meet the recommendations of BS 8300-2.



7.9 Level 01 Ingress



7.10 Level 00 Egress

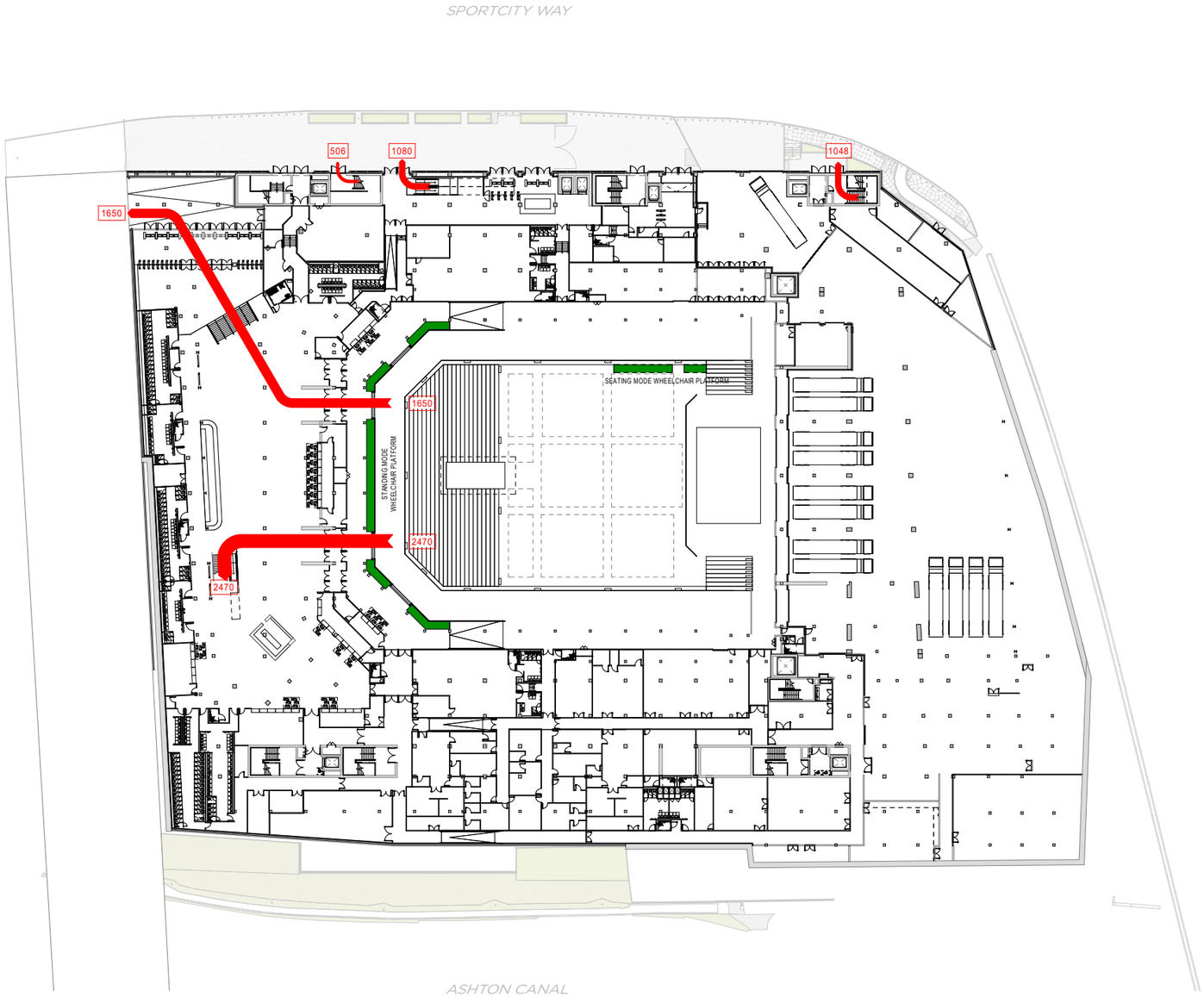
Lifts and escalators

All passenger lifts will be specified to meet BS 8300 and BS EN 81:70. Escalators are to be specified to meet the criteria of EN 115-1:2017 and BS 5656-2:2004.

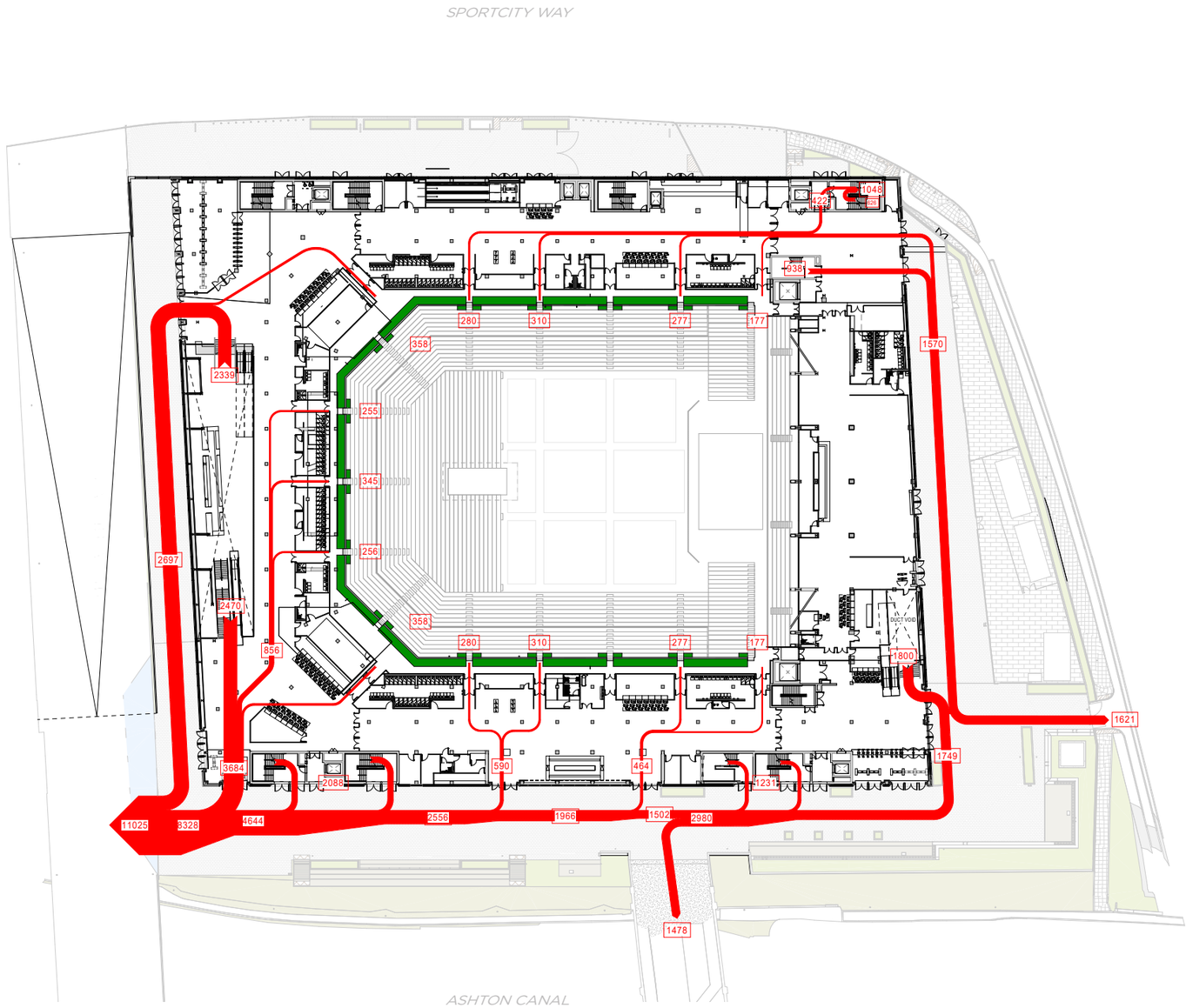
Escalators are usually sited in an obvious circulation path making it easy for people to board them. Alternative circulation using adjacent lifts, stairs or ramps for journeys between adjacent floors will be clearly visible and/or signed as this provides choice for those people who cannot or choose not to use escalators.

Passenger lifts serving GA and hospitality areas will exceed the minimum dimensions for lifts set out in AD M and BS 8300.

A minimum space of 1500mm by 1500mm will be provided at the opening of the lift.



7.11 Level 01 Egress



7.12 Level 00 Emergency Egress

Emergency Escape

The responsibility to provide access means that suitable egress strategies must be developed for disabled people. Safe evacuation of people with physical disabilities or impairments relies on a combination of physical features and management procedures plus the development of a robust evacuation strategy developed by building management.

The 118 wheelchair users and companions are expected to be located at Level 01 and will have step-free access to external, limiting vertical movements. Similarly, wheelchair users and companions will be located on the venue floor which will have step-free egress.

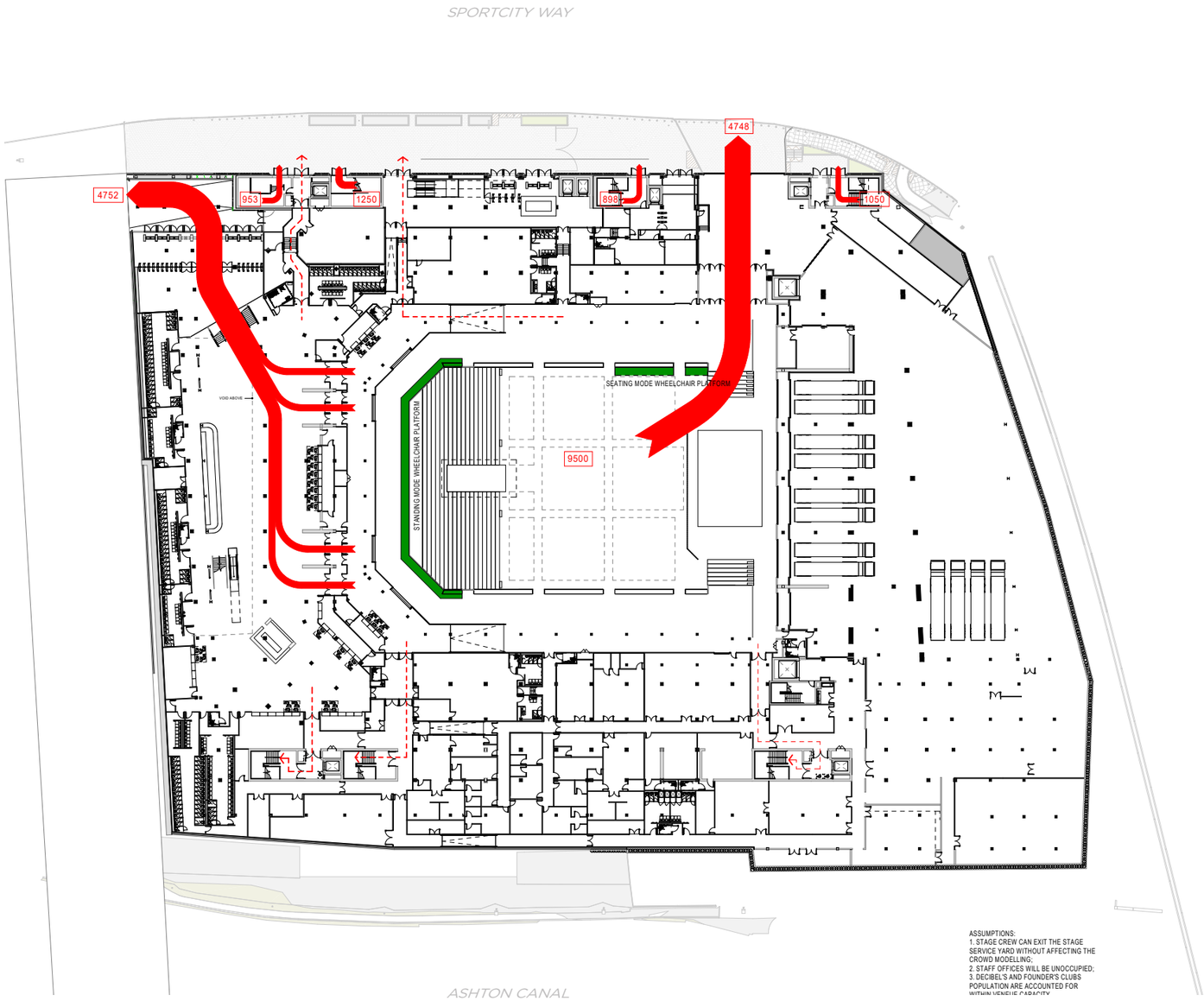
Wheelchair users and companions located at height in the venue will be located in the hospitality areas at Level 02 and on Level 03. The evacuation strategy will incorporate the use of firefighting lifts for evacuation located at the four corners of the building. Designated refuge areas will be provided with emergency voice communication for the use of any users on each level.

A progressive horizontal evacuation approach is proposed to allow occupants to move horizontally to an alternative zone, acting as a place of relative safety, before continuing their evacuation using any firefighting lifts not required by the fire service.

The number of disabled people who could be present within the hospitality areas, not just the bowl, will also be considered in the requirement for provision of refuge spaces.

Fire Strategy

The fire strategy for OVG Manchester has been developed to enable safe evacuation of all occupants. The venue will be designed to meet the functional requirements of the Building Regulations 2010. BS 9999, 2017 will be used as the overall guidance for most areas of the building with the means of escape assessment conducted in accordance with BS7974:2019 and its associated Published Documents.



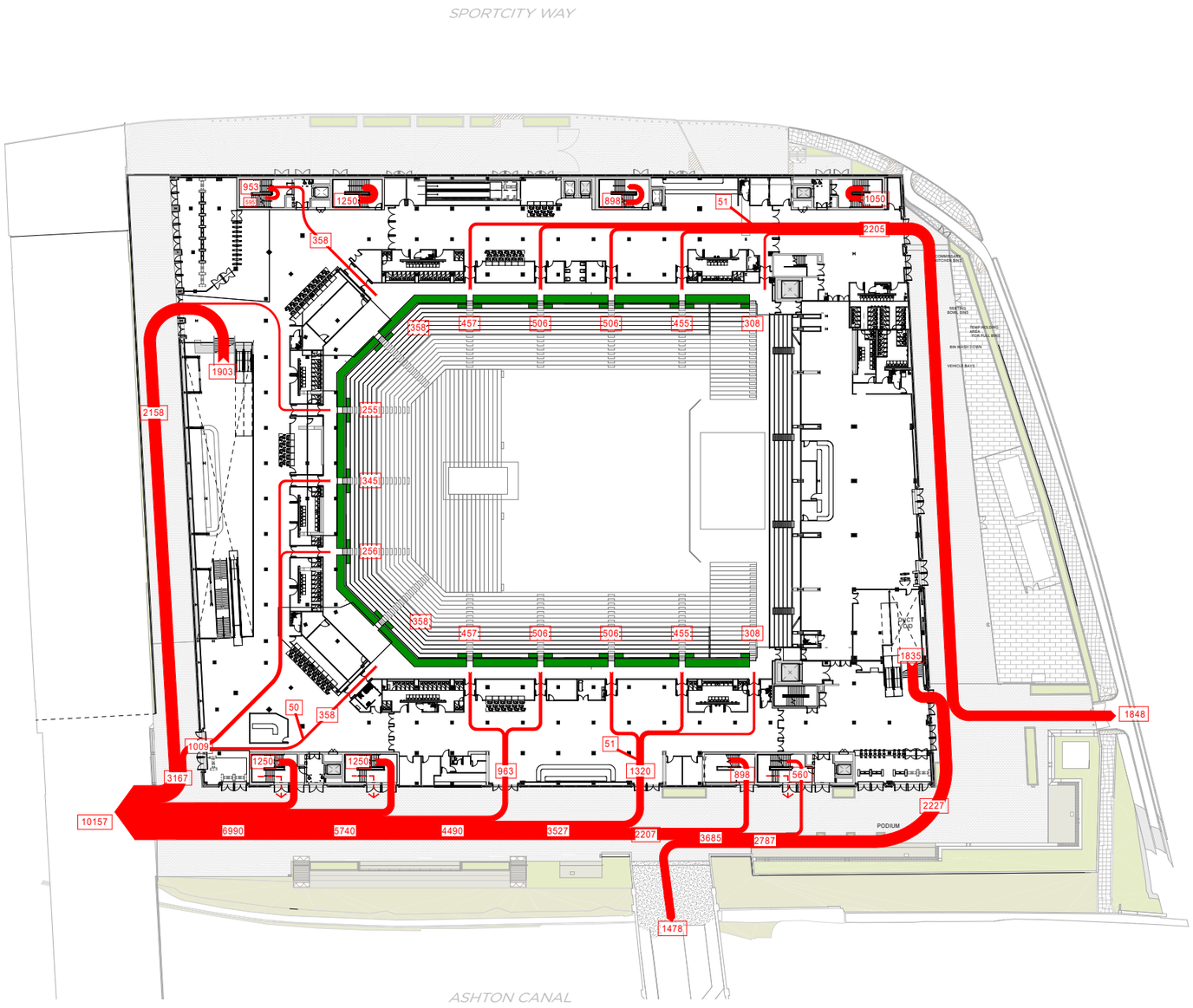
7.13 Level 01 Emergency Egress

A fire engineered assessment has been performed to demonstrate safe escape within the building. This considers the amount of time required for occupants to escape and assesses the time available for escape based on maintaining tenable conditions with smoke control systems and other active and passive fire safety systems. The required safe egress time has been designed to aim to meet 8 minutes from the point that occupants start moving when they hear the fire alarm to the point that occupants leave the building or enter a free flowing protected stair. The aim of this figure is to minimise the risk of any panic and ensure occupants are able to leave within a reasonable time frame upon becoming aware of a fire. 10 protected stairs and 2 open accommodation stairs (supported by a smoke control system) have been used for the escape assessment. Exits direct to external are available at Level 0 and at Level 1.

Evacuation of disabled people is a combination of physical and management procedures plus a liaison between building managers and occupants. Evacuation is proposed to be provided via evacuation lifts in the building. Occupants can move to adjacent building zones to wait in a place of relative safety before continuing evacuation using the evacuation lifts. A means of two-way communication between the waiting area adjacent to each lift and a central monitored location from where evacuation assistance will be coordinated will be provided.

The structure for OVG Manchester is designed to 90 minutes fire resistance. 90 minute compartmentalization is provided between the bowl and surrounding compartments. Areas of higher fire risk- such as storage and kitchens will be separated by fire resisting construction (30 minutes). This high level of compartmentalization assists in maintaining a high level of safety for both ambulant and disabled occupants during the evacuation period.

Sprinklers are provided throughout OVG Manchester with the exception of the main bowl area, where sprinklers are not provided due to the height of the space. These assist in managing potential fire sizes and increase safety for escaping occupants and fire service intervention. Smoke control is provided in the bowl, atrium and in concourses where people



are required to escape back through from the bowl.

An external fire spread assessment has been conducted to ensure fire spread does not occur outside the building. Fire resistance will be provided to the façade where any occupants need to escape within 1.8m.

Vehicular firefighting access is provided around the site to within 18m of firefighting cores as well as to access points on the north and south elevations. Four firefighting cores are provided with dry risers in each to enable firefighting internally. Smoke clearance is provided in the basement areas and loading bay at Level 0 to assist in firefighting operations.

7.14 Crowd Flow

The key objective of the crowd flow study is to ensure OVG Manchester can be efficiently operated during major events and is fully integrated into the wider environment. OVG Manchester has been designed with the view to delivering a safe, efficient and comfortable environment for all users. The scope of our study covers the following elements of OVG Manchester and the site to ensure an efficient and comfortable experience for all spectators for normal operating conditions:

- Width and capacity of site connectivity
- Width and capacity of entrances and exits.
- Width and capacity of stairs and escalators.
- Area and capacity of concourse.

Site Movements Arena Only Egress Scenario

Based on discussions with OVG and review of transport mode splits at the existing Etihad Campus, we assume spectators leave OVG Manchester and use various transport modes in the following proportion:

- 20% of the spectators use the tram,
- 5% of spectators leave via the canal walk
- 35% of spectators go South via the Etihad Stadium Plaza to the city, bus stops and other means of transport
- 40% of spectators move to the north, either beyond the Etihad Campus or utilising the north car park if available.,

These modal splits represent a baseline case and will develop as the Venue travel plan develops, encouraging increased numbers of occupants to use sustainable transport with less reliance on car journeys. It is noted that as the other plots on the campus are developed in the future, the onsite car parking will potentially be reduced which will be offset by measures to promote walking, cycling and public transport, as detailed in the travel plan.

Multi-Event Scenario When Venue and Stadium Could Egress at the Same Time

To test a worst-case multi-event scenario a peak egress is modelled (i.e. spectators leaving the site after an event at OVG Manchester and a match at Etihad Stadium). The key inputs considered, as agreed with OVG, are;

- A stadium event with 61,000 spectators (allowing for an expanded north Stand) and ~23,500 spectator event at OVG Manchester.
- OVG Manchester would discharge 20 minutes after the final match whistle at the Etihad Stadium.
- It is assumed that simultaneous egress from both the stadium and OVG Manchester will be a rare occurrence, the operational management plan developed by the client should consider this rare scenario and have a strategy to manage flows
- Spectators clear the seating bowl of OVG Manchester in 8 minutes.

Images on the right represent the egress flow of spectators to the different transport modes in the following proportion after a multi-event scenario. This is based on discussion with BuroHappold transport team and OVG as well as review of CCTV footages of Etihad Stadium match days.

From the OVG Manchester Venue:

- 20% of spectators go north to use the existing car park (limited numbers including blue badge spaces – see 7.3) or to walk further north away from the campus
- 20% of spectators use the tram
- 5% of spectators leave via the canal walk
- 55% of spectators go south via Etihad Stadium plaza to the city, bus stop etc.

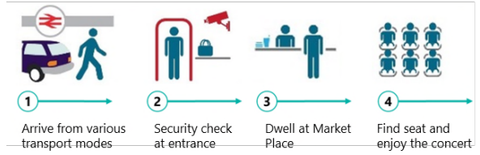
From Etihad stadium:

- 25% of spectators go north to use the existing car park or walk further north away from the campus
- 10% of spectators use the tram
- 1% of spectators leave via canal walk
- 64% of spectators go South to city, coach park, bus stop etc. via Etihad Stadium City Square.

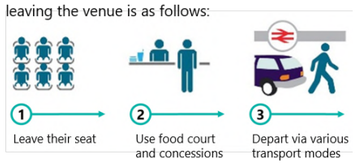
In this scenario the bulk of onsite parking will be dedicated to the stadium, as per section 7.3, so users of OVG Manchester are generally not expected to be parking on the campus.

	Centre Stage Standing Event	Centre Stage Seated Event
Level 00	9,200 General + 300 Hospitality Spectators	4,120 General + 300 Hospitality Spectators
Level 01	1,900 General + 700 Hospitality Spectators	3,680 General + 700 Hospitality Spectators
Level 02	1,530 Hospitality Spectators	1,530 Hospitality Spectators
Level 03	9,527 General Spectators	9,527 General Spectators
Level 04	300 Hospitality Spectators	300 Hospitality Spectators
Total	**20,627 General + 2,830 Hospitality Spectators**	**17,327 General + 2,830 Hospitality Spectators**

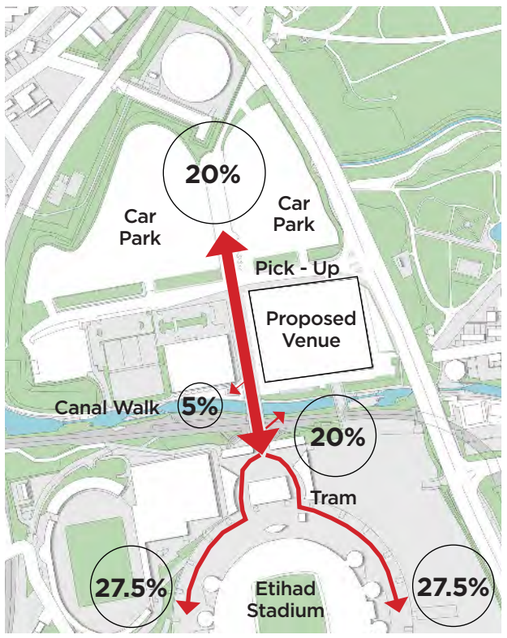
The **arrival process** considered for spectators arriving into the venue is as follows:



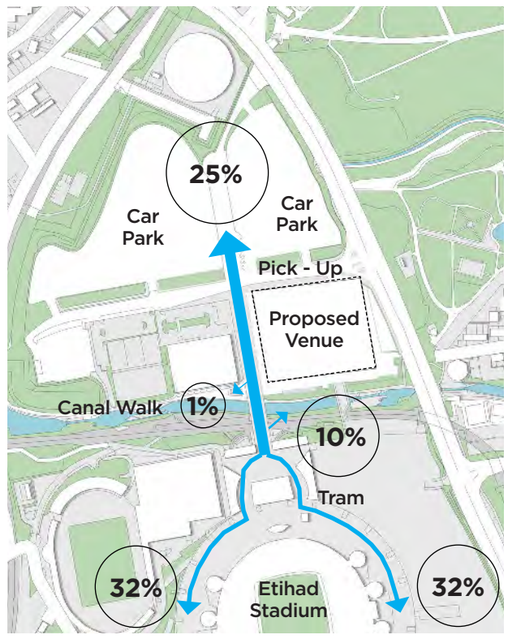
The **departure process** considered for spectators leaving the venue is as follows:



Multi-event Scenario
OVG Manchester Egress



Multi-event Scenario
Etihad Stadium Egress



7.15 Crowd Flow Studies

The crowd flow studies indicates there is sufficient capacity within OVG Manchester, with occasional high density.

Assessment of External movements, OVG Manchester only

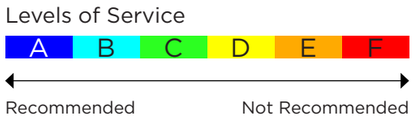
BuroHappolds analysis shows that the design provides sufficient capacity at most locations for a safe and comfortable movement of spectators during peak egress. Occasional congestion can be expected at the following locations, resulting in slowing down of spectators:

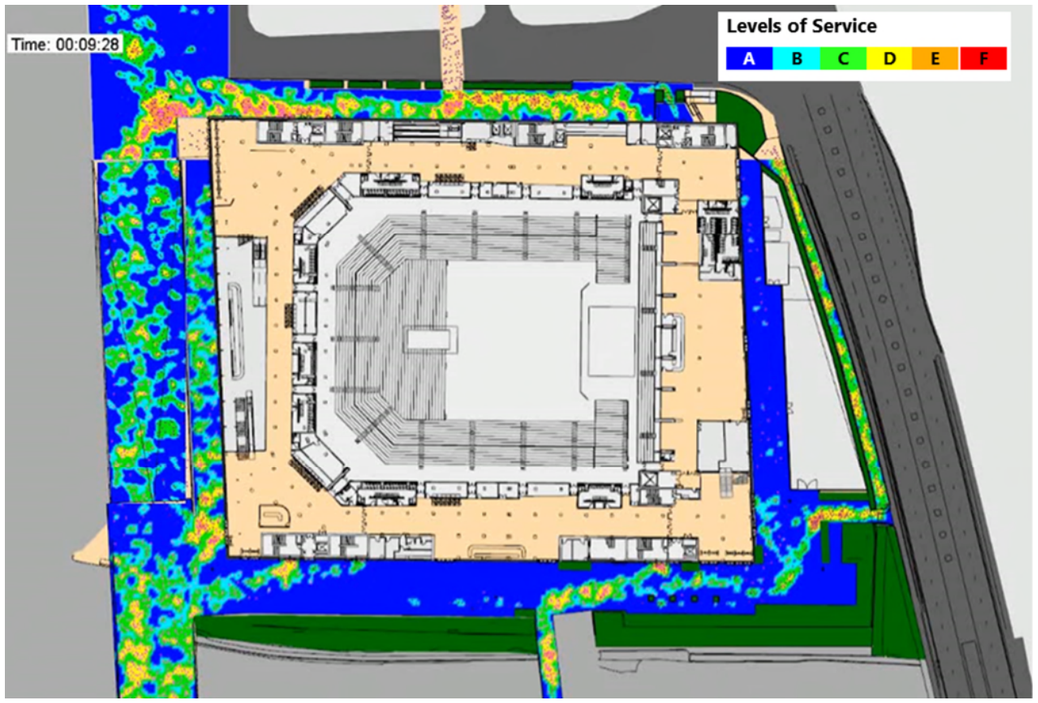
- Some cross-flows are likely at the NW corner, particularly in front of the Level GF NW exit.
- High density levels are likely at the access to the pedestrian crossing on Sportcity Way.
- Spectators are likely to slow down and/or spill over on to the cycle path of Alan Turing Way due to the width constraint along this path.

Assessment of External movements, Multi-event scenario

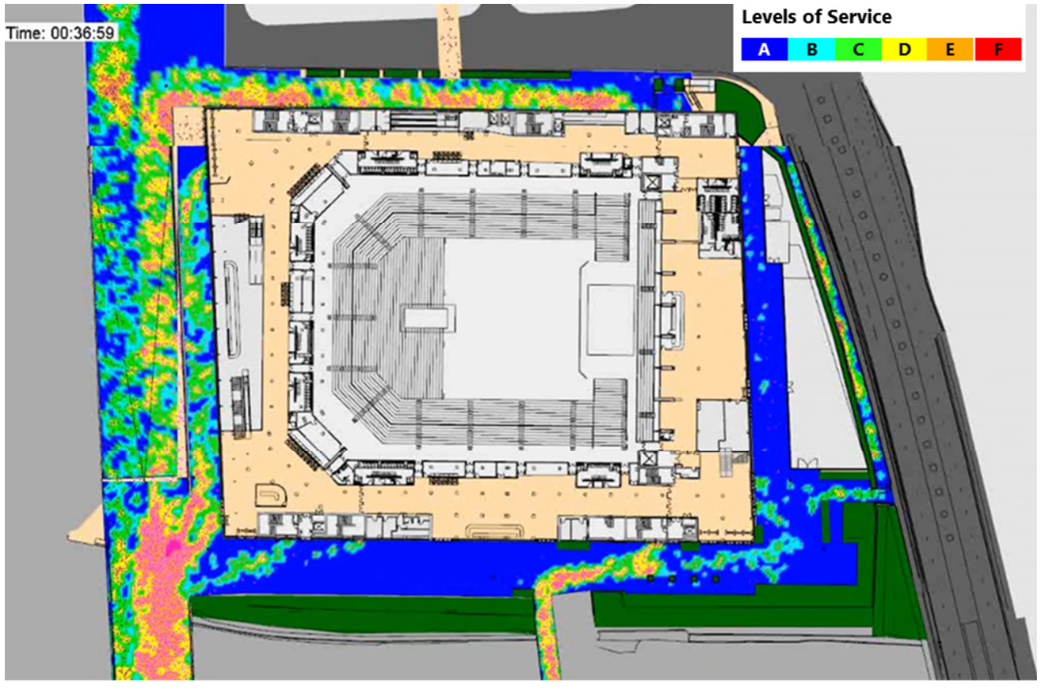
BuroHappolds analysis shows that with effective operational management and clear signage to direct spectators the public realm provides sufficient capacity for a safe and comfortable spectator movement at most locations. The following locations are identified as potential risks:

- High density levels are likely at the SW corner due to limited width for South flows.
- Spectators are likely to slow down and/or spill over on to the cycle path of Alan Turing Way due to the width constraint along this path.





Public Realm - Instantaneous density of a centre stage standing event, OVG Manchester only



Public Realm - Instantaneous density in the rare case of a during a multi-event egress

7.16 Level 00 Servicing

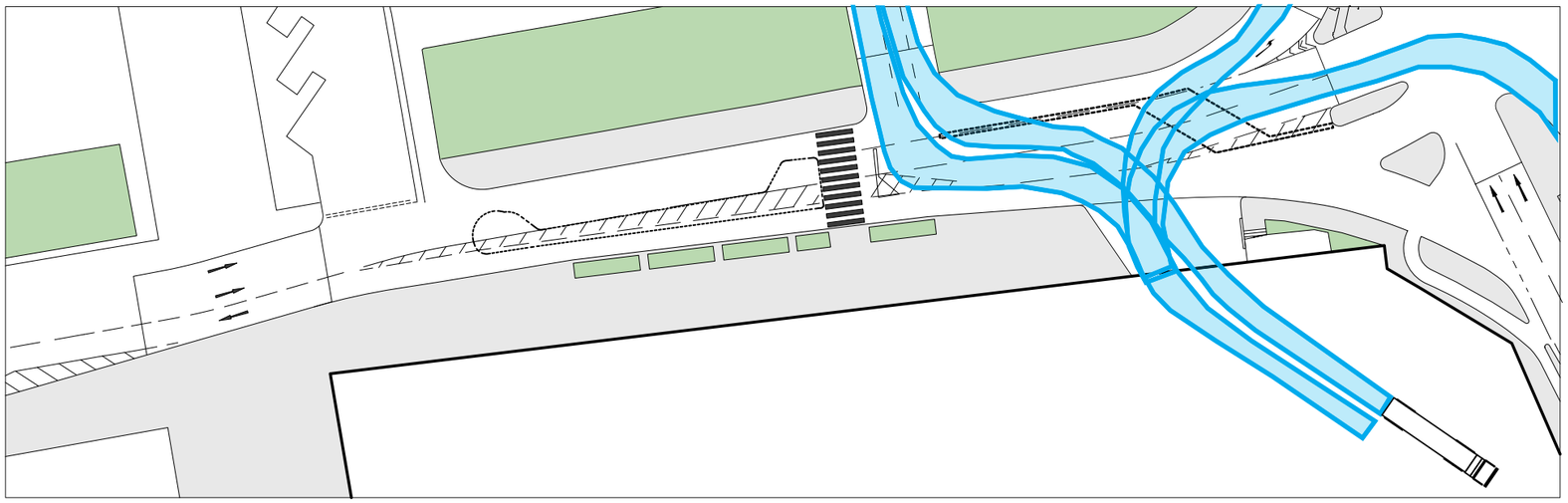
Level 00 Service Yard

The service yard provides for parking and unloading of production vehicles associated with an event. Eight vehicles are able to load directly onto the event floor at any one time, whilst parking for four further large vehicles is available.

The service yard also provides for more day-to-day delivery activities including catering deliveries, and provides the location for storage and collection of waste compactors.

The service yard is located on the eastern side of the Venue and is accessed from Sportcity Way. Vehicle tracking analysis has been undertaken to ensure vehicles can safely enter the area, turn and exit again. A two way entry route is provided so entering vehicles can safely pass those exiting. This is to avoid the need for vehicles to wait on Sportcity Way before entering.

The service yard entry is to be provided with traffic lights linked to Sportcity Way's junction with Alan Turing Way. Service yard traffic will only be permitted to cross Sportcity Way when the traffic approaching from the east is held at a red light as part of the existing junction signal phasing.



Servicing to Alan Turing Way/Sportcity Way Junction

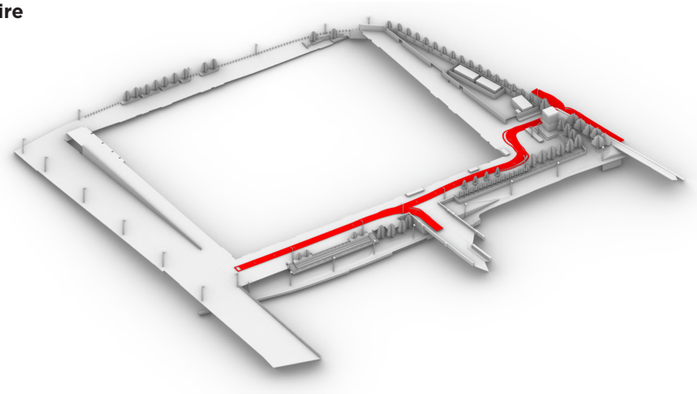
7.17 Level 01 Servicing

Level 01 Podium Compound

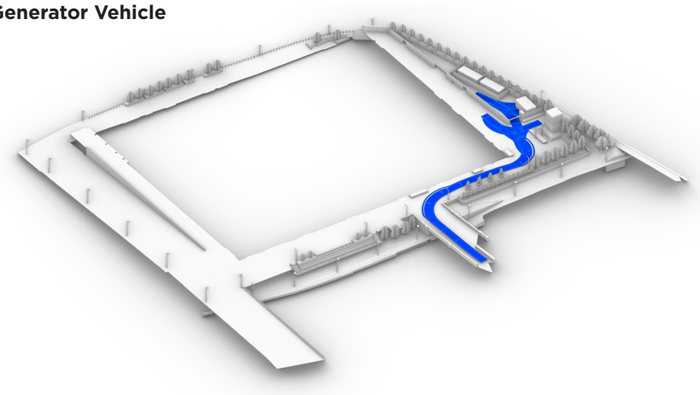
Separate waste and vehicle compounds are provided on the Level 01 podium. The waste compound is provided for temporary storage of waste before it is transferred to the campus-wide waste management facility. The waste is stored in large wheeled bins, which are loaded onto or towed by a vehicle to be transferred. These vehicles access the podium via Joe Mercer Way.

The vehicle compound is provided as a facility to occasionally park Outside Broadcast trucks or other vehicles required for a special event, such as equipment for a temporary ice rink. The space has been designed to be flexible to respond to a variety of needs, but is able to accommodate a typical Outside Broadcast set up consisting; two large production trucks, two generators and a satellite uplink vehicle. These vehicles access the area via Forge Lane Bridge from the south, their entry will be carefully managed to avoid conflict with arena users and other pedestrians. Vehicles are able to enter, turn and leave the podium area safely in a forward gear.

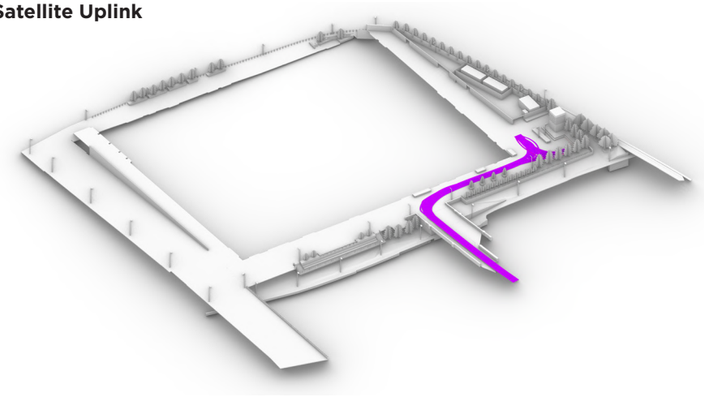
ATR Fire



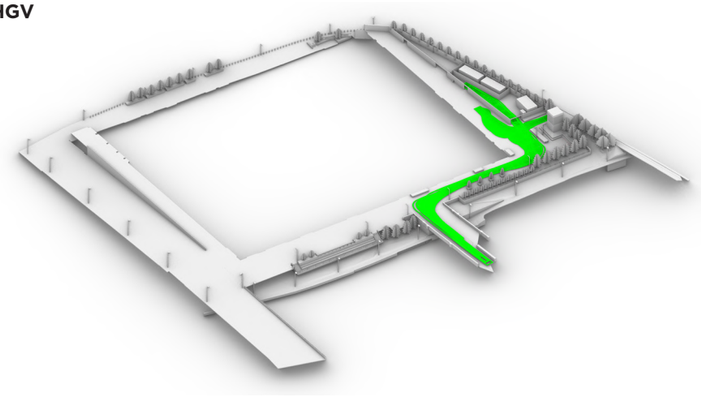
ATR Generator Vehicle



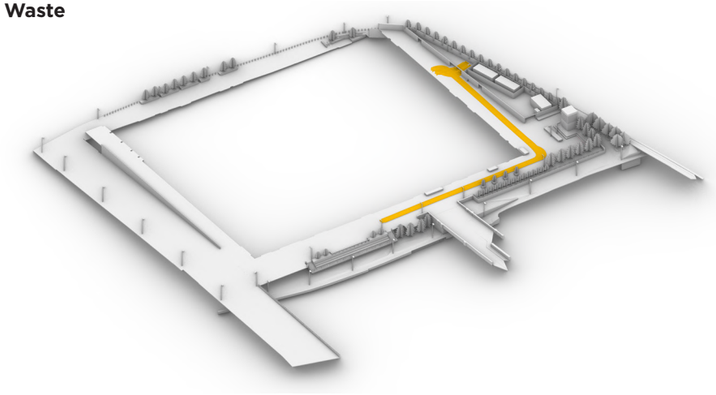
ATR Satellite Uplink



ATR HGV



ATR Waste



7.18 Sanitary Accommodation

Unisex wheelchair accessible toilets will generally be provided in the same locations as male/female toilets. As per BS 8300-2:2018 the minimum internal finished dimension will be no less than 1700mm wide by 2200mm deep. If doors open inwards then the room size will be increased to include a space of 800mm by 1400mm clear of all fixtures (including drop down rail when in the down position) and the arc of the door swing.

Accessible WCs will provide a choice of left and right hand transfer and have been provided on the basis of 1:15 for wheelchair accessible seating generally within 40m travel distance. They will also be located in areas where there are no wheelchair viewing positions, recognising that not everyone who uses an accessible WC is a wheelchair user.

Every series of separate-sex WCs will incorporate at least one cubicle for ambulant disabled people, 800mm to 1000mmwide, with 750mm clear space forward of the pan and an outward swinging door as per BS 8300-2 Figure 46. Where there are four or more cubicles there will be a cubicle for ambulant disabled people plus an enlarged cubicle 1200mm wide with an outward swinging door, based on the provisions of AD M section 5.

Changing Places facilities provide sufficient space and equipment for people who are not able to use the toilet independently, and will accord with the recommendations of BS 8300-1, with location to be determined as the design progresses. There are three ‘parent’ rooms at Level 03, the details of which are also to be developed as the design progresses.

Back of house accommodation will include changing and WC facilities suitable for ambulant disabled and wheelchair users who are staff, performers, team or crew members; in all cases the level of accommodation will equivalent facilities, and where possible, integrated facilities. Accessible facilities will also be provided for members of the event and production control areas at Level 04.

There are three ‘parent’ rooms at Level 03, the details of which are to be developed as the design progresses.

As part of on-going design development the following considerations will be made:

- As part of the future design development, if self-contained cubicles are used to provide gender neutral facilities, those toilet compartments should accord with the spatial requirements of BS 6465-2. In addition, at least one self-contained unisex toilet for ambulant disabled people should be co-located per group of gender neutral toilets as per BS 8300-2 Figure 39 illustrate; it is 1200mm wide, with 750mm forward of the pan and includes a basin. These can be handed with an open side to the left or right

- Baby changing facilities will not be provided in wheelchair accessible toilets. If baby changing facilities are provided, there will be wheelchair accessible baby changing facilities.

- Fixtures and fittings are to contrast visually from their backgrounds.

While people with sensory impairments primarily require an assistance dog, people with mobility impairments and wheelchair users may also have an assistance dog with them. It is essential to provide suitable areas for assistance dogs to be watered and relieve themselves. A dog spending area will be located in the North East of Level 01 to provide relieving stations for assistance dogs. This will be designed in accordance with the RNIB’s ‘Guidance on the provision of spending facilities for guide dogs and other assistance dogs’.

- Communication aids such as sound reinforcement systems to assist hearing aid users, as well as the hard-of-hearing and deafened staff and visitors are to be provided as appropriate

- Counter loops must be incorporated into the design of ticket offices/reception areas/ bar service counters and similar locations to be determined.

SUSTAINABILITY

8.0 Sustainable Design and Construction 130
8.2 Waste Strategy 132

8

8.0 Sustainable Design and Construction

OVG Manchester at Eastlands will promote sustainability and be at the forefront of energy efficiency and best practice low carbon design, aspiring to be the most sustainable entertainment venue in the UK and amongst the world's leading.

Sustainable development is inherent within the regeneration proposals transforming a brownfield site earmarked within the Eastlands Regeneration Framework into an iconic venue for Manchester to be proud of. A regeneration story that brings local economic and social value whilst playing its full part in delivering the Our Manchester 2025 vision and ambitious Manchester Zero Carbon 2038 commitments. The Arena aligns with and is fully supportive of the impressive sustainability initiatives already in place on the Etihad Campus, as underpinned by the Etihad Campus Strategic Sustainability Framework. Collectively, we aspire to be a pioneer for the whole of Manchester in pursuing its twin objective of realising locally-inclusive, globally-competitive economic growth, whilst simultaneously transforming to a net zero-carbon campus.

Responding to the Climate Emergency

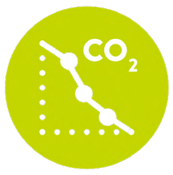
Manchester City Council has declared a Climate Emergency alongside a bold commitment to be zero carbon by 2038. The Arena fully acknowledges that business as usual is no longer an option which is why we are putting forward an exemplar building in comparison to other arenas. The venue significantly exceeds all council planning targets relating to sustainable development and sets a new benchmark for venues in the UK.

Reference should be made to the Sustainability Statement, Energy Statement, Climate Change Chapter within the Environmental Impact Assessment, and other supporting technical documents for full details of the sustainability proposals. Key sustainability initiatives integrated into the Proposed Development are summarised on the next page, framed by the four key themes of the Etihad Campus Strategic Sustainability Framework:

- Climate & nature positive
- Vibrant & inclusive
- Healthy & active
- Open & connected

Best in class

Benchmarking has been undertaken to substantiate the aspiration to be the most sustainable UK venue. Comparisons have been drawn with comparable arenas currently submitted for planning. Focusing on the two key planning metrics for sustainability, the Proposed Development outperforms the others in terms of carbon emissions savings over the current Building Regulations Part L 2013 baseline and is on par with the target of BREEAM Excellent using the current scheme.

Zero Carbon 2038	Social Value	Fully Inclusive	Sustainable Travel
The Venue fully supports Manchester Zero Carbon 2038 strategy, with a deliverable route map to achieve this.	During construction and after opening, the Venue supports the local economy and communities through new employment and skills opportunities.	The Venue will be the best in class inclusive venue for both audience and performers, aspiring for Attitude is Everything Gold Status.	The Arena will benefit from excellent public transport links inherent in the Etihad Campus and will continue to support initiatives that make walking and cycling the preferred option.
			

Venue	Status	Energy
OVG Manchester	• Capacity 23,500 • Planning decision 2020	• 34% carbon emissions saving over Part L 2013, with potential for greater, pending final design (>Policy EN6: Min. 6%)) • PV area maximised on the roof • New cutting edge environmentally friendly fully recyclable Organic PV system proposed • REEAM Excellent (>Policy DM1: BREEAM Very Good)
YTL Arena, Bristol	• Capacity 17,080 • Planning decision 2020	• 32.9% carbon emissions saving (Part L 2013) • 10,000 m2 solar PV with battery storage • BREEAM Excellent
MSG Sphere, London	• Capacity 21,500 • Planning decision 2020	• 13.4% carbon emissions saving (Part L 2013) • 36m2 PV (external lighting) • BREEAM Very Good

Beyond Planning Compliance

The Proposed Development significantly exceeds the two key planning metrics for sustainability.

MCC Core Strategy	OVG Manchester
Policy EN 6 CO2 reductions from low or zero carbon energy supplies Min 15% improvement on Part L 2010 (equivalent to 6% improvement on Part L 2013)	34% improvement on Part L 2013, with potential for greater once the design is finalised.
Policy DM 1 Development Management & Guide to Development in Manchester Min BREEAM Very Good	BREEAM Excellent

In addition, the Proposed Development has anticipated potential future policy relating to the Zero Carbon 2038 by actively:

- Going beyond Part L compliance to predict total energy consumption in operation and develop a route map to zero carbon by 2038;
- Undertaking an embodied carbon assessment to create a baseline for improvement during detailed design; and
- Proactively defining exemplar sustainable development in its widest sense and aligning with emerging climate emergency design.

8.1 Sustainable Design and Construction (Continued)

Climate & Nature Positive Beacon of Manchester's rapid transition to a zero0carbon city, rich with wildlife and green infrastructure		**Vibrant & Inclusive** An arena for everyone, providing unrivalled education, training and employment opportunities for local residents	**Healthy & Active** World-class destination for performance and leisure, inspiring healthy lifestyles and workplace	**Open & Connected** Fully integrated into the fabric of the City, with excellent transport connections that support sustainable travel
Zero-Carbon 2038 Committed route map to be net zero carbon by 2038	**Sustainable Catering** Sustainable and responsible food policy delivered in conjunction with our partners	**Local Opportunities** Commitment to significant local employment, skills and opportunities	**Safe & Secure Venue** World-leading robust strategy developed with GMP, Protect Advisers, and existing Campus operations team	**Walking & Cycling** Direct investment to enhance routes to/ from the city centre, with connection to the Manchester Beelines network
Efficient building services systems 34% CO2 emissions reduction against Building Regulations Part L 2013 through intelligent energy efficient building services systems, with potential to be higher depending on final solutions identified (>6% for policy compliance)	**Zero Waste to Landfill, No Single Use Plastic** Operational targets to be set in operation in collaboration with supply chain.	**Local Economy** Estimated additional £47 million per year in direct annual local spending	**Eat Well** Healthy eating options & free drinking water provision	**Travel Planning** Integrated event ticketing and communication to promote sustainable transport planning at point of ticket sale
Renewable Technologies PV area maximised on the roof, with exploration of a new cutting edge environmentally friendly fully recyclable Organic PV system	**Reduced Embodied Carbon** Circular economy principles to reduce impact of construction materials, measured through a whole life carbon assessment	**Construction Opportunities** Estimated 3,344 FTE construction jobs, including 100 apprenticeships, created during construction phase	**Healthy Environment** Optimised comfort in temperature, indoor air quality, lighting and acoustics	**Cycle Storage** Investment in improved campus wide cycle facilities (240 extra covered spaces across the Campus)
Low Carbon Technologies Air Source Heat Pumps for heating and cooling, with heat recovery	**Ecological Enhancements** Replacement of poor-quality site with improved ecology and environment onsite and adjacent	**Arena Opportunities** Estimated 566 FTE jobs created over the first 20 years of operation	**Access to Nature** 'Green biodiversity ring' of planting around the arena and canal side public realm enhanced by wildflowers	**Travel Information** Clear signposting and live travel information to the inherent excellent public transport links on and near the Campus
Ultra-efficient Building Envelope U-Values better than Part L 2013 (over 40% for roof, walls and floor and nearly 30% for glazing).	**Sustainable Drainage** Over 50% reduction in surface water run-off rates from existing through an innovative active system combining attenuation and rainwater harvesting.	**Everyone is Welcome** Best in class inclusive venue –Attitude is Everything Gold Status, Sensory Room, 2 No. Changing Places toilets	**Climate Resilience** Resilience to future increases in temperature	**Controlled Parking Zones** Improved residents' environment through reducing congestion and parking controls
District Heating Future proofed for connection if network becomes available	**Rainwater Harvesting** 100% rainwater for toilet flushing	**Responsible Neighbour** Establishing resident groups to ensure local views are always considered	**Active Travel** Plan to encourage walking and cycling	**Community Use** Working with our local partners to provide community activities and non-event day experiences

8.2 Waste Strategy

Waste Segregation and Storage

Waste will be separated at source into a number of streams. Residual waste and dry mixed recyclables (DMR) will be segregated venue-wide, with glass and organics also segregated in certain areas.

A large proportion of the venue's waste will be generated in the concourses. To reduce the risk of litter bins in these areas overflowing, cleaners will regularly empty them and transfer waste to larger bins in intermediate stores.

Waste generated within the bars and concession units will be stored within the units themselves, while waste produced in the hospitality areas will be backhauled to the kitchens on each level.

Waste Movement and Collection

OVG are keen to explore opportunities to integrate with the rest of the Etihad Campus and, where possible, to make use of existing infrastructure.

A portion of the venue's waste will therefore be moved to the existing Etihad Campus waste compound for collection, via the bin compound on the Level 01 podium. To ensure that the waste strategy offers sufficient resilience, provision will also be made for a portion of the venue's waste to be compacted on-site and collected from the Level 00 service yard.

At this stage, it is proposed that cleaners move residual waste to the compactors in the Level 00 service yard and DMR, organics and glass bins to the Level 01 bin compound, before transferring them to the Etihad Campus waste compound for consolidation and collection.

Waste will mainly be moved to Level 00 and Level 01 using the service lift in the north-east corner of the venue, although the service lift in the south-east corner can also be used if needed.

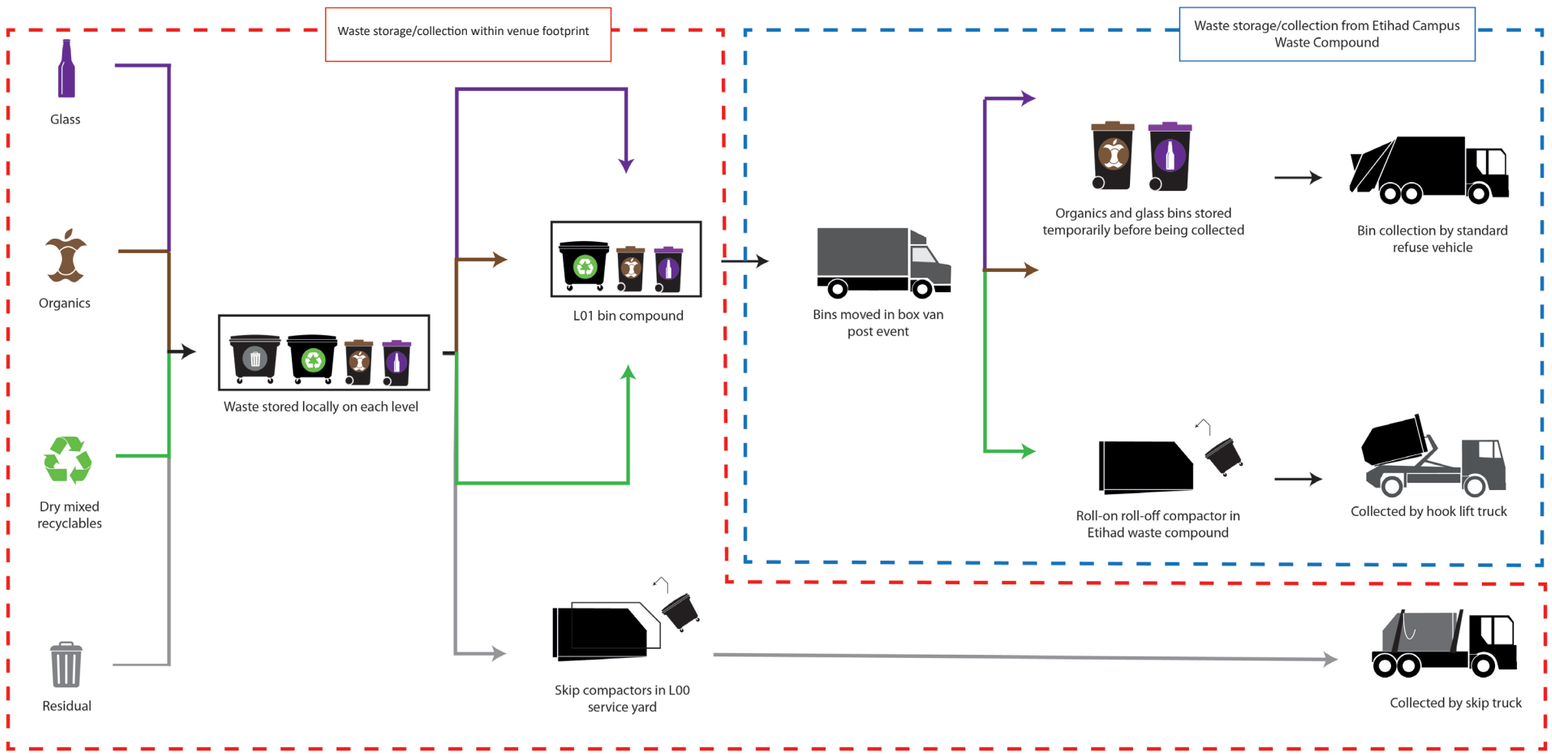
The compactors in the Level 00 service yard will be collected by a private contractor post-event using a skip-lift truck. Collection vehicles will access and exit the service yard via Sportcity Way to the north. The compactors have been oriented to ensure that the trucks do not obstruct the main servicing circulation route when they are making collections.

To maximise the efficiency of operations, it is recommended that DMR, glass and organics bins are moved from the Level 01 bin compound to the Etihad Campus waste compound using 3.5t box vans.

In order to avoid any adverse impacts on users of the campus, waste will be moved in the early hours, when levels of pedestrian activity are at their lowest.

Organics and glass bins will be collected from the Etihad Campus waste compound by a rear-end loader refuse vehicle, while DMR will be compacted. To minimise the number of waste vehicle trips, it is proposed that DMR is stored in a large portable roll-on roll-off compactor and collected by a hook-lift truck.

Further information can be found within the Waste Management Strategy in the EIA.



APPENDIX

9.0 Venue Plans - Level Ground Floor 134
9.1 Venue Plans - Level 01 135
9.2 Venue Plans - Level 02 136
9.3 Venue Plans - Level 03 137
9.4 Venue Plans - Level 04 138
9.5 Venue Plans - Level 05 139
9.6 Landscape Planting Schedule 140
9.8 Area Schedule 142
9.9 Planning Drawing Register 143

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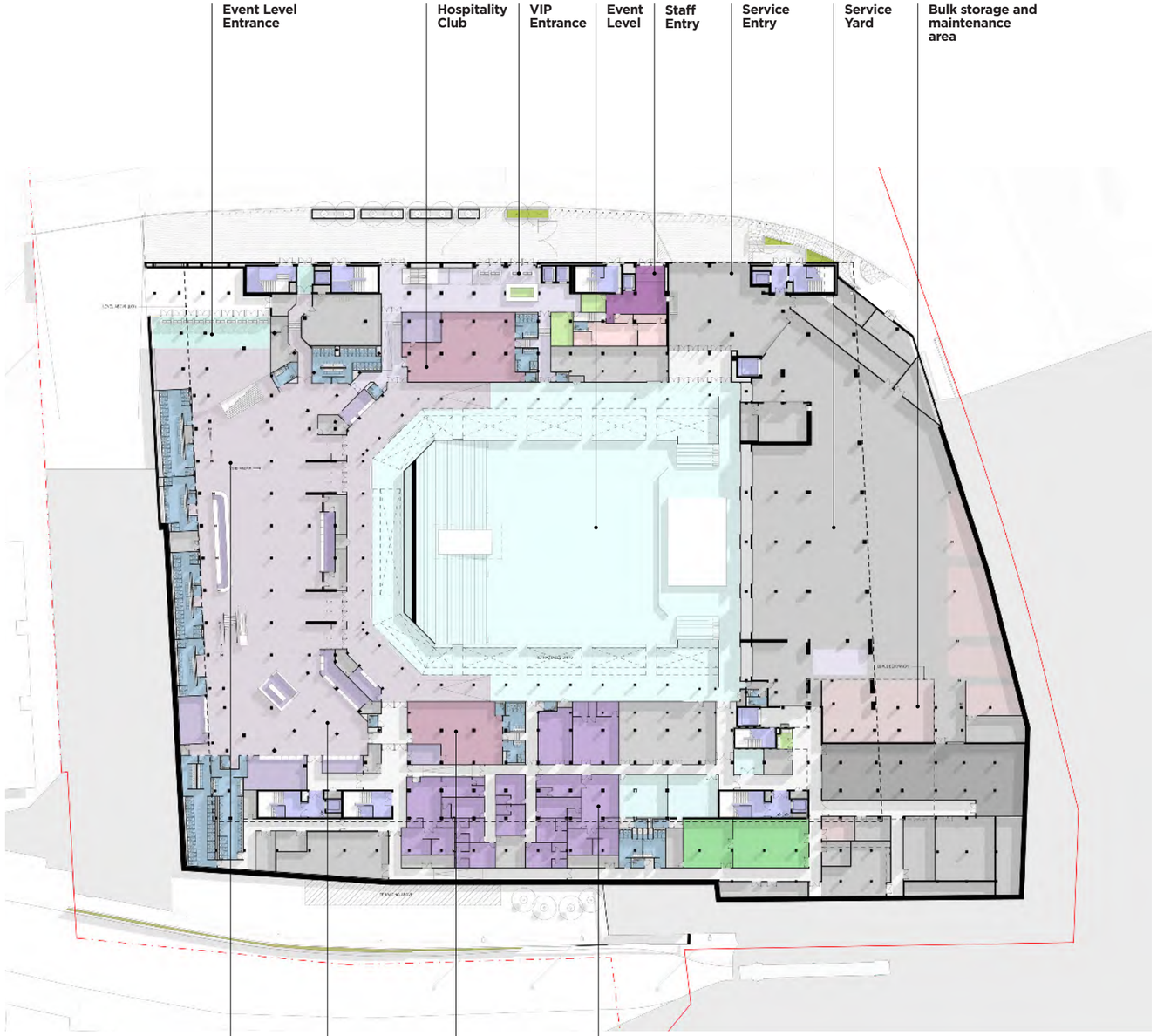
9.0 Venue Plans - Level Ground Floor

The base of the building is accessed from two sides, the north and the east.

The north side has the main vehicle entrance to the back of house service yard from Sportcity Way in the north east corner, and the premium hospitality entrance is centred to the north side, closest to the main car parks. An accessible entrance also forms part of this north entrance area, with internal ramped access to the auditorium and lift access to the upper levels. In the northwest corner is the main entrance for the auditorium floor guests from Joe Mercer Way, leading to the atrium hall concourse and food court. The atrium floor is connected to the upper levels by stairs, escalators and lifts in the main cores, and is a triple height space from Ground Floor through to Level 02. With feature bars and food service, this atrium space is the vibrant heart of the building pre-event. Access to the auditorium is through large banks of doors on the east side of the atrium, furthest from the stage end. To the north and south sides of the auditorium are two hospitality spaces, with access to the atrium space and the main floor, and to the lower tier, as required.

On the east side of the building, behind the stage end is the large service yard that is key to the efficient operation of the event set-up. Supported by an array of storage spaces, this area is also the main delivery point for the production kitchen in the south east corner. Adjacent to the north service yard entrance is a dedicated staff entrance and suite of management offices. Two large capacity service lifts are located to each side of the backstage area for transport of goods and equipment up through the building. A waste management compactor room is located close to the north service vehicle entrance, for ease of access.

On the southside of Level Ground Floor is the suite of artists' dressing rooms, green room and other management support spaces for performers and competitors. Event crew facilities are located alongside but separated from the artists' facilities in the south east corner, with excellent connectivity both to the auditorium and the back of house staging areas and facilities in the service yard.



- Auditorium
- Back of House
- Back of House Circulation
- Catering
- Concessions
- Concourse
- Circulation
- Crew/Production
- Hospitality
- Hospitality Circulation
- Kitchens
- Medical
- Merchandise
- Offices
- Open Storage
- Performers
- Plant
- Security
- Storage
- Ticketing
- Venue Operations
- Vertical Circulation
- WCs



9.1 Venue Plans - Level 01

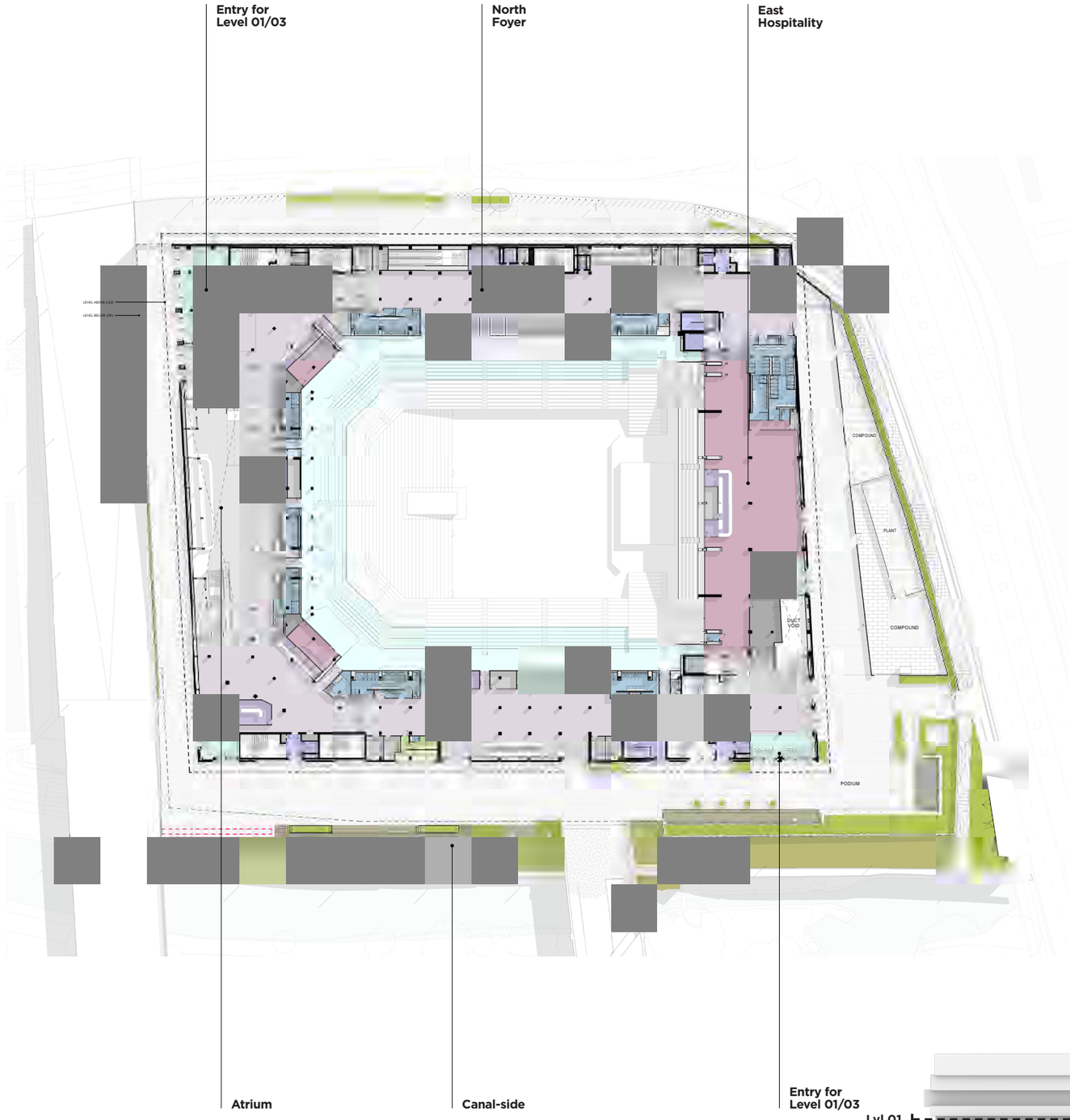
This level of the building is accessed from three sides, making best use of the existing site levels to bring spectators into the building. Primary entrances are on the north west and south east corners, taking spectators into the building to access the concourse at Level 01, and with lift, escalator and stair access up to Level 03. The northwest entrance is via a level platform across the front of the building accessed at the south west corner junction with Joe Mercer Way. This connects to the landscaped external space on the south side of the building that provides a level access route to the south east entrance.

The concourse extends through three sides of the building, from north through to west and south, and is lined with a range of spectator amenities for food, beverage and merchandise as well as distributed sanitary and other support facilities. The west concourse overlooks the atrium floor concourse and feature bar on the level below. Also on the south side is the venue box office, with a series of outward facing ticket windows to the canal-side approach, as well as internal ticketing information desk. The landscaping on the south side includes small seating areas facing the venue and overlooking the canal towpath, and potential spaces for pop-up food units, as well as a bar in the centre of the building façade which can open to the exterior area. A series of compartment doors in each concourse allows each zone to be opened as required either pre-event or on non-auditorium event days, offering additional use, activation and amenity.

At the back of the building, parallel with Alan Turing Way is a secondary entrance for the East Hospitality Lounge. This lounge has dedicated sanitary and catering support spaces.

The concourses and lounges all have level access to the back of the lower tier of the auditorium.

Separating the building from Alan Turing Way is the east external compound space – a series of enclosures for operational support, including occasional support vehicle parking and waste management.



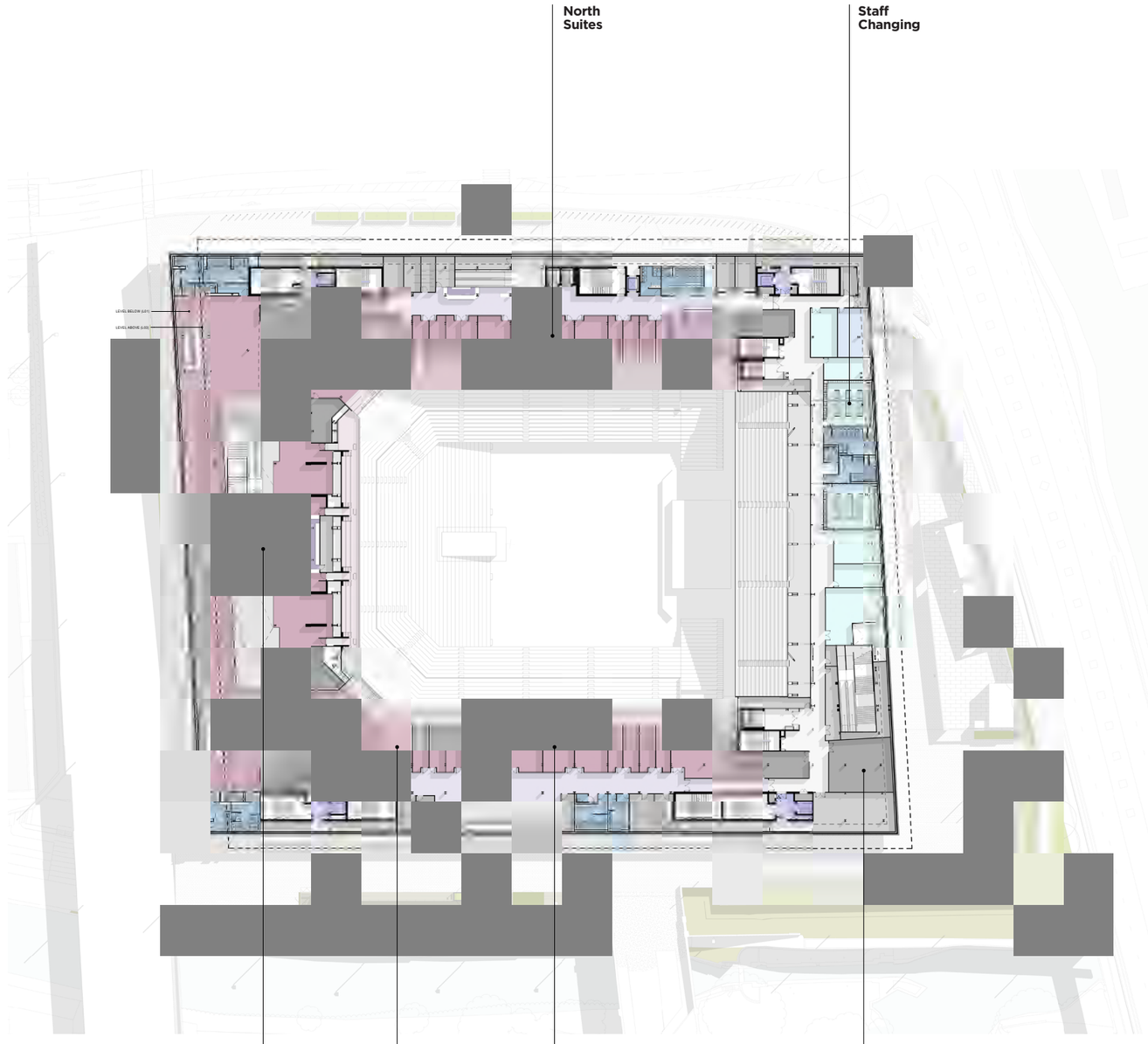
9.2 Venue Plans - Level 02

Hospitality guests arrive at the VIP entrance on the north side of the venue at Ground Floor, and access level 02 via dedicated escalator and lifts.

The majority of the premium seats in the auditorium space are located at this hospitality level, with guests seated on the north, west and south sides. The supporting accommodation is sub-divided into a series of spaces – individual suites and slightly larger 'loge' lounges that are open to the auditorium on the north and south sides, with dedicated seats on the tier in front. The west atrium lounge is separated from the auditorium by the rise of the south upper tier. However, the lounge surrounds the top level of the west atrium space, with views down to the concourse spaces below on Level 01 and Ground Floor.

A corridor circulation lounge route with bars, small seating areas and spectator support facilities connects all three sides of the Club level, with guests arriving into the space via the lifts and escalators from the central north hospitality entrance.

To the east side of the auditorium are the venue staff support facilities – including locker rooms, sanitary and shower facilities, a multi-faith room, and event office spaces, all accessed via the north side staff entrance lift and stair.

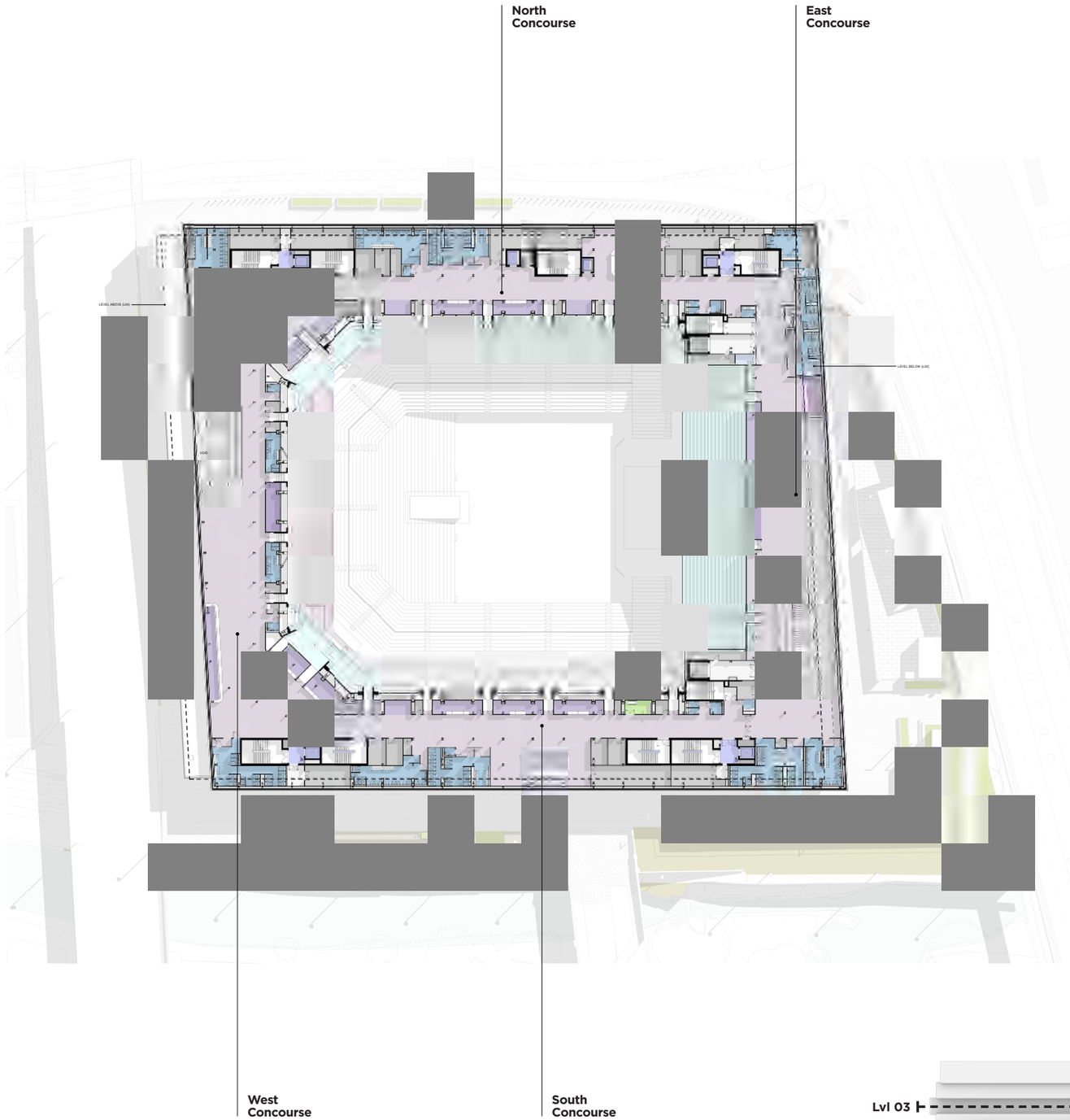




9.3 Venue Plans - Level 03

Level 03 serves the majority of spectators on the upper tier. From entrances on Level 01, people will travel by escalator and lift to this level, where a full circuit of concourse provides access to the main horseshoe upper tier on the north, west and south sides, and also to the east tier behind the stage.

Sanitary blocks, food and beverage and other spectator support facilities are distributed to all sides of the concourse, but predominantly to the north and south sides.

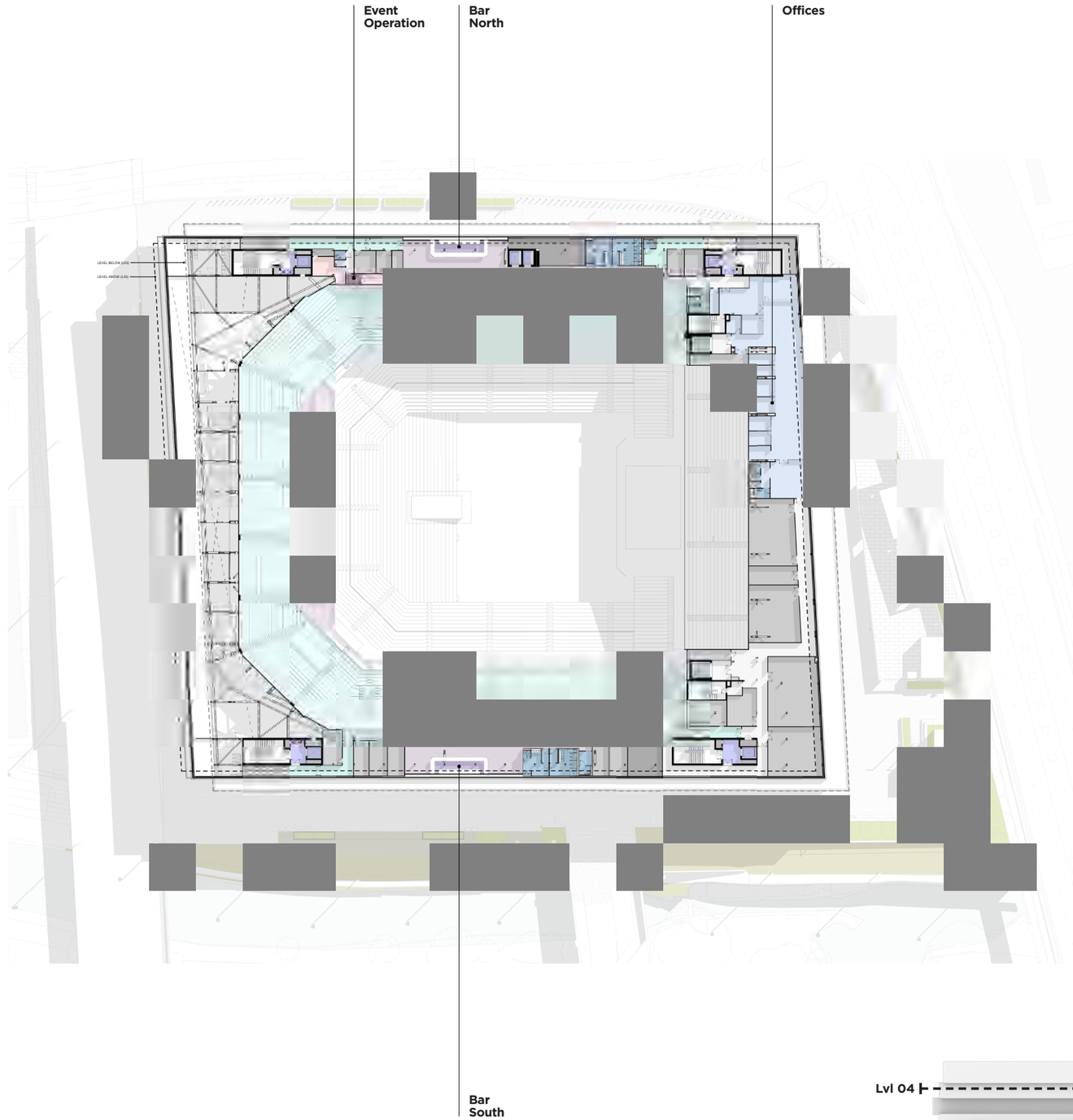




9.4 Venue Plans - Level 04

Spectator accommodation at Level 04 comprises two slim lounge spaces on the north and south sides that are open to the main auditorium with views down to the stage and event floor. Guests in these lounges do not have access to the back of the tier, and are accommodated at tables and drinks rails at the front of the lounge to watch performances. The lounges have dedicated sanitary, catering and bar support spaces.

The main venue management offices are located to the east side of the building on Level 04, along with sundry plant and storage spaces.

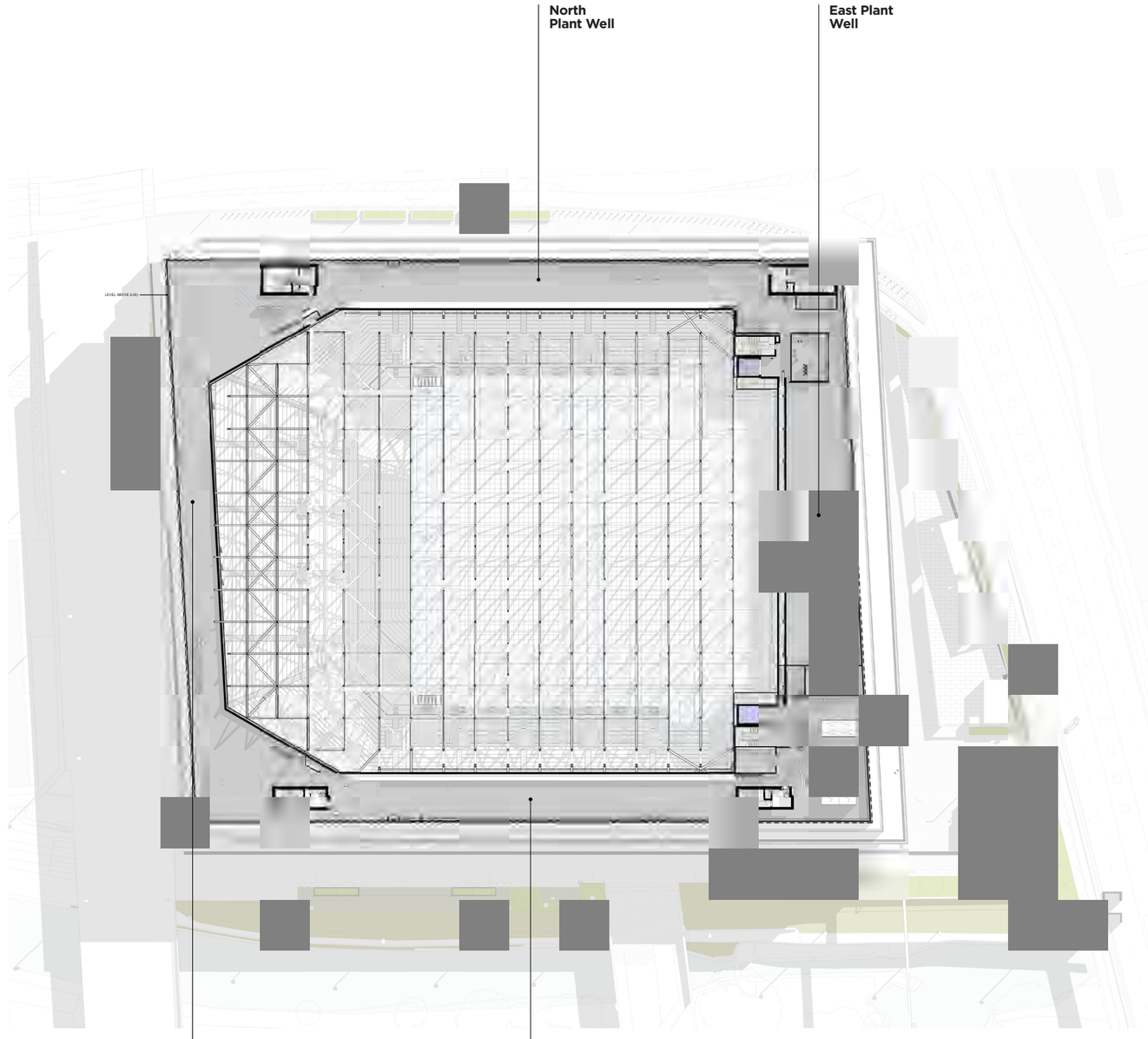


- Auditorium
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- Storage
- Ticketing
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- WCs



9.5 Venue Plans - Level 05

There is no spectator accommodation at Level 05. This level is primarily comprised of back of house plant spaces and external plant wells on the perimeter of the building. Vertical circulation is linked to access points for the ceiling rigging platforms at high level over the auditorium floor.



9.6 Landscape Planting Schedule

Code	Location/Zone	Species	Common Name	Pot Size	Height	Spread	Girth	Comment
Trees								
	South Side, tree in planter and tree in hard paving	*Sorbus aria*	Common whitebeam	0250L	4-6m	3-4m	20-25cm	Wind mitigation species
	South side along Ashton Canal	*Pinus sylvestris*	Scots Pine	0350L	6m	5m	20-25cm	Wind mitigation species
	South side, bottom left corner, along Ashton Canal and Alan Turin Way	*Pinus sylvestris*	Scots Pine	0450L	8m	6m	25-30cm	Wind mitigation species
	South side along Ashton Canal	*Betula pendula*	Common birch	0250L	4-6m	3-4m	20-25cm	Wind mitigation species
	South side along Ashton Canal	*Magnolia grandiflora*	Bullbay	0450L	8m	5m	25-30cm	Wind mitigation species
	East side along Alan Turing Way	*Tilia cordata*	Small-leaved lime	0250L	4-6m	3-4m	20-25cm	
	North Side along Sportcity Way	*Acer campestre*	Field maple	0350L	6m	3-4m	20-25cm	
Specimen Shrub								
	South side along Arena façade, in planter	*Prunus lusitanica*	Common laurel	0050L	2m	2-4m	8-10cm	Wind mitigation species
Planting Mix A								
	Shrubs							
	Planter areas on South side	*Hebe rakaiensis*	Rakai hebe	0005L	0.5-1m	1.5-2m	-	-
	Perennials							
	Planter areas on South side	*Achillea millefolium*	Common yarrow	0005L	0.5-1m	0.5-1m	-	-
	Planter areas on South side	*Achillea 'Terracotta'*	Yarrow 'Terracotta'	0005L	1-1.5m	0.1-0.5m		-
	Planter areas on South side	*Linaria vulgaris*	Common toadflax	0003L	0.1-0.5m	0.1-0.5m	-	-
	Planter areas on South side	*Liriope muscari 'Monroe White'*	Lilyturf 'Monroe White'	0003L	0.1-0.5m	0.1-0.5m	-	-
	Grasses							
	Planter areas on South side	*Carex flacca*	Glaucous sedge	0003L	0.1-0.5m	0.5-1m	-	-
	Planter areas on South side	*Carex pendula*	Pendulous sedge	0007L	1-1.5m	0.5-1m	-	-
	Planter areas on South side	*Helictotrichon sempervirens*	Blue Oat Grass	0007L	1-1.5m	0.5-1m	-	-
	Planter areas on South side	*Melica ciliata*	Silky-spike melic	0005L	0.5-1m	0.1-0.5m	-	-
	Planter areas on South side	*Schizachyrium scoparium*	Blue stem	0005L	0.5-1m	0.5-1m	-	-
	Ground covers							
	Planter areas on South side	*Cotoneaster dammeri*	Bearberry Cotoneaster	0003L	0.1-0.5m	1.5-2.5m	-	-
	Planter areas on South side	*Pachysandra terminalis 'Green Carpet'*	Japanese spurge 'Green Carpet'	0003L	0.1-0.5m	0.5-1m	-	-
Planting Mix B								
	Shrubs							
	East side along Alan Turing Way	*Hebe rakaiensis*	Rakai hebe	0005L	0.5-1m	1.5-2m	-	-
	East side along Alan Turing Way	*Philadelphus 'Belle Etoile'*	Mock orange 'Belle Etoile'	0007L	1-1.5m	1.5-2m	-	-
	East side along Alan Turing Way	*Viburnum tinus*	Laurustinus	0007L	1-1.5m	1.5-2m	-	-
	Perennials							
	East side along Alan Turing Way	*Liriope muscari 'Monroe White'*	Lilyturf 'Monroe White'	0003L	0.1-0.5m	0.1-0.5m	-	-
	Grasses							
	East side along Alan Turing Way	*Melica ciliata*	Silky-spike melic	0005L	0.5-1m	0.1-0.5m	-	-
	Ground covers							
	East side along Alan Turing Way	*Pachysandra terminalis 'Green Carpet'*	Japanese spurge 'Green Carpet'	0003L	0.1-0.5m	0.5-1m	-	-

9.7 Landscape Planting Schedule

Code	Location/Zone	Species	Common Name	Pot Size	Height	Spread	Girth	Comment
Planting Mix C								
	Shrubs							
	North Side along Sportcity Way	*Sarcococca hookeriana var. humilis*	Dwarf sweet box	0005L	0.5-1m	0.5-1m	-	-
	North Side along Sportcity Way	*Skimmia japonica 'Nymans'*	Skimmia 'Nymans'	0005L	0.5-1m	1-1.5m	-	-
	Ferns							
	North Side along Sportcity Way	*Dryopteris erythrosora*	Japanese shield fern	0005L	0.5-1m	0.5-1m	-	-
	North Side along Sportcity Way	*Dryopteris filix-mas*	Male fern	0007L	1-1.5m	0.5-1m	-	-
	North Side along Sportcity Way	*Polystichum munitum*	Western sword fern	0007L	1-1.5m	1-1.5m	-	-
Wildflower Mix								
	South side along Ashton Canal	*Festuca ovina*	Sheeps fescue	0001L	0.2m	0.1m	-	-
	South side along Ashton Canal	*Polypodium cambricum*	Southern polypody fern	0002L	0.3m	0.3m	-	-
	South side along Ashton Canal	*Lotus corniculatus*	Birds foot trefoil	Seed	-	-	-	-
	South side along Ashton Canal	*Anthyllis vulneraria*	Kidney vetch	Seed	-	-	-	-
	South side along Ashton Canal	*Hypericum montanum*	Pale St Johns wort	0001L	0.2m	0.1m	-	-
	South side along Ashton Canal	*Thymus pulegioides*	Large Thyme	0001L	0.2m	0.1m	-	-
	South side along Ashton Canal	*Primula veris*	Cowslip	0001L	0.2m	0.1m	-	-
	South side along Ashton Canal	*Achillea millefolium*	Yarrow	0001L	0.3m	0.1m	-	-
	South side along Ashton Canal	*Salvia verbenaca*	Wild clary	0001L	0.3m	0.1m	-	-
	South side along Ashton Canal	*Knautia arvensis*	Field scabious	0002L	0.3m	0.3m	-	-
	South side along Ashton Canal	*Leontodon hispidus*	Rough Hawkbit	Seed	-	-	-	-
	South side along Ashton Canal	*Geranium sanguineum*	Bloody cranes-bill	0002L	0.3m	0.2m	-	-
	South side along Ashton Canal	*Veronica spicata subs. Hybrida*	Western Spiked Speedwell	0002L	0.3m	0.3m	-	-
	South side along Ashton Canal	*Centaurea nigra*	Common knapweed	0002L	0.3m	0.3m	-	-
	South side along Ashton Canal	*Carex humilis*	Dwarf Sedge	0002L	0.3m	0.3m	-	-
	South side along Ashton Canal	*Carex digitata*	Fingered Sedge	0002L	0.3m	0.3m	-	-
	South side along Ashton Canal	*Scilla autumnalis*	Autumn squill	0001L	0.2m	0.1m	-	-
	South side along Ashton Canal	*Sedum forsterianum*	Rock stonecrop	0002L	0.3m	0.3m	-	-
Climbers								
	Green Screens on East, West and South side	*Carpinus betulus*	Common hornbeam	0007L	3m	3m	-	-
	Green Screens on East, West and South side	*Hedera helix 'Woerner'*	English ivy	0007L	3m	3m	-	-
	Green Screens on East, West and South side	*Hedera helix 'Goldchild'*	Ivy 'Goldchild'	0007L	1.5m	1.5m	-	-
	Green Screens on East, West and South side	*Pyracantha 'Dart's Red'*	Firethorn 'Dart's Red'	0007L	2m	2m	-	-

9.8 Area Schedule

Area Schedule (GEA)					
Level	**Name**	**Use Class**	**Use Class**	**Use Class**	**m²**
Level GF	GEA LGF	D2			17309 m²
Level GF	GEA LGF Base Atrium	A1	A3	A4	3964 m²
Level 0M	GEA 0M	D2			1497 m²
Level 01	GEA L01	D2			4848 m²
Level 01	GEA L01 Atrium	A1	A3	A4	2331 m²
Level 01	GEA L01 Canal Popup		A3		41 m²
Level 01	GEA L01 Canalside		A3	A4	1233 m²
Level 01	GEA L01 Back Stage	A1	A3	A4	1235 m²
Level 02	GEA L02 Tier	D2			352 m²
Level 02	GEA L02	D2			2436 m²
Level 02	GEA L02 Atrium		A3	A4	3593 m²
Level 02	GEA L02 North		A3	A4	1749 m²
Level 02	GEA L02 South		A3	A4	1839 m²
Level 03	GEA L03 Tier	D2			861 m²
Level 03	GEA L03	D2			10743 m²
Level 04	GEA L04	D2			2888 m²
Level 04	GEA L04 North		A3	A4	798 m²
Level 04	GEA L04 South		A3	A4	668 m²
Level 05	GEA Upper TIer	D2			4899 m²
Roof	GEA L05	D2			5323 m²
TOTAL GEA					**68608m²**

Area Schedule (GIA)	
Level	**Area**
Level GF	20477 m²
Level 0M	1497 m²
Level 01	9573 m²
Level 02	9460 m²
Level 03	10211 m²
Level 04	4301 m²
Level 05	5563 m²
TOTAL GIA	**61082m²**

9.9 Planning Drawing Register

Drawing Number	Name (Line 1) NAME OF PACKAGE	e (Line 2)TYPE OF DRA\	Name (Line 3)LEVEL	Format	Scale	Author	Check By	Approved By	14.02.2020
BRA-POP-XX-XX-DR-A-0600	SITE - EXISTING LOCATION PLAN	PLANNING		A0	1:1250	MC	DS	PG	00
BRA-POP-XX-XX-DR-A-0601	SITE - EXISTING SITE SURVEY	PLANNING		A0	1:250	MC	DS	PG	00
BRA-POP-XX-XX-DR-A-0602	SITE - EXISTING SITE SURVEY NORTH	PLANNING		A0	1:1250	MC	DS	PG	00
BRA-POP-XX-XX-DR-A-0605	SITE - PROPOSED SITE PLAN	PLANNING		A0	1:1250	GK	DS	PG	00
BRA-POP-XX-XX-DR-A-0606	SITE - PROPOSED BLOCK PLAN	PLANNING		A0	1:500	GK	DS	PG	00
BRA-POP-ZZ-GF-DR-A-0611	LEVEL GF - ALL ZONES	PLANNING	RL 55.00	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-M0-DR-A-0612	LEVEL M0 - ALL ZONES	PLANNING	RL. 59.14	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-01-DR-A-0613	LEVEL 01 - ALL ZONES	PLANNING	RL 61.20	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-02-DR-A-0614	LEVEL 02 - ALL ZONES	PLANNING	RL. 65.70	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-03-DR-A-0615	LEVEL 03 - ALL ZONES	PLANNING	RL 69.80	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-04-DR-A-0617	LEVEL 04 - ALL ZONES	PLANNING	RL 76.95	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-05-DR-A-0619	LEVEL 05 - ALL ZONES	PLANNING	RL 83.58	A0	1:250	MC	DS	PG	00
BRA-POP-ZZ-RF-DR-A-0620	ROOF LEVEL - ALL ZONES	PLANNING	RL 94.40	A0	1:250	MC	DS	PG	00
BRA-POP-XX-ZZ-DR-A-0623	ELEVATIONS	PLANNING		A0	1:250	GK	PG	DS	00
BRA-POP-XX-ZZ-DR-A-0624	ELEVATIONS	PLANNING		A0	1:250	GK	PG	DS	00
BRA-POP-XX-ZZ-DR-A-0625	OVERALL SECTIONS 01 & 02	PLANNING		A0	1:250	MC	DS	PG	00
BRA-POP-XX-ZZ-DR-A-0626	OVERALL SECTIONS 03 & 04	PLANNING		A0	1:250	MC	DS	PG	00
BRA-POP-XX-ZZ-DR-A-0627	FACADE SECTIONS	PLANNING		A0	1:50	GK	PG	DS	00
BRA-POP-XX-ZZ-DR-A-0628	FACADE SECTIONS	PLANNING		A0	1:50	GK	PG	DS	00
BRA-POP-ZZ-ZZ-DR-A-0629	FACADE - OFFICE WINDOWS	PLANNING		A0	1:50	GK	PG	DS	00
BRA-POP-XX-ZZ-DR-A-0630	FACADE - TYPICAL PERFORATED PANELS	PLANNING		A0	As indicated	GK	PG	DS	00
BRA-POP-XX-ZZ-DR-A-0631	FACADE - TYPICAL ENTRANCE DOORS	PLANNING		A0	As indicated	GK	PG	DS	00
BRA-POP-XX-01-DR-A-0632	FACADE - CANALSIDE UP AND OVER DOOR	PLANNING		A0	As indicated	GK	PG	DS	00
BRA-POP-XX-01-DR-A-0633	FACADE - BOX OFFICE	PLANNING		A0	As indicated	GK	PG	DS	00
BRA-POP-XX-GF-DR-A-0634	FACADE - NORTHWEST ENTRANCE	PLANNING		A0	1:50	GK	PG	DS	00
BRA-POP-XX-GF-DR-A-0635	FACADE - SERVICE YARD & VIP ENTRANCE	PLANNING		A0	1:50	GK	PG	DS	00
BRA-POP-ZZ-ZZ-DR-L-0650	LANDSCAPE SITE PLAN	PLANNING		A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-GF-DR-L-0651	LANDSCAPE GENERAL ARRANGEMENT PLAN	PLANNING	GROUND FLOOR	A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-01-DR-L-0652	LANDSCAPE GENERAL ARRANGEMENT PLAN	PLANNING	LEVEL 01	A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-GF-DR-L-0653	HARD LANDSCAPE AND FURNITURE PLAN	PLANNING	GROUND FLOOR	A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-01-DR-L-0654	HARD LANDSCAPE AND FURNITURE PLAN	PLANNING	LEVEL 01	A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-GF-DR-L-0655	SOFT LANDSCAPE PLAN	PLANNING	GROUND FLOOR	A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-01-DR-L-0656	SOFT LANDSCAPE PLAN	PLANNING	LEVEL 01	A0	1:250	ML	TJ	DS	00
BRA-POP-ZZ-ZZ-DR-L-0657	LANDSCAPE SECTIONS	PLANNING		A0	1:100	ML	TJ	DS	00
BRA-POP-ZZ-ZZ-DR-L-0658	TYPICAL PAVING DETAILS	PLANNING		A0	1:20	FP	TJ	DS	00
BRA-POP-XX-XX-DR-YW-0660	WAYFINDING TOTEM LOCATION AND ELEVATION	DRAFT PLANNING		A0	As indicated	LQ	SB	DS	

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