Development Control
Gloucester City Council
PO Box 2017, Pershore, WR10 9BJ
01452 396 396
development.control@gloucester.gov.uk
www.gloucester.gov.uk/planning

Application for Removal or Variation of a Condition following Grant of Planning Permission or Listed Building Consent

Town and Country Planning Act 1990 (as amended); Planning (Listed Buildings and Conservation Areas Act) 1990 (as amended)

Publication of applications on planning authority websites

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website. If you require any further clarification, please contact the Authority's planning department.

Site Location

Disclaimer: We can only make recommendations based on the answers given in the questions.

If you cannot provide a postcode, the description of site location must be completed. Please provide the most accurate site description you can, to help locate the site - for example "field to the North of the Post Office".

Number

Suffix

Property Name

Liberty House

Address Line 1

St Catherine Street

Address Line 2

Address Line 3

Gloucestershire

Town/city

Gloucester

Postcode

GL1 2BX

Description of site location must be completed if postcode is not known:

Easting (x)

383343

Northing (y)

219104

Description

Applicant Details

Name/Company

Title

Mr

First name

Matt

Surname

Mulcahy

Company Name

Gloucester Rugby Club

Address

Address line 1

Gloucester Rugby Club

Address line 2

Kingsholm Stadium

Address line 3

Town/City

Gloucester

County

Gloucestershire

Country

Postcode

GL1 2BX

Are you an agent acting on behalf of the applicant?

- [x] Yes
- [ ] No

Contact Details

Primary number

Secondary number

Fax number

Email address

***** REDACTED ******

Agent Details

Name/Company

Title

Mr

First name

Chris

Surname

Fleming

Company Name

McLoughlin Planning

Address

Address line 1

First Floor

Address line 2

119 Promenade

Address line 3

Town/City

CHELTENHAM

County

Country

Postcode

GL50 1NW

Contact Details

Primary number

***** REDACTED ******

Secondary number

Fax number

Email address

***** REDACTED ******

Description of the Proposal

Please provide a description of the approved development as shown on the decision letter

Change of use from warehouse (Class B8) to training facilities and associated facilities for Gloucester Rugby Club (Class E (d)), replacement windows, new window openings, new cladding to building, and associated external alterations.

Reference number

21/00758/FUL

Date of decision (date must be pre-application submission)

09/12/2022

Please state the condition number(s) to which this application relates

Condition number(s)

Condition 4

Has the development already started?

- [x] Yes
- [ ] No

If Yes, please state when the development was started (date must be pre-application submission)

09/12/2022

Has the development been completed?

- [ ] Yes
- [x] No

Condition(s) - Variation/Removal

Please state why you wish the condition(s) to be removed or changed

Please see supporting letter

If you wish the existing condition to be changed, please state how you wish the condition to be varied

Please see supporting letter

Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

- [x] Yes
- [ ] No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact?

- [x] The agent
- [ ] The applicant
- [ ] Other person

Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

- [ ] Yes
- [x] No

Ownership Certificates and Agricultural Land Declaration

Certificates under Article 14 - Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended)

Please answer the following questions to determine which Certificate of Ownership you need to complete: A, B, C or D.

Is the applicant the sole owner of all the land to which this application relates; and has the applicant been the sole owner for more than 21 days?

- [ ] Yes
- [x] No

Can you give appropriate notice to all the other owners/agricultural tenants? (Select 'Yes' if there are no other owners/agricultural tenants)

- [x] Yes
- [ ] No

Certificate Of Ownership - Certificate B

I certify/ The applicant certifies that:

- [x] **I have/The applicant has given the requisite notice to everyone else (as listed below) who, on the day 21 days before the date of this application, was the owner* and/or agricultural tenant** of any part of the land or building to which this application relates; or**
- [ ] **The applicant is the sole owner of all the land or buildings to which this application relates and there are no other owners* and/or agricultural tenants**.**

*** "owner" is a person with a freehold interest or leasehold interest with at least 7 years left to run.**

**** "agricultural tenant" has the meaning given in section 65(8) of the Town and Country Planning Act 1990**

Owner/Agricultural Tenant

Name of Owner/Agricultural Tenant:
***** REDACTED ******

House name:
Buccleuch Property

Number:

Suffix:

Address line 1:
27 Silvermills Court

Address Line 2:
Henderson Place Lane

Town/City:
Edinburgh

Postcode:
EH3 5DG

Date notice served (DD/MM/YYYY):
20/12/2022

Person Family Name:

Person Role

◯ The Applicant
⊘ The Agent

Title

Mr

First Name

Chris

Surname

Fleming

Declaration Date

20/12/2022

☑ Declaration made

Declaration

I / We hereby apply for Removal/Variation of a condition as described in this form and accompanying plans/drawings and additional information. I / We confirm that, to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine options of the persons giving them. I / We also accept that: Once submitted, this information will be transmitted to the Local Planning Authority and, once validated by them, be made available as part of a public register and on the authority's website; our system will automatically generate and send you emails in regard to the submission of this application.

☑ I / We agree to the outlined declaration

Signed

Nathan McLoughlin

Date

20/12/2022

McLOUGHLIN PLANNING

119 Promenade
Cheltenham
GL50 1NW
[redacted]
w www.mplanning.co.uk

MP Ref: CF/0595
Email: [redacted]
Tel: [redacted]

20/12/2022

Gloucester City Council
Planning Department
VIA EMAIL ONLY

Dear Sir/Madam

Gloucester Rugby Training Centre | Variation of Condition 4.

McLoughlin Planning has been instructed by Gloucester Rugby Club to submit a Planning Application for the variation of Condition 4 of Planning Permission: 21/00758/FUL. The purpose of this letter is to set out the comprehensive planning case for the variation of opening hours and show how the proposal accords with the provisions of the Development Plan. To this end the letter is structured as follows:

- Site Description & Planning History
- Proposed Development
- The Planning Case
- Conclusions

In addition, this letter is accompanied by the following material:

- Design and Access Statement
- Business Case
- Hospitality Report
- Transport Statement & Event Transport Management Plan

Site Description & Planning History

The site comprises the existing Indoor Training Centre, hospitality facilities associated with Gloucester Rugby. The site sits to the North of Gloucester City Centre, adjacent to Kingsholm Stadium at 33-44 St Catherine Street.

The only relevant history is the application below:

- 21/00758/FUL – Change of use from warehouse to training centre and associated facilities – Approved

Proposed Development

This planning application proposes the variation of Condition 4 of planning permission 21/00758/FUL to allow the for a change to the hours of operation. Its variation will allow events to take place whether there is rugby on at Kingsholm Stadium or not. For the avoidance of doubt the condition states:

"The hospitality elements of the development shall only be used for visiting members of the public (non-club staff) as an ancillary function to the training centre and on Gloucester Rugby home game match days only."

In line with the variation of condition the following events are proposed:

- Major Sporting events fan Zone
- Private C&E
- Comedy Nights/ Box Office Events
- Christmas Events
- Room hire

The primary function of the hospitality element would still be used as an ancillary facility to the training centre and Gloucester Rugby Club as set out within the planning permission. The proposed changes would enable the Club to accommodate additional events outside of matchdays. The proposed variation would be in line with licensing agreements for the venue.

Planning Policy

Section 38(6) of the Town and Country Planning Act 1990 (As amended) requires Planning Applications to be determined in accordance with the Development Plan unless material considerations indicate otherwise. The Development Plan currently comprises the Gloucester, Cheltenham, and Tewkesbury Joint Core Strategy (JCS) and the national Planning Policy Framework is a material consideration in planning decisions.

Gloucester, Cheltenham and Tewkesbury JCS

1. The JCS, adopted in 2017 is a key part of the development plant. This site is situated outside of Gloucester City Centre, as defined in the JCS, but clearly within the urban area. In terms of relevant planning policies, it is important to highlight the strategic objections of the plan in addition to detailed policy requirements.

   Strategic Objective 1 looks to build a strong and competitive urban economy. This objective is particularly pertinent in this case as the aim of the objective looks to:

   "*Provide the right conditions and sufficient land in appropriate locations to support existing businesses and attract new ones particularly from major high-tech and knowledge-based industries, tourism, retail and leisure sector, to rebalance the local economy away from its public sector dominance, improve the areas economic resilience, support a highly-skilled workforce and continue to provide a focus for economic growth within the county."*

   And to *"develop the area's role as a tourist destination, building on the unique characteristics and festival culture that already exists in the JCS area."*

2. In terms of specific policies, these are as follows;

   SD14 – Health & Environmental Quality
   INF4 – Social & Community Infrastructure
   These are explored in detail below.

   Gloucester City Emerging Local Plan

   Gloucester City Council has an emerging local plan currently at regulation 19 stage so can be given some weight. The relevant policies worth consideration are as follows:

Policy B5 Tourism and Culture

The Planning Case

In granting Planning Permission, the Local Planning Authority have accepted that a hospitality function in the building is acceptable in principle. However, its use is currently limited to use in line with the Training Centre and Gloucester Rugby home game days only.

Crucially the rationale for this condition is established in the reason for Condition 4 stated below:

"To establish the basis of the assessment, and in the interests of the amenities of the area and highway safety."

In setting this condition, the reason is clear and precise as per Planning Policy Guidance Paragraph 23 in that it expressly relates to a protecting the amenities of the area and highway safety only. In lifting the condition therefore evidence is required to show that the amenities of the area and the highway safety are not compromised by the condition's removal.

Impact on Local Amenity

Policy SD14 of the JCS, sets out that new development must:

"Result in no unacceptable levels of air, noise, water, light or soil pollution or odour, either above or cumulatively, with respect to relevant national and EU limit values"

In addition to this Paragraph 130 Part F of Section 12 of the NPPF sets out that developments should 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

In response Noise and Vibration Assessments have been prepared by PDA in accordance with BS7445. In this, the report concludes that the overall impact is considered to be low (Paragraph 7.3), provided that noise levels are not exceeded. In addition to this, the report refers to mitigation measures such as noise limiters and venue fit out. These could be secured by condition. As a result, the requirements of Policy SD14 are met.

Highway Safety

Policy INF1 of the JCS relates to the transport network and is supportive of development that dose not result in a severe impact on the highways network. This is echoed in the NPPF by paragraph 111.

The capacity for the venue is 900 for live music and 720 for indoor sports events. A transport Statement and Event Transport Management Plan has been prepared by Key Transport Consultants and is submitted as part of this application. It demonstrates that on non-matchdays and outside of the training centre opening hours there is parking available suitable for 300 people attending events by car with further nearby car parks available to ensure that around 600 people could be hosted at the venue without causing a significant parking problem locally. Furthermore, fore events in excess of 600 people the Transport Management Plan proposed to take advantage of existing match day parking arrangements which experiences crowds of around 16,000 people.

In addition to the suitable parking facilities the site is in a highly accessible location either by public transport or on foot Paragraph 6.8 of the report prepared by Key Transport Consultants considers that 20% of people will travel to the venue in methods other than by private car further

demonstrating that events of over 600 people could be accommodated without significant off-site parking demand. As a result, the requirements of Policy INF1 are met.

Conclusions

The purpose of this letter is to support the Planning Application for the variation of condition 4 of Planning Permission: 21/00758/FUL. In so doing, this along with the additional reports and information submitted, comprehensively demonstrates the case for this variation and how the proposal accords with the provisions of the Development Plan that seek to protect local amenity & highway safety.

The proposal provides substantial benefits to the local economy by allowing greater variety of events to take place within the city, ensuring a continued positive contribution the Rugby Club makes on the citys economy. on the local area in terms of the revenue it creates and the employment it supports. This is all in accordance with the Strategic Objective 1 of the JCS set out above.

In so doing, the technical moise, vibration & highways reports have explored the impacts arising from operations outside of current. This work has concluded that there will not be an unacceptable level of impact across these three considerations

Therefore, in accordance with Section 38(6) of the Town and Country Planning Act 1990 (As amended) The proposed variation accords with the provisions of the Development Plan, and as a result, Planning Permission should be granted subject to appropriate revision of Condition 4.

Yours sincerely

Chris Fleming BSc (Hons) MA MRTPI
Associate Director

Hospitality & Events Venue

Design & Access / Gloucester Rugby

October 2022 | Revision 02

THE DEVELOPMENT STUDIO

This Document has been produced by

The Development Studio

Prepared by: JR

[redacted]

Project Ref: 2019

Gloucester Rugby Training Centre

Kingsholm Business Park

St. Catherine's Street

GL1 2BX

October 2022

Contents

Project Team

Client/Employer	Gloucester Rugby
Architects	The Development Studio
Planning Consultant	McLoughlin Planning
Transport Consultants	Key Transport Consultants
Acoustic & Consultants	PDA Acoustics
Licensing Team	Worthingtons Licensing Solutions

1.0 Introduction

1.01 Report Introduction

This *Design and Access Planning Statement* has been prepared by **The Development Studio**, who have been appointed by Gloucester Rugby to progress the design development of their new Hospitality and Events Venue at Kingsholm Business Park. The Venue forms part of a wider Gloucester Rugby Training Centre application made in July 2021 (21/00758/FUL).

This report is to support an application for the removal of conditions pertaining to the restriction of the Hospitality Venues use to 'Match Days Only'

1.02 Project Background

The Development Studio were appointed by Gloucester Rugby as Lead Consultants to deliver a planning application for the training centre and hospitality venue in in July 2021 (21/00758/FUL). This report refers to removal of condition(s) within that application.

The design development retains the core values of the original application, promoting reuse of currently underused areas, enhancing Gloucester Rugby's prominence within Kingsholm and thereby reinforcing its commitment to the area and Gloucester City Centre. The hospitality & events venue aims to be a vibrant and exciting place, hosting a wide range of events beyond sporting or match-day associated events, bringing a richness and more effective year-round use of the site.

1.03 Stakeholder Engagement

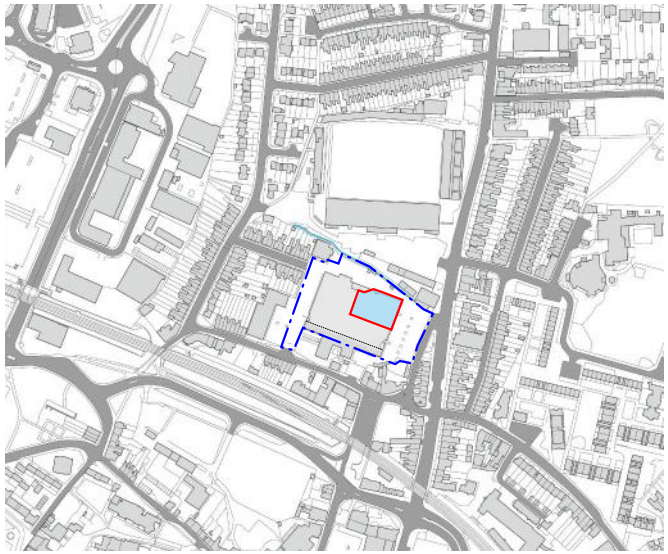
As part of the design process **The Development Studio** and Gloucester Rugby have engaged with various stakeholders, both internally and externally, to consult and communicate ideas, concerns and needs.

Detailed meetings with Gloucester City Council, Freemans Events and the club itself have helped to evolve the feasibility and interest from local parties. The developed design has been a response to these consultations, creating a flexible space that will serve a wide range of uses and events.

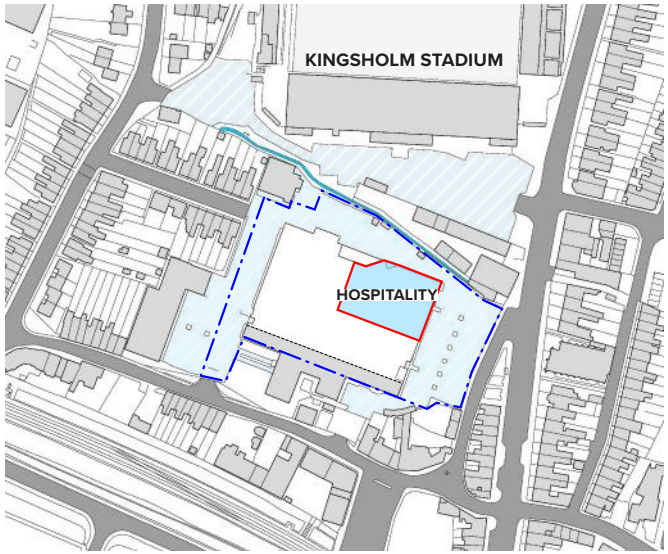
1.04 Supporting Documents

Below is a list of the supporting information for this application:

• Design & Access Statement	The Development Studio
• Planning Statement	McLoughlin Planning
• Acoustic Reports	PDA Acoustics
◦ Noise Impact Assessment	
◦ Reverberation Assessment	
• Travel/Transport Reports	Key Transport Consultants
◦ Transport Statement & ETMP	
◦ Travel Plan	



Site Location



Site Location

1.1 Site Introduction

1.11 Site History & Context

The site is a 4500m^2 warehouse, situated half a mile north of Gloucester City centre along Kingsholm Road (A430). The southern end of the warehouse contains office space, currently unoccupied as office space. Primary access is via St. Catherine's Street, to the south, and is also the primary vehicular access for this site.

Kingsholm Stadium, Gloucester Rugby's home ground, sits to the immediate north of the site. There is, however, a divide between the proposed Hospitality Venue site and the stadium in the form of the small River Twyver (Dockham Ditch). It lies approximately 0.5m below the site level for the warehouse.

An application for a pedestrian crossing linking the two sites together has been approved (21/00777/FUL). This application and the subsequent bridge to be delivered has been designed to accommodate for the capacities referenced in this report.

1.12 Kingsholm Stadium

Gloucester Rugby's operations at Kingsholm stadium go far beyond match-day events, with Kingsholm hosting a variety of private and corporate events. The stadium has demonstrated its capability and suitability to host such events. The sites location boasts good access to both Gloucester Station and the M5, with local bus lines and pedestrian routes serving the site also. The proposed Hospitality Venue works to enhance Gloucester Rugby's capabilities on the site bringing new events and opportunities to Gloucester, widening the range of events possible in Kingsholm and enhancing the use and space efficiency of the warehouse site.

Site location for hospitality space.

External entrance

Internal Photography

1.2 Proposal Vision

1.21 A New Events Venue

The hospitality and events venue aims to provide a new capacity of venue to Gloucester; catering for events larger than the capacity of the Guildhall but small than Kingsholm Stadium.

The vision for the venue is a vibrant, popular and multi-use space providing events that benefit the entire community. The warehouse will provide a stylish industrial chic vibe which is increasingly popular with established music and social venues. The venue will provide a high-class entertainment space and provide opportunities for Gloucester City to hold more indoor events within the city centre.

Key to this proposals vision is flexibility in the design. This will allow the space to be used for a wide variety of events, helping to maximise the potential of a currently underused space.

Lastly, the venues proximity to Kingsholm Stadium provides a unique opportunity to enhance match-day events, providing a space for fans to gather and support the club pre and post match. Similarly, the venue has opportunity to support other large events that occur at Kingsholm Stadium.

1.22 Planned Uses

The proposed hospitality and events venue will have a multitude of uses. The design team and Gloucester Rugby have identified several key uses for the venue, and have designed outline layouts and proposals for these. These uses are as follows:

- **Informal Bar / Events Usage**
  - Live Sports screenings
  - Gloucester Rugby away-game screenings.
  - Pre/post-match social space
  - Comedy Nights
  - Oktober Fest & other seasonal events
  - Fan Zone (upcoming World Cup)
- **Formal Dining**
  - Conferences & awards ceremonies
  - Venue / wedding hire
- **Auditorium**
  - Awards ceremonies
  - Formal event screenings
  - Seated shows & concerts
- **Concerts / Music Events (standing)**
- **Boxing & Wrestling Events**
- **E-Sports Venue**
- **Indoor Market Space**

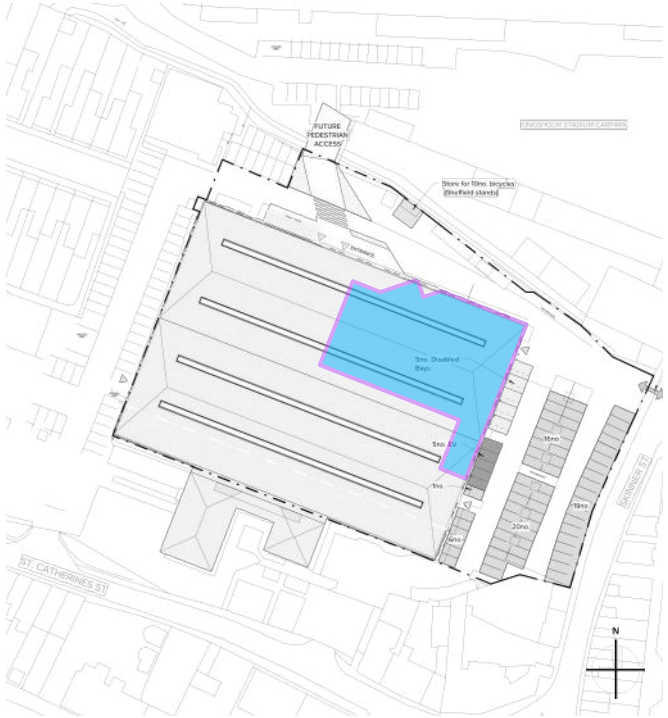
TDS Concept Images of Venue Space

1.3 Proposal Layout

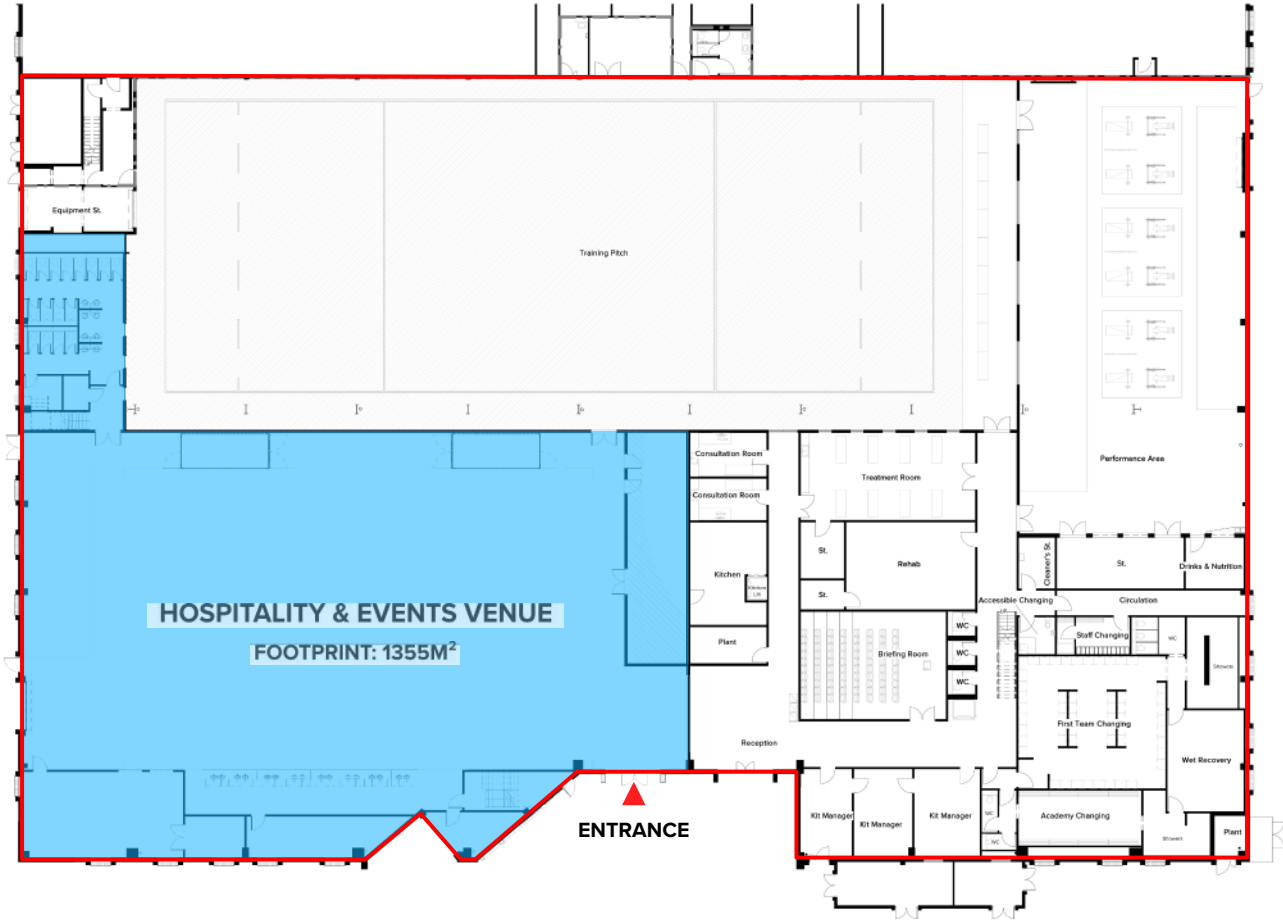
1.31 Proposal Introduction

The plan to the right demarks the 1355m^2 hospitality & events venue area in relation to the original planning application and wider development of the warehouse. The fundamental design concepts are the same, but there are minor alterations to the layout to improve the efficiency and Gloucester Rugby's evolving brief.

The following pages run through the elements that will allow for flexibility in use, allowing the venue to host a wide range of event types. The proposal is to deliver the hospitality in two phases to allow for an organic growth of the facility and to test the spatial layout and a range of events to ensure the final design can deliver on the business case.



Site Location Plan of the Hospitality Venue (on Original Site Plan).



Drawing 2019-TDS-XX-XX-DR-A-1010GAGroundFloor-00 with Venue demarked.

Original Application Boundary (21/00758/FUL)

Hospitality & Events Venue Area

1.3 Proposal Layout - Ground Floor

1.32 Design Alterations

Minor design changes have been made from the layout included with the original planning application. This includes a greater provision of WC's more than adequate for the maximum capacity of the venue, alongside a reworked bar, kitchen and cellar space to allow us to better cater for the space as the design has developed. Additionally, on the upper floor (see next page) a large plant room, dedicated staff changing and storage rooms have been included.

1.33 Main Stage & AV

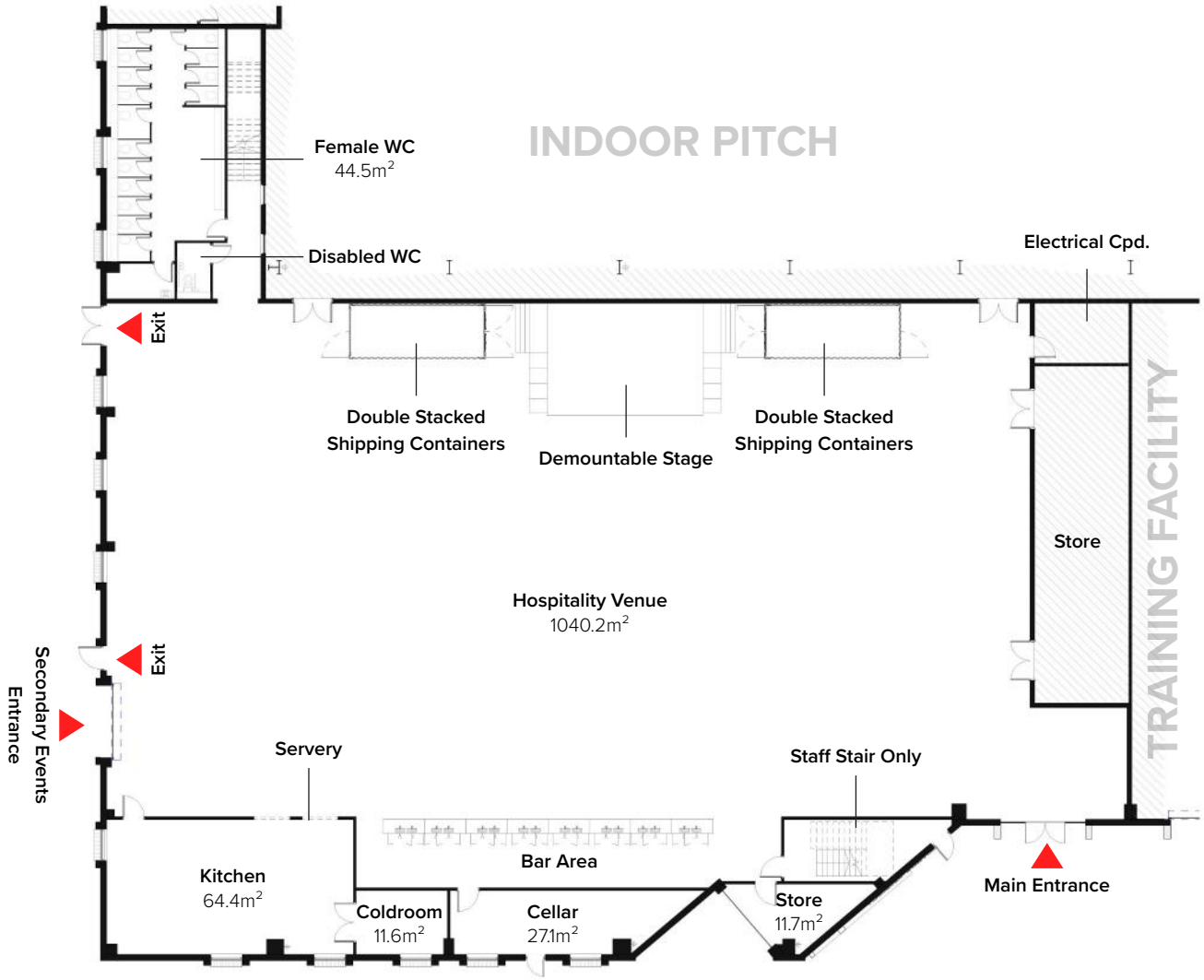
The venue situates itself around a main stage area that can be demounted and stored to allow flexibility in the spaces use. Either side of the stage will be a set of double stacked shipping containers. The containers will host large display screens, rigging for lighting and sound, and internally provide green room space and AV support space for the performances. A high-class audio system will be designed for the space to minimise reverberation internally, and provide the cleanest sound for the space. Similarly the audio systems design will help to minimise noise over spill into non-hospitality and external areas.

1.34 Bar & Kitchen

The Bar and Kitchen areas layout will provide beverage and light catering services for the hosted events. The design provides for an amply sized cellar and kitchen space for flexibility in the scale and use between different events.

1.35 WC Provisions

WC provisions have been made for 750 persons, split across two levels, calculated to serve the 'worst-case scenario' use of interval type events. Gloucester Rugby would bring in additional facilities for any events over this 750 person capacity.



Ground Floor Layout

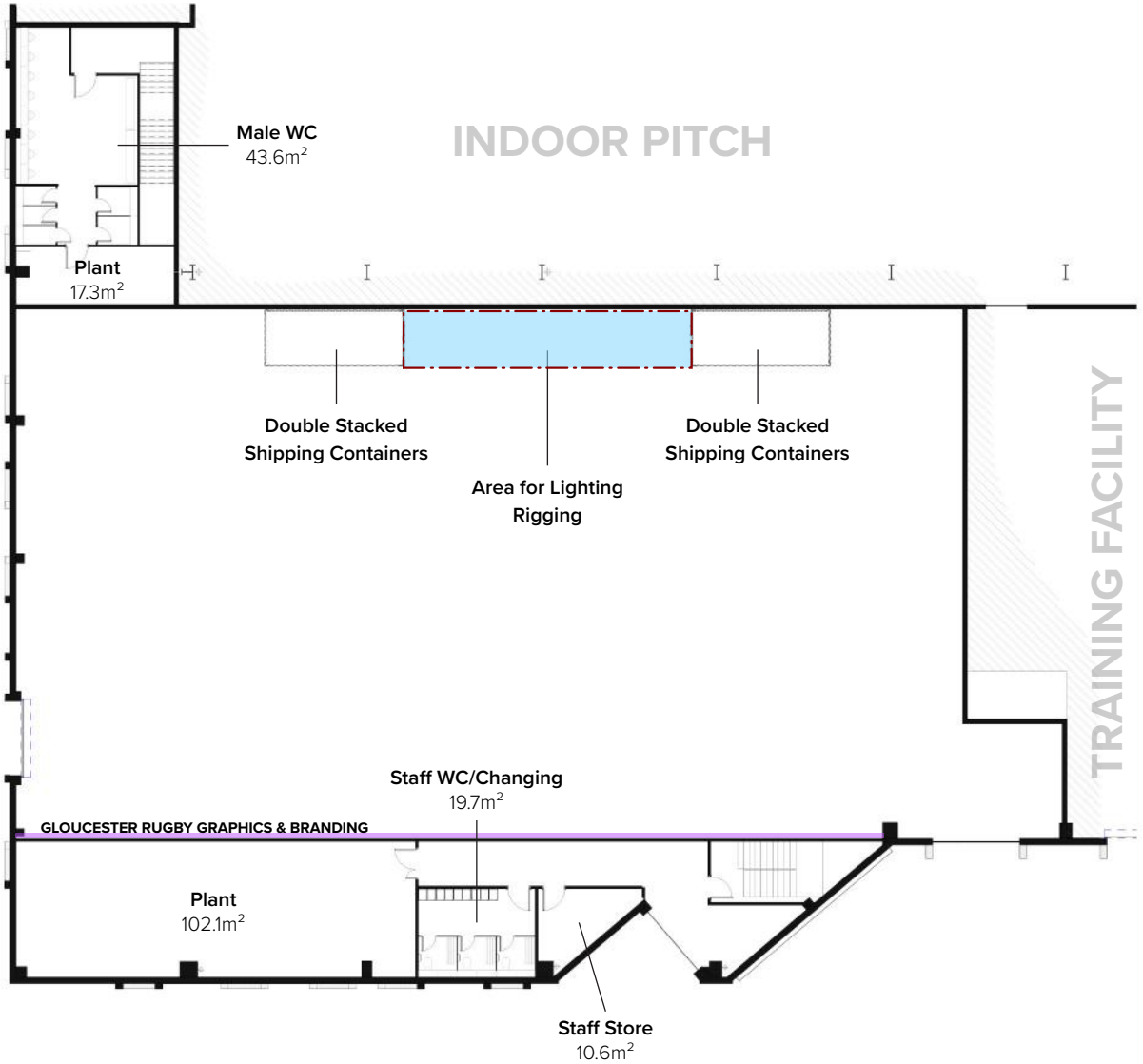
1.3 Proposal Layout - First Floor

1.36 Upper Floor Graphics & Branding

The upper floor plays host to dedicated staff changing and storage. Alongside this is the male WC provisions and two plant rooms to accommodate equipment that will be required to keep the space comfortable.

Throughout the warehouse there are ample opportunities for large, bold Gloucester Rugby graphics or sponsorship opportunities to be positioned. This will reinforce a continuation between the two sites (Kingsholm Warehouse & Kingsholm Stadium) and promote a single campus approach.

Example Light Rigging (top) and Branding & Graphics (bottom).



First Floor Layout

Layouts & Uses

02

2.0 Bar / Informal Layout

2.01 Primary Layout (720 Capacity)

The Bar / Informal Layout is the primary layout and function for the space, comprising bench and table layouts organised into rows. Surrounding this lies the bar, kitchen servery and designated areas for external catering companies (food vans) to operate.

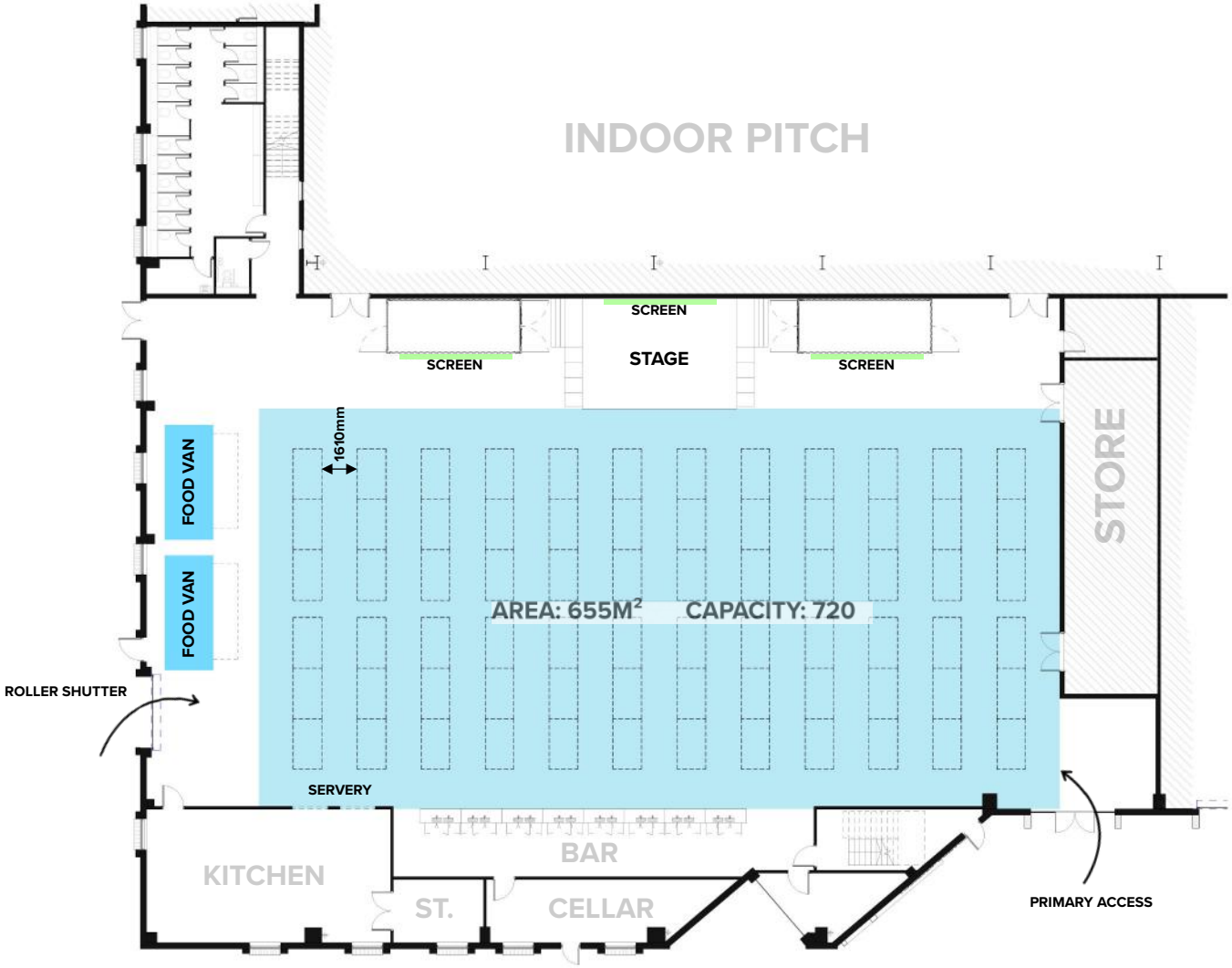
The stage area can host three large screens to allow live events to be shown, or accompany live acts on the stage.

Each square shown accommodates 10 persons in a bench table seating configuration, with 1610mm spacing between each row. This gives the space a comfortable capacity of 720, whilst maintaining accessible circulation across the space. The WC layouts accommodate for 750 persons. The tables and benches can be moved easily and stored within the large stores provided.

Use	Area	Capacity	Comments
Informal Bar	655m^2	720	-

Options for External Catering to support space.

The Depot in Cardiff displays a similar layout to the one described.



Bar / Informal Layout

2.1 Auditorium

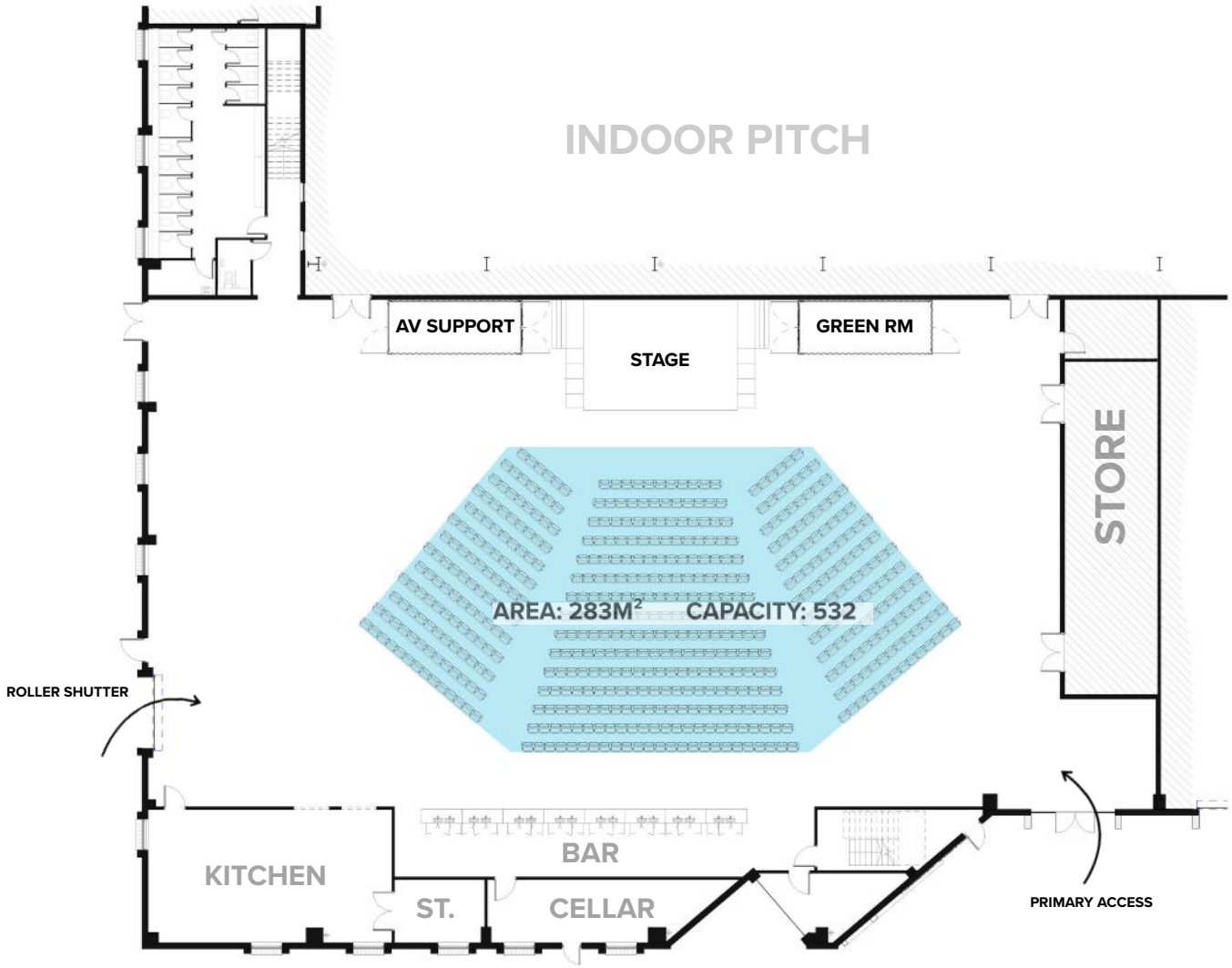
2.11 Seated Concerts & Auditorium

The seated auditorium layout encompasses 532 seats across a 283m^2 area. The layout will be used to host seated concerts and performances, alongside plays, film screenings or formal presentations.

The layout provides a good centred view on the raised stage area, allowing spectators to comfortably view the performance/presentation from all seats.

Seating layouts would be flexible to accommodate varying capacities and event types, and the seats themselves will be specified to be able to be stacked and stored efficiently.

Use	Area	Capacity	Comments
Auditorium	283m^2	532	-



Auditorium Layout

2.2 Formal Dining

2.21 Banquets & Dining

This layout accommodates a more formal event for seated banquets and dining. The layout shown displays 40 round-tables of 10 persons each.

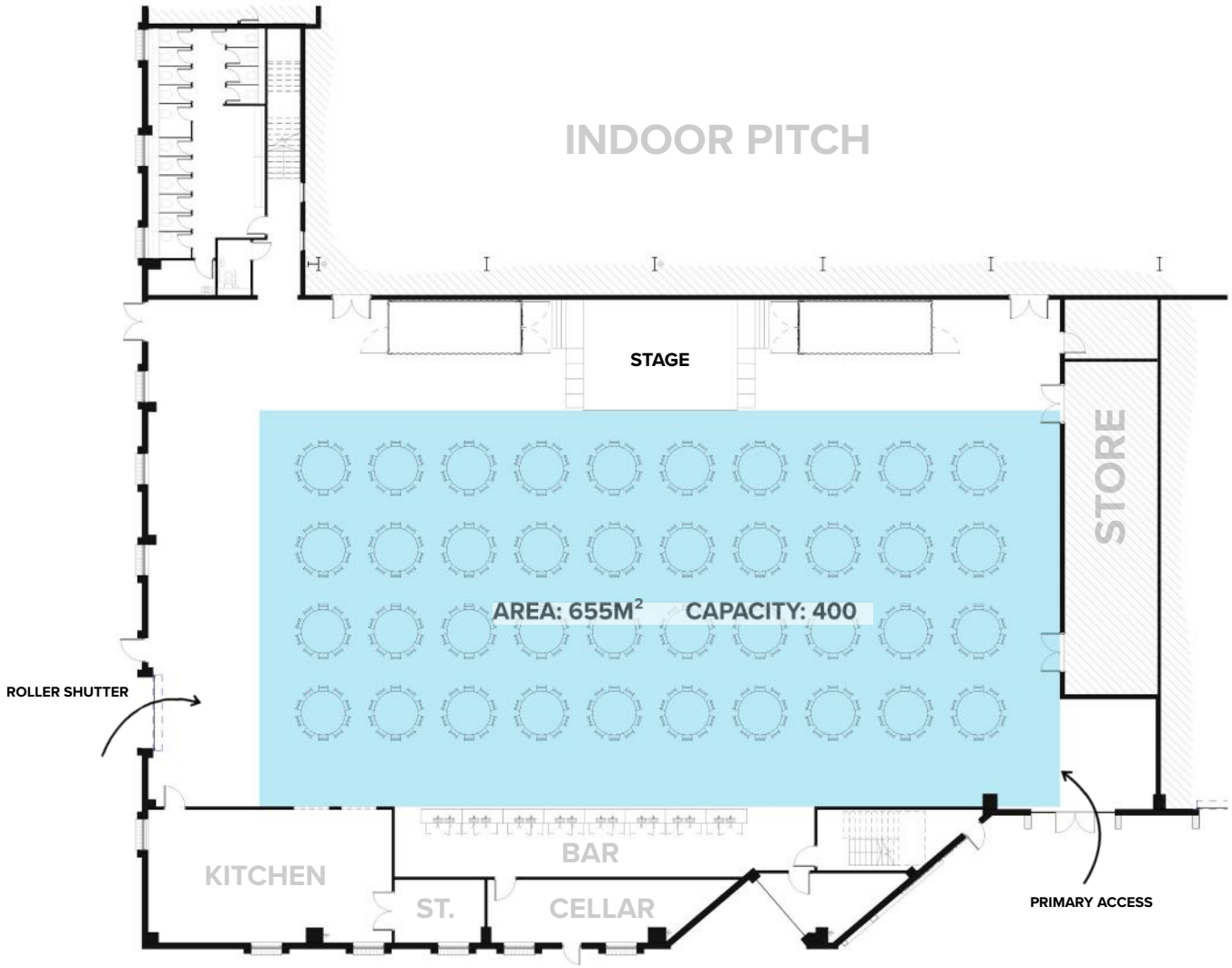
The tables are spaced at 1300mm allowing for comfortable access and way finding across the venue. This layout will allow Gloucester Rugby to host a number of more formal and pre-organised events, such as;

- Hosted Banquets (charity, community events etc.)
- Conferences
- Award Ceremonies & Presentations
- Venue Hire (weddings, religious ceremonies, school events)

The hospitality and events venue will increase Gloucester Rugby's capability in hosting such events, which is currently limited to 250 persons at Kingsholm Stadium.

The industrial design and high-class AV systems will provide a new and unique venue to Kingsholm.

Use	Area	Capacity	Comments
Formal Dining	655m^2	400	-



Formal Dining Layout

2.3 Boxing / In-the-Round

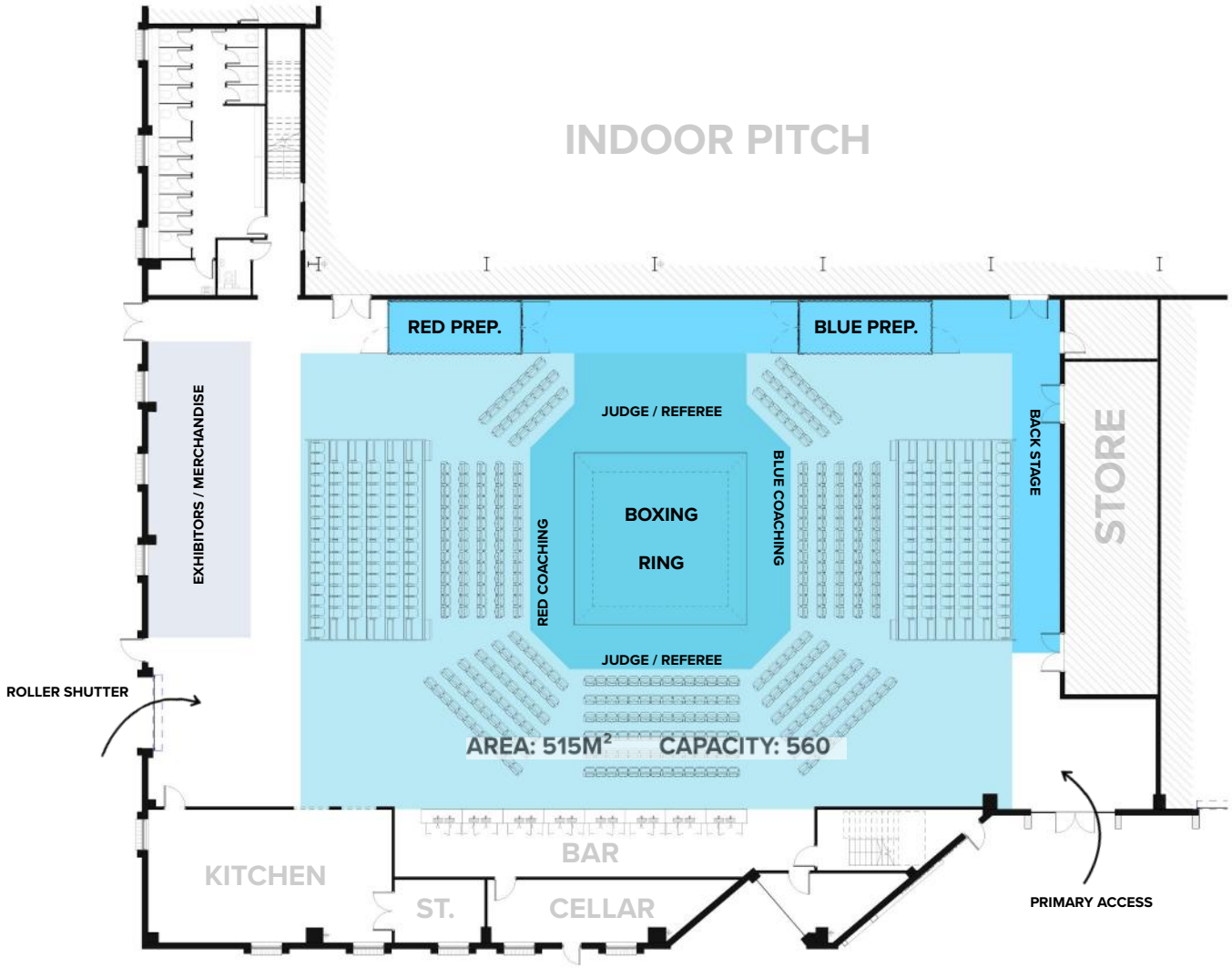
2.31 In-House Sports

The venue, its location and ties to Gloucester Rugby, make it an ideal place to host in-house sporting events. Boxing and Wrestling events have been proposed as potential uses for the venue. With a growing Boxing scene within Gloucester, and national events gaining high publicity, the venue would be able to bring new sporting events into the Kingsholm area.

The layout shown to the right displays an In-the-round type layout common to Boxing venues. Capacity for 560 seated persons has been shown, included provisions for each coaching team, the refereeing team and judging area.

The layout occupies 515m^2 of the total 1040m^2 footprint, and therefore leaves substantial space around the event to facilitate exhibitors, merchandise stands or concession areas.

Use	Area	Capacity	Comments
Boxing	515m^2	560	-
Exhib.Merch	62m^2	-	-



Boxing Layout

2.4 E-Sports

2.41 E-Sports Typology

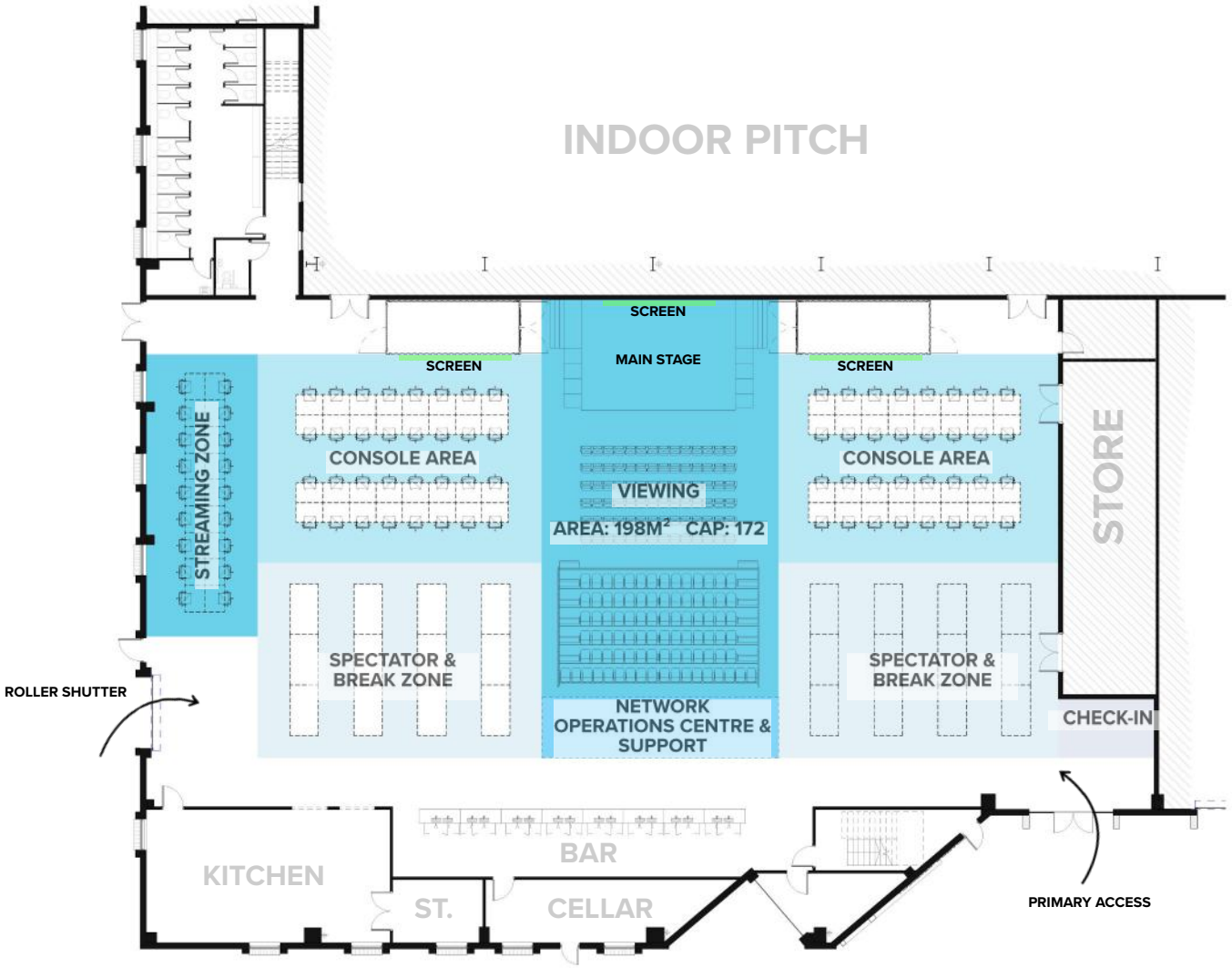
E-Sports Venues are a relatively new typology that are seeing a considerable increase in popularity. The 'blank canvas' and flexibility of the venue is perfect for providing an E-Sports event space. The layout design operates around a central main stage with a capacity of 172. On this main stage gaming stations will be setup for main event competitions and presentations. Surrounding this space console areas for individual or group competitions area situated. This can be live streamed to the screens situated on the shipping containers and main stage.

Behind the main competition areas are Spectator and Break Zones. These allow spaces for spectators to view the action on the main screens, and for competitors to take a break from the action. LAN/ Steaming Areas are also included for spectators, streamers and journalists to stream reports live from the venue.

2.42 Network Operations Centre (NOC)

The Network Operations Centre is situated centrally to the design and will form the core supports and organisation area. Naturally, E-Sports events require extensive networking and logistic support. Specialist consultants will be brought in to ensure the spaces are designed and operated to a high-quality and professional standard, suitable for professional competition.

Use	Area	Capacity	Comments
Viewing	198m^2	172	-
Break Zone	210m^2	Aprx. 240	-
Console Area	187m^2	64	-
Streaming	64m^2	20	-
NOC	30m^2	-	-



E-Sports Layout

2.5 Standing Concert

2.51 Standing Capacity

The maximum capacity of all hospitality and events venue options comes form the standing concert layouts. The designed capacity is 900 persons, across an area of 450m^2.

This layout provides an option for medium capacity live music events. A 900 persons capacity will provide a unique venue space for Gloucester, allowing a space for events that are too large for the Guildhall but too small for Kingsholm Stadium.

The provided toilets can accommodate for 750 persons, so for maximum capacity events additional facilities will be required. These can be placed externally, and can be easily accessed via entryways from the car park (left side of drawing).

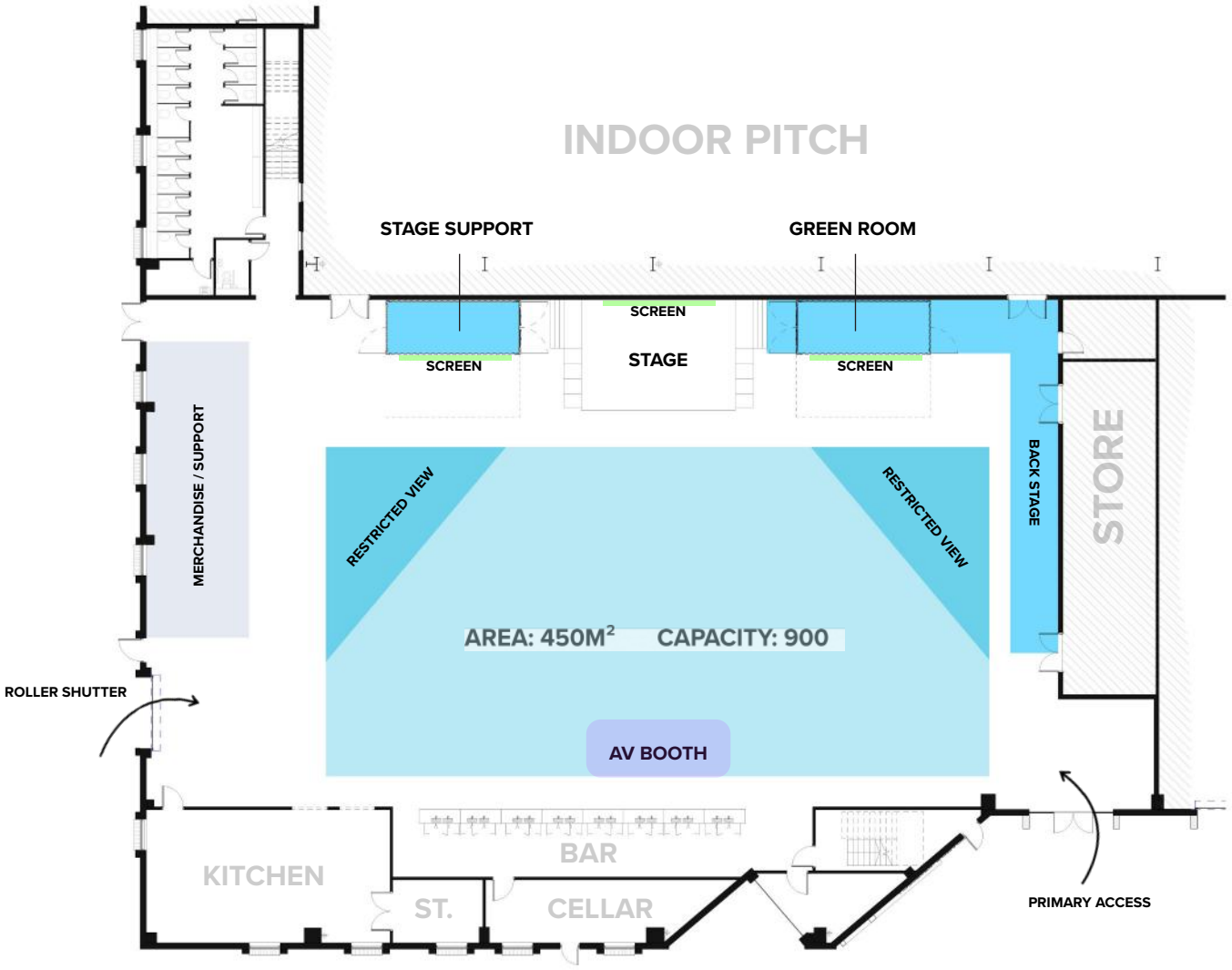
Two corners of the allocated area have been designed as 'restricted visibility' due to the limited angles onto the stage, but large displays either side of the main stage still provide a secondary viewing option.

2.52 High Quality Music Venue

A high-quality audio, visual and lighting layout will be designed to provide a high-class venue, allowing for a range of concert types. Precedents for providing such spaces include The Depot in Cardiff or The Marble Factory in Bristol. These spaces have reused old industrial spaces, turning them into exciting and popular music venues. Bristol's The Marble Factory, in particular, has become a staple of the cities renown music scene. The Kingsholm Venue could provide a space to grow and facilitate Gloucester's own music scene.

Use	Area	Capacity	Comments
Standing	450m^2	900	Extra Wcs*.

**Extra WC provisions for 150 persons required for max capacity events*



Standing Concert Layout

2.6 Indoor Market

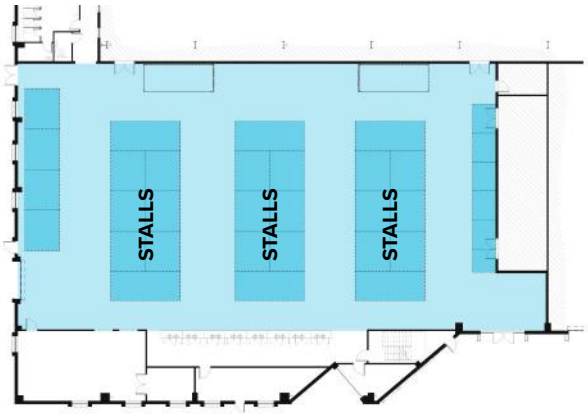
2.61 Indoor Market

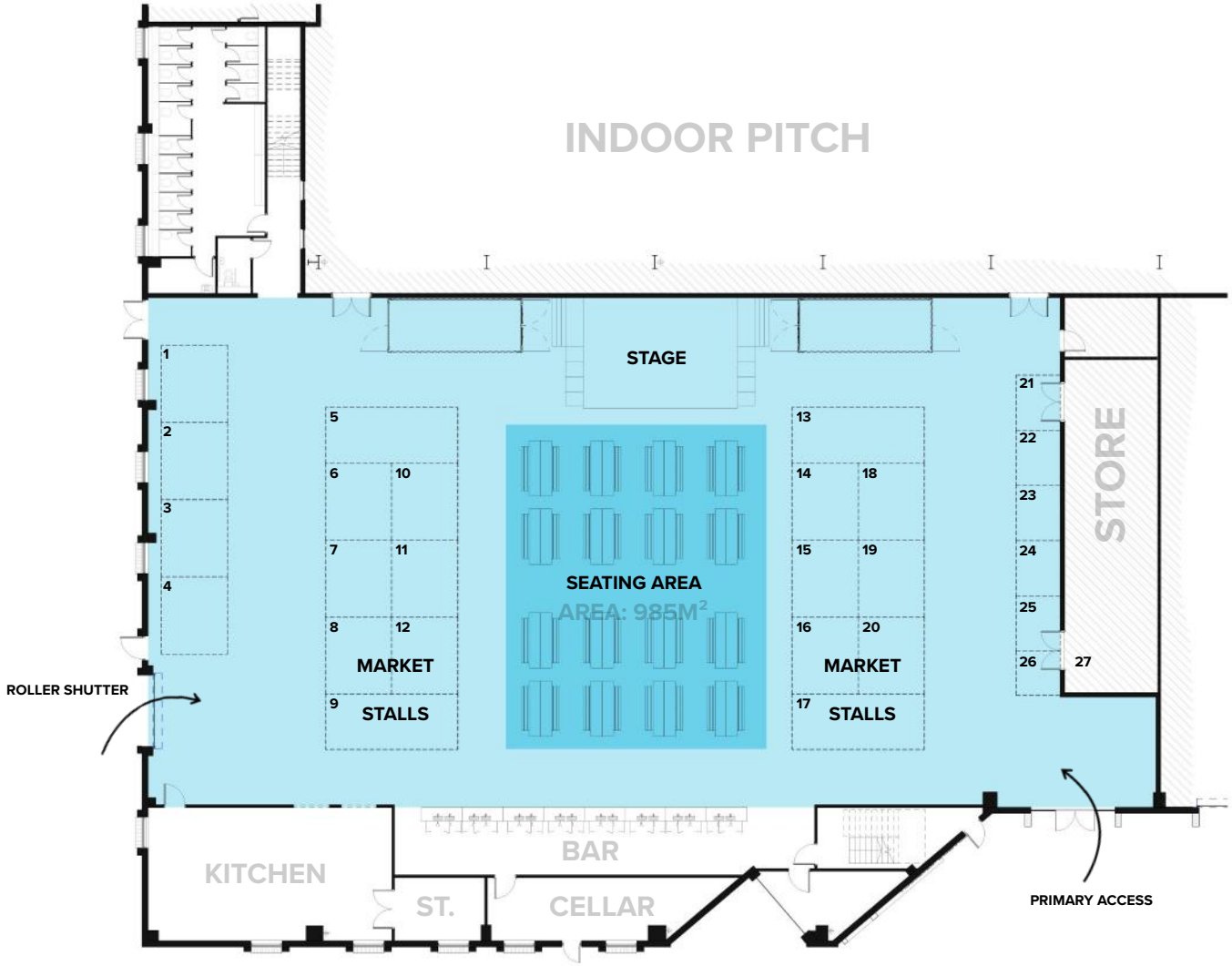
The indoor market layout would provide a space for monthly or seasonal markets depending on demand (e.g Christmas Markets/ Arts Markets/Food Festivals). The markets would be temporary pop-up markets selling artesian crafts and food, and would be a venue to support small local businesses and independents.

Two layouts configurations are shown, both occupying 985m^2 of the hospitality space. In configuration one (right), the central market stalls have been replaced by a seating area to be used on markets that have food sellers and stalls. (e.g Food Festivals). The seating area holds approximately 160 persons.

The stage can be mounted or demounted for flexibility. The mounted stage can be used to support market events, e.g live music or Christmas concerts for a Christmas market.

Use	Area	Capacity	Comments
Market	985m^2	-	-





Indoor Market Layout

2.7 Planned Usage

2.71 Usage and Hours

The table to the right summarises the planned uses across the 7 layout configurations. The maximum capacities do not include staffing, support teams or performing artists, and therefore the overall accommodated capacity will be higher.

The planned hours for use are subject to Gloucester Rugby's operation schedule, but the following licensing hours are proposed and can be used as a guideline for the expected hours of use.

Licensing Hours:

Open to the public	Mon-Sun	0600-0300
Sale of Alcohol	Sun-Thur	0600-2400
	Fri & Sat	0600-0200
Live Music	Sun-Thur	0800-2300
	Fri & Sat	0600-0200
Recorded Music	Sun-Thur	0800-2400
	Fri & Sat	0600-0230
Late Night Refreshment	Mon-Sun	2300-0300
Performance of Dance	Sun-Thur	0800-2300
	Fri & Sat	0600-0200
Indoor Sporting Events	Mon-Sun	0800-2300
Boxing & Wrestling	Mon-Sun	0800-2300
Exhibition of Film	Mon-Sun	0800-2300
Plays	Mon-Sun	0800-2300

The above hours are provisional only.

Additional hours trading on Christmas Eve and NYE are proposed also.

Layout Configuration	Area Use (m^2)	Capacity*	Example Uses	Comments
Bar / Informal Layout	655m^2	720	Bar, Sports-event screenings, Oktober Fest, Comedy Nights	72x tables of 10, options for external catering
Auditorium	283m^2	532	Seated Concerts, Film screenings, Plays/performances	
Formal Dining	655m^2	400	Venue/wedding Hire, Banquets, Conferences, award ceremonies	40x Tables of 10.
Boxing / In-the-round	515m^2	560	Boxing, Wrestling	
E-Sports	700m^2	Varied	E-Sports	Main stage Capacity 172+Other spectators.
Standing Concert	450m^2	900	Music Concerts	Max. Capacity of Venue. Approx. 1000 with Staff. Additional WC's required for max capacity.
Indoor Market	985m^2	Stalls as Drawn	Seasonal Markets, Indoor Markets, Food Festivals, Christmas Market, Arts Market	Flexible Layouts

*Max capacity numbers do not include staff, support and performers.

Planned Usage Table

Design & Concept Vision

03

3.0 Design Style

3.01 Precedent Studies

The Development Studio have undertaken several design and precedent study's with Gloucester Rugby, including a site visit to Stroud Brewery. Through this research a clear design style has been reached.

The utilitarian nature of the warehouse space lends itself well to a industrial chic design style that it increasingly popular within music venues. Several projects have formed key precedents for the hospitality venue;

- The Depot, Cardiff
- The Marble Factory, Bristol
- Baltic Market, Liverpool
- Camp & Furnace, Liverpool


CAMP & FURNACE


THE DEPOT

3.02 Design & Materials

Design motifs and styles include; timber/metal finishes, bench seating in contemporary industrial styles, simple suspended lighting, exposed structures, industrial features such as shipping containers, bold signage and concrete floors.


BALTIC MARKET


THE DEPOT

3.03 Branding & Sponsorship

The large internal space also provides ample opportunity for Gloucester Rugby signage and branding to promote and reinforce the connectivity back to Kingsholm Stadium, in addition temporary or permanent sponsorship opportunities through banners, flags, wall signage and lighting. In essence the branding and sponsorship opportunities match the flexible nature of the space,

3.1 Access & Movement

3.11 Main Entrance

Pedestrian access to the events venue would be from the main stadium entrance off Kingsholm Road. This reinforces the Gloucester Rugby brand to visitors and will enhance the overall experience. The main entrance to the north facade provides the primary access point for the hospitality. The pedestrian link provides a direct route to Kingsholm Stadium for pre/post match events, and allows guests to accumulate at Kingsholm before being navigated to the hospitality venue.

The secondary access is the roller shutter door to the east. This can be used as a logistical entrance or as a main entrance for events depending on layout and use. This gives added flexibility to the space and how it is operated.

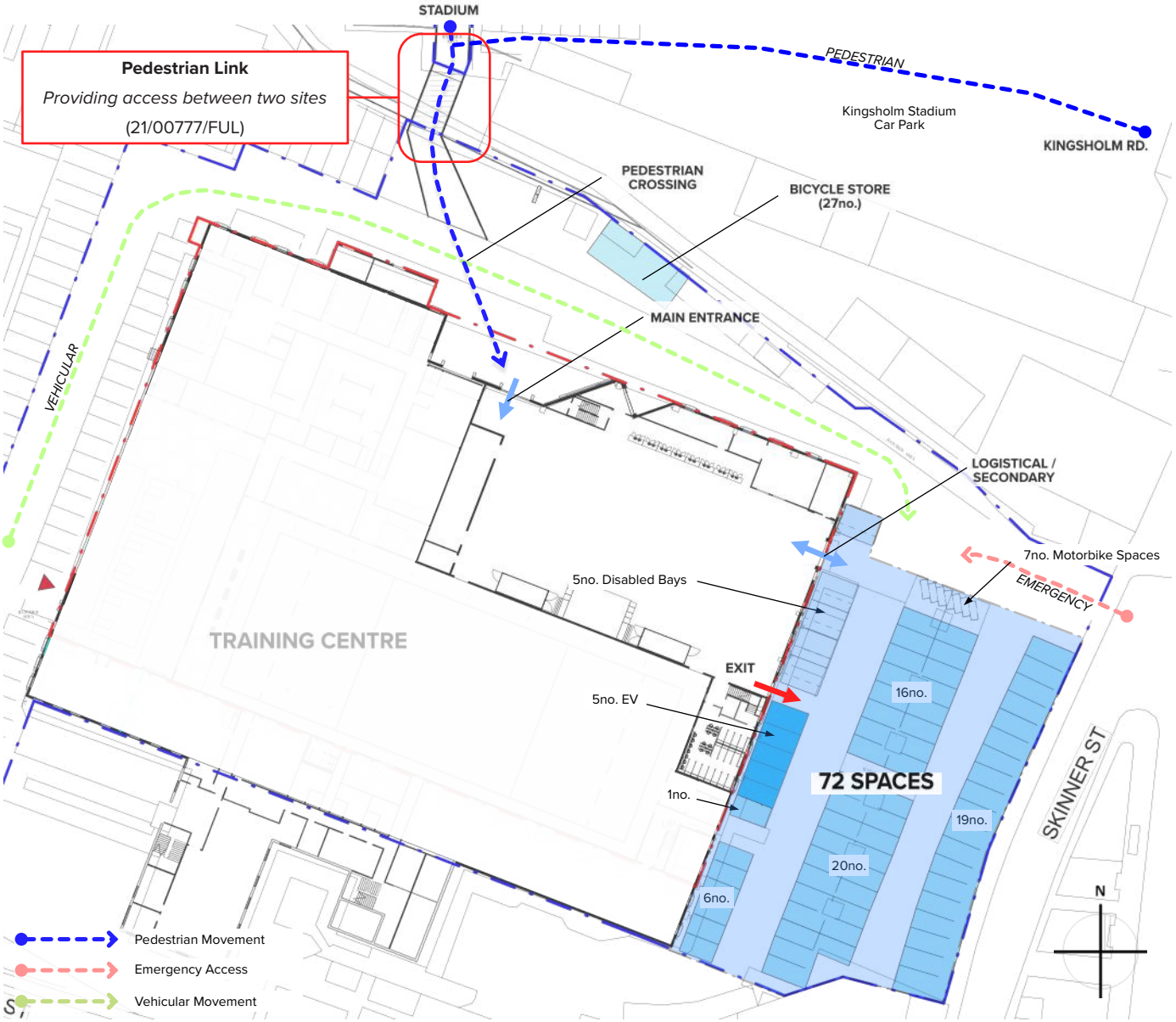
3.12 Vehicles and Parking

The car park of 72 spaces (included 5 disabled and 5 EV points) will be used to support the venues events, alongside the motorbike and bicycle parking onsite. For more information see Key Transport Consultants transports/traffic reports.

3.13 Transport Impact Report - Consultant

Key Transport Consultants (KTC) have undertaken a transport statement as part of their analysis of the impact of the hospitality development on the area. KTC concluded that events up to 600 people would cause no significant local parking problems, and the use of the hospitality on match-days may in fact help alleviate mass traffic movements pre- and post- matches, due to the staggered arrival and departures it will create.

For events over 600 persons an Event Transport Management Plan is proposed, and would look to use some of the existing matchday parking arrangements, during which crowds of some 16,000 people are handled. See KTC's attached report for in-depth information.



Access & Movement Diagram

3.2 Consultant Reports

3.21 Acoustics

PDA acoustic consultants have undertaken a Noise Impact Assessment and internal Reverberation Assessment in support of this development. Both reports are attached to this application. The Noise Impact Assessment pays special attention to the nearest noise sensitive residences along Skinner Street, and concludes that worst case noise increase levels are within 5dB of limitations. The reports further state that the fit-out and careful design of the audio systems will further reduce this impact.

In addition to this, PDA provided a Reverberation Assessment with recommendations on improving the acoustic quality of the space for hospitality use. An offset of these improvements are that they will likely further reduce the external noise impact for neighbouring residencies. See PDA's report's for in-depth information.

3.22 Audio, Visual and Lighting

A key part of the hospitality and events venue will be the audio and lighting systems. High-quality specially designed systems will be procured to ensure the space can operate flexibly across a range of uses whilst providing an exceptional entertainment experience.

Using precedents from The Marble Factory and The Depot, lighting will be critical in creating an atmospheric and vibrant space that brings a unique experience to Gloucester and memorable events.

As previously mentioned, expert consultant advice in the audio systems will reduce the noise impact on the neighbouring residencies and reduce reverberation, providing high-quality sound.


THE DEPOT

THE DEPOT


THE DEPOT


MARBLE FACTORY

3.3 Conclusion

3.31 Summary

This report aimed to demonstrate and highlight both the suitability of the events venue at Kingsholm, and the opportunity it brings to the city.

The venue increases Gloucester Rugby's commitment to the local community and Gloucester, providing capacity and capabilities for a whole new host of medium-scale events. Furthermore, the opportunity for Gloucester to host pre and post match events expands match-day experiences, whilst its use as market space will provide a platform for small traders and businesses.

The ability to host a wide variety of events in a flexible and adaptable space, will allow the venue to be used for a variety of means, giving Gloucester a medium-sized events venue that it is currently lacking.

TDS Concept CGI.

THE
DEVELOPMENT
STUDIO

Hospitality & Events Venue

Gloucester Rugby

April 2022 | Revision 01

THE DEVELOPMENT STUDIO

This Document has been produced by

The Development Studio

Prepared by: James Reason

[redacted]

Project Ref: 2104

Gloucester Rugby Training Centre

Kingsholm Business Park

Gloucester

GL1 2BX

April 2022

Hospitality Venue

Introduction

Report Introduction

Gloucester Rugby have appointed The Development Studio to progress the design development of a new Hospitality and Events Venue adjacent to their training centre. This report outlines the current design development, summarising the concept, site visits, project ambition and the next steps required to develop the project.

Brief

Gloucester Rugby have proposed a new hospitality venue that will provide a new unique venue, delivering an alternative match day experience. The venue's primary function will be to provide match day hospitality, however the scale and flexibility of the space will allow it to serve a range of functions including; sporting event screenings (away games, world cups, Gold Cup), music gigs, E Sports and other club events.

Gloucester Rugby are looking to maximise the potential capacity of the allocated hospitality space for its primary function, alongside testing alternate occupancy styles and arrangements for the other functions.

Report Contents

Phase 1 works de-marking the hospitality space in July 2021.

Proposed Layouts

Proposed Ground Floor

Ground Floor Base layout

The base layout for the hospitality venue is a 950m^2 open space, with a clear unobstructed area provided by the warehouse structure. The existing roller shutter doors provide good opportunities for guest and logistical movements.

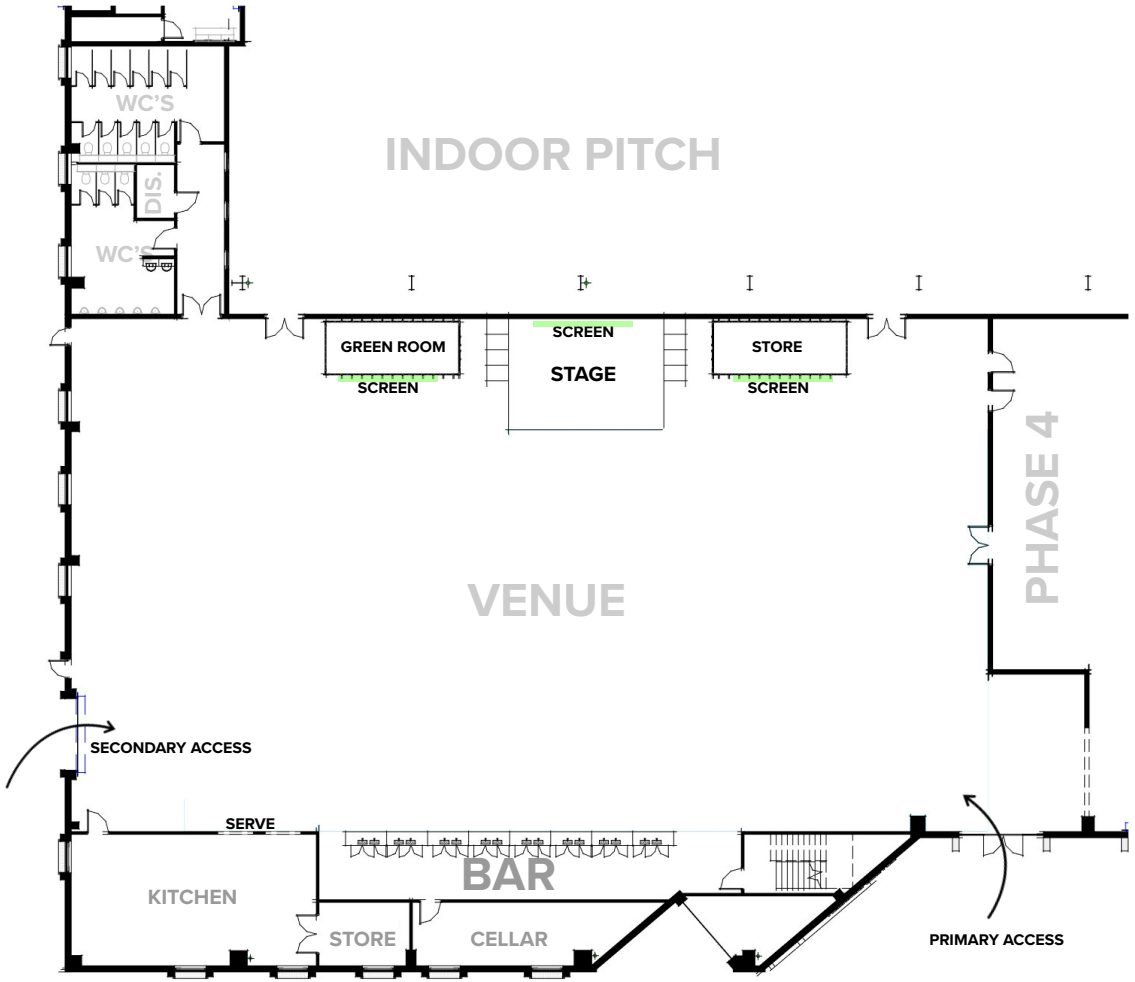
The design includes a bar, kitchen and support areas. Areas provisioned on the ground floor are:

- Kitchen 65m^2
- Coldroom (store) 12m^2
- Cellar 27m^2
- Bar 50m^2

Opposite to this sits a stage flanked by shipping containers stacked two-high. These will provide space for additional screens and internally provide a space for storage and a green room.

The WC provisions lie adjacent to the stage and indoor pitch. Provisions are currently for 600 persons and will be developed through the Stage 3 process.

Access to the venue is provided by the existing roller shutter door openings. The main entrance will be redesigned to be an attractive glazed entrance, whilst the secondary access will be used for over spill and provides space flexibility, allowing direct access to the car park for event facilities such as additional WC's, catering or a smoking area.



Ground Floor

Proposed Layouts

Proposed First Floor

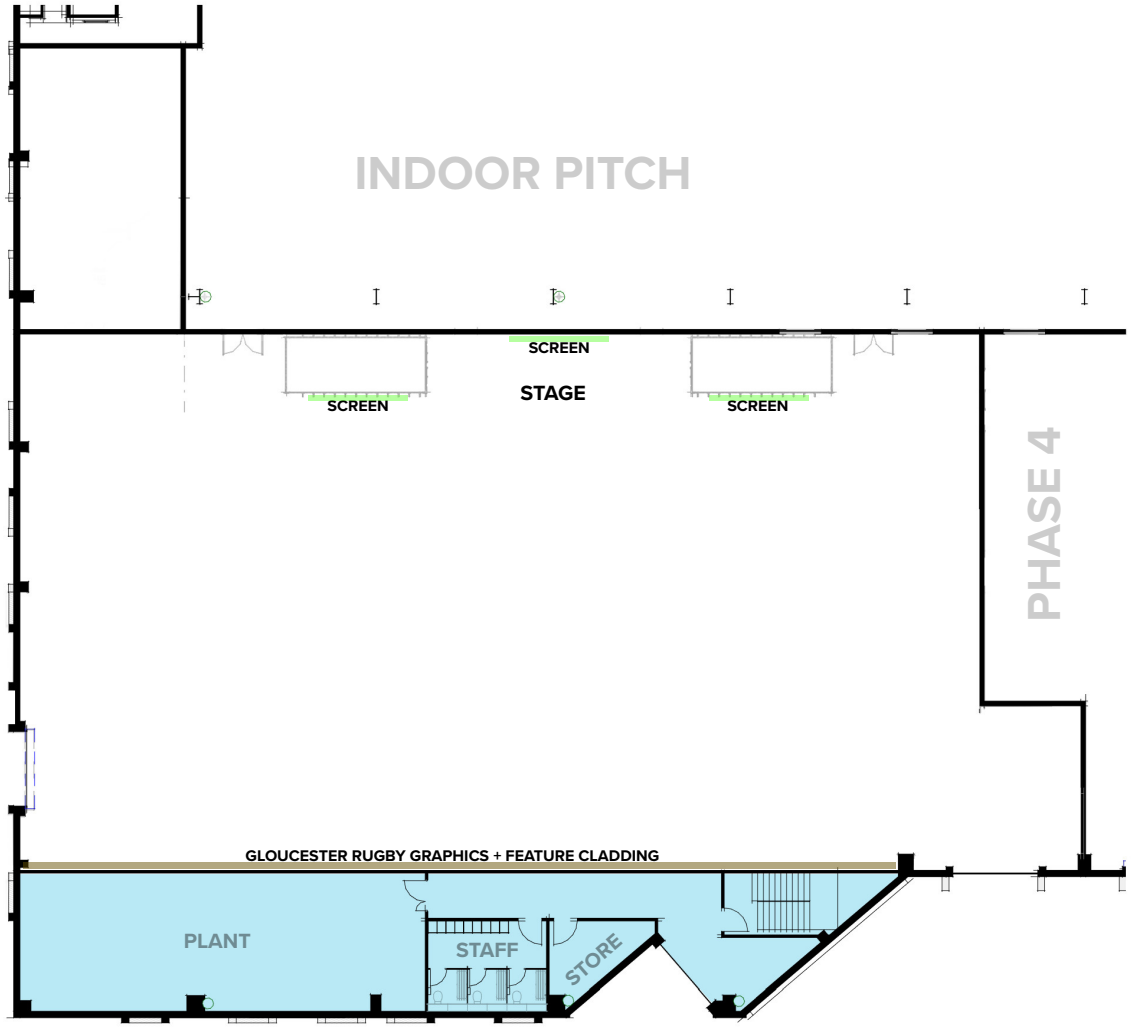
First Floor Layout

The first floor layout is common to all the design options. It is a 225m^2 deck that sits above the bar/kitchen area, and provides staff changing and storage rooms, alongside plant space to serve the hospitality venue.

- Plant 102m^2
- Staff Changing 20m^2
- Staff storage 11m^2

The additional wall space above the bar will allow a prominent area for feature cladding similar to that in the training centre, alongside bold Gloucester Rugby graphics, logos, sponsorship's, and potentially additional sports screens if needed.

Additional spaces may need to be positioned on the first floor. These could include AV control rooms for music gigs, similar control spaces for lectures/presentation events or additional staff changing depending on final venue capacity numbers.



First Floor

Proposed Layouts

Layout: Informal 600

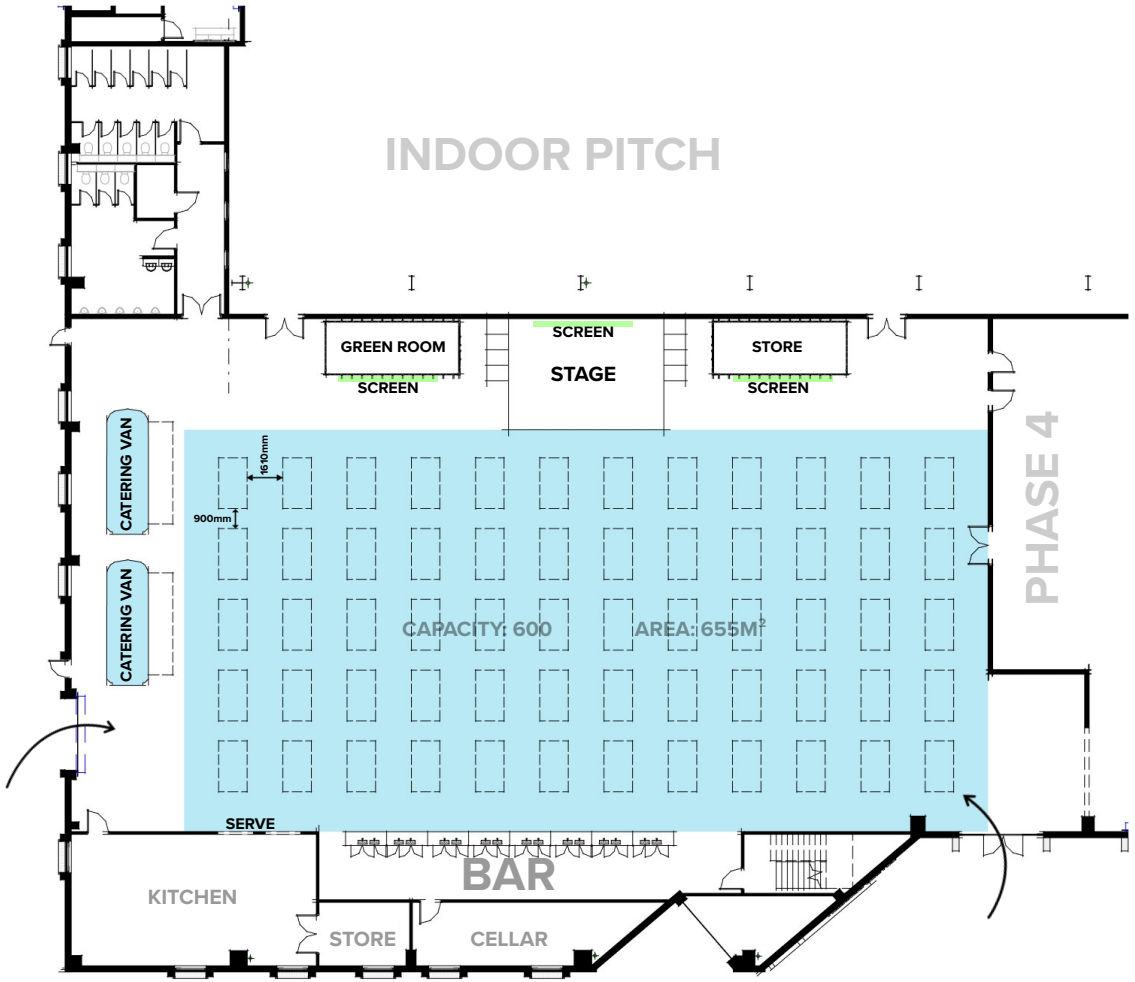
Layout 1: Informal Seating (600)

Layout 1 is an informal bench seating arrangement, with space for catering vans, and circulation space. The capacity is 600 persons over 655m^2, with each bench seating 10 people. The benches are positioned as 900mm and 1800mm spacing. The layout provides good views onto the screen/stage areas.

- **600 capacity**
- **655m^2**

The support spaces, *common to all design layouts,* are as follows for reference;

Kitchen	65m^2
Coldroom (store)	12m^2
Cellar	27m^2
Bar	50m^2
Stage	35m^2
GreenRm/Store	30m^2



Layout Informal 600

Proposed Layouts

Layout: Informal 720

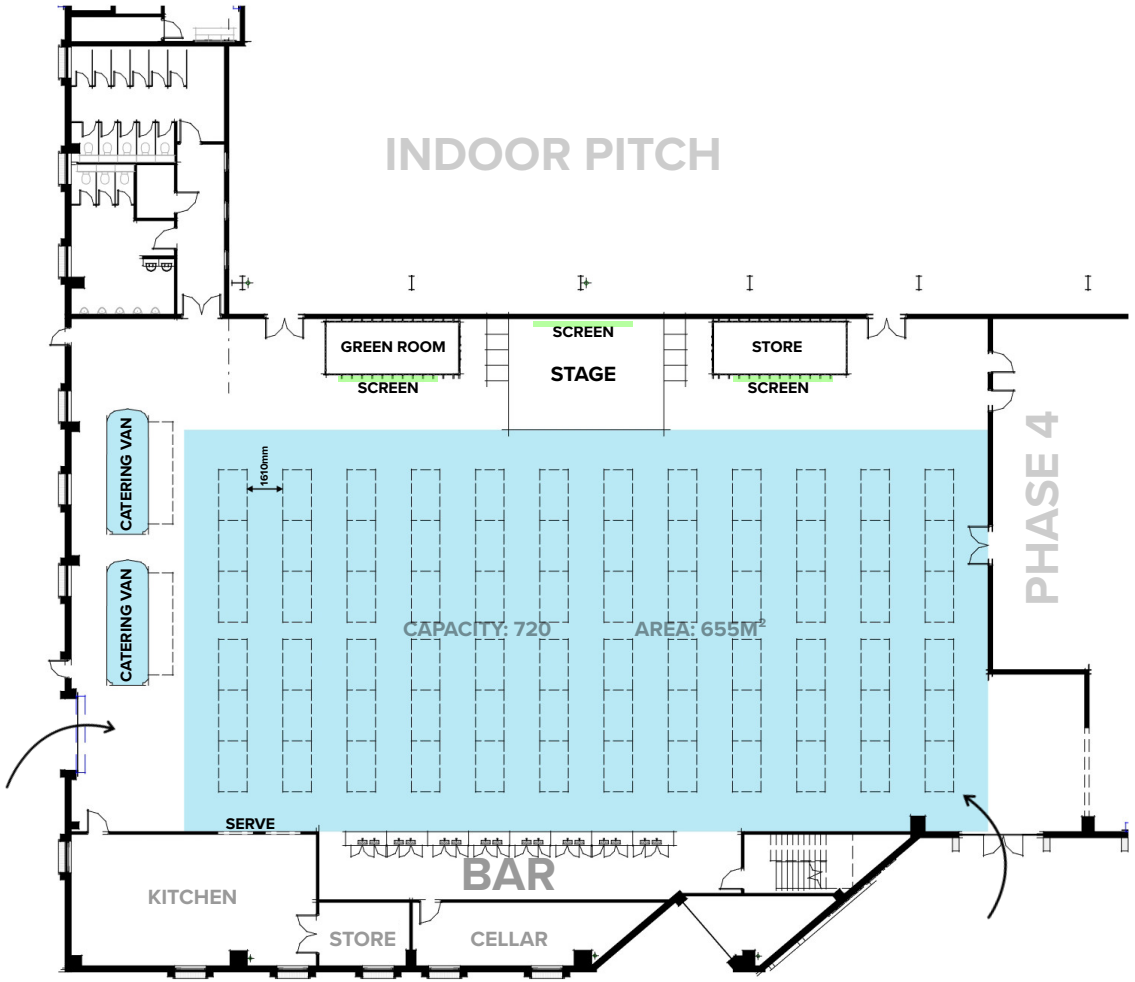
Layout 2: Informal Seating (720)

Layout 2 follows the same idea of configuration 1, but with a denser seating pattern at the cost of table circulation. The capacity is 720 persons over 655m^{2,} with each bench seating 10 people. The layout provides good views onto the screen/stage areas.

- **720 capacity**
- **655m^2**

The support spaces, *common to all design layouts,* are as follows for reference;

- Kitchen 65m^2
- Coldroom (store) 12m^2
- Cellar 27m^2
- Bar 50m^2
- Stage 35m^2
- GreenRm/Store 30m^2



Layout Informal 720

Proposed Layouts

Layout: Lecture/ Auditorium (seated)

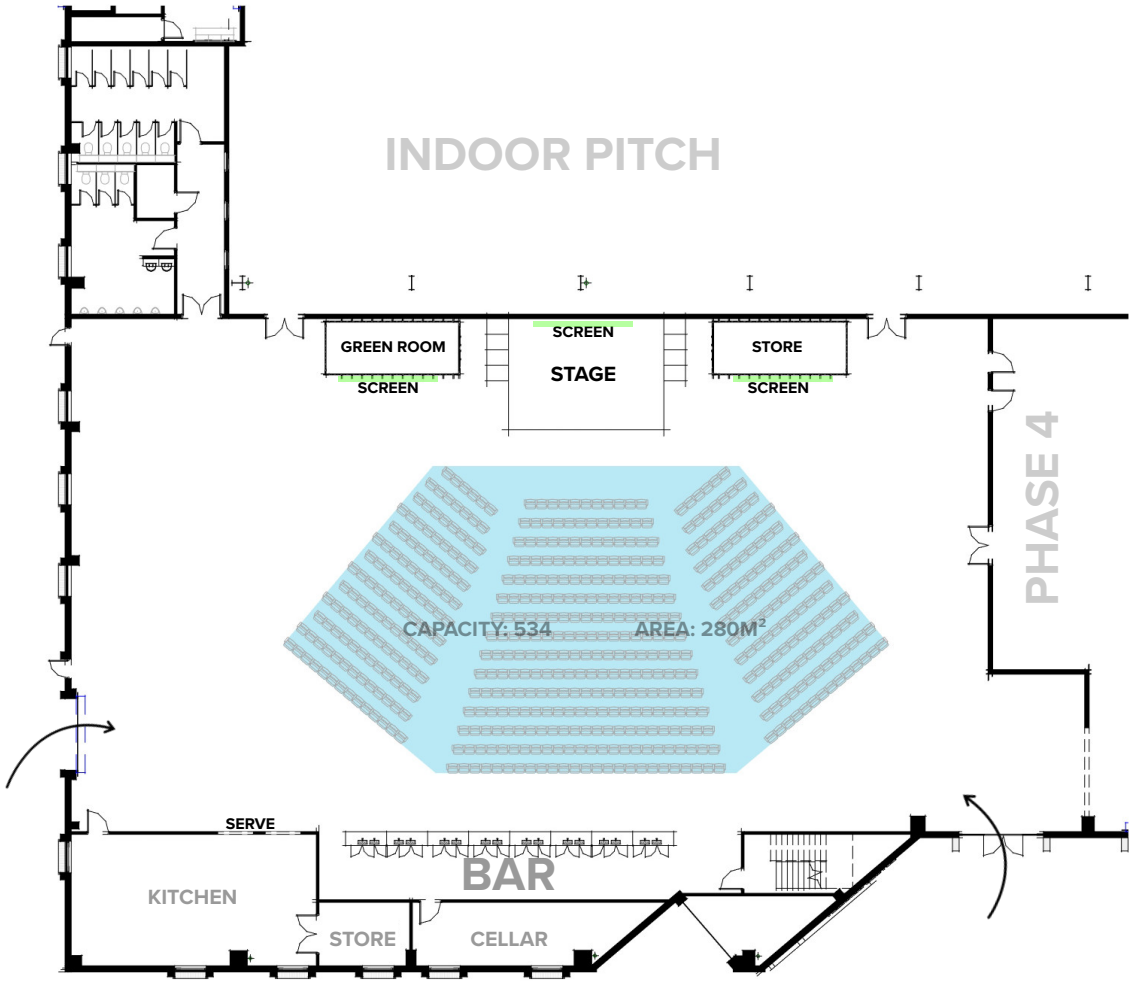
Layout 3: Auditorium (534)

Layout 3 comprises a auditorium style layout for seated presentations or concerts. Rows are spaced at 850mm and row lengths are minimised to 12 seats to the nearest gangway.

- **534 capacity**
- **280m²**

The support spaces, *common to all design layouts,* are as follows for reference;

- Kitchen 65m²
- Coldroom (store) 12m²
- Cellar 27m²
- Bar 50m²
- Stage 35m²
- GreenRm/Store 30m²



Layout Lecture / Auditorium Seated

Proposed Layouts

Layout: Concert (standing)

Layout 4: Concert (Standing 700)

Layout 4 has been designed for standing music concerts/gigs based on 0.5m^2 per person as best practice. The notional area has been based on ideal stage viewing positions. An additional increase in capacity would require additional external services to be brought in on a temporary basis (i.e WC facilities/catering). The secondary access point would ideally serve this role.

- **700 capacity (standing)**
- **350m^2**

The support spaces, *common to all design layouts,* are as follows for reference;

- Kitchen 65m^2
- Coldroom (store) 12m^2
- Cellar 27m^2
- Bar 50m^2
- Stage 35m^2
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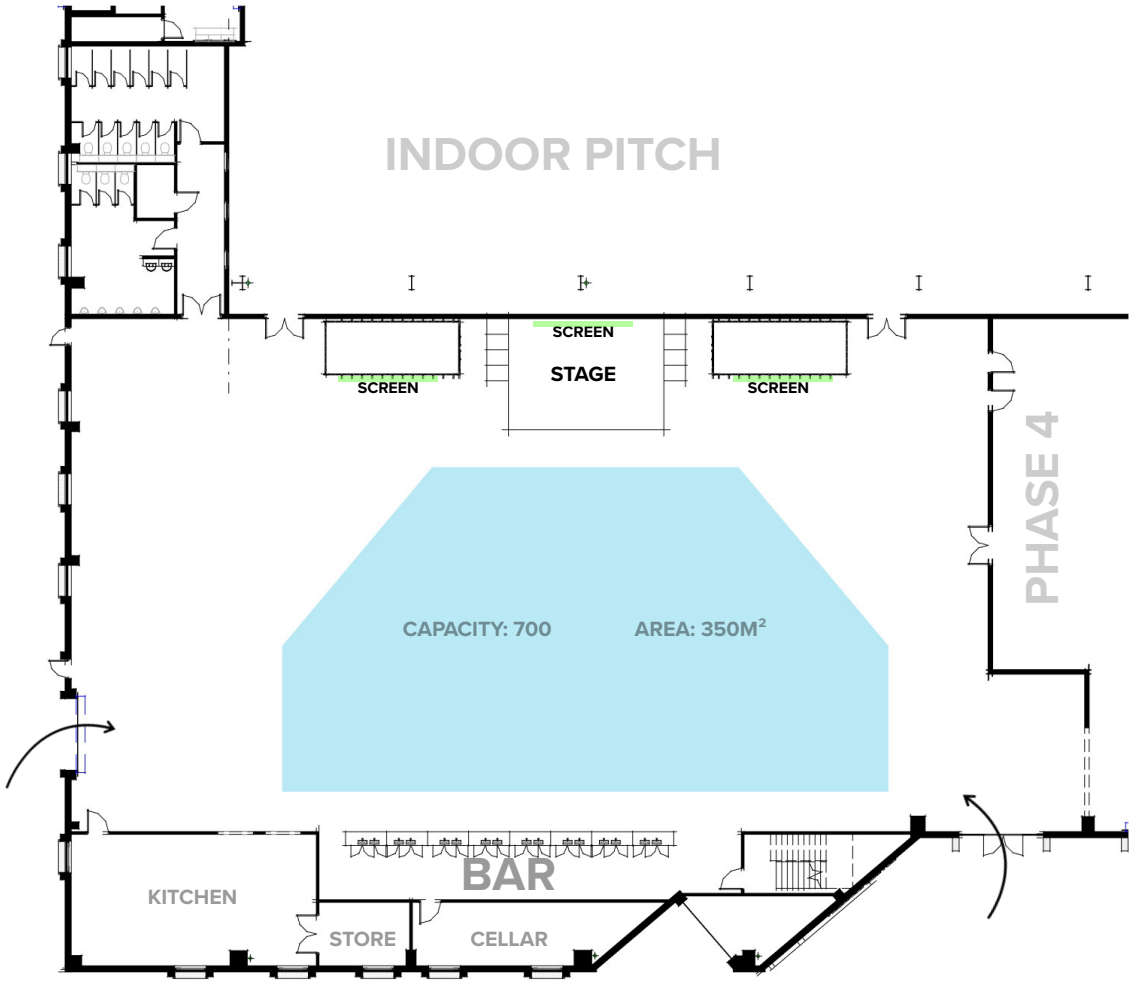


Layout Concert Standing

Further Opportunities

1

Use of space above kitchen as additional hospitality or a meeting space. Benefits are;

- Options to create VIP/hire-able hospitality area
- Strong architectural feature bringing a new aspect to the space
- Additional hospitality space.
- Risks are: additional cost, capacity and increased first floor access required (Plant space will be relocated to above WC's).

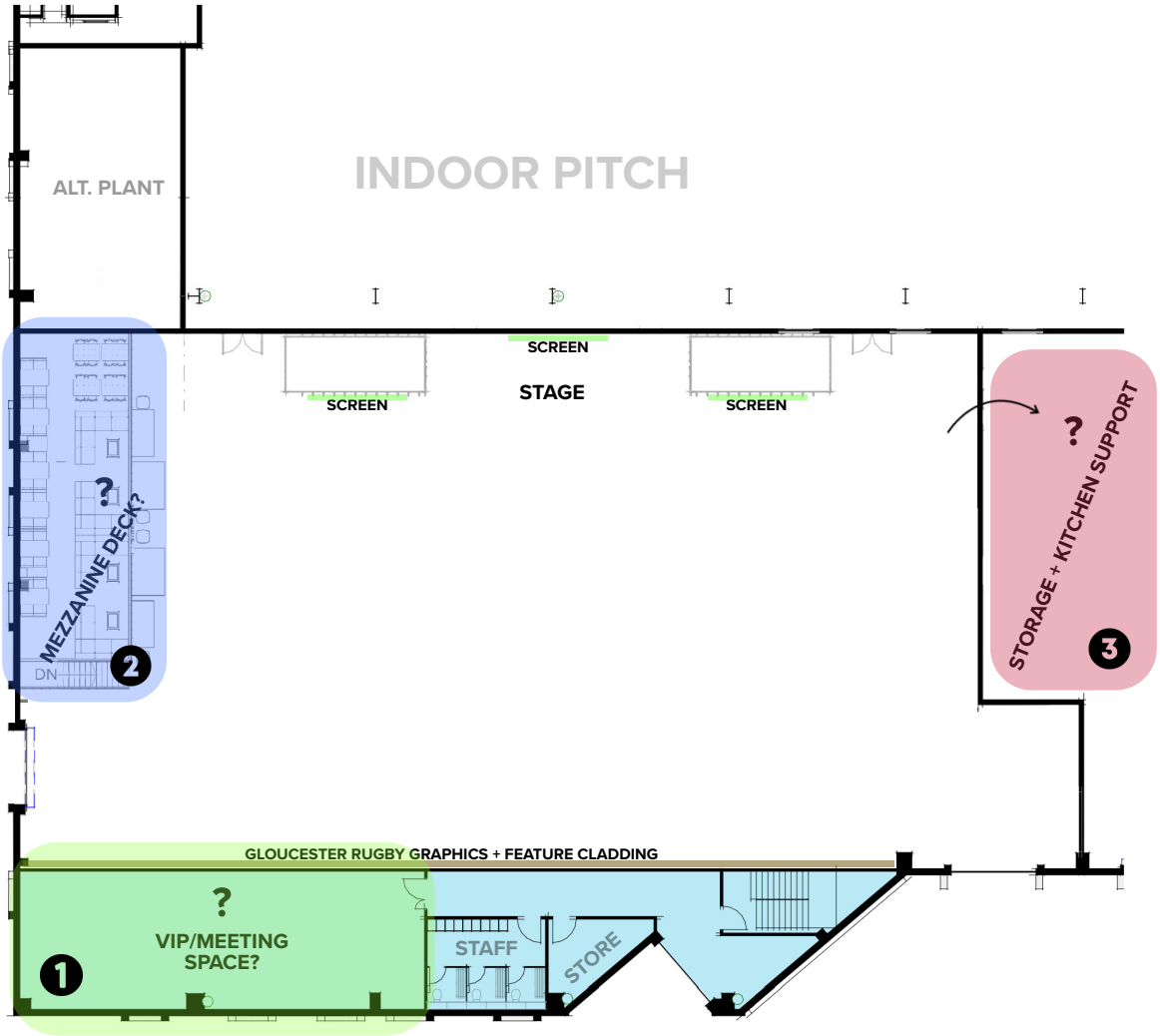
2

Proposal of mezzanine deck and fixed kitchen units for hire or rental on a long term let. Benefits are;

- Additional mezzanine capacity (approx. 80 persons)
- Creation of a cosy/snug or VIP space.
- Provides access to Opportunity 1
- Risks are: additional cost, difficult to provision food vans at current capacity.

3

Additional kitchen support space, and dedicated storage areas have been provisioned within Phase 4.



Further Opportunities

Concept

Design Style

Precedents

TDS have undertaken several design and precedent study's with Gloucester Rugby, including a site visit to Stroud Brewery's hospitality space. Through this research a clear design style has been reached.

The utilitarian nature of the warehouse space lends itself well to a industrial chic design style that it increasingly popular within music venues. Several projects have formed key precedents for the hospitality venue;

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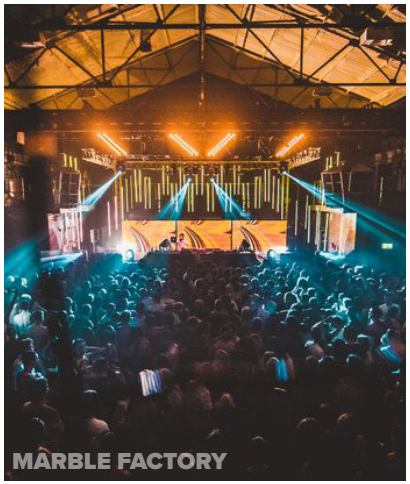
Design motifs and styles include; timber/metal finishes, bench seating in contemporary industrial styles, simple suspended lighting, exposed structures, industrial features such as shipping containers, bold signage and concrete floors.


MARBLE FACTORY

THE DEPOT

BALTIC MARKET


THE DEPOT

Concept

Design Style

Next Steps

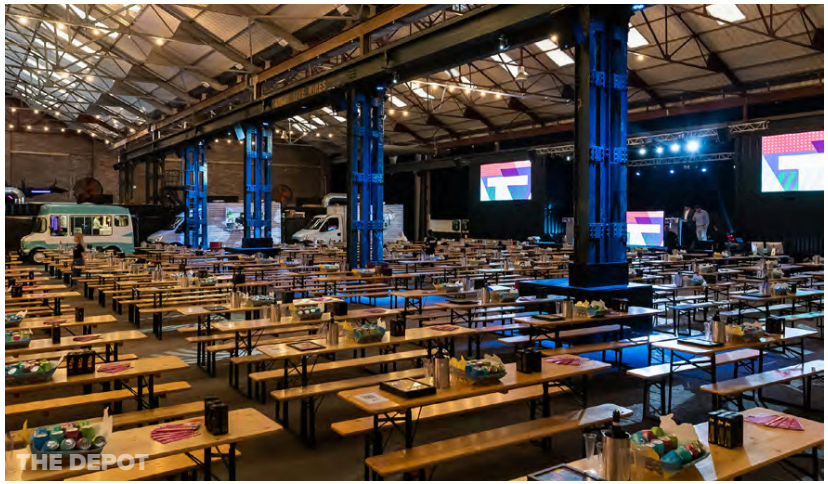
TDS have been working with WWA and EG Carter to prepare early cost and programme information on the project. The current programme illustrated shows a starting date of May 2022 through to completion in August 2023, ready for the 23/24 season and rugby world cup. Key dates are scheduled below.

May 2022	*RIBA Stage 3 to commence (design development)*
Jun 2022	*GR sign-off*
Jul 2022	*RIBA Stage 4 commences (construction package)*
Aug 2022	*Planning Condition Submission*
Aug 2022	*CGI images prepared for promotion*
Sept 2022	*Cost Finalisation*
Oct 2022	*GR sign-off*
Nov 2022	*Contract awarded and lead-in*
Jan 2023	*Start on site*
Aug 2023	*Handover to GR*

Required Consultant Appointments

To deliver the project the following consultants require formal appointment in April 2022:

Lead Consultant and Architect	*TDS*
Project Manager & Cost Consultant	*WWA*
Structural & Civil Engineers	*Hydrock*
MEP Consultants	*Neptune / JonesKIng*
Acoustician	tbc
AV consultant	tbc
Transport consultant	*Key*



Concept

Visualisation

Concept Visual; Rugby World Cup Screening Event

THE
DEVELOPMENT
STUDIO

Warehouse Business Case

1. BACKGROUND

We have leased the warehouse next to the stadium which has a multi-use purpose, currently half of the warehouse is a state-of-the-art gym, indoor training ground, medical rooms and offices.

This business plan is to look at the feasibility to convert some of the remaining area into a hospitality offer for the purpose of game day entertainment and the ability to have non-match day events to include comedy nights, local bands and other similar events.

2. PROPOSED CHANGES AND RATIONALE

The proposed changes are summarised as follows:

I believe a basic fit out that keeps the "Industrial feel "to the building and furnish the area with bench " picnic style " tables to maximise the seating capacity and keep the refurbishment costs to a minimum. Large screen TV for viewing and a stage for local bands / concerts / comedy nights.

Keep the menu simple, this will increase the speed of service and reduce the staffing costs
Numbers will need to be confirmed but would imagine approx. 500.

This area will be utilised on match days for members pre-game and has the possibility to be opened to the public post game.

The area can also be used on non-match days for Cheltenham race week, Octoberfest, Boxing events, Night club/DJ's/etc, Indoor pop concert, Comedy event and Christmas parties.

Major Sporting Event Fan Zones

This area can be utilised as a FAN ZONE for rugby world cup, Cheltenham races, Lions, Football etc.
These wouldn't be ticketed events but opening bars and food outlets 5 to 10 times a year

Private C&E
We will open ourselves up to taking larger bookings that currently don't even enquire with us for private conference and events as our capacity is only 220. The main potential here would be large charity dinners or awards ceremonies of over 400 people.

Comedy nights / Box Office Events
The capacity of the venue will be very much in line with the Cheltenham Town Hall and Gloucester Guild Hall who both operate a full-time calendar of events. These events include live music, comedy and stage/theatre and include household names as well as tribute acts. We would look to work with an agent to maximise the events through out the year.

Christmas
Our Christmas Events schedule could look very different with larger private corporate parties just one potential area of growth. Festival style Christmas party could be developed to offer something different to what is currently being offered.

Room Hire
The large space will enable us to increase the room hire rates and attract large job fairs and wedding parties as currently there are limited venues in Gloucester that can hold more than 400. The Guild Hall only has a capacity for 400 and they have a busy calendar of event From cinema nights to local bands.

IMPACT OF CHANGES

This change would also produce the following benefits:

- Increased the food revenue
- Increase the drink revenue
- Increase the membership revenue
- Define a clear good, better, best offer to our fans

3. FINANCIAL IMPACT

The figures used below are excluding VAT

Matchday: pre-game only

Debenture is one off charge £850 x 500 = £425,000

Per season based on 500 memberships sold @ £720+vat (ticket price removed) £360,000

	Spend/revenue per person per game	**Spend/revenue per person per season (16 games)**	**Revenue based on 500 memberships sold**
SPH			
Bar spend @ 25%			
Food spend			
Membership fee			
Total			

Non – game days such as comedy nights

	Spend/revenue per person per game	**Spend/revenue per person per season (10)**	**350 covers**
SPH			
Bar spend @ 25%			
Food SPH			
Ticket price			
Total			

We would look to introduce food to the offer by way of buy on the night as charging for food in the ticket price has not worked on previous years

Summary:

One off debenture charge -

Annual members game days -
Annual non-games days - £

First year = £1,021,875

Every year after = £5 (based match days on only 10 non-game day events)

We would see an uplift if we increased the number of events or changed the format to include large Christmas parties that included food, room hire, local gigs.

See appendix A for a breakdown of different options and projected revenue.

4. PROCESS FOR CHANGE

Agree with line manager
Approval from CEO
Contact supplier as arrange date
Pay supply once complete

5. SIGN OFF

Manager ……
Date……..

CEO ……
Date……

Finance Director ……
Date……

Philip Dunbavin Acoustics Ltd
3 Bridgewater Court
Barsbank Lane
Lymm
WA13 0ER

ACOUSTIC CONSULTANTS

HOSPITALITY VENUE NOISE IMPACT ASSESSMENT

GLOUCESTER RUGBY TRAINING CENTRE

REPORT REFERENCE NO. J003937-5750-RDC-01

31ST AUGUST 2022

[redacted]

Registered Number 2302847 England
Registered Office: 3 Bridgewater Court, Barsbank Lane, Lymm WA13 0ER

Document Control Sheet

Details of Assessment	
Client	Gloucester Rugby Ltd
Document Title	Hospitality Venue Noise Impact Assessment – Gloucester Rugby Training Centre
Report Reference	J003937-5750-RDC-01

Client Address:	Company Address:
Kingsholme Road Kingsholme Gloucester Gloucestershire GL1 3AX	PDA Ltd 3 Bridgewater Court Barsbank Lane Lymm WA13 0ER

Issue	Date	Author	Remark	Status
01	31/08/2022	Richard Cookson	Initial Issue	
02				

	Name	Position
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1.0 SUMMARY

PDA Ltd were commissioned by Gloucester Rugby Ltd to carry out a noise impact assessment of the proposed extension of operating hours of the hospitality venue of the Gloucester Rugy Training Centre, Kingsholm Road, Gloucester.

A survey of existing environmental noise levels has been undertaken close to the noise sensitive residences on Skinner Street to supplement a previous environmental noise survey undertaken close to the boundary of the site with Serlo Road in 2021. Measurements were taken using broadband A-weighted and octave band parameters, and are reported within.

High levels of noise were generated within the hospitality venue and noise levels in a range of different positions, including close to the nearest noise sensitive properties, were measured to assess the building envelope in terms of sound insulation.

Calculations were then carried out in order to assess the likely noise egress from the entertainment venue to these noise sensitive locations.

Sound limits were determined for the entertainment space, in octave frequency bands, such that the impact of the development would be low at the nearby noise sensitive properties. The limiting sound levels are indicated in Table 3 and Table 4 and are suitable for entertainment with some limitations on the low-frequency noise generated within the space.

It is noted that the impact assessment is for the worst case night-time entertainment levels and it is likely that noise limits could be increased by up to 5dB for entertainment during the daytime period prior to 23:00.

It is noted that the entertainment venue has not yet been developed and the building is currently an open space. We would expect that following fit-out the attenuation of noise levels from inside the venue to nearby noise sensitive properties may further reduce. Additionally outline advice is given in reducing noise egress and / or increasing internal noise levels by careful design of the fit-out and sound system.

2.0 BRIEF FOR CONSULTANCY

PDA Ltd were commissioned to carry out the following:

A) Noise Survey - Assessment of existing building envelope and background sound levels

We will travel to the site and carry out a measurement of the sound insulation of the existing building envelope. We would propose to set up a loudspeaker 'pink noise' sound source within the existing building and measure the typical sound pressure levels generated within the building due to the sound source. This initial test would be carried out during the daytime. We would also measure the background sound level at the northern boundary. We would return at night-time when background sound levels are low and would measure the increase in sound level close to the nearest noise sensitive residences whilst generating a short burst of 'pink noise' within the building, in order to characterise the sound insulation of the building envelope.

We would propose to undertake night-time measurements during the quieter part of the night and would require access to the building at this time.

We would also measure ambient outdoor sound levels during the evening / night-time close to the eastern boundary of the site representative of the background sound levels at houses along Kingsholme Road and Skinner Street during the hours of proposed operation of the development.

We will carry out all noise surveys in accordance with the provisions of BS7445 “Description and Measurement of Environmental Noise”. The measurements made will include both dBA and octave band noise levels including L_{eq}, L_{max}, and L_{90} parameters. During the survey duration, we will require unrestricted access to the site.

B) Survey Processing and Report

The results of the noise survey will be assessed in line with the requirements of the National Planning Policy Framework (NPPF). We will determine the likely noise levels within the space during operation, and using the measured and / or calculated sound insulation of the building envelope we will calculate the sound level at the nearest noise sensitive properties. The impact of the calculated sound level will be assessed in accordance with the guidance of the NPPF at the nearest noise sensitive residences. Note that there is no nationally accepted criterion for the assessment of entertainment noise and additional guidance and standards will be used as appropriate to inform the assessment within the scope of guidance given in the NPPF.

Where the sound levels generated have the potential to exceed the criterion at nearby noise sensitive properties we will propose mitigation measures which in the first instance are likely to be noise limits for music noise within the space. Any such noise limits will need to be addressed by either careful control of the sound system within the proposed venue, or by increasing the sound insulation of the building envelope.

We will produce a report detailing all survey procedures, measurements and results suitable for submission to the Local Authority in support of your planning application. If necessary we will propose suitable limits for entertainment noise levels within the open space of the warehouse such that the impact at nearby houses is limited to an acceptable level.

3.0 ASSESSMENT CRITERIA

3.1 National Planning Policy Framework

National Planning Policy is guided by the National Planning Policy Framework (NPPF) updated in July 2021. With regard to Noise the Framework states the following;

Planning policies and decisions should contribute to and enhance the natural and local environment by:

- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.*

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.*

The terms '*significant adverse impact*' and '*adverse impact*' are defined in the explanatory notes of the 'Noise Policy Statement for England (NPSE) which states;

There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

The notes also offer an explanation of the term 'adverse impacts' as follows;

… refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

Although no specific noise limits for LOAEL and SOAEL have been defined, in 2014 the UK Government published a planning practice guidance document for noise which indicates where these limits fall with relation to the perception of noise. A summary is reproduced in Section 4.2 below, and the full document is published at https://www.gov.uk/guidance/noise--2. It is considered that guidance from other acoustic standards may be employed to determine suitable levels within the overall principal of the National Planning Policy Framework.

3.2 Planning Practice Guidance – Noise

In March 2014 (updated July 2019) the UK Government published further guidance on the assessment of noise for planning purposes in the form of the on-line publication, Planning Practice Guidance on noise (http://www.gov.uk/guidance/noise--2). This document offers further guidance on the typical levels which constitute the NOEL, LOAEL and SOAEL. The relevant section is reproduced in the table below;

Table 1 – Planning Practice noise level guidance

Perception	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

It is notable from the above planning guidance that development should not normally be permitted above Significant Observed Adverse Effect Levels, and should aim to minimise Other Adverse Effect Levels (below SOAEL but above LOAEL). However, it is clear that noise is permitted to approach and/or exceed the Lowest Observed Adverse Effect Level, providing that noise is mitigated and reduced to a minimum.

3.3 World Health Organisation Guidelines for Community Noise

The relevant criteria with respect to the assessment of sounds affecting the use of residential property are the criteria of the World Health Organisation Guidelines for Community Noise.

World Health Organisation guidelines for community noise give noise levels for critical health effects of indoor and outdoor living spaces as follows;

Table 1 – WHO guidelines for community noise criteria

Environment	Critical health effect	Criterion
Dwelling, indoors	Speech intelligibility and moderate annoyance, daytime and evening	35 dB $L_{Aeq,\ 16\ hours}$
Outdoor living areas	Few moderately annoyed, daytime and evening	50 dB $L_{Aeq,\ 16\ hours}$
	Few seriously annoyed, daytime and evening	55 dB $L_{Aeq,\ 16\ hours}$
Inside bedrooms	Sleep disturbance (night-time)	30 dB $L_{Aeq,\ 8\ hours}$ 45 dB L_{Amax}
Outside bedrooms	Sleep disturbance (night-time)	45 dB $L_{Aeq,\ 8\ hours}$

3.4 Entertainment Noise

Although the criteria of for annoyance of the WHO Guidelines for Community Noise are intended to include all typical sound sources, the document is generally relevant to sound which does not have a particular character or distinguishing characteristic. In the case of entertainment noise, it is generally recognised that these sources may attract the attention of a resident to the noise more readily than a constant broad-band noise source, and thus there is a greater potential to cause disturbance, especially at times when the internal noise sources within properties are low, such as when residents are going to sleep.

There is no nationally agreed standard for the assessment of entertainment noise impact. A number of draft criteria have been proposed over the years, none of which have received universal acceptance. In the past there have been attempts to apply the criterion of 'inaudibility' of entertainment noise at nearby residences. However, this has now been largely rejected, both in terms of the legal enforceability and with respect to the conflict of such a criterion with the desire to provide entertainment and leisure uses reasonably close to residential areas.

3.4.1 Previously used criterion for low impact outdoors

PDA have previously employed a criterion for entertainment venues where these are used on an unlimited basis throughout the year. The criterion selected limits the music sound from the venue to 5dB below the L_{90} background sound level in each octave frequency band between 63Hz and 4kHz. The result of this criterion has been found to be that music noise may be faintly audible but neither melody or words are clearly discernible and we would judge this criterion to be appropriate for entertainment carried out where there is no specific limitation on the time or frequency of events held and background sound levels are reasonably elevated.

For locations where background sound levels are quiet and where entertainment noise is being assessed during the night-time period the above criterion may be over-stringent and in such cases it is more appropriate to consider noise levels inside dwellings and their potential impact on quiet rest / sleeping.

3.4.2 Previously used criterion where control of low-frequency sound is required

A further criterion employed previously, particularly where the source of entertainment noise may have a strong low-frequency component, is the use of NR curves which control both the absolute level and the prominence of low-frequency components. A typical NR criterion would be to achieve NR 20 dB indoors which is approximately equivalent to 25dB(A) for typical noise spectra and thus controls overall levels to below the night-time rest criterion of BS 8233 allowing an extra margin to account for

any additional character corrections which might be appropriate for the music noise, and also controls low-frequency sounds to within a reasonable limit.

3.4.3 Defra "Noise from Pubs and Clubs" research reports (2005 – 2006)

A study into entertainment noise, entitled 'Noise from Pubs and Clubs' was commissioned by DEFRA and reported in two reports published in 2005 and 2006. The 2005 report authored by the University of Salford reviews the candidate criteria for the assessment of entertainment noise and proposes a validation exercise to test the criteria under laboratory conditions. The second report authored by Capita Symonds and the Building Research Establishment reports on trials of the criteria carried out using 60 test subjects who attended BRE Test houses at night and were subjected to various entertainment noise sources which they rated for acceptability, and these subjective ratings were then tested for correlation against the various candidate standards.

The report found that the noise metric which provided the best overall prediction of subjective ratings of all entertainment noise tested by ordinary members of the public was the indoor Absolute L_{Aeq}. Other options for assessment are considered and rated in order of ability to predict unacceptable entertainment noise to ordinary test subjects. The highest rated proposed criterion, with the best correlation to the trials is described as follows:

> •*Absolute L_{Aeq} – That is an $L_{Aeq,5min}$ noise level value set at a single action level. However an intrusive entertainment noise criteria based on Absolute L_{Aeq}, would be difficult to use where the existing ambient noise level without the entertainment noise was close to, equal to or above the action level. Therefore, we would recommend an action level Absolute L_{Aeq}, with an additional subjective requirement that the entertainment noise itself has a clearly audible (to an otologically normal listener) contribution to the overall noise e.g. the songs/tracks would be recognisable to a listener familiar with the music and any words intelligible. In terms of an action level, a table in this report is provided showing various levels of entertainment noise used in the laboratory testing and the responses of test subject's. In the context of this study's objective to determine criteria that represents a clearly unacceptable situation, the noise levels at which test subjects felt the noise was "just unacceptable" for a one off event within a habitable room with windows closed was at 34 dB $L_{Aeq,5\ minute}$. The range for the first two scores of unacceptability was $L_{Aeq,5\ minute}$ 34 to 37 dB.*

Whilst the above report has not been adopted nationally, or written into any particular standard, it serves to inform the likely lower limit of what could be considered unacceptable. It should be borne in mind that the above 34dB L_{Aeq} criterion is for a single one-off event, indoors with windows closed during the night-time (i.e. after 11pm), and hence it would be reasonable to suppose that a lower level might be appropriate for more regular events. It would also be appropriate to consider that a higher level might be appropriate during the daytime period before 11pm.

3.4.4 Discussion and Selected criterion

In considering an appropriate criterion for this development we have considered that the local noise climate around the nearby noise sensitive residences is very varied. Houses along Kingsholme Road and Skinner Street are likely to have reasonably high existing noise levels due to road traffic on Kingsholme Road and building services noise from nearby commercial buildings. However, the houses to the west of the proposed development, whilst further from the hospitality area, are likely to be exposed to much quieter existing levels.

In order to account for the variable existing sound climate we would propose to limit the entertainment music noise from the proposed hospitality development to either NR 20 for habitable rooms with partially opened windows, or to 5dB below the pre-existing L_{90} in octave frequency bands between 63 Hz and 4 kHz, selecting whichever of the above criteria is the highest. This allows for open window ventilation where existing background levels are low, without causing unreasonable disturbance, but where background noise levels are already high controls noise to below the existing background level to control disturbance.

The above criterion is appropriate for regular daily / weekly entertainment.

4.0 SURVEY DETAILS

4.1 Survey Personnel

The building envelope assessment measurements were carried out and attended by Mr Jamie Wilson BA (Hons), AMIOA of PDA Ltd on 04/08/2022 and 05-08/2022 during the daytime and at night when external background sound levels were low. Additionally an ambient sound survey was carried out on the boundary of the site with the closest houses on Skinner Street. The ambient sound survey was carried out between 15:12 on 04/08/2022 and 09:42 on 05/08/2022.

4.2 Equipment

The equipment used for the building envelope assessment consisted of an NTi XL2 sound level meter and calibrator for which calibration certificates are held. The NTi XL2 is a class 1 sound level meter in accordance with IEC 61672-1 and IEC 61260.

The environmental noise survey at the boundary of the site with Skinner Street was carried out using a Rion NA-28 sound level meter and calibrator for which calibration certificates are held. The Rion NA-28 is a class 1 sound level meter in accordance with IEC 61672-1 and IEC 61260.

For the building envelope assessment, the sound level meter was handheld whilst noise measurements were taken in various positions both inside and outside the Training Centre building. A windshield was fitted to the microphone throughout the measurement process.

Throughout the environmental ambient noise survey the microphone was fitted with a weatherproof kit designed for the Rion sound level meter. The microphone was mounted on a pole approximately 1.5 meters above the ground and at least 3.5 meters away from any other reflective surfaces.

A field calibration was carried out on the sound level meters both before and after the building envelope measurements and the noise survey, during which time no significant deviation from the calibrated level was observed.

4.3 Site Details

The Gloucester Rugby Training Centre is located in a former industrial portal-frame building to the south of the Kingsholm stadium. The hospitality area is to occupy the north-eastern end of the building which is bounded by a car parking area then Kingsholm Road to the northern end, and Skinner Street to the southern end.

The nearest noise sensitive residences are those on the west side of Kingsholm Road which back on to Skinner Street. The rear of these properties is shielded from the road traffic passing down Kingsholm Road and hence is likely to be more sensitive to entertainment noise than the properties to the east of Kingsholm Road where the background sound level is likely to be greater. The closest property on Skinner Street is approximately 50m from the façade of the hospitality area of the Training Centre.

5.0 AMBIENT NOISE SURVEY

5.1 Weather

During the ambient noise survey, the weather was clear and dry, a temperature between 10°C and 26°C and a windspeed of 0 - 5 m/s from the north during the period that the hospitality venue is proposed to operate. Weather observations were taken from the Weather Underground website from the nearby IGLOUCES6 weather station.

5.2 Measurement

A free field ambient sound survey was carried out between 15:12 – 09:42 at a location on the boundary of the site closest to the nearby residential receivers.

L_{A90} measurements have been reported to show typical background noise of the vicinity of the hospitality venue and the nearby noise sensitive properties, which includes road traffic noise and other contributing sources.

A map of the survey site location and measurement position for the survey are shown in ***Fig. 1*** below.

Figure 1 - Survey measurement position and surrounding site layout

5.3 Results

The A – weighted broad band measurements recorded from the survey are shown in Figure 2 below in terms of L_{Aeq}, L_{Amax} and L_{A90}.

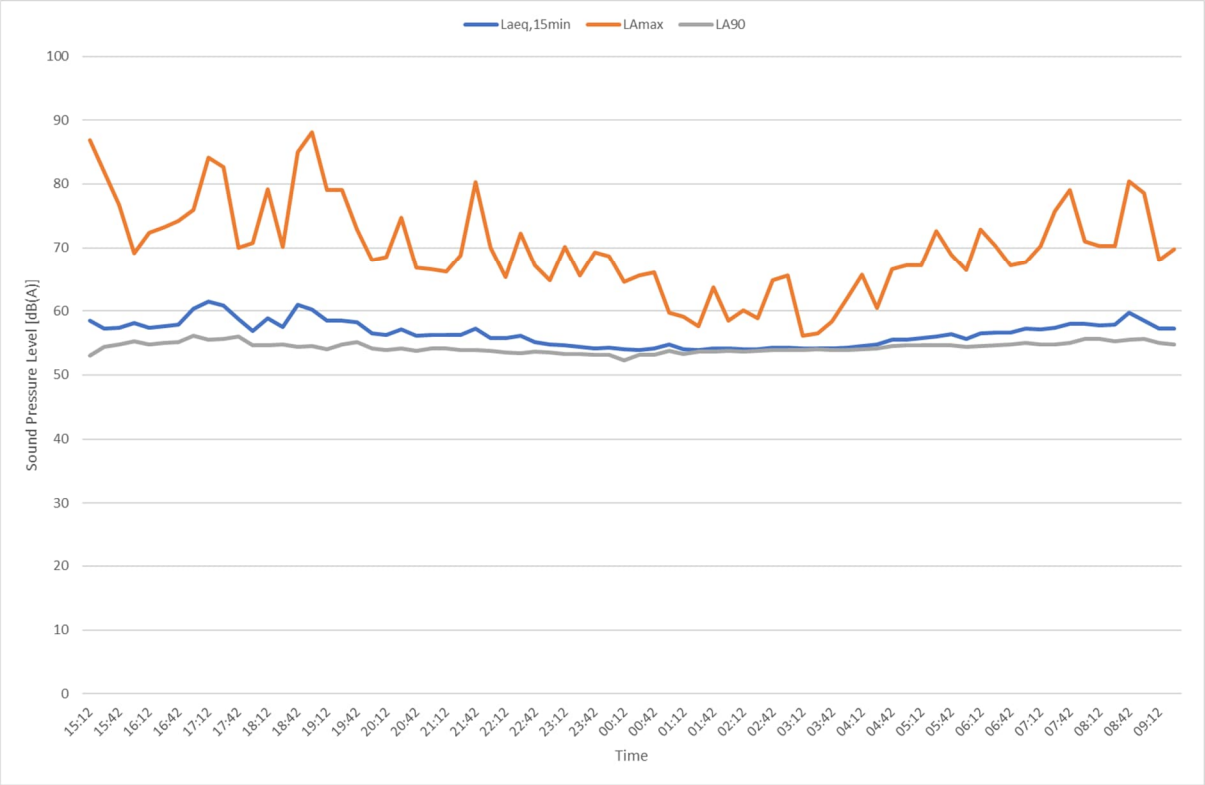

Figure 2 – Ambient sound survey levels at boundary of site with Skinner Street

The overall ambient sound level for the proposed night-time entertainment period (recorded music) between 23:00 and 02:30 was 54 dB $L_{Aeq,T}$ and in terms of modal L_{A90} for the period was 53 dB L_{A90}. It was noted that the quiet background was limited by continuous building services sound from the nearby commercial properties.

With regard to the properties at Serlo Road, to the west of the Training Centre, background sound measurements were previously undertaken in the vicinity of these properties in June 2021 and are fully reported in PDA report J003341/5015/RDC/1 dated 30/06/2021. The A-weighted broadband measurements are summarised in Figure 3 below. The overall ambient sound level for the proposed night-time entertainment period (recorded music) between 23:00 and 02:30 was 39 dB $L_{Aeq,T}$ and in terms of modal L_{A90} for the period was 35 dB L_{A90}.

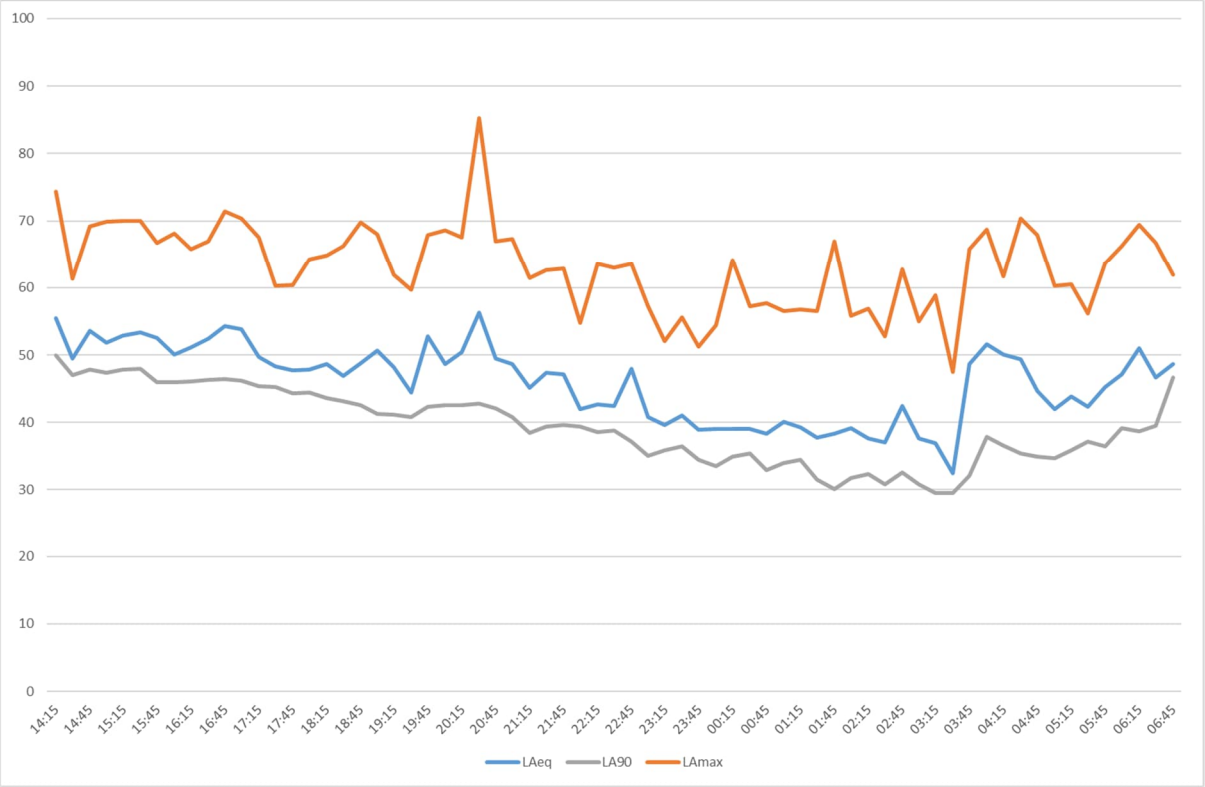

Figure 3 - Ambient sound survey levels close to boundary of site with Serlo Road

6.0 BUILDING ENVELOPE / NOISE EGRESS ASSESSMENT

In order to determine the impact of entertainment noise proposed for the hospitality area, a measure of the noise transmission from the entertainment space to the nearby noise sensitive properties was carried out.

6.1 Measurement

Measurements of noise transmission were carried out by installing a loudspeaker noise source within the proposed hospitality area. The loudspeaker was set to generate pink-noise at a maximum sound level and the levels (in octave frequency bands) were measured in the vicinity of the loudspeaker, inside the building close to the roof.

In addition to these measurements the sound levels were also measured outside the venue close to the noise sensitive properties on Skinner Street and Serlo Road (see Figure 1 for measurement positions). In order to minimise the background sound levels the measurements were carried out at night (after midnight) and L_{min} values were measured to minimise the effect of external transient sounds. Noise levels were measured both with the source operating and with the source off to determine the residual sound levels in the absence of the entertainment source.

Measurements at Serlo Road were approximately 1m from the concrete panel boundary fence and have been considered as façade. A correction of 3dB was applied to these values to obtain the equivalent free-field sound levels. Measurements at Skinner Street were adjacent to the alternating brick pillar and metal palisade fence and have been considered to be free-field.

6.2 Sound transmission calculations

The measured sound levels (in octave frequency bands) with the pink noise source operating were corrected by carrying out a decibel subtraction of the residual measurement with the pink noise source off, to obtain the sound level in octave bands due to the entertainment venue only at the nearby noise sensitive properties. Where the sound levels with the source operating were no higher than those with the source off (due to limitations in the level of noise which could be generated within the building) it was assumed that the worst case sound level from the entertainment source was at least 10dB below the measured ambient sound level in that octave band.

Once the measured sound levels in the vicinity of the nearby noise sensitive residences had been corrected for background noise and reflections (for the façade measurement at Serlo Road), the measured sound levels within the entertainment venue were subtracted from the levels at the nearby noise sensitive residences (in octave frequency bands) to obtain the transfer function between sound levels with in the venue and those close to the nearest noise sensitive residences.

The measured transfer functions account for all sound transmission paths between the inside of the proposed entertainment venue and the nearby noise sensitive properties, including sound transfer via the walls, doors and lightweight roof of the building.

In the case of the transfer function measured at Skinner Street this is likely to be similar to the transfer function for the developed hospitality use (assuming that the existing roof and door constructions are retained). However, with regard to the Serlo Road location, it is noted that the existing industrial building is one open space filling the whole southern bay of the building, whereas the developed hospitality venue will only occupy the eastern end of the building (see Figure 4). In order to account for the reduced roof area radiating sound, and the increased distance between the roof and the residences at Serlo Road from the test carried out with the whole of the industrial unit open, an additional -5dB correction in each octave frequency band has been applied to the transfer function between the hospitality venue and the Serlo Road residences. This is considered conservative as the reduction in roof area alone is less than 1/3 of the existing roof (-5dB) without accounting for the additional distance to the properties on Serlo Road (note that due to the office uses to the western end of the building only transmission from the building roof is likely to affect the Serlo Road residences.

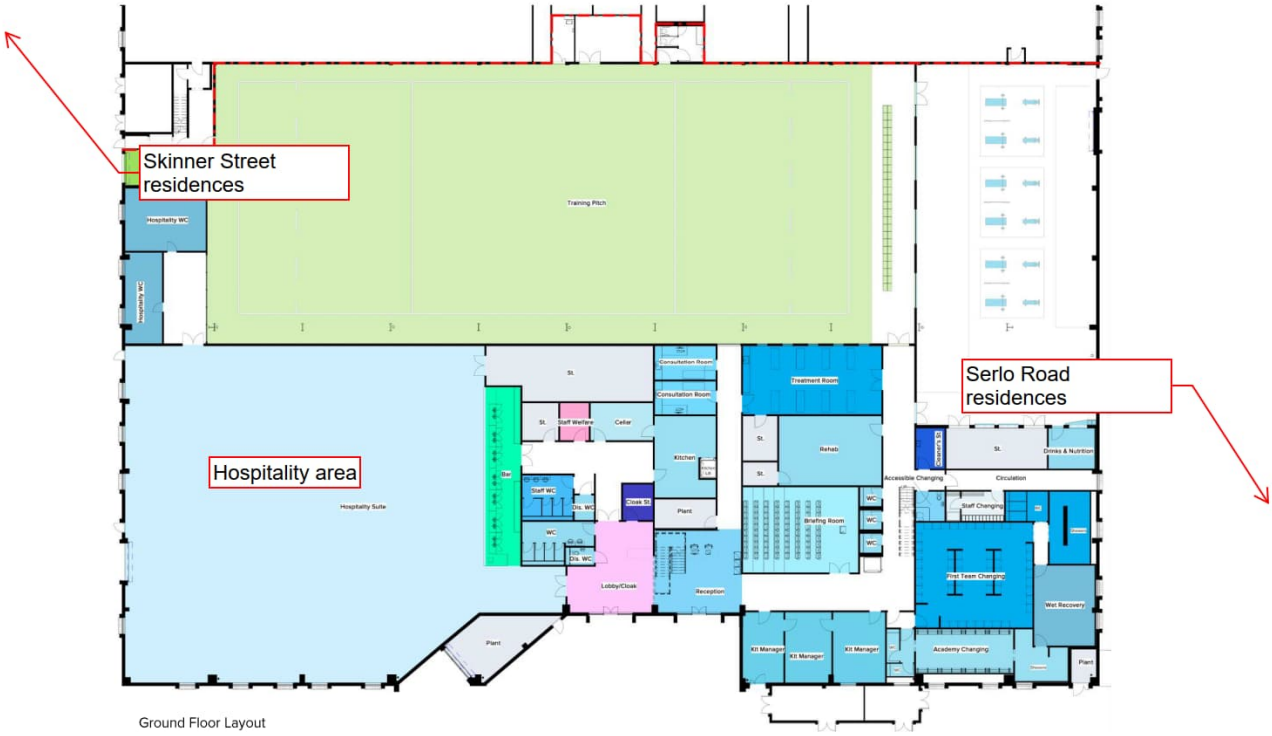

Figure 4 – Proposed internal layout (currently a single undivided space)

Sound attenuation from music noise measured ~3m from the loudspeaker within the hospitality venue to nearby noise sensitive properties and the level inside the roof of the venue was calculated as follows:

Table 2 – Measured level differences for transmission of music noise from hospitality venue to other locations

Location	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Rear of properties on Skinner Street	-37.4	-38.0	-44.1	-45.5	-51.2	-52.2	-57.9
Properties on Serlo Road	-48.0	-49.7	-56.1	-60.1	-61.3	-61.7	-71.8
Inside hospitality venue at roof level	-1.4	-8.0	-9.1	-7.3	-9.4	-10.0	-12.1

7.0 NOISE IMPACT ASSESSMENT

7.1 Skinner Street residences

For the residences on Skinner Street, existing background ambient sound levels are already typically 53 dB L_{A90} for the quietest period during which the entertainment venue is proposed to operate (23:00 – 02:30). In this case an appropriate limit would be to limit the entertainment noise in octave frequency bands to a level 5dB below the pre-existing background. In our experience this would limit the entertainment noise to a level which was occasionally just audible outside, where music noise may be faintly audible but neither melody or words are clearly discernible.

In order to meet this criterion the entertainment music sound should be limited to the following levels:

Table 3 – Entertainment sound limits for Skinner Street criterion

Octave band frequency	63	125	250	500	1000	2000	4000	dB(A)
Noise level in venue (3m from speakers)	**84.0**	**84.0**	**88.0**	**89.0**	**89.0**	**89.0**	**89.0**	**95.2**
Transfer function roof [1]	*-1.4*	*-8.0*	*-9.1*	*-7.3*	*-9.4*	*-10.0*	*-12.1*	-

Noise level inside roof [1]	*82.6*	*76.0*	*78.9*	*81.7*	*79.6*	*79.0*	*76.9*	-
Transfer function to Skinner St	-37.4	-38.0	-44.1	-45.5	-51.2	-52.2	-57.9	-
Levels outside Skinner St	46.6	46.0	43.9	43.5	37.8	36.8	31.1	44.6
Background -5dB limit criterion	47.0	47.4	44.2	43.5	37.9	37.3	42.3	-
Level of exceedance	-0.4	-1.4	-0.3	0.0	-0.1	-0.5	-11.2	-

Notes:

1. Transfer function and noise level inside roof are provided to allow potential noise monitoring at roof level (See Section 8.2).

Note that the levels outside residences on Skinner Street are not predicted to exceed the criterion of 5dB below background sound levels in octave frequency bands providing the entertainment noise is limited to the above values (entertainment sound levels measured approximately 3m from the venue loudspeaker).

7.2 Serlo Road Residences

For the residences on Serlo Road, existing background ambient sound levels are relatively low for the quietest period during which the entertainment venue is proposed to operate (23:00 – 02:30). In this case some properties may be expected to have windows open in the evening / night and an appropriate limit would be to limit the entertainment noise within habitable rooms to NR 20 to control the noise level at each frequency band (with particular reference to low-frequencies). In order to calculate the internal noise levels in habitable rooms we have used the rule-of-thumb value of 10dB reduction in each octave frequency band for noise levels from outdoor to indoor values with a partially opened window.

In order to meet this criterion the entertainment music sound should be limited to the following levels:

Table 4 – Entertainment sound limits for Serlo Road criterion

Octave band frequency	**63 Hz**	**125 Hz**	**250 Hz**	**500 Hz**	**1000 Hz**	**2000 Hz**	**4000 Hz**	**dB (A)**	**NR**
Noise level in venue	**84.0**	**84.0**	**88.0**	**89.0**	**89.0**	**89.0**	**89.0**	**95.2**	**-**
Transfer function roof	-1.4	-8.0	-9.1	-7.3	-9.4	-10.0	-12.1	-	-
Noise level inside roof	82.6	76.0	78.9	81.7	79.6	79.0	76.9	-	-
Transfer function to Serlo Road	-48.0	-49.7	-56.1	-60.1	-61.3	-61.7	-71.8	-	-
Levels outside Serlo Road	36.0	34.3	31.9	28.9	27.7	27.3	17.2	33.0	-
Attenuation of partially open window	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-	-
Levels inside habitable rooms (windows open)	26.0	24.3	21.9	18.9	17.7	17.3	7.2	23.0	21

Note that the levels within habitable rooms are predicted to marginally exceed the NR 20 criterion, however, it is noted that the exceedance occurs in the 2kHz octave band, and not the lower frequencies, hence it can be seen that the lower frequency sound levels are adequately controlled, whilst the small exceedance at 2kHz can be shown as not having a significant effect due to the overall noise level being only 23.0 dB(A). We would note that by reference to Section 3.4.3 that an internal noise level of 34 dB L_{Aeq} is determined to be the level 'just acceptable' for a single one-off night time event. Noting that the predicted 23 dB(A) level is more than 10dB below the one-off event level (i.e. less than half as loud in terms of human perception) we would consider that this is an acceptable level for regular entertainment. We would also note that these levels will only be experienced when windows to habitable rooms are open. At other times when windows are closed the entertainment noise is unlikely to be significantly audible within the habitable rooms.

7.3 Overall impact

The overall impact of the proposed hospitality venue is predicted to be low provided that the noise levels inside the venue (as detailed in Table 3 and Table 4 above) are not exceeded. We would note that the noise levels allow for a reasonably high entertainment noise level overall [95 dB(A)]. However, noise will need to be limited in the lower frequencies and the noise levels in the 63Hz and 125Hz octave bands would need to be carefully controlled where live music, or dance music is being played at high levels. Options for additional mitigation are discussed in Section 8.0 below.

8.0 DISCUSSION

The noise impact of the proposed hospitality venue has been assessed based on the proposed worst case use. It has been proposed that the venue license be extended to allow the following uses:

Table 5 – proposed licensed activities

Open to the Public	Mon-Sun	0600-0300
Sale of Alcohol	Sun-Thurs	0600-2400
	Fri & Sat	0600-0200
Live Music	Sun-Thurs	0800-2300
	Fri & Sat	0600-0200
Recorded Music	Sun-Thurs	0800-2400
	Fri & Sat	0600-0230
Late Night Refreshment	Mon-Sun	2300-0300
Performance of Dance	Sun-Thurs	0800-2300
	Fri & Sat	0600-0200
Indoor Sporting Events	Mon-Sun	0800-2300
Boxing & Wrestling	Mon-Sun	0800-2300
Exhibition of Film	Mon-Sun	0800-2300
Plays	Mon-Sun	0800-2300

The noise impact assessment discussed above has taken the likely worst-case use of Live Music (Fri & Sat) until 02:00 and Recorded Music (Fri & Sat) until 02:30. These are likely to be the worst case uses in terms of noise and are predicted to have a low-impact provided that the noise levels in Table 3 and Table 4 are not exceeded. Although overall music sound levels of 95 dB(A) within the venue are indicated noise levels will need to be limited to 84 dB(Z) within the 63 Hz and 125 Hz bands. Options for mitigation are discussed below.

8.1 Operation during the daytime

The above assessment is based on the worst case scenario of night-time entertainment (i.e. after 23:00). We would note that during the daytime (before 23:00) we would expect up to 5dB increase in the assessment criteria to be acceptable (i.e. entertainment noise not exceeding L90 background noise levels in each octave band [63Hz – 4kHz] or levels in habitable rooms not exceeding either 28 dB(A) or NR 25 with windows open). As such we would expect entertainment noise levels to be permitted to increase by up to 5 dB in each octave frequency band.

8.2 Noise Limiter / Noise Monitoring

In order to ensure that the noise criteria at the nearest noise sensitive residences are met it will be necessary to control the noise levels within the hospitality venue. The options for control are either by use of noise limiters or by external noise monitoring or a combination of both.

Noise limiters are devices which monitor the noise level within the venue and give a warning to the performer when the noise limits are approached or exceeded. Generally when the levels are persistently exceeded the limiter will shut off the power to the sound system until the correct levels are restored. It is important to ensure that the system fitted has the capability of controlling both the overall

level and the low-frequency limits, and it may be necessary to fit more than one limiter with the input filters set to control different parts of the frequency spectrum.

The noise limits given in this report in the venue are for noise levels close to the loudspeakers (~3m), with tests carried out using a single loudspeaker. For more complex sound systems it might be more appropriate to monitor the sound levels at the level just below the roof of the entertainment venue, as noise emissions from the roof are likely to be the limiting factor in terms of noise egress. A transfer function and equivalent roof noise levels are indicated in Table 3 and Table 4 to allow monitoring to be carried out at roof level and noise limiters referenced to this level if appropriate.

An alternative approach to noise limiters is to monitor the noise levels close to the nearby noise sensitive residences on Serlo Road and Skinner Street. Close to residences on Skinner Street the music noise should not be clearly audible (i.e. it should not be possible to make out the words of songs or to readily identify the melody played, although the music may be just audible outside the residence (in accordance with the Noise Council Code of Practice on Environmental Noise Control at Concerts, "control can be exercised … by limiting the music noise so that it is just audible outside the noise sensitive premises. When that is achieved it can be assumed that the music noise is not audible inside the noise sensitive premises"). For the premises at Serlo Road, due to the lower background levels the music noise may be more clearly audible, and in that case use of a sound level meter should indicate that during periods where other environmental sounds are quiet, the sound levels outside close to noise sensitive properties should not exceed 33 dB(A), and low frequency components of the sound should not be subjectively excessive.

8.3 Fit out of venue

We would note that the above assessment has been carried out on the venue prior to fit-out. The building is currently a very large volume space with hard reflecting external walls which result in a very reverberant open space with a large radiating roof area.

Following internal fit-out the space will be divided, with only a relatively small volume taken up by the hospitality space. The division of the space using lightweight partitions is likely to reduce the reverberation (through the reduction in volume and the increase in absorption of the lightweight walls) and also reduce the radiating area of the roof. The reduction in the reverberation will lead to a greater difference between the levels at the floor level of the entertainment venue, and those at roof level, such that it is likely that higher noise levels will be permitted at floor level whilst still achieving the limiting noise levels at roof level. The effect of dividing the space will also decrease the radiating area of the roof as previously referenced. Whilst this has been estimated in the assessment above for the houses at Serlo Road, it is possible that the attenuation may further increase and we would recommend that the transfer function between the dance floor and noise sensitive properties is re-measured following fit-out to allow the internal limits to be revised if necessary.

8.4 Design of sound system

The assessment above was carried out using a basic PA cabinet speaker to provide the noise levels within the proposed hospitality space. Specialist sound systems employing highly directional loudspeakers (such as linear array systems) facing down towards the entertainment space may be able to maximise the sound level at floor level in the space whilst minimising the level at the lightweight roof. Alternatively an array of multiple small delay loudspeakers close to / above the audience can be used to produce high levels at the audience whilst minimising levels at the roof. Such systems may be employed to increase the sound level of the hospitality area if required, without increasing the sound level at the nearby noise sensitive residences. However, there are limitations to the directionality of such systems at lower frequencies and manufacturers should be consulted in the design of such a specialist system.

8.5 Operational considerations

In addition to music noise patrons should be encouraged to leave the venue quietly in the evenings and also patrons standing outside the bar chatting / smoking should be discouraged.

9.0 CONCLUSION

PDA Ltd were commissioned by Gloucester Rugby Ltd to carry out a noise impact assessment of the proposed extension of operating hours of the hospitality venue of the Gloucester Rugy Training Centre, Kingsholm Road, Gloucester.

A survey of existing environmental noise levels has been undertaken close to the noise sensitive residences on Skinner Street to supplement a previous environmental noise survey undertaken close to the boundary of the site with Serlo Road in 2021. Measurements were taken using broadband A-weighted and octave band parameters, and are reported within.

High levels of noise were generated within the hospitality venue and noise levels in a range of different positions, including close to the nearest noise sensitive properties, were measured to assess the building envelope in terms of sound insulation.

Calculations were then carried out in order to assess the likely noise egress from the entertainment venue to these noise sensitive locations.

Sound limits were determined for the entertainment space, in octave frequency bands, such that the impact of the development would be low at the nearby noise sensitive properties. The limiting sound levels are indicated in Table 3 and Table 4 and are suitable for entertainment with some limitations on the low-frequency noise generated within the space.

It is noted that the impact assessment is for the worst case night-time entertainment levels and it is likely that noise limits could be increased by up to 5dB for entertainment during the daytime period prior to 23:00.

It is noted that the entertainment venue has not yet been developed and the building is currently an open space. We would expect that following fit-out the attenuation of noise levels from inside the venue to nearby noise sensitive properties may further reduce. Additionally outline advice is given in reducing noise egress and / or increasing internal noise levels by careful design of the fit-out and sound system.

APPENDIX A – DEFINITION OF ACOUSTIC TERMS

The decibel

This is the basic unit of noise, denoted dB.

A Weighting

This is a weighting process which simulates the human ear's different sensitivity at different frequencies. A weighting can be shown two typical ways, 50 dB(A) L_{eq} or 50 dB $L_{Aeq.}$ Both mean the same thing. (See below for a definition of L_{eq}). The dB(A) level can be regarded as the overall level perceived by human beings.

L_{eq} and $L_{eq(s)}$

This is the equivalent continuous noise level which contains the same acoustic energy as the actual time-varying sound. In other words it is a kind of average noise level. It is denoted dB L_{eq} or, for A-weighted figures dB(A) L_{eq} or dB L_{Aeq}. It can also be expressed in terms of frequency analysis (see later). $L_{eq(s)}$ is the sample L_{eq} level.

L_n

This is the level exceeded for n% of the time. It is denoted dB L_n or, for A-weighted figures dB(A) L_n or dB $L_{An.}$ It can be expressed in terms of frequency analysis (see later). L_{90} is the level exceeded for 90% of the time and is a measure of the lowest level typically reached. L_{10} is the level exceeded for 10% of the time and is the highest level typically reached. L_{50} is the level exceeded for 50% of the time and, mathematically, it is the median.

L_{max}

This is the maximum level reached during a measurement period. The "time constant", or the ability of the equipment to respond to impulses is usually expressed along with it, e.g. "Fast", "Slow", etc. It is denoted dB L_{max} or, for A-weighted figures dB(A) $L_{max,}$ dB $L_{Amax,}$ etc. It can also be expressed in terms of frequency analysis.

Frequency Analysis

Whereas dB(A) gives a very useful overall figure, it has its limitations in that it cannot be used to model or predict the effect of noise control and mitigation as this nearly always has radically different performance at different frequencies.

Frequency analysis expresses an overall noise level at each frequency or band of frequencies in the audible range. Octave band analysis divides the audible range into 10 bands from 31.5 Hz to 16 kHz and the noise level in each band can be expressed in any form e.g. L_{eq}, L_{90}, L_{max} etc. One third octave band analysis uses 30 bands.

Narrow band analysis takes the process to resolutions of less than 1 Hz. This is useful for identifying the existence of tones (whines, hums, etc.) and in pin-pointing the sources.

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ACOUSTIC CONSULTANTS

HOSPITALITY REVERBERATION ASSESSMENT

GLOUCESTER RUGBY TRAINING CENTRE

REPORT REFERENCE NO. J003937-5765-RDC-01

9TH SEPTEMBER 2022

[redacted]

Document Control Sheet

Details of Assessment	
Client	Gloucester Rugby Ltd
Document Title	Hospitality Reverberation Assessment – Gloucester Rugby Training Centre
Report Reference	J003937-5765-RDC-01

Client Address:	Company Address:
Kingsholme Road Kingsholme Gloucester Gloucestershire GL1 3AX	PDA Ltd 3 Bridgewater Court Barsbank Lane Lymm WA13 0ER

Issue	Date	Author	Remark	Status
01	09/09/2022	Richard Cookson	Initial Issue	
02				

	Name	Position
Prepared By	Richard Cookson PhD, BSc(Hons) MIOA	Principal Consultant
Checked By	Max de Salis PhD CEng MIOA	Director / Principal

This report has been prepared based upon a scope of works and associated resources agreed between the client and Philip Dunbavin Acoustics Ltd (PDA). This report has been prepared with all reasonable skill, care and diligence and has been based upon the interpretation of data collected. This has been accepted in good faith as being accurate and valid at the time of the collection. This report has been based solely on the specific design assumptions and criteria stated herein.

CONTENTS

1.0 SUMMARY

PDA Ltd were commissioned by Gloucester Rugby Ltd to carry out an assessment and advice for the control of reverberation within the proposed hospitality area of the new Training Centre.

A survey of existing reverberation levels has been undertaken within the existing building, however, it is noted that the space is yet to be divided to form the separate hospitality and admin/office areas.

A CATT Acoustic ray-tracing model of the existing space was produced and calibrated to match the measured reverberation time of the existing space. The calibrated model was then modified to represent the proposed hospitality space.

A number of iterations of acoustic absorption were applied and it was found that to achieve the proposed target criterion of Tmf ≤ 1.2 seconds, Class A absorption treatment was required to three walls of the proposed space, in addition to 112m^2 of suspended acoustic rafts (e.g. 31 no. rafts of 3000mm x 1200mm).

Due to the uncertainty of acoustic reverberation models we would recommend that further measurements of the reverberation time are scheduled during the division and fit-out of the space to allow the model to be further refined before acoustic treatments are finalised.

2.0 BRIEF FOR CONSULTANCY

PDA Ltd were commissioned to carry out the following:

C) Reverberation Times

We will assess surface finishes and dimensions of the proposed entertainment space and together with measurements of the existing reverberation this will be used to produce a model of the space using CATT ray tracing software.

We will use the model to determine the predicted improvement in the internal reverberation and the placement and quantity of suitable acoustic absorbers to control the reverberation to an acceptable level.

The results of the assessment will be presented in a short technical report detailing the predicted reverberation times and the proposed placement and quantity of acoustic absorption products.

3.0 ASSESSMENT CRITERIA

There are no published guidelines for acceptable criteria for reverberation in hospitality venues. Generally, reverberation criteria exist for spaces where verbal communication may be required over distances larger than a few meters(school halls / sports halls etc), and where it is desirable to reduce the noise build up from peoples voices through the Lombard effect (whereby individuals talking involuntarily raise the volume of their voices in the presence of background sounds, leading to sound build-up in occupied reverberant spaces). In the case of the considered hospitality area, we understand that the space will also be used for music performances and entertainment, as such a lower reverberation time is desirable, as the current reverberation time in the space has been observed to be very high. A lower reverberation time will increase the clarity of music, entertainment and speech within the venue, and will also serve to reduce the reverberant sound level at the roof thereby providing a small reduction in the sound break-out of the building which could potentially affect nearby noise sensitive residences.

Although there are not standards giving reverberation criteria for entertainment spaces, we may infer suitable criteria by reference to standards for other types of spaces.

3.1 BS 8233:2014 Guidance on sound insulation an noise reduction for buildings

BS 8233 does not give target criteria for reverberation time although it discusses its importance in rooms used for speech and / or music.

3.2 Sports England guidance

Sport England published guidance on sport hall acoustics in 2012 which states that sports hall reverberation times should be between 1.5 and 2.0 seconds at mid-frequency, and that excessive reverberation times can lead to:

- Poor speech intelligibility
- High background noise levels
- Increased stress for users
- Management / control difficulties.

3.3 Building Bulletin 93 (BB93) Acoustic Design of Schools

BB93 gives criteria for school assembly halls / multi-purpose halls (drama, PE, audio/visual presentation, assembly, occasional music) of 0.8 – 1.2 seconds in terms of mid-frequency T_{mf} for new-build halls, with a relaxation to 0.8 – 1.5 seconds for refurbished halls.

3.4 Discussion and Selected criterion

Reverberation is proportional to the room volume, and inversely proportional to the total absorption area, as such for larger rooms the reverberation time can be difficult to limit without applying acoustic absorber to all of the room surfaces. For the proposed entertainment space (assuming all entertainment sound will be amplified, and hence no sound reinforcement is required) reducing the reverberation to as low as practicable would likely give the best acoustic performance. In reality the lowest achievable reverberation time will be limited by the surfaces to which absorbent finishes can be applied (i.e. it is unlikely that the floor will be able to be treated) and the cost of the treatment. We have therefore assumed that the roof will remain open and unlined and the floor will remain a hard floor with the industrial finishes retained where possible.

We would therefore suggest that a target criterion such as the BB93 upper limit for a new-build assembly hall (1.2 seconds T_{mf}) would be a reasonable target to allow amplified speech and music to be reasonably audible and intelligible in the space, and to reduce the noise build-up through occupants talking to acceptable levels.

4.0 ASSESSMENT METHODOLOGY

The primary methods of predicting reverberation in buildings are the 'classical' Sabine method, and various refinements, and numerically modelled methods such as ray-tracing.

The Sabine method estimates reverberation from the room volume and the surface area and acoustic absorptivity of absorbers within the room. The method assumes that energy is lost and sound level decays continuously as the sound propagates around the room. Unfortunately the method is only accurate where the room is reasonably reverberant and the acoustic absorption is reasonably evenly distributed over the room surfaces. In particular, with very high rooms or very large volumes the method becomes increasingly inaccurate.

The numerical ray tracing method simulates sound 'rays' propagating outwards from a source and reflecting off the room surfaces, with the intensity of the sound ray reducing in proportion to the absorption coefficient of the surfaces it reflects from. Whilst the numerical ray tracing models allow a much more detailed analysis of the sound decay within the room, they are also dependent on a number of parameters of the building surfaces which are not always known. Such parameters include the scattering coefficient (the proportion of rays which do not reflect from surfaces in a specular manner) and the absorption coefficients of materials themselves, which are not known in detail for many building elements. This is particularly the case for existing buildings, such as the building considered, where the precise construction and materials are unknown.

Due to the uncertainty in prediction methods for reverberation times the assessment will be conducted in the following steps;

1. Measure the existing reverberation times in the existing building

2. Create a computer ray-tracing model of the existing building using CATT Acoustic ray-tracing software

3. Compare the modelled and measured reverberation and calibrate the model by changing selected parameters such that the results of the model approximate the measured values.

4. Modify the model to the proposed space (note that the proposed space has a lower volume and different rooms surface areas and different room shape than the existing room all of which will influence the reverberation time).

5. Compare the results of the model with the proposed criterion.

6. Add further absorption as required, repeat step 5 and 6 until the criterion is proposed to be achieved.

As noted above there is considerable uncertainty in the prediction of reverberation, even using numerical ray tracing methods. In this case, as there is to be considerable remodelling in addition to acoustic treatments, and as the changes in acoustic absorption brought about by the remodelling are not precisely known, we would recommend that the reverberation is remeasured periodically during the build to refine / recalibrate the model prior to final selection of acoustic treatments.

5.0 SURVEY DETAILS

5.1 Survey Personnel

The reverberation assessment measurements were carried out by Mr Jamie Wilson BA (Hons), AMIOA of PDA Ltd on 04/08/2022.

5.2 Equipment

The equipment used for the assessment consisted of an NTi XL2 sound level meter and calibrator for which calibration certificates are held. The NTi XL2 is a class 1 sound level meter in accordance with IEC 61672-1 and IEC 61260. The sound level meter was used in conjunction with a pink noise generator and loudspeaker to measure the T_{20} reverberation time estimated from a 20dB decay measurement using an interrupted source.

5.3 Site Details

The Training Centre building has been partially divided using a lightweight dividing wall of plasterboard on metal stud to separate the indoor training pitch and gym from the proposed office and hospitality areas. However, the dividing wall between the hospitality area and office has not yet been constructed.

5.4 Results

The results of the Reverberation Time measurements are indicated below:

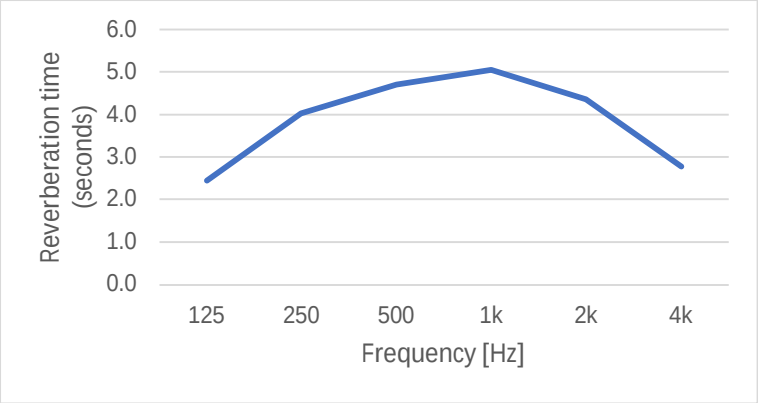

Figure 1 – Measured reverberation time in existing space

The measured Tmf in the existing space was 4.7 seconds, with reverberation times greater than 5 seconds in the 1kHz octave band.

6.0 RAY TRACING MODEL

6.1 Initial Calibration

The existing space was modelled using CATT Acoustic ray tracing software. Initial results using library absorption coefficients for room surfaces and a general scattering coefficient of 20%. Materials modelled were lightweight cladding panels, concrete blockwork, roller shutter doors, concrete floor and metal frame plasterboard partitions. The results of the initial model indicated a predicted T_{mf} of 5.8 – 5.9 seconds with a predicted reverberation of approximately 6.5 seconds in the 500Hz frequency band.

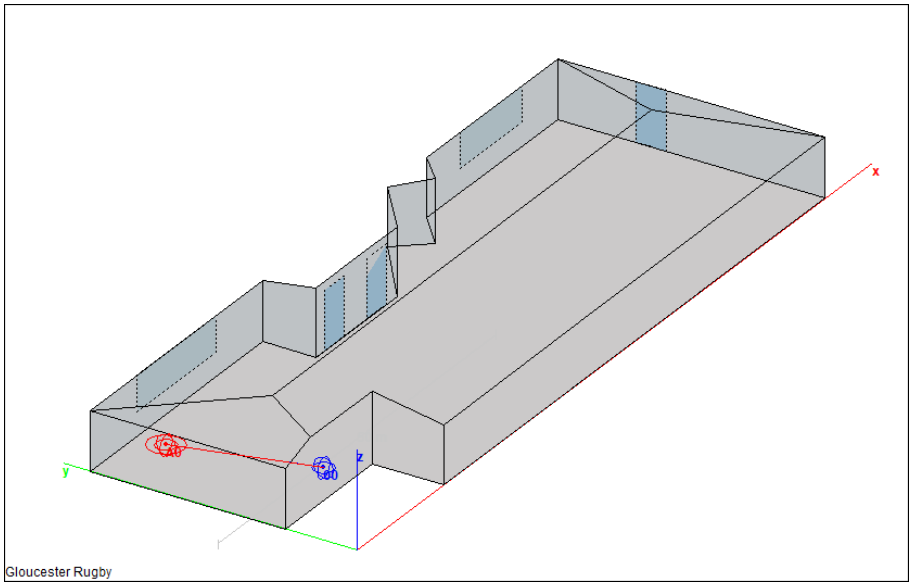

Figure 2 – CATT model of existing space

Reviewing the scattering and absorption coefficients selected, the scattering coefficients appeared to be reasonable and were judged to be unlikely to account for the difference between the measured and modelled reverberation times. The cladding panel coefficients were taken from laboratory tests and were judged likely to be reasonably accurate. Similarly the smooth concrete floor and new double boarded lightweight plasterboard partition was judged unlikely to be providing sufficient absorption to account for the difference in models. The roller shutter doors also were too small in area to make significant impact

on the results. As such it was reasoned that the error was likely in the library data for the concrete blockwork. This was supported by there existing a number of different library absorption spectra for concrete blocks. The more acoustically absorbent blockwork data was generally historical data from un-painted 'breeze blocks' which are likely to refer to coarse aggregate blocks with a fairly course porous structure, whilst those in the proposed hospitality venue painted and their type unknown. The absorption coefficients of the modelled blockwork were adjusted until the measured reverberation times were replicated. The final absorption coefficients of the blockwork were found to be in-between the reasonably high library values for unpainted 'breeze blocks' and the initially employed reasonably low absorption values for 'painted concrete blocks'.

The reverberation times of the final calibrated model predicted a T_{mf} of 4.7 seconds and the octave band reverberation times were within 0.1s of the measured value in each octave frequency band.

6.2 Modelled hospitality space

The calibrated model was modified by insertion of a modelled lightweight wall separating the proposed office area from the hospitality area.

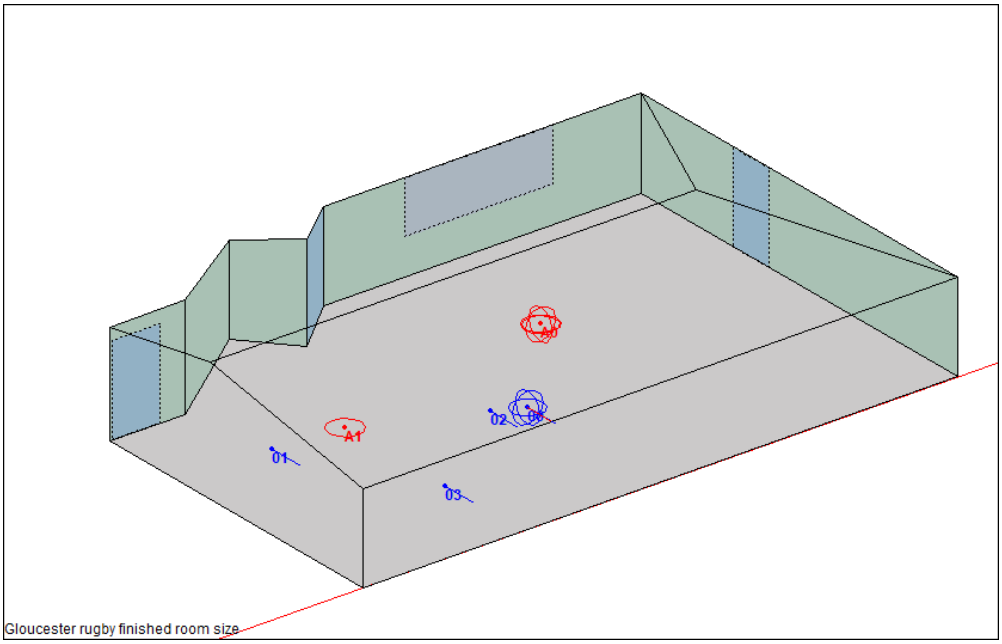

Figure 3 – CATT model of hospitality space

Initial results of the model indicate the untreated space would have the following reverberation times:

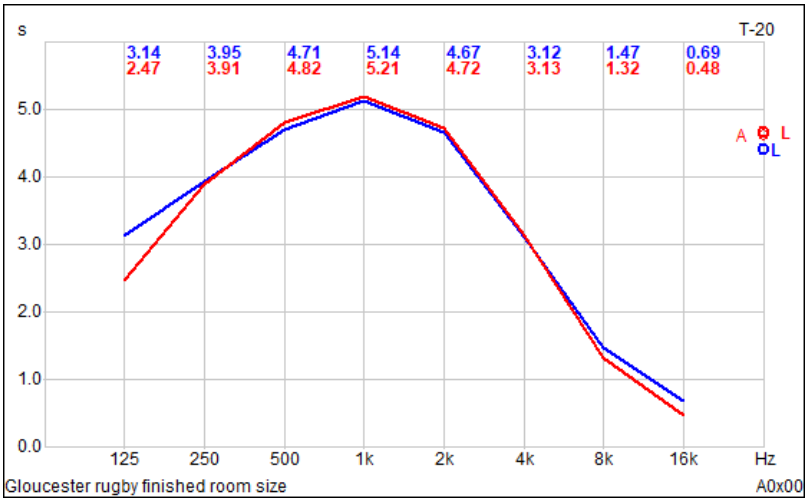

Figure 4 – CATT predicted reverberation for untreated space

We would note that the predicted reverberation times for the hospitality space are similar to those measured in the existing space.

7.0 MITIGATION OPTIONS

We have modelled a number of mitigation scenarios. In general, the building having generally a high ceiling and high hard walls will require absorption lower down in the space to prevent long reverberation times from sound reflecting around the walls of the lower part of the building. It is unlikely that the space will be carpeted, as such absorption in the lower part of the building will be required to the walls. Good practice dictates that absorption should be applied to two orthogonal walls to avoid flutter echoes becoming prominent between reflective parallel surfaces.

Initial treatment considered was Gyptone perforated plasterboard wall lining to the two new separating separating the hospitality area from the training pitch and office areas respectively. The initial estimated results are indicated below;

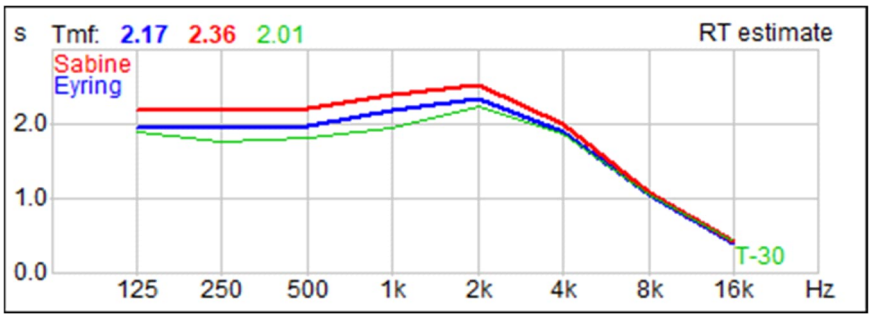

Figure 5 – Estimated reverberation time with two orthogonal walls treated with Gyptone absorbers

Although the reverberation is reduced, it is still considerably higher than the target criterion.

A number of further iterations were considered, a selection of which are indicated below:

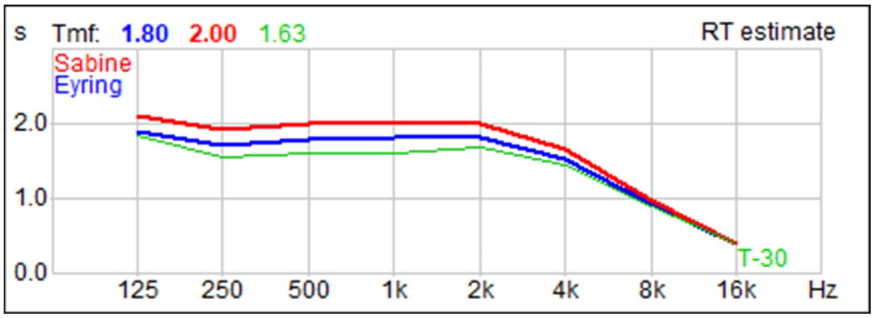

Figure 6 – Toughsorba 175mm Class A absorption to 2 orthogonal walls

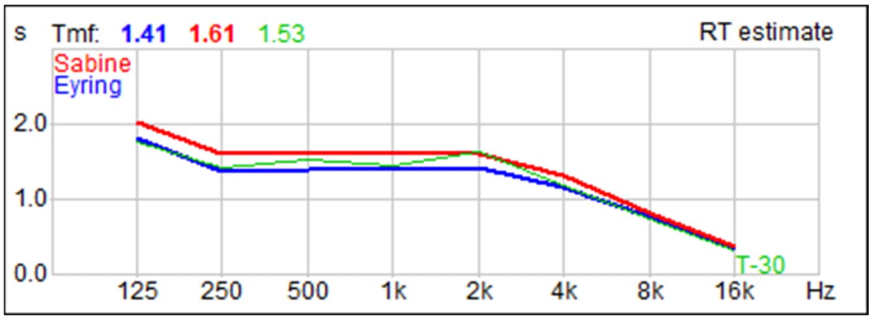

Figure 7 – Toughsorba 175mm Class A absorption to 3 orthogonal walls

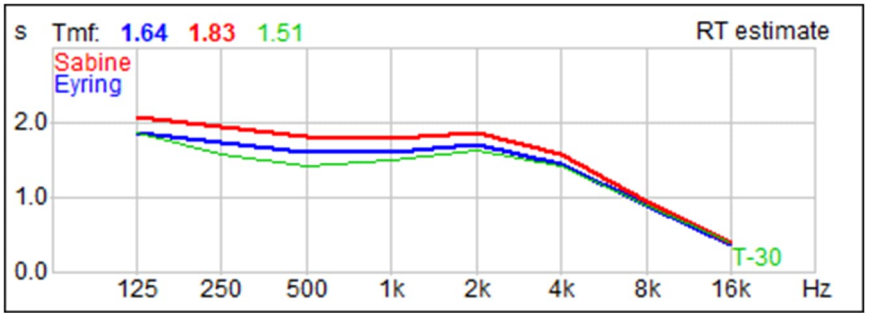

Figure 8 – Gyptone to 2 orthogonal walls plus Ecophon Solo rafts at 6.5m

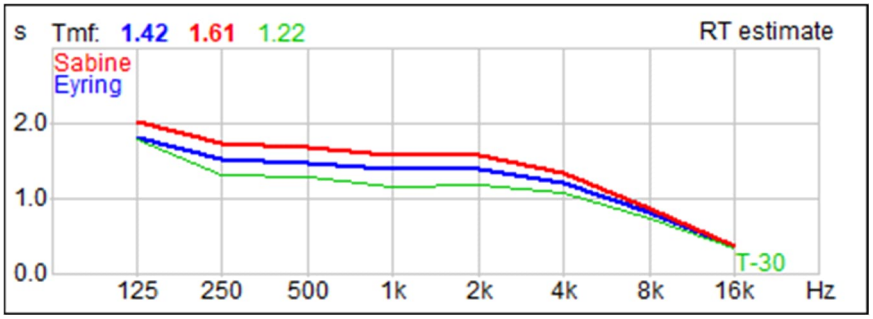

Figure 9 – Toughsorba 175mm to 2 orthogonal walls plus Ecophon Solo rafts

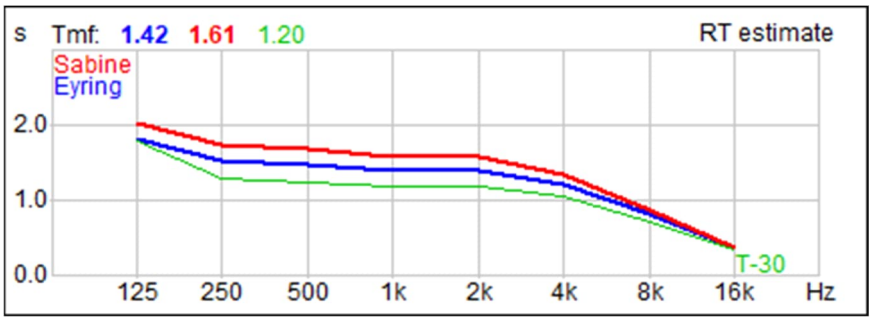

Figure 10 – As Figure 9 with raft height reduced to 5.5m

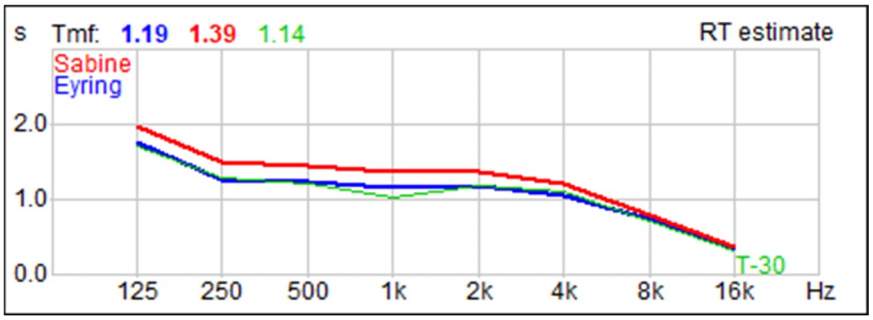

Figure 11 – As Figure 10 with Toughsorba 175mm to 3 walls

The final iteration has been modelled using the full ray tracing prediction to achieve the following predicted reverberation times.

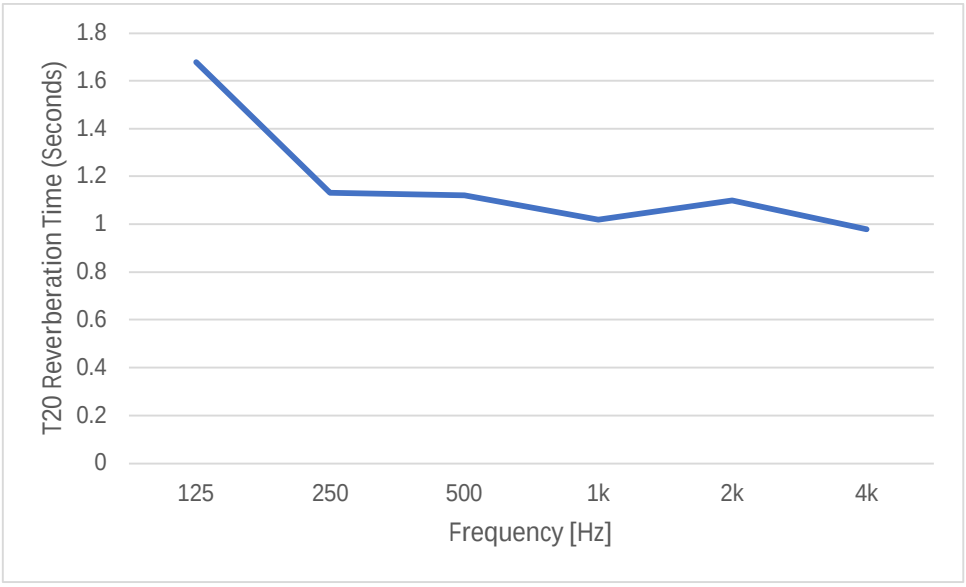

Figure 12 – Predicted reverberation estimate in treated space

The overall mid-frequency reverberation time (T_{mf}) is predicted as 1.08 seconds which meets the proposed 1.2 seconds.

7.1 Details of final mitigated design

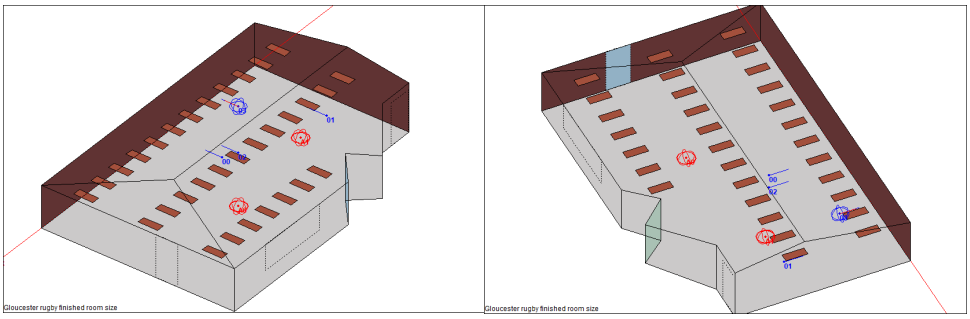

Figure 13 – Proposed acoustic treatments

The proposed acoustic treatments consist of absorption Class A wall linings to three walls plus Class A ceiling rafts suspended at 5.5m high.

- The modelled wall absorption consists of Toughsorba acoustic panels backed with a 175mm air gap to the wall and backed with 25mm mineral wool (90kg/m^3 density). (See attached brochure).

  The proposed treated walls are the south and west internal lightweight partitions, and the blockwork areas of the eastern wall.

- The example ceiling rafts consist of 31 Ecophon Solo rafts, each 3000 x 1200mm suspended 5.5m above floor level. (See attached brochure). [Please note that alternative absorption products with a similar acoustic absorbency may be suitable such as those from SuperPhon.] We would recommend that a refined model is re-run with the selected product and orientation after calibration measurements have been made to the divided hospitality space.

8.0 CONCLUSION

PDA Ltd were commissioned by Gloucester Rugby Ltd to carry out an assessment and advice for the control of reverberation within the proposed hospitality area of the new Training Centre.

A survey of existing reverberation levels has been undertaken within the existing building, however, it is noted that the space is yet to be divided to form the separate hospitality and admin/office areas.

A CATT Acoustic ray-tracing model of the existing space was produced and calibrated to match the measured reverberation time of the existing space. The calibrated model was then modified to represent the proposed hospitality space.

A number of iterations of acoustic absorption were applied and it was found that to achieve the proposed target criterion of Tmf ≤ 1.2 seconds, Class A absorption treatment was required to three walls of the proposed space, in addition to 112m^2 of suspended acoustic rafts (e.g. 31 no. rafts of 3000mm x 1200mm).

Due to the uncertainty of acoustic reverberation models we would recommend that further measurements of the reverberation time are scheduled during the division and fit-out of the space to allow the model to be further refined before acoustic treatments are finalised.

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This is the equivalent continuous noise level which contains the same acoustic energy as the actual time-varying sound. In other words it is a kind of average noise level. It is denoted dB L_{eq} or, for A-weighted figures dB(A) L_{eq} or dB L_{Aeq}. It can also be expressed in terms of frequency analysis (see later). $L_{eq(s)}$ is the sample L_{eq} level.

L_n

This is the level exceeded for n% of the time. It is denoted dB L_n or, for A-weighted figures dB(A) L_n or dB L_{An}. It can be expressed in terms of frequency analysis (see later). L_{90} is the level exceeded for 90% of the time and is a measure of the lowest level typically reached. L_{10} is the level exceeded for 10% of the time and is the highest level typically reached. L_{50} is the level exceeded for 50% of the time and, mathematically, it is the median.

L_{max}

This is the maximum level reached during a measurement period. The "time constant", or the ability of the equipment to respond to impulses is usually expressed along with it, e.g. "Fast", "Slow", etc. It is denoted dB L_{max} or, for A-weighted figures dB(A) L_{max}, dB L_{Amax}, etc. It can also be expressed in terms of frequency analysis.

Frequency Analysis

Whereas dB(A) gives a very useful overall figure, it has its limitations in that it cannot be used to model or predict the effect of noise control and mitigation as this nearly always has radically different performance at different frequencies.

Frequency analysis expresses an overall noise level at each frequency or band of frequencies in the audible range. Octave band analysis divides the audible range into 10 bands from 31.5 Hz to 16 kHz and the noise level in each band can be expressed in any form e.g. L_{eq}, L_{90}, L_{max} etc. One third octave band analysis uses 30 bands.

Narrow band analysis takes the process to resolutions of less than 1 Hz. This is useful for identifying the existence of tones (whines, hums, etc.) and in pin-pointing the sources.

APPENDIX B – BROCHURES OF EXAMPLE ABSORBENT MATERIALS

CI/SfB (42) Rm1 (P2)

Soundsorba Ltd.
March 2015

TOUGHSORBA™
Robust Acoustic Panels

DESIGNER ACOUSTIC SOLUTIONS

TOUGHSORBA™ acoustic panels are made with natural wood fibres from 100% sustainable sources. These acoustic panels are tough and available in any RAL colour, depending on quantity.

They can be used on ceilings and high level walls where resistance from ball impact is important. This robustness, along with multi-colours, makes them ideal for use in reducing reverberant noise levels in a wide variety of buildings such as schools, gymnasiums, restaurants, offices, leisure centres, cinemas, community halls, churches, swimming pools, etc.

TOUGHSORBA™ acoustic panels are Class A sound absorbers.

SOUNDSORBA®
ACOUSTIC PRODUCTS

TOUGHSORBA™

Robust Acoustic Panels

TOUGHSORBA™ high performance impact resistant noise absorbing panels are ecologically friendly and used to reduce reverberant noise levels inside buildings. Their special fine rustic finish gives them a unique design feature as well as providing maximum open area for sound absorption. The choice, depending on quantity, to have the surface of the panels to any colour, such as RAL, NCS, BS makes the TOUGHSORBA™ panel the perfect choice for creative design, combined with good acoustics as they achieve Class A acoustic absorption performance, which is the highest class.

APPLICATION

TOUGHSORBA™ acoustic panels are especially suitable where colours on the face of the panels will add design flair and a robust and durable product is required. The panels are generally used on indoor high level wall areas, normally above door height upwards, and ceiling areas. Their high acoustic performance makes them suitable for gymnasiums, offices, schools, colleges, universities, cinemas, restaurants, community halls, swimming pools, factories, atriums, etc.

MANUFACTURE

Made from natural wood fibres from 100% sustainable sources. Wood, magnesite and water are all the principal components of the TOUGHSORBA™ acoustic panels (fibre width 1mm) and they are completely harmless in terms of building biology. They are flame and termite resistant. The panels are bevelled on all four face edges with 5mm bevel to give a nice visually pleasing finish. TOUGHSORBA™ panels are not classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (HOHSC).

5mm beveled edge on all sides

The "swimming pool" version has additives which inhibit mould and bacteria growth when used in swimming pool environments. Make sure to order "swimming pool" version if panels are going to be used in a swimming pool.

STANDARD NOMINAL SIZES

Nominal Panel Size: 1200 x 600 x 25mm

Dimensional tolerances +/- 3mm

Maximum dimensional changes in a standard climate of 23° C/ 50% relative humidity is +/-1%

NOMINAL WEIGHT

11 Kg/m^2

Sports Arena - Abu Dhabi

Sports Centre - Birmingham

HUMIDITY

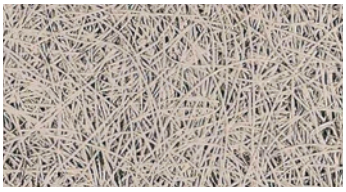
Suitable for rooms with a constant relative humidity of up to 80%.

For suitably ventilated indoor swimming pools, please order "**swimming pool**" version as this version will have special additives during the production process which adds an anti-micro biological agent into the paint to resist the potential for bacteria, mould growth, etc., in such environments.

SURFACE FINISH

The face surface of the TOUGHSORBA™ acoustic panels has an appealing rustic cobweb appearance.

Beige and White finishes are standard colour finishes.



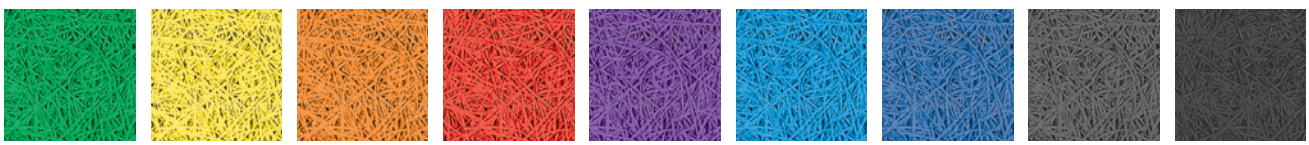
Beige

White

COLOURS

An almost unlimited range of colours are available – almost every colour tone from popular colour systems such as RAL, NCS or BS colour, subject to minimum single batch order quantity.

Deviations in colour tone from the colour chart and colour perception are possible due to the rough fibre or panel surface.



These colours are for guidance only to demonstrate the wide range of colours options available.

FIRE SAFETY

TOUGHSORBA™ has a Euroclass B-s1,d0 fire rating. This is equivalent to BS Class 0 fire rating in the United Kingdom.

IMPACT RESISTANCE

TOUGHSORBA™ has been tested vigorously to assess its durability in sports situations. TOUGHSORBA™ remains intact and unaffected when impacted by indoor footballs and basketballs. It is certified as "safe against ball throwing" according to DIN 19032/Part 3

(When the panels are used in sport halls where they may be hit by balls, then the panels must be fixed with 9 screws per panel, instead of the normal 6 screws per panel).

MAINTENANCE

TOUGHSORBA™ is simple to maintain by just vacuuming periodically. Any damage can be spray painted. Ask for painting guide.

Panels age naturally under U.V. light conditions like all natural products.

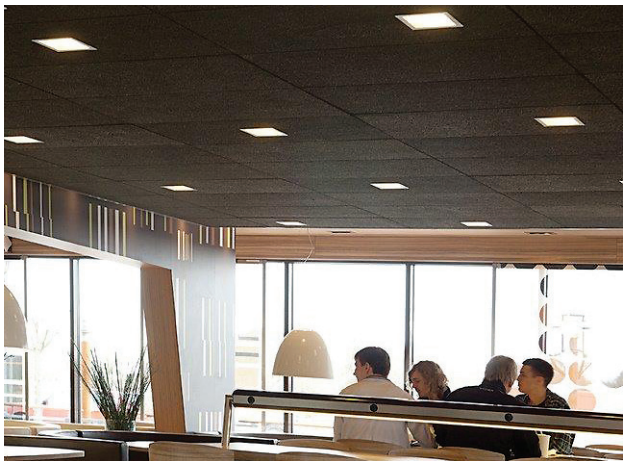
SUSTAINABILITY

TOUGHSORBA™ panels are manufactured from Spruce wood and water and a bonding agent of Magnesite. The Spruce wood is from sustainable forests and FSC and PEFC approved.

Ball Impact Resistance

Sports Halls

Showrooms



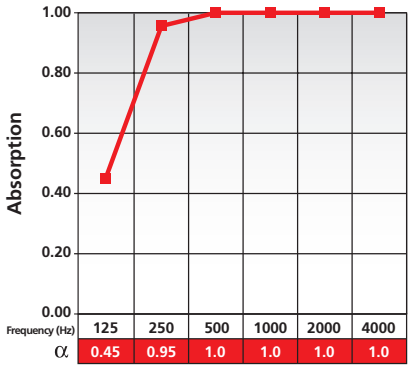
Restaurants

ACOUSTIC PERFORMANCE

CLASS A

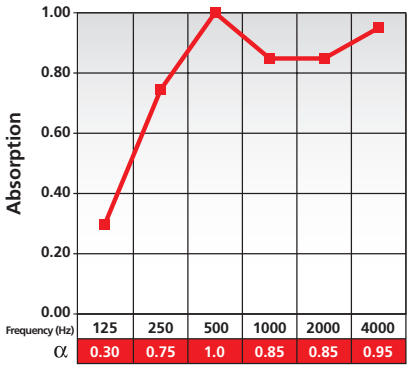
A Fixed with 175mm air gap + 25mm 90kg/m³ density mineral wool

NRC = 1.0 Class = A



B Fixed with 60mm air gap + 30mm 40kg/m³ density mineral wool

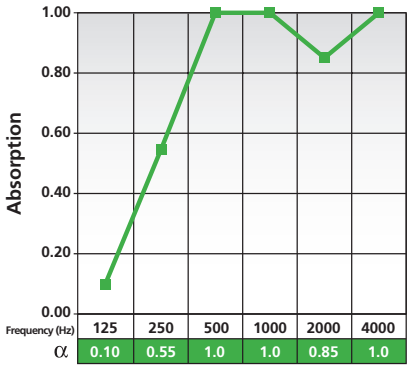
NRC = 0.85 Class = A



CLASS B

C Fixed with 25mm air gap + 25mm 90kg/m³ density mineral wool

NRC = 0.85 Class = B



Note: a small difference in density (e.g. +/-10 kg/m³) will not make any difference to the overall absorption.

TOUGHSORBA™

Robust Acoustic Panels

INSTALLATION

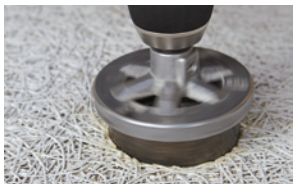
The installation of TOUGHSORBA™ acoustic panels is part of the final interior lining and may only be carried out under controlled humidity and temperature conditions. All dust causing measures must be completed before starting the installation. As the panels are made from natural product, make sure you acclimatise them for 48 hours before use.

Store the panels flat and protect against moisture and dirt. The panels must be kept dry and should be stacked clear of the floor and care must be taken not to damage edges or the surface of the board.

The packaging does not protect the product against rain. The panels are not resistant to direct, prolonged effects of water like rain, condensation and ground moisture.

The panels have a "directional" grain on the face pattern and therefore make sure that you check the grain run on each panel, to ensure that they all run in the same direction.

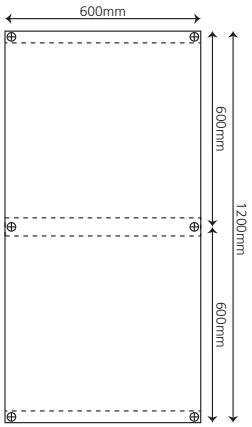
Cutting: Use a circular saw with dust extractor to cut the panels. Bevels can be formed afterwards with a saw blade set at an angle, if required. Cut the panels from the face side up. The rear surface of the panel is unfinished.



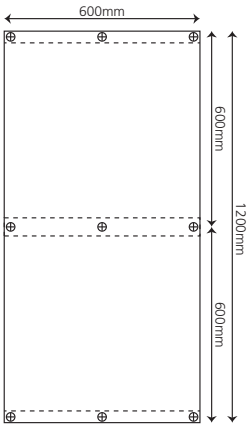
1. Before starting installation, check substrate base for sufficient load bearing capacity. Backing substrate should be flat and level.
2. Fasten the timber battens to the ceiling/wall surface at the required centres (not greater than 600mm) with suitable fixings to suit the substrate. Use timber framing with a minimum 60mm width fixing face. This will enable easy fixing 20mm minimum from edges as required. Check initial panel installation for secure fixing before carrying on with the rest of the installation.
3. Install additional timber framing around any openings which may be required.
4. Start the panel installation from the centre of the room and work outwards.
5. Rust protected, universal drywall screws are used to fixing the panels to timber batten support framing. For standard 25mm thick panels, screw length of minimum of 50mm should be used (head diameter 9mm). However, the contractor must check the suitability of the screw fixing for his particular project as each project is different.

Make sure that the screw head stay flush with the surface face of the panel. Do not NOT sink the screw head below the surface of the panel. After installation, touch up the screw heads with same colour paint as the panels.

For normal areas:
6 screws per board



For ceilings and walls in indoor swimming pools, vibrating constructions, sports hall areas: **9 screws per board**



6. Observe any necessary corrosion protection requirements.
7. Mineral wool is inserted piece by piece with the installation of the acoustic panels.
8. Damaged or soiled panels or panels with colour deviations must not be installed.

Install Panels perpendicular to the framing. Short edge joints must be backed by a framing member.

GUIDE SPECIFICATION

A. General

1. All TOUGHSORBA™ designer acoustic panels should be installed in accordance with the manufacturers recommendations.

2. All necessary hardware and accessories for a complete job installation are to be furnished by the contractor.

3. Installation of the panels should not begin until all wet work, such as plastering, concrete, etc. is completely dry. The panels are designed for storage and installation under standard occupancy conditions from 10° C to 20° C and not more than 75% RH in an enclosed building.

4. The contractor shall be responsible for the examination and acceptance of all surfaces and conditions prior to the acoustical panel installation.

5. The acoustic panels should be acclimatised to the room where the panels are to be installed for 48 hours prior as they are made from natural wood based ingredients and therefore can be susceptible to undue moisture.

B. Product

1. Install TOUGHSORBA™ panels using screws as recommended in the manufacturers installation instructions. Panel size: 1200 x 600 x 25mm

2. TOUGHSORBA panels to be finished in …… colour.

C. Supplier

1. TOUGHSORBA™ acoustic panels are supplied by:

Soundsorba Ltd
27-29 Desborough Street, High Wycombe, Bucks HP11 2LZ UK

[redacted]

Prices and Conditions of Sale

Our standard terms and conditions (copy available on request) apply to all orders. Since Soundsorba Limited exercise no control over the use of its products, no legal responsibility is accepted for any application of their products. We reserve the right to change specifications without notice as our policy is one of continuous improvement.

EXPERIENCING
FREEDOM OF
EXPRESSION

ECOPHON SOLO™

Ecophon
SAINT-GOBAIN

Contents

A sound effect

ON PEOPLE

Saint-Gobain Ecophon contributes to good indoor environments for working, healing and learning. We do this by developing, manufacturing and delivering acoustic products and systems designed around the natural evolution of human hearing – replicating the outdoor sound experience indoors, because that's just better for people.

Having a sound effect on people, in every way we can, is what we do proudly. That promise makes every one of us a passionate advocate for the importance of room acoustics to people's wellbeing – whatever the space, activity or need.

TAKE ME TO THE ECOPHON UNIVERSE ›

Good acoustics

MATTER EVERYWHERE

The importance of acoustics is underappreciated. Sound impacts us in daily life, and the scientific support for improving our indoor sound environments is well-documented.

And what exactly is an ideal indoor sound environment for people? One based on how we experience sound outside. The human auditory sense is naturally adapted to an outdoor environment where there is not any sound reflections from ceilings and walls.

That’s why most of what we do at Ecophon is about replicating the acoustic qualities found in nature for indoor environments. We want to optimise indoor spaces to our natural way of hearing, so that speech and sound is easy to hear and understand, when needed, improving performance and wellbeing.

SHOW ME HOW ›

Building on

BETTER

Sustainability is more than a word – it's a collective movement to protect people and the planet that requires honest commitment and genuine care. That's why Ecophon is building on better materials, transparency, and principles, to name just a few.

We actively support an industry-wide drive to standardized, easy-access Environmental Product Declarations for individual products, rather than product families.

If we're going to build a sustainable future, it has to start with an honest approach, high ambition and the best of intentions – to build on better together.

SHOW ME MORE ›

Ecophon Solo™

EXPERIENCING FREEDOM OF EXPRESSION

The ever on-point trend Ecophon Solo™ allows freedom of design and opportunity to create striking new expressions. The free-hanging panels and system are all 40 mm thick and come in all the shapes, colours and sizes you need to fulfil your artistic ideas.

- Superior acoustic qualities
- Available in a wide range of shapes
- Freedom of design with numerous colours, sizes and surface choices

Solo is well-suited to projects where a wall-to-wall solution is not an option, undesired or in need of improvement. Think lobbies, atriums, historic buildings, restaurants or shopping centres, among others. Hanging Ecophon Solo units directly over work areas, receptions and information counters, as well as other strategic points throughout the space, can improve speech, hearing and acoustic comfort considerably.

GET INSPIRED ›

ECOPHON SOLO™ PRODUCT RANGE

With Solo you can choose between a variety of shapes, sizes and colours, create your own unique Solo shape with Solo Freedom or explore the design features of Solo Textile and Solo Steel.

Hanging from the ceiling, baffles can be used to form distinct lines, rolling waves or zig-zaggy patterns. Mounted on walls, they add interesting contours and depth to any space. It is just as easy to mount as it is pleasing to look at.

Add perfection to your free hanging installation by using Solo Matrix where the grid offer precision but keep the floating, free hanging impression.

Industry-low
CO_2 emissions
with exceptional raw materials and wide use of renewable energies

GO TO SOLO OVERVIEW ›

SOLO SQUARE
1200x1200x40

SOLO RECTANGLE
1800x1200x40
2400x600x40
2400x1200x40
3000x1200x40

SOLO RECTANGLE LINE
2400x1200x40

SOLO CIRCLE
Ø 800x40
Ø 1200x40

SOLO CIRCLE XL
Ø 1600x40

SOLO FREEDOM
≤ 2400x1200x40

SOLO TEXTILE
1200x1200x40

SOLO STEEL
1200x1200x40

SOLO MATRIX

MODULES:	ROWS:
600x1200x40	600x1040x40
600x2400x40	1200x1040x40
1200x1200x40	2400x1040x40
2400x1200x40	Patented system

SOLO BAFFLE
1200x200x40
1200x300x40
1200x600x40
1800x200x40
1800x300x40
1800x600x40

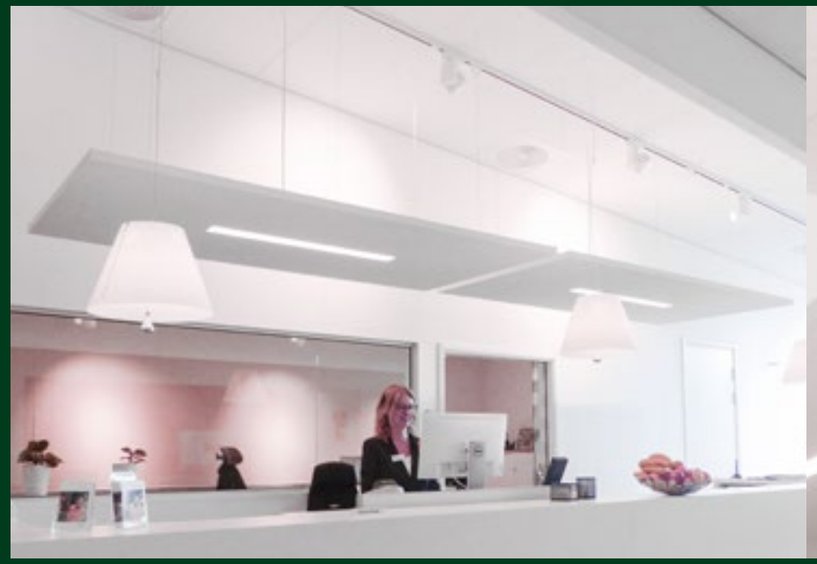
SOLO BAFFLE WAVE
1800x300x40
1800x600x40

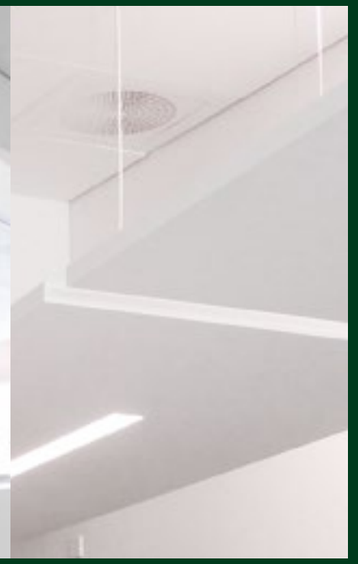
SOLO BAFFLE ZIGZAG
1800x300x40
1800x600x40

SOLO BAFFLE WALL
1200x200x40
1200x300x40

SOLO SQUARE

Design possibilities with colours and three different suspension system to choose from.





SOLO RECTANGLE LINE

Integrated recessed luminaire with high level of output, giving a distinctive expression.

SOLO RECTANGLE

Design possibilities with large sizes and colours. Three different suspension system to choose from.

SOLO CIRCLE

Design possibilities with colours and three different suspension system to choose from.

SOLO CIRCLE XL

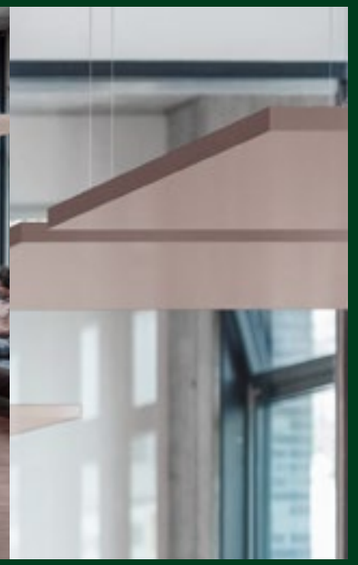
Design possibilities with colours. A large Circle consisting of two semicircles.

SOLO TEXTILE

A panel with elegance, fully covered in textile. Available in colours.

SOLO FREEDOM

Custom-made shapes with your own design or use one of our six standard shapes.



SOLO STEEL

A panel covered in perforated steel. Available in four colours.

SOLO BAFFLE

Design possibilities with colours and different sizes in a vertical installation.

SOLO BAFFLE ZIGZAG

A baffle shaped like zigzag, design possibilities with colours.

SOLO BAFFLE WAVE

A baffle shaped like a wave, design possibilities with colours.

SOLO BAFFLE WALL

Wall installation with design possibilities in different colours, add depths to any space.

SOLO MATRIX

A patented system with a vast range of design possibilities. Each panel has a built in hatch function, and can easily be demounted.

INSTALLATION METHODS

Ecophon Solo offers a variety of mounting methods to meet market requirements for different installations, both for wall and ceiling.

Enjoy freedom of expression with a variety of installation styles.

ECOPHON E-TOOLS

Ecophon offers several useful tools and services for the different phases of the building process, from inspiration to specific maintenance instructions for your Ecophon products.

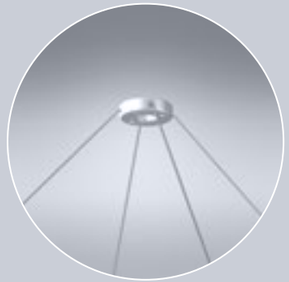
LET'S TRY THEM ›

DIRECT INSTALLATION
close to the soffit with Connect Absorber Bracket and Connect Absorber Anchor.

The brackets are available in adjustable lengths of 50-70 mm and 70-90 mm.

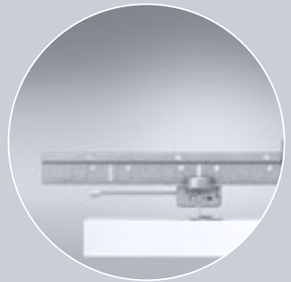
SUSPENDED WIRE INSTALLATION
with Connect Adjustable Wire Hanger.

Suspended wire mounting can also be done with an angle of up to 45° and in multi-levels.



CONNECT ONE-POINT FIXING
with Connect Absorber Anchor and Connect Adjustable Wire Hanger.

The installation has a discrete design and reduces the amount of fixations in the soffit.



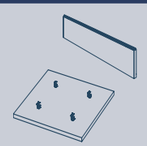
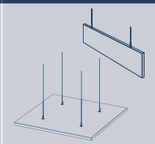
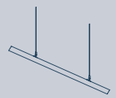
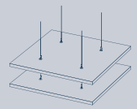
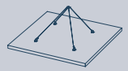
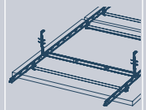
SOLO MATRIX INSTALLATION
can be done in modules or rows with Connect grid system. The pre-installed anchors and click-in connection to the grid system gives a free hanging design with the accuracy of a grid system.

The Connect Nonius Hangers is available in a range of different lengths.

BAFFLE INSTALLATION
can be done as direct installation using Solo Baffle Anchor and Connect Baffle Profiles or Connect Baffle Wall Fixing.

For suspended mounting Connect Adjustable Wire Hanger or Connect grid system can used with Solo Baffle Hook.

ECOPHON SOLO OVERVIEW

			Installation methods								
Shape	Product	Size (mm)	Direct	Suspended with wire	Suspended with wire, angle ≤45°	Suspended, with wire, multi-level	Suspended with wire, one-point	Suspended with Connect grid	Suspended in Connect grid	Wall	Surface
											
	Ecophon Solo Square	1200x1200x40	•	•	•	•	•				Akutex FT
	Ecophon Solo Rectangle	2400x600x40	•	•	•	•					Akutex FT
		1800x1200x40	•	•	•	•					
		2400x1200x40	•	•	•	•	•				
		3000x1200x40		•							
	Ecophon Solo Rectangle Line	2400x1200x40		•							Akutex FT
	Ecophon Solo Matrix (Modules)	600x1200x40							•		Akutex FT
		600x2400x40							•		
		1200x1200x40							•		
		2400x1200x40							•		
	Ecophon Solo Matrix (Rows)	600x1040x40							•		
		1200x1040x40							•		
		2400x1040x40							•		
	Ecophon Solo Circle	Ø 800x40	•	•	•	•					Akutex FT
		Ø 1200x40	•	•	•	•	•				
	Ecophon Solo Circle XL	Ø 1600x40		•							Akutex FT
	Ecophon Solo Freedom	≤2400x1200x40	•	•	•	•					Akutex FT
	Ecophon Solo Textile	1200x1200x40	•	•							Ecophon Textile
	Ecophon Solo Steel	1200x1200x40		•							Ecophon Steel
	Ecophon Solo Baffle	1200x200x40	•	•				•			Akutex FT
		1200x300x40	•	•				•			
		1200x600x40	•	•				•			
		1800x200x40	•	•				•			
		1800x300x40	•	•				•			
		1800x600x40	•	•				•			
	Ecophon Solo Baffle Wave	1800x300/200x40	•	•				•			Akutex FT
		1800x600/300x40	•	•				•			
	Ecophon Solo Baffle ZigZag	1800x300/200x40	•	•				•			Akutex FT
		1800x600/300x40	•	•				•			
	Ecophon Solo Baffle Wall	1200x200x40								•	Akutex FT
		1200x300x40								•	

Ecophon Solo panels contribute to a healthy indoor environment with superior acoustic absorption, low VOC emissions in line with the strictest requirements, and a full chemical transparency with verified Health Product Declarations. The low environmental footprint of our Solo panels is third-party verified in Environmental Product Declarations.

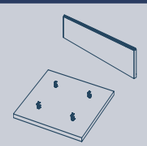
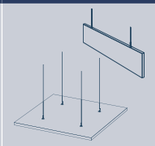
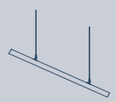
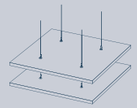
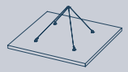
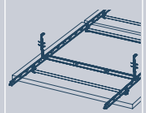
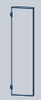
Plant

For projects where environmental excellence is a priority, Ecophon offers you the Plant option, specifically designed to maximise the contribution of the ceiling to green building certification schemes. Our Plant panel range features bio-based materials, an industry-low CO2 footprint and the lowest indoor air emissions, with the Eurofins Indoor Air Comfort Gold certification.

The products do not contribute to fire and the glass wool core of the Solo tiles is tested and classified as non-combustible according to EN ISO 1182. Fire classification according to EN 13501-1, see Technical Properties on respectively product.

NOTE
More product and system information such as installation help and sustainability documentation can be found at www.ecophon.com

ECOPHON SOLO OVERVIEW

Shape	Product	Size (mm)	Installation methods: Direct	Suspended with wire	Suspended with wire, angle ≤45°	Suspended, with wire, multi-level	Suspended with wire, one-point	Suspended with Connect grid	Suspended in Connect grid	Wall	Surface
											
	Ecophon Solo Square	1200x1200x40	•	•	•	•	•				Akutex FT
	Ecophon Solo Rectangle	2400x600x40	•	•	•	•					Akutex FT
		1800x1200x40	•	•	•	•					
		2400x1200x40	•	•	•	•	•				
		3000x1200x40		•							
	Ecophon Solo Rectangle Line	2400x1200x40		•							Akutex FT
	Ecophon Solo Matrix (Modules)	600x1200x40							•		Akutex FT
		600x2400x40							•		
		1200x1200x40							•		
		2400x1200x40							•		
	Ecophon Solo Matrix (Rows)	600x1040x40							•		
		1200x1040x40							•		
		2400x1040x40							•		
	Ecophon Solo Circle	Ø 800x40	•	•	•	•					Akutex FT
		Ø 1200x40	•	•	•	•	•				
	Ecophon Solo Circle XL	Ø 1600x40		•							Akutex FT
	Ecophon Solo Freedom	≤2400x1200x40	•	•	•	•					Akutex FT
	Ecophon Solo Textile	1200x1200x40	•	•							Ecophon Textile
	Ecophon Solo Steel	1200x1200x40		•							Ecophon Steel
	Ecophon Solo Baffle	1200x200x40	•	•				•			Akutex FT
		1200x300x40	•	•				•			
		1200x600x40	•	•				•			
		1800x200x40	•	•				•			
		1800x300x40	•	•				•			
		1800x600x40	•	•				•			
	Ecophon Solo Baffle Wave	1800x300/200x40	•	•				•			Akutex FT
		1800x600/300x40	•	•				•			
	Ecophon Solo Baffle ZigZag	1800x300/200x40	•	•				•			Akutex FT
		1800x600/300x40	•	•				•			
	Ecophon Solo Baffle Wall	1200x200x40								•	Akutex FT
		1200x300x40								•	

Ecophon Solo panels contribute to a healthy indoor environment with superior acoustic absorption, low VOC emissions in line with the strictest requirements, and a full chemical transparency with verified Health Product Declarations. The low environmental footprint of our Solo panels is third-party verified in Environmental Product Declarations.

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NOTE
More product and system information such as installation help and sustainability documentation can be found at www.ecophon.com

COLOURS AND SURFACES

AKUTEX™ FT

The Akutex label guarantees that the product carrying it has a superior surface technology. Our research and development will always focus on visual aspects, acoustic properties, working environment, architectural trends and environmental aspects. This ensures that Akutex is always one step ahead.

WHITE FROST
Nearest NCS colour sample S 0500-N.
Light reflectance 85%.

VOLCANIC ASH
Nearest NCS colour sample 2002-Y.
Light reflectance 56%.

SILVER STONE
Nearest NCS colour sample S 4502-Y.
Light reflectance 29%.

SILK SLATE
Nearest NCS colour sample S 7000-N.
Light reflectance 13%.

GOJI BERRY
Nearest NCS colour sample S 3030-Y80R.
Light reflectance 27%.

SILENT STEAM
Nearest NCS colour sample S 2010-B.
Light reflectance 45%.

SCALLOP SHELLS
Nearest NCS colour sample S 0804-Y50R.
Light reflectance 76%.

WET SAND
Nearest NCS colour sample S 3020-Y30R.
Light reflectance 35%.

OCEAN STORM
Nearest NCS colour sample S 4020-R90B.
Light reflectance 24%.

MOONLIGHT SKY
Nearest NCS colour sample S 7020-R90B.
Light reflectance 7%.

GOLDEN FIELD
Nearest NCS colour sample S 1040-G90Y.
Light reflectance 61%.

SUNSET HEAT
Nearest NCS colour sample S 2070-Y60R.
Light reflectance 20%.

RUBY ROCK
Nearest NCS colour sample S 4050-R10B.
Light reflectance 7%.

EUCALYPTUS LEAF
Nearest NCS colour sample S 5010-B30G.
Light reflectance 23%.

SUMMER FOREST
Nearest NCS colour sample S 6030-G10Y.
Light reflectance 10%.

DARK DIAMOND
Nearest NCS colour sample S 9000-N.
Light reflectance 4%.

MORNING DRIZZLE
Nearest NCS colour sample S 1002-B.
Light reflectance 69%.

CLOUDY DAY
Nearest NCS colour sample S 1500-N.
Light reflectance 62%.

PEACH ROSE
Nearest NCS colour sample S 1515-Y80R.
Light reflectance 55%.

HIGHLAND FOG
Nearest NCS colour sample S 2005-G.
Light reflectance 55%.

SAGE GARDEN
Nearest NCS colour sample S 3010-B30G.
Light reflectance 40%.

FRESH CLOVER
Nearest NCS colour sample S 3020-G40Y.
Light reflectance 35%.

NOTE

Colours may vary slightly between different production batches.

Reproduction of colours vary between print and reality.

Acoustic ceiling products is amongst the largest surface in a room. It will affect not only the entire look and feel of the interior, but also the end-users' wellbeing. Ecophon has developed different types of surfaces and in different colours to suit most types of environments.

ECOPHON TEXTILE

Ecophon Textile gives you the ability to create good acoustics that look at once understated and eye catching. The subtle pattern is made from a high-quality knitted material using the pique technique.

PEACEFUL
Nearest NCS colour sample S 3010-G80Y.
Light reflectance 37%.

RELIABLE
Nearest NCS colour sample S 3502-Y.
Light reflectance 37%.

CURIOUS
Nearest NCS colour sample S 3030-B.
Light reflectance 29%.

CONFIDENT
Nearest NCS colour sample S 6020-R90B.
Light reflectance 9%.

GENUINE
Nearest NCS colour sample S 7005-R80B.
Light reflectance 10%.

FEARLESS
Nearest NCS colour sample S 9000-N.
Light reflectance 2%.

PASSIONATE
Nearest NCS colour sample S 2030-R20B.
Light reflectance 33%.

NOTE

Limited colour variation may occur between batches.

Ecophon Textile fabrics have been designed for long durability, regular dusting according to Ecophon specifications and limited exposure to direct UVs are recommended to increase the lifespan of the products. Reproduction of colours vary between print and reality.

ECOPHON STEEL

Ecophon Steel is a micro-perforated steel surface with powder coating that gives a robust and contemporary feel.

MILKY WAY
Nearest NCS colour sample S 0500-N.
Light reflectance 85%.

ASTEROID GREY
Nearest NCS colour sample S 3502-R.
Light reflectance 38%.

ENDLESS SPACE
Nearest NCS colour sample S 9000-N.
Light reflectance 2%.

VENUS COPPER
Nearest NCS colour sample S 3040-Y50R.
Light reflectance 22%.

NOTE

Colours may vary slightly between different production batches.

Reproduction of colours vary between print and reality.

Ecophon is the leading supplier of indoor acoustic solutions that improve working performance and quality of life. We believe in the difference sound can make to our everyday lives, and are passionate advocates for the importance of room acoustics to people's wellbeing – whatever the space, activity or need.

Having a sound effect on people is the principle that guides all we do. We're proud of the Swedish heritage and human approach that promise is founded on. Our uncompromising commitment to transparent sustainable practice. And, as members of the Saint-Gobain Group, to be doing our part in making the world a better home.

SAINT-GOBAIN

Ecophon
SAINT-GOBAIN

CMSDANSKIN
ACOUSTICS

RIBA · CPD PROVIDERS NETWORK

Uniclass			
L5161:N373:P91			
CI/SfB			
	(42)	Ry	(P3)

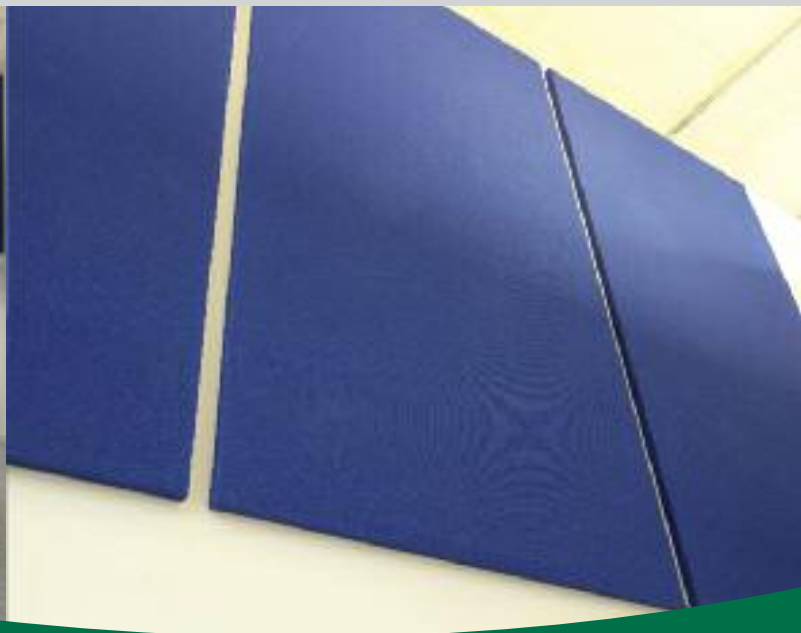
SuperPhon®

Sound Absorption & Reverberation Control

2

contents

The SuperPhon® Range



4

SuperPhon® Wall Panels Full or Partial Coverage

SuperPhon® is a flexible solution that can be tailored to any sort of environment. It can provide complete wall coverage or it can provide partial wall coverage. The fundamental attraction of SuperPhon® is its adaptability.

With a wide selection of colour finishes and installation options, the SuperPhon® range provides an aesthetically pleasing reverberation solution for a range of applications.

Suitable applications for wall mounted SuperPhon® Wall System and Panels include:

- Recording studios
- Audiology rooms
- Commercial premises
- Schools
- Offices
- Churches
- Halls
- Reception areas
- Cinemas and theatres
- Call centres and conference rooms
- Public entertainment facilities

Benefits

- Provides up to Class 'A' performance
- 88 colours available over two ranges
- Wipe clean finish available
- Bespoke manufacture
- Complete range of fixing systems
- Free reverberation calculation service
- Installation service can be provided through approved contractors
- Full technical and on-site support

Design flexibility

The SuperPhon® range is available in standard sizes and thicknesses, and bespoke panels and absorbers of a specific size, thickness, shape or fabric facing can be readily manufactured. As well as the broad offering of standard fabric colours, panels can be colour matched to any chosen fabric.

Bespoke installation options

SuperPhon® systems can be installed using a range of permanent, non-permanent, visible or non-visible fixings. Ranges include metal fixing plates, adhesive, Rotofast anchors, Easy Fix System and Velcro. CMS Danskin Acoustics provides installation guidelines with each product.

Physical information

SuperPhon® Wall System and Panels	
Thickness	25mm and 50mm Other thicknesses available on request
Max panel size	3000mm x 1200mm Subject to fabric limitations
Standard sizes*	1200mm x 1200mm 1500mm x 1200mm 1800mm x 1200mm 2100mm x 1200mm 2400mm x 1200mm 2700mm x 1200mm 3000mm x 1200mm
Weights	3.25kg/m² for 25mm panel 5.00kg/m² for 50mm panel

*Other sizes available on request

For technical information and installation details, please see our Technical Data Sheets

6

SuperPhon®
High Impact Wall Panel
Absorption & Impact Resistance

SuperPhon® High Impact Panels have been specifically developed to provide attractive reverberation solutions for areas of high traffic or where surface impact is expected.

SuperPhon® High Impact Panels are manufactured to exact project requirements. They are made from sound absorbent, non-combustible glass fibre board with an impact resistant front face wrapped under the fabric. However, this technical precision does not mean that they are any less aesthetic. As with other CMS solutions, the panels provide an attractive finish to both new builds and retrofits.

SuperPhon® High Impact Panels combine effective absorption with impact resistance, making them ideal for:

- Schools
- Leisure centres
- Exhibition centres
- Offices

Physical information

SuperPhon®	High Impact
Thickness	25mm, 37mm and 62mm
Max panel size	3000mm x 1200mm

Benefits

- Provides up to Class 'A' performance
- 88 colours available over two ranges
- Wipe clean finish available
- Bespoke manufacture
- Free reverberation calculation service available
- Installation service can be provided through approved contractors
- Full technical and on-site support

Accreditation

SuperPhon® High Impact panels have been tested and certified by the CST Global Centre for Sports Technology, a UKAS approved test house (also approved by the ISSS, World Squash Federation and ITF) and is certified to DIN 18032-3 for impacts in Sports Halls and Gymnasiums for multi-purpose use, by balls including footballs and hockey balls.

SuperPhon® High Impact panels are also certified to EN15312 for repeated impacts by footballs and hockey balls (1000 impacts at 50Kg).

For technical information and installation details, please see our Technical Data Sheets

SuperPhon® Ceilings
High Impact Grid

SuperPhon® High Impact Grid Panels have been specifically developed to provide an attractive reverberation control solution for areas of high traffic or where high levels of surface impact are expected. They provide Class A acoustic performance suitable for lining ceilings in many varied applications.

Physical information

SuperPhon®	High Impact Grid
Thickness	50mm
Panel size	1200mm x 600mm

- Gymnasiums and sports halls
- Prisons
- Mental health institutions
- Public areas, i.e. reception areas
- Offices, call centres and conference rooms
- Schools

Benefits

- Provides up to Class 'A' performance
- 88 colours available over two ranges
- Wipe clean finish available
- Bespoke manufacture
- Free reverberation calculation service
- Installation service can be provided through approved contractors
- Full technical and on-site support
- Range of fixing systems

For technical information and installation details, please see our Technical Data Sheets

10

SuperPhon® Ceilings – Ceiling Panels

SuperPhon® Acoustic Ceiling Panels adhere directly to walls and ceilings to offer a highly aesthetic and effective reverberation control solution.

Manufactured from lightweight melamine foam, the tiles are quick and easy to install and require no specialist equipment. The tiles can be cut on-site using a sharp knife, if required. Designed for all types of reverberant areas the tiles are particularly suited to schools, recording studios and acoustic enclosures.

- Schools
- Nurseries
- Conference rooms
- Recording studios
- Acoustic enclosures
- Offices

Physical information

SuperPhon®	Ceiling Panels
Thickness	40mm, 60mm, 80mm
Dimensions	595mm x 595mm or any size up to 1200mm x 600mm maximum
Material	CMS Melamine Foam

Benefits

- Reduce reverberation times to improve the listening environment
- Attractive coloured acoustic tiles adhere to walls or ceilings creating a simple and colourful solution
- Excellent sound absorption
- Fibre free
- Lightweight and easy to install

For technical information and installation details, please see our Technical Data Sheets

SuperPhon® Suspended Absorbers – Baffles/Rafts

In environments with continual activity, such as sports halls or busy workplaces, it may not be appropriate to apply sound absorption solutions at wall levels. The solution in these scenarios is often SuperPhon® Suspended Absorbers, Baffles or Rafts.

SuperPhon® Baffles/Rafts provide an effective means of controlling reverberation and reflected sound in rooms. It provides an ideal solution for environments and workplaces where noise can be an issue. For example, it is used widely in recording studios, sports halls, schools and call centres.

Design flexibility

SuperPhon® Baffles are available in standard sizes and thicknesses, and bespoke panels and absorbers of a specific size, thickness, shape or fabric facing can be readily manufactured. As well as the broad offering of standard fabric colours, panels can be colour matched to any chosen fabric.

SuperPhon® Suspended Absorbers

CMS Danskin Acoustics' range of SuperPhon® Suspended Absorbers are manufactured from either glass fibre or foam cores, creating a wide range of absorbers that can be suspended safely and discreetly, using a range of bespoke suspension methods. Of couse, the design of absorbers is totally flexible - so you could also choose to transform them into a striking design feature.

Benefits

- Provides up to Class 'A' performance
- 88 colours available over two ranges
- Wipe clean finish available
- Bespoke manufacture
- Free reverberation calculation service available
- Installation service can be provided through approved contractors
- Full technical and on-site support
- Range of fixing systems

Physical information

SuperPhon®	Baffles/Rafts and Suspended Absorbers
Thickness	25mm and 50mm Other thicknesses available on request
Max panel size	3000mm x 1200mm Subject to fabric limitations
Standard sizes*	1200mm x 300mm 1200mm x 450mm 1200mm x 600mm 1800mm x 300mm 1800mm x 450mm 1800mm x 600mm
Weights	3.25kg/m² for 25mm panel 5.00kg/m² for 50mm panel

*Other sizes available on request

For technical information and installation details, please see our Technical Data Sheets

PhotoPhon

For a really creative aesthetic feel, PhotoPhon gives you the flexibility to design any of the SuperPhon® range panels to a design that suits you. Using our special fabric, we can create a panel finish using your own choice of artwork.

It's your choice! Supply your high resolution images and let us manufacture bespoke and creative acoustic panels or we can create the finished artwork for you. There's absolutely no compromise on the acoustic performance.

Applications

- Apply images to any type of panel application
  - SuperPhon® High Impact Panels
  - SuperPhon® Suspended Ceiling Panels
  - SuperPhon® Baffles
  - SuperPhon® Wall Panels
  - Supply your own high resolution images or let us create the artwork for you
- Up to Class A acoustic performance

Bespoke installation options

SuperPhon® systems can be installed using a range of permanent, non-permanent, visible or non-visible fixings. Ranges include metal fixing plates, adhesive, Rotofast anchors, Easy Fix System and Velcro. CMS Danskin Acoustics provides installation guidelines with each product.

Physical information

SuperPhon® Wall System and Panels	
Thickness	25mm and 50mm Other thicknesses available on request
Max panel size	3000mm x 1200mm Subject to fabric limitations
Standard sizes*	1200mm x 1200mm 1500mm x 1200mm 1800mm x 1200mm 2100mm x 1200mm 2400mm x 1200mm 2700mm x 1200mm 3000mm x 1200mm
Weights	3.25kg/m² for 25mm panel 5.00kg/m² for 50mm panel

*Other sizes available on request

For technical information and installation details, please see our Technical Data Sheets

CMS Danskin Central/Southern Office
Unit 2 Lyncastle Road, Appleton, Warrington WA4 4SN
[redacted]

CMS Danskin Scotland Office
1 Netherton Road, Wishaw, North Lanarkshire ML2 0EQ
[redacted]

For further details please ring

Central/Southern: [redacted]

Scotland: [redacted]

or email [redacted]

MH 10/2013 Issue 1

www.cmsdanskin.co.uk

GLOUCESTER RUGBY HOSPITALITY FACILITY, KINGSHOLM

TRANSPORT STATEMENT & EVENT TRANSPORT MANAGEMENT PLAN

September 2022

Key Transport Consultants Ltd
26 Berkeley Square, Bristol, BS8 1HP

[redacted]

www.key-transport.com

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FIGURES

APPENDICES

1. INTRODUCTION

1.1 Key Transport Consultants is retained by Gloucester Rugby Club to advise on transport matters pertaining to the proposed change of use of an existing warehouse building to accommodate a replacement training facility which has relocated from Hartpury College. The existing warehouse is located almost immediately south of the Kingsholm Stadium, Gloucester Rugby's home ground in Gloucester city centre.

1.2 The new facility incorporates an indoor training pitch, treatment and recovery areas, along with meeting rooms, office space, players breakout, canteen and kitchen facilities. The relocation of the commercial team currently based in Kingsholm Stadium into the new facility is also included. The proposals also include hospitality space for matchday hospitality along with other events such as potential auditorium style or formal banqueting layouts.

1.3 Gloucester Rugby Club is seeking permission for unencumbered/unrestricted use of the hospitality space. This would allow for events, including matchday hospitality, and such as non-rugby/sports events, major sporting events, private conference and events, comedy nights/box office events, corporate private parties and room hire for say wedding parties and job fairs. This Transport Statement (TS) considers the transport implications of the proposed unencumbered/unrestricted use of the hospitality space and includes a section on Event Transport Management Plan (ETMP) measures.

1.4 This statement continues in Section 2 with a description of the site and local transport network. Section 3 describes the proposals for the site including access. Section 4 sets out the transport policy context and Section 5 considers accessibility by alternative modes of transport to the site.

1.5 Parking provision and traffic impact are assessed in Section 6, and ETMP measures are set out in Section 7. Conclusions are provided in Section 8.

2. SITE AND LOCAL TRANSPORT NETWORK

Site Location

2.1 The site is on Kingsholm Business Park to the north of Gloucester city centre and is shown in **Figures 1** and **2**. The site lies to the south of Gloucester Rugby's Kingsholm Stadium and to the west of A430 Kingsholm Road in Gloucester. The existing building provided 4,500m^2 of warehouse use with car and cycle parking, and is in the process of being converted to a new Gloucester Rugby training facility to replace that previously based at Hartpury College, and will also include the proposed hospitality facility development.

Site and Local Highway Network

2.2 The site has vehicular access via St Catherine Street which is a two-way single carriageway road. The site access junction is a simple priority junction, which serves a number of commercial premises in the business park with associated car parking.

2.3 The site access road passes around the warehouse building and provides access to lorry parking on its northern side and car parking of some 75 spaces on the eastern side of the site. There is also a vehicular access from the site onto Skinner Street which is for vehicles leaving the site only. This access is not in general use. The site also provides a shelter for motorcycle parking, estimated at some 5 to 6 motorcycles, and lockable cycle parking shelters providing parking for 17 cycles.

2.4 The eastern end of St Catherine Street links directly with A430 Kingsholm Road as a westbound one-way road. Eastbound traffic wishing to gain access to Kingsholm Road turns left from St Catherine Street into Skinner Street, a one-way road northbound, which then links with Kingsholm Road at a simple priority junction with separate lanes for left and right turning vehicles. The western end of St Catherine Street serves residential development as does Dean's Walk, its northern continuation. St Catherine Street, Skinner Street and Dean's Walk are subject to a 20mph speed restriction.

2.5 The south side of St Catherine Street provides access to the Gloucester City Council Hare Lane North off-street pay and display car park to the south of the site access as shown in **Figure 2**.

2.6 A430 Kingsholm Road is a single carriageway road subject to a 30mph speed restriction which provides a north-south link between central Gloucester to the south and the A38/A417 dual carriageway roads to the north at a roundabout junction. Kingsholm Road serves a variety of uses including local shops, a public house, residential properties and business premises. To the north of Skinner Street there are two business premises before the west side of Kingsholm

Road provides access to Kingsholm Stadium. The Kingsholm Stadium access forms a crossroads junction with a slight stagger with Sweetbriar Street, the minor road opposite.

2.7 The main pedestrian access to the Kingsholm Stadium is on the south side of the stadium where car parking for 105 cars plus four disabled parking spaces is provided. A small number of spaces are also provided on the western stadium frontage in a service area. At least two spaces in the main car parking area have access to electric charging facilities. The parking spaces are not available for supporters on match days.

On-Street Parking

2.8 There are parking restrictions on all local roads as set out on **Figure 3** which also shows walking isochrones from the pedestrian accesses to the site. In the vicinity of the site access, St Catherine Street is subject to a no parking restriction between 08:00 and 19:00. There is a length of residents permit parking on the north side of St Catherine Street between 08:00 and 19:00, west of the site access junction. The eastern end of St Catherine Street is subject to no parking at any time.

2.9 The majority of the east side of Skinner Street is subject to no parking at any time. The west side has the same restriction as on St Catherine Street and includes a four-car length of permit parking between 08:00 and 19:00 or parking for 1 hour with no return within 1 hour.

2.10 No on-street parking is permitted at any time on the west side of Kingsholm Road to the north of the Skinner Street junction. To the south of Skinner Street there are a variety of restrictions which include lengths of permit holder parking between 08:00 and 19:00 or parking for 1 hour with no return within 1 hour (or 1½ hours with no return within 1½ hours).

2.11 On-street parking is permitted on much of the east side of Kingsholm Road for permit holder parking between 08:00 and 19:00 or parking for 1½ hours with no return within 1½ hours.

Off-Street Car Parking

2.12 As noted above, the south side of St Catherine Street provides access to the Gloucester City Council Hare Lane North pay and display car park. Its location, along with the other off-street car parks referred to below, is shown on **Figure 2**. It is some 300m or 3 or 4 mins walk from the primary pedestrian site access (on the northern building frontage) and provides 79 spaces including one disabled space. The car park is open seven days a week with the charging hours of 07:00 to 18:00 Monday to Sunday. The parking charges are as follows:

- Up to 1 hour - £1.30
- Up to 4 hours - £2.20
- All Day - £3.00
- Sunday (up to 1 hour): £1.10
- Sunday all day: £2.00

2.13 The Gloucester City Council Hare Lane South pay and display car park is located to the south of the Hare Lane North car park with access via Park Street and Hare Lane. It is some 550m or 7 mins walk from the primary pedestrian site access and provides 96 spaces including six disabled spaces. The car park is open seven days a week with the charging hours of 07:00 to 18:00 Monday to Sunday. The parking charges are as follows:

- Up to 1 hour - £1.30
- Up to 2 hours - £2.20
- Up to 3 hours - £3.20
- Up to 4 hours - £4.20
- Sunday (up to 1 hour): £1.10
- Sunday all day: £2.00

2.14 The two Hare Lane car parks were visited on Monday 5th September 2022 in the early evening. At 18:34 hours, Hare Lane North had just 13 cars parked which had reduced to 10 by 18:57 hours. At 18:44 hours, Hare Lane South had just 22 cars parked. During this time, which was after the daytime parking charges ended, there were therefore 140 parking spaces available for public use.

2.15 The Gloucester City Council Great Western Road pay and display car park is some 650m or 8 mins walk from the primary pedestrian site access and has 56 spaces. It is open seven days a week with charging over 24 hours. The parking charges are £3.20 all day and £2.20 all day on Sunday.

2.16 The Gloucester City Council Westgate Street pay and display car park is some 950m or 12 mins walk from primary pedestrian site access and has 95 spaces including four disabled spaces. It is open seven days a week with charging hours of 07:00 to 18:00 Monday to Sunday. The parking charges are as follows:

- Up to 1 hour - £1.30
- Up to 3 hours - £2.20
- Up to 4 hours - £3.20
- Up to 5 hours - £4.20
- All day - £6.00
- Sunday Up to 1 hour - £1.10
- Sunday all day - £2.00

Matchday Parking

2.17 On matchdays, GR has established parking arrangements as follows:

- GR offer/sell matchday (for 15:00 and evening kick off) parking tickets via the website for parking at Cathedral Vue car park, a 5 mins walk from the stadium;
- GR also offer/sell matchday parking at St Oswalds car park (the old cattle market) which is some 15 mins walk away and large;
- GR operate a matchday park and ride service from the EDF Energy overflow car park at Barnwood with coaches supplied by Swanbrooks. The cost is £2 per adult and £1 per child and OAPs.

Pedestrian Facilities

2.18 Pedestrian access to the site is via the vehicular access on St Catherine Street. A pedestrian link to the stadium is subject to a current planning application, and pedestrian access can be provided from Skinner Street, but the access is gated and not in general use. There are footways on both sides of St Catherine Street and dropped kerbs with tactile paving just north of the junction with Skinner Street. There are footways on both sides of Skinner Street with dropped kerbs and tactile paving just south of the junction with Kingsholm Road.

2.19 There are footways on both sides of Kingsholm Road. There are dropped kerbs with tactile paving at junctions with Kingsholm Road. There is a Zebra crossing on Kingsholm Road between Alvin Street and Skinner Street. There are traffic signal-controlled pedestrian crossing facilities at the Worcester Street (the southern continuation of Kingsholm Road) junction with Gouda Way/Black Dog Way to the south of the site. There is a traffic signal-controlled pedestrian crossing to the north of the site, just north of the access to Kingsholm Stadium.

Cycle Facilities

2.20 Access for cyclists to the site is via the vehicular access on St Catherine Street. As indicated above, there are covered shelters providing parking for 17 cycles. Cycle access from the site exit on Skinner Street is possible but the access is gated and not in general use.

2.21 Kingsholm Stadium provides a covered cycle shelter for some 20 cycles in the main car park. The shelter is also used for motorcycle parking.

2.22 There are intermittent on-street cycle lane markings on both sides of Kingsholm Road. The eastern length of St Catherine Street is signposted as a cycle route to the city centre from Kingsholm Road. The route is via Hare Street, past the off-street car park, to a Toucan crossing facility on Gouda Way. As shown in the Gloucester cycle map in **Appendix A**, Sweetbriar Street, Kingsholm Road and St Catherine Street form part of National Cycle Network Route 41 which passes through Gloucester from the north east of the city to the south west via the city centre.

Public Transport

2.23 There are bus stops on both sides of Kingsholm Road. The closest stop is on the west side of Kingsholm Road for northbound buses just south of the Skinner Street junction which has a shelter with seating and a raised bus boarding platform. A southbound stop is located just south of the Alvin Street junction and has a flag sign.

2.24 There are also north and southbound stops with flag signs to the north of the site, on the eastern frontage of Kingsholm Stadium. The southbound stop has a raised kerb and footway for boarding.

2.25 Details of buses calling at these stops are provided in Section 5 below.

2.26 The Gloucester Transport Hub bus station is located to the south east of the site. It is an 11 min or 900m walking distance between the Transport Hub and the site via the St Catherine Street access. The journey is some 10 minutes or 750m walking distance via the Skinner Street access.

2.27 Gloucester railway station is also located to the south east of the site. It is an 11 minute or 900m walking distance between the station and the site via the St Catherine Street access. The journey is some 10 minutes or 750m walking distance via the Skinner Street access.

Personal Injury Accident Records

2.28 By law only personal injury collisions (PIC) have to be reported to the Police. The Police produce collision report forms that are submitted to the Local Highway Authority which is responsible for analysing the data and undertaking any accident remediation work that is required. Collision data has been obtained from Gloucestershire County Council for the roads in the vicinity of the site for the five year period from 1 January 2016 to 12 April 2021. The data is included at **Appendix B**. An officer in the Gloucestershire County Council Network and Traffic Management Team confirmed on 29th July 2022 that this data was still current.

2.29 No PICs are recorded on St Catherine Street, with four PICs recorded locally in total. Of these four PICs, one was fatal, one was serious and two were slight.

2.30 The fatal collision occurred on Kingsholm Road in darkness and in rainy weather in September 2019. A pedestrian crossing the road was knocked down by a northbound car with the driver failing to stop. The collision does not appear to have been associated with the rugby club being on a non-match day.

2.31 The serious collision occurred on Alvin Street in darkness and in rainy weather in October 2019 where a taxi driver turned right from Kingsholm Road and collided with two pedestrians crossing Alvin Street. One was seriously injured, the other severity of injury was recorded as slight.

2.32 Of the two slight injury PICs, both occurred on Kingsholm Road. One was at the Zebra crossing just north of Alvin Street where an ambulance collided with a crossing pedestrian. The other involved two cars at the junction with Sweetbriar Street in darkness and in rainy weather.

2.33 A theme of the above recorded PICs is collisions occurring in dark and rainy conditions and involving a number of pedestrians. However, there does not appear to be a significant record of injury accidents and none that can be directly associated with the warehouse site.

3. DEVELOPMENT PROPOSALS

3.1 The proposals are for unencumbered/unrestricted use of the hospitality space proposed within the 4,500m^2 warehouse currently also providing the new training facility for Gloucester Rugby Club. The hospitality venue's primary function will be to provide match day hospitality, however the scale and flexibility of the space will allow it to serve a range of functions including; sporting event screenings (away games, world cups, Gold Cup), music gigs, E Sports and other functions.

3.2 The base layout of the hospitality venue is a 950m^2 open space which could be used for a variety of purposes. The proposals include a kitchen, cold room (store), cellar and bar totalling some 154m^2. Plant, staff changing and staff storage are proposed on a 225m^2 deck above the bar/kitchen area. The main area could be used for informal seating, auditorium style layout for seated presentations (or concerts) and for standing concerts. The capacity of the scheme is some 900 persons for live music events with general bar usage/indoor sporting events for 720 persons.

3.3 Other opportunities for use of the space may arise but, from the details above, it appears that the greatest number attending is likely to be 900 people.

3.4 In terms of operational hours, these will vary. The Gloucester Ruby Club licensing team are applying for the following which can be used as guidelines for the operational hours.

• *Open to the public*	*Mon- Sun*	*06.00 x 03.00*	
• *Sale of alcohol*	*Sun - Thur*	*06.00 x 24.00*	*Fri & Sat 06.00 x 02.00*
• *Live Music*	*Sun - Thur*	*08.00 x 23.00*	*Fri & Sat 06.00 x 02.00*
• *Recorded music*	*Sun - Thur*	*08.00 x 24.00*	*Fri & Sat 06.00 x 02.30*
• *Late night refreshment*	*Mon- Sun*	*23.00 x 03.00*	
• *Performance of dance*	*Sun - Thur*	*08.00 x 23.00*	*Fri & Sat 06.00 x 02.00*
• *Indoor sporting events*	*Mon- Sun*	*08.00 x 23.00*	
• *Boxing & Wrestling*	*Mon- Sun*	*08.00 x 23.00*	
• *Exhibition of Film*	*Mon- Sun*	*08.00 x 23.00*	
• *Plays*	*Mon- Sun*	*08.00 x 23.00*	

3.5 Hospitality events will be coordinated with the operation of the training facility. The normal pattern of training, when there is a match on Saturday, is for full training days on Monday, Tuesday and Thursday (as set out in the TS submitted with the planning application for the training facility). Wednesday is a day off and Friday is a short day involving the players playing the next day accompanied by support staff. If there is a match on Sunday then the above pattern is shifted by a day.

3.6 The proposed 72 space car park is likely to be all but fully utilised on normal training days until around 15:00 when most players will have left, with most, if not all, vehicles having left by 18:00.

3.7 Larger hospitality events which would potentially generate significant demand for car parking would not take place on normal training days until after the training activities have finished at about 16:30. This would suggest that larger hospitality events on training days would not take place until the car park was largely unoccupied which would equate to evening use from say 18:00 onwards on a weekday. Weekend hospitality events could potentially take place any time on non-match Saturdays and on Sundays. Matchday hospitality would cater for those attending the nearby stadium in any event.

3.8 For smaller hospitality events the on-site car parking provision may be sufficient to cater for demand but for larger events, of 720 to 900 people, control on use of the on-site car parking will be required and other parking identified. This matter is further considered in Sections 6 and 7 which sets out the Event Transport Management Plan proposals.

Access

3.9 Vehicular access to the facility will be via the existing site access via St Catherine Street as described in Section 2. This access will also provide an access for pedestrians and cyclists.

3.10 Primary pedestrian access to the building is proposed via the northern frontage of the building with secondary access proposed on the eastern frontage. Pedestrian access is also proposed via the existing site access on Skinner Street and a planned pedestrian link to the Kingsholm Stadium, would provide another pedestrian access option.

3.11 The vehicular exit onto Skinner Street is proposed to provide an emergency access.

3.12 Service vehicle access is proposed as at present with vehicles using the St Catherine Street access and route through the site to the northern site frontage. This is the previous location for loading and unloading the warehouse.

Parking

3.13 The existing site car parking of 75 spaces will be retained for use by the training facility but is proposed to be amended to provide 72 spaces in total in association with the proposed training facility, including 5 disabled parking spaces located close to the building entrance. Of the 72 spaces, 5 will be provided with electric charging facilities.

3.14 Cycle parking will be upgraded to include the provision of parking for 27 cycles in association with the proposed training facility. This will be located close to the main entrance on the northern side of the site. Motorcycle parking is already provided in a shelter.

3.15 Parking is considered in more detail in Section 6 along with the traffic impact of the proposals.

4. TRANSPORT POLICY CONTEXT

National Policy

National Planning Policy Framework

4.1 The National Planning Policy Framework (NPPF) was published by the Ministry of Housing, Communities and Local Government and updated in July 2021. The document constitutes guidance for local planning authorities and decision takers both in drawing up plans and as a material consideration in determining planning applications. The document sets out the Government's planning policies for England and how these are expected to be applied.

4.2 The document reaffirms the status of local development plans as the starting point for decision making.

4.3 The key message of NPPF is a presumption in favour of sustainable development. In defining sustainable development, the NPPF refers to resolution 42/187 of the United Nations General Assembly which defined it as *"meeting the needs of the present without compromising the ability of future generations from meeting their own needs".* The UK Sustainable Development Strategy Securing the Future sets out five 'guiding principles' of sustainable development:

(i) living within the planet's environmental limits;
(ii) ensuring a strong, healthy and just society;
(iii) achieving a sustainable economy;
(iv) promoting good governance; and
(v) using sound science responsibly.

4.4 Of particular relevance to travel, transport and the proposed development are paragraphs 104 to 113, with key sections included below.

4.5 Paragraph 105 of NPPF states: "*Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health."*

4.6 Paragraph 106 states: *"Planning policies should:*

a) support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;

b) be prepared with the active involvement of local highways authorities, other transport

infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;

c) identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;

d) provide for attractive and well-designed walking and cycling networks with supporting facilities such as secure cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);

e) provide for any large scale transport facilities that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion and contribution to the wider economy. In doing so they should take into account whether such development is likely to be a nationally significant infrastructure project and any relevant national policy statements; and

f) recognise the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value in serving business, leisure, training and emergency service needs, and the Government's General Aviation Strategy."

4.7 Paragraph 107 states: *"If setting local parking standards for residential and non-residential development, local planning authorities should take into account:*

a) the accessibility of the development;

b) the type, mix and use of development;

c) the availability of and opportunities for public transport;

d) local car ownership levels; and

e) an overall need to reduce the use of high-emission vehicles."

4.8 Under the heading *"Considering development proposals", paragraph 110 states "In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users;

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design

Guide and the National Model Design Code; and

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."

4.9 Paragraph 111 states that *"Development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

4.10 It goes on to state in Paragraph 112 *"Within this context, applications for development should:*

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."

4.11 Paragraph 113 states *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."*

4.12 The National Design Guide referred to in the NPPF calls for the creation of beautiful places which, amongst other matters, includes provision for tree lined streets.

4.13 The transport aspects of the Gloucester Rugby development proposal are considered to meet all the requirements of NPPF for the promotion of sustainable transport.

Planning Practice Guidance

'Promoting sustainable transport

Paragraphs 104 to 113

104. Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

(a) the potential impacts of development on transport networks can be addressed;

(b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;

(c) opportunities to promote walking, cycling and public transport use are identified and pursued;

(d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

(e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

105. The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

106. Planning policies should:

(a) support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;

(b) be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;

(c) identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;

(d) provide for attractive and well-designed walking and cycling networks with supporting facilities such as secure cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);

(e) provide for any large scale transport facilities that need to be located in the area 44 , and the infrastructure and wider development required to support their operation, expansion and contribution to the wider economy. In doing so they should take into account whether such development is likely to be a nationally significant infrastructure project and any relevant national policy statements; and

(f) recognise the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value in serving business, leisure, training and emergency service needs, and the government's General Aviation Strategy 45 .

107. If setting local parking standards for residential and non-residential development, policies should take into account:

(a) the accessibility of the development;

(b) the type, mix and use of development;

(c) the availability of and opportunities for public transport;

(d) local car ownership levels; and

(e) the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.

108. Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network, or for optimising the density of development in city and town centres and other locations that are well served by public transport (in accordance with chapter 11 of this Framework). In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists.

109. Planning policies and decisions should recognise the importance of providing adequate overnight lorry parking facilities, taking into account any local shortages, to reduce the risk of parking in locations that lack proper facilities or could cause a nuisance. Proposals for new or expanded distribution centres should make provision for sufficient lorry parking to cater for their anticipated use.

Considering development proposals

110. In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

(a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

(b) safe and suitable access to the site can be achieved for all users;

(c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46 ; and

(d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

111. Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

112. Within this context, applications for development should:

(a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

(b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

(c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

(d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

(e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

113. All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'

Local Policy

4.14 The Gloucester City Council website states that the adopted Local Plan is the Joint Core Strategy (2017) and Gloucester Local Plan (1983) – saved policies.

Joint Core Strategy 2017

4.15 The Joint Core Strategy (JCS) forms part of the development plan for Gloucester City along with Cheltenham Borough and Tewkesbury Borough. It notes that:

Whilst the JCS provides the higher level or strategic part of the development plan for the area, more detailed, locally-specific planning policies will be set out in the Gloucester City Plan, Cheltenham Plan and Tewkesbury Borough Plan, collectively called district plans. These will include local allocations of land for development and local policies to guide decisions on planning applications. They also form part of the development plan and will need to reflect and be consistent with the policies in the JCS

4.16 Under JCS Ambition 3 – A healthy, safe and inclusive community, Strategic Objective 7 – Promoting sustainable transport states:

Reduce the need to travel and the reliance on the car by:

- *Improving opportunities for public transport, walking and cycling by making routes more convenient, safe and attractive*
- *Improving existing and providing new frequent public transport links and safe walking and cycling routes in all new developments*
- *Improving access to services in rural and urban areas through new development, improved integrated transport links and supporting local and community led transport initiatives in the Local Transport Plan throughout the JCS area.*
- *Promoting bus priority on key public transport corridors identified in the Local Transport*

Plan throughout the JCS area.

4.17 Policy SD4 Design Requirements states:

vii. Movement and Connectivity

New development should be designed to integrate, where appropriate, with existing development, and prioritise movement by sustainable transport modes, both through the application of legible connections to the wider movement network, and assessment of the hierarchy of transport modes set out in Table SD4a below.

Where Table SD4a indicated that pedestrians and people with mobility difficulties are highest in the hierarchy and where other motorised vehicles are lowest.

4.18 Policy INF1: Transport Network states the following:

1. Developers should provide safe and accessible connections to the transport network to enable travel choice for residents and commuters. All proposals should ensure that:

i. Safe and efficient access to the highway network is provided for all transport modes

ii. Connections are provided, where appropriate, to existing walking, cycling and passenger transport networks and should be designed to encourage maximum potential use

iii. All opportunities are identified and taken, where appropriate, to extend and/or modify existing walking, cycling and public transport networks and links, to ensure that credible travel choices are provided by sustainable modes

2. Planning permission will be granted only where the impact of development is not considered to be severe. Where severe impacts that are attributable to the development are considered likely, including as a consequence of cumulative impacts, they must be mitigated to the satisfaction of the Local Planning Authority in consultation with the Highway Authorities and in line with the Local Transport Plan.

3. Developers will be required to assess the impact of proposals on the transport network through a Transport Assessment. The assessment will demonstrate the impact, including cumulative impacts, of the prospective development on:

a) Congestion on the transport network

b) Travel safety within the zone of influence of the development

c) Noise and/or atmospheric pollution within the zone of influence of the development

4. Where appropriate the local planning authority may require applications to be accompanied by a Travel Plan that has full regard to the criteria set out in the NPPF.

Gloucester Local Plan 1983

4.19 The Gloucester City Council website states that only two policies from the 1983 Local Plan are considered relevant. Neither of these relate to transport matters.

Gloucestershire Local Transport Plan (LTP) 2020 – 2041

4.20 The key objectives for the LTP are as set out below:

- Protect and enhance the natural and built environment
- Support sustainable economic growth
- Enable safe and affordable community connectivity
- Improve community health and wellbeing and promote equality of opportunity

4.21 The LTP refers to the document Manual for Gloucestershire Streets as set out below.

Manual for Gloucestershire Streets (MfGS), July 2020

4.22 MfGS forms part of a suite of documents that come under the LTP as well as being an adopted document in its own right. The aims of MfSG are set out below:

Manual for Gloucestershire Streets (MfGS) provides guidance to developers, their consultants and design engineers, Local Planning Authorities, Parish and Town Councils, and the public on how new development within Gloucestershire can contribute towards the provision of a safe and sustainable transport network within the County.

4.23 MfGS sets out the parking standards for new developments as set out below. Parking is considered in more detail in Section 7 below.

Commercial / Industrial (Non-Residential)

Commercial operators should have a good understanding of the needs of their business and will determine how land under their control could be managed. Car parking need is a subjective matter particularly in the mind of neighbours; the applicant should provide a minimum parking provision for each development along with an evidence base to demonstrate the appropriateness of the provision. Trip rates accumulation should either be derived from first principles or from existing data, for example; TRICS or comparison to facilities of similar size and geographic circumstance.

Adequate space for heavy goods, delivery and public service vehicles must be made within the site boundary, which should not conflict with the proposed parking arrangements.

4.24 Disabled parking provision, along with motorcycle and cycle parking, is set out as follows:

Other Users Needs In Non Residential

Development Consideration and provision must be made for disabled badge holders, motorcycles, bicycles and ULEV. The following ratios are required.

Accessible Spaces

Size of Car Park (no of spaces)	Designated Bay Provision
1-50	2 + 3% of total car park
51-200	3 + 3% of total car park
201-500	4 + 3% of total car park
501-1000	5 + 3% of total car park
1000 +	6 + 3% of total car park

Motorcycle Spaces

1 space per 10 car spaces, minimum provision 1 space

Bicycle Spaces

The number of stands should reflect the governments aspiration to double cycling by 2025, therefore no fewer than the level of cycling in the area per person as should in the latest census and then doubling it should be provided.

No fewer than 6 spaces are to be provided in any scenario for staff.

Visitor cycle provision must be made over the staff provision, no fewer than 6 spaces are to be provided adjoin the main access to the building.

ULEV Charging Spaces

Initially 5% of the total parking spaces provided and a further 5% of the total parking spaces at an agreed trigger but no later than 3 years from the first opening.

Every new non-residential building undergoing a major renovation with more than 10 car parking spaces to have one charge point and cable routes for an electric vehicle charge point for one in five spaces.

5. ACCESSIBILITY

Introduction

5.1 This section considers the accessibility of the proposed development site by alternative travel modes.

5.2 The National Travel Survey (NTS): 2021, published in August 2022, provides details of all trips per person per year, and is shown in Table 5.1 below.

5.3 It is advised that the 2021 NTS survey fieldwork continued to be impacted by coronavirus restrictions thus impacting on the number of surveys conducted. While response rates increased from 2020, they were still lower than in 2019. Furthermore, *'caution is needed when interpreting these results for 2020 and 2021 as they are likely to be less representative of residents of England compared to previous years'*. The data does however continue to show general trends in use of modes.

Table 5.1: Proportion of Total Trips by Mode and Distance

Modal Split by Distance

Distance	Car Driver	Car Passenger	Bus	Train	Walk	Cycle	Other
0 - 1.6km	11.21%	5.82%	0.24%	0.00%	81.88%	0.61%	0.25%
1.6 - 3.2km	34.43%	17.74%	2.54%	0.03%	40.43%	3.10%	1.73%
3.2 – 8km	52.29%	26.70%	6.83%	0.17%	7.65%	2.82%	3.54%
All Journeys	39.60%	19.54%	3.51%	1.48%	31.02%	1.98%	2.87%

5.4 The data still provides evidence of the relationship between distance and probability of use of different modes of transport. The analysis shows that walking is the dominant mode for trips under 1.6km (81.88%).

5.5 For distances over 1.6km but less than 3.2km, use of a car is the most popular mode of travel (52.17% for car driver and passenger), while walking is the second most popular mode, chosen by over a third (40.43%).

5.6 For all journeys, use of bus and train is still lower that pre-pandemic levels while active modes (walking and cycling) generally remain higher. Generally, car use is also slightly lower than pre-pandemic levels but an increase from the 2020 survey.

Walking

5.7 The site lies within an easy walking distance of central Gloucester, which provides a wide variety of shops and services, and is within walking distance of areas of residential development as shown in **Figure 2**.

5.8 As noted in Section 2, there are footways on both sides of local roads and local roads have street lighting. There are dropped kerbs with tactile paving at crossing points, including on St Catherine Street, Skinner Street (near its junction with Kingsholm Road), at the Kingsholm Stadium site access and at other junction with Kingsholm Road. There is a Zebra crossing on Kingsholm Road, just north of the junction with Alvin Street/St Catherine Street and there is a traffic signal-controlled pedestrian crossing on Kingsholm Road, just north of the rugby stadium access.

5.9 There are bus stops on Kingsholm Road as described below and in Section 2 and the site is considered to have good pedestrian accessibility.

Cycle Facilities

5.10 Cycle access to the site is via St Catherine Street and the site provides a lockable shelter with cycle parking. As shown on **Figure 1**, the majority of Gloucester lies within a 5km cycle distance of the site.

5.11 As noted in Section 2, and as shown in **Appendix A** and on **Figure 2**, National Cycle Network Route 41 passes close to the site via the eastern end of St Catherine Street which is signposted as a cycle route to the city centre from Kingsholm Road. National Cycle Network Route 41 passes through Gloucester from the north east of the city to the south west via the city centre and includes intermittent on-street cycle lane markings on both sides of Kingsholm Road. In the city centre, National Cycle Network Route 45 can be joined.

5.12 The site is considered to have good cycle accessibility.

Public Transport

Bus

5.13 The closest bus stop to the site is located on Kingsholm Road for northbound services close to the junction with Skinner Street as described in Section 2 and is approximately 50m from the site. The stop has a shelter with seating, raised bus border, flag and timetable. The southbound stop is approximately 100m south and has a bus stop flag. These bus stops are served by the 71, 351 and 97 gold bus services. The 71 and 351 link Gloucester and Tewkesbury and the 97 link Gloucester and Cheltenham.

5.14 Approximately 200m north of site, the rugby ground bus stops serve 71, 351 and 97 Gold as well as the 103 which links The Crypt School, south Gloucester and Longlevens, north east Gloucester. The buses currently serving the area are summarised in **Table 5.2** with the local bus stop locations shown in **Figure 2**.

5.15 The Gloucester Transport Hub bus station is located to the south east of the site. As noted in Section 2, it is an 11 min or 900m walking distance between the Transport Hub and the site via the St Catherine Street access. The journey is some 10 minutes or 750m walking distance via the Skinner Street access.

Table 5.2 - Local Bus Service and Frequencies (Approx.)

Service	Route	Mon-Fri		Sat		Sun	
		First Bus	Last Bus	First Bus	Last Bus	First Bus	Last Bus
71	Gloucester – Walton Cardiff - Tewkesbury	05:56	18:21	07:16	18:31	-	-
	Tewkesbury – Walton Cardiff - Gloucester	07:12	19:30	08:29	19:40	-	-
97	Gloucester – Innsworth – Churchdown – The Reddings -- Cheltenham	06:17	22:47	06:47	22:47	09:17	19:27
	Cheltenham – The Reddings – Churchdown – Innsworth - Gloucester	06:31	00:27	07:07	00:27	10:06	20:07
351	Gloucester – St Oswalds – Maisemore – Hartpury – Apperley - Tewkesbury	09:02	17:52	09:02	17:52	-	-
	Tewkesbury – Apperley – Hartpury – Maisemore – St Oswalds - Gloucester	07:40	15:20	07:40	15:20	-	-

Train

5.16 Gloucester rail station is located to the south east of the site. The station is served by regular services to Cheltenham with the journey taking approximately 9 minutes and London Paddington taking approximately 90 minutes. Gloucester Rail Station has car and cycle parking. It also has a ticket office and staff members on site, toilets, a café and step free access for disabled passengers. As noted in Section 2, the station is an 11 minute or 900m walking distance between the station and the site via the St Catherine Street access. The journey is some 10 minutes or 750m walking distance via the Skinner Street access. There are about 66 trains per day between Gloucester and Cheltenham between 03:37 and 23:55 hours.

Summary

5.17 The site is considered to have good pedestrian accessibility. It lies within an easy walking distance of central Gloucester and within walking distance of areas of residential development. The site is also considered to have good cycle accessibility with on-site cycle parking, and with National Cycle Network Route 41 passing close to the site. The majority of Gloucester lies within a 5km cycle distance of the site. A number of regular bus services operate on Kingsholm Road with stops close to the site, and Gloucester Transport Hub and rail station lie within only a 10 or 11 minute walking distance. Overall the site is considered to enjoy good accessibility by means of transport other than the private car.

6. PARKING AND TRAFFIC IMPACT

Parking

6.1 As noted in Section 2 above, the site currently provides access to two lorry parking spaces on its northern side, and car parking of some 75 spaces on the eastern side of the site. The existing parking will broadly be retained in its current locations as part of the training facility proposals resulting in 72 car parking spaces, including 5 disabled spaces.

6.2 No electric charging facilities are currently provided in the car park. It is proposed that electric charging facilities are provided for 5 parking spaces. This number can be increased in the future if there is sufficient demand. Motorcycle parking is currently provided on-site in a shelter.

6.3 The site currently provides some 17 cycle parking spaces in a lockable shelter. The standard of cycle parking is proposed to be upgraded with the provision of parking for 27 cycles located close to the main entrance. Use of the cycle parking spaces will be monitored and additional spaces can be provided if necessary.

6.4 As noted earlier there are also 105 car parking spaces plus 4 disabled spaces available at the Kingsholm Stadium on non-matchdays.

6.5 Hospitality events that generate a greater car parking demand than the available on-site parking will therefore generate a demand for off-site car parking.

6.6 There are various scenarios to consider, as follows:

- On matchdays, the hospitality facility will enable an enhanced experience to spectators but, as the stadium car park will not be available and there will be reduced car parking available at the training centre, those attending will largely have to adhere to the existing matchday travel and parking arrangements.

- On training days, the training centre car park will be used by players and staff meaning it is likely to be largely full. Stadium parking will be available and therefore events that coincide with training could be accommodated, but to a significantly lower capacity.

- At times when there are no matches or training taking place at the stadium and training centre, there will be potential for a total of some 180 parking spaces, albeit some staff parking will also be required.

6.7 Based on Department for Transport National Travel Survey data (2019 ie pre-Covid) the average car occupancy for leisure events is 1.7 people. Arguably for hospitality events, a higher occupancy could be expected but the lower figure is used for robustness. The available parking on-site and in the adjoining stadium could therefore accommodate about 300 people. It is considered reasonable that another 200 people (about 120 cars) could park off-site in nearby public car parks as identified earlier in this report.

6.8 Not all people attending hospitality events will arrive by car. Others will choose sustainable options such as walking, cycling or public transport. Also, some will arrive by taxi which will not create a parking demand. If, what is considered a very robust assumption, 20% of people travel other than by private car, that would mean that events of over 600 people could be accommodated without significant off-site car parking demand.

Traffic Impact

6.9 The benefit of larger numbers being able to enjoy matchday hospitality at or adjoining the ground means that spectator's journeys will potentially be more staggered with not all arriving at the stadium just before and leaving just after kick-off.

6.10 Hospitality is about providing people with a good and memorable experience, and this will not necessarily be achieved if they arrive or depart during peak traffic conditions and experience delays etc. Providing organisers of non-matchday hospitality events are cognisant of the need to avoid peak periods on the local highway network, ie commuter/school start and end times, etc, then the traffic impact from the numbers of cars arriving at the site and stadium car parks are not considered sufficient to result in severe impacts. Furthermore, collision records do not suggest a serious road safety issue in the vicinity of the site and, with appropriate management, this is not expected to be exacerbated by the proposed hospitality facility.

6.11 For events with more than 600 people attending, it is proposed that the impact is mitigated by way of an Event Transport Management Plan as set out in the following section.

7. EVENT TRANSPORT MANAGEMENT PLAN

Introduction

7.1 This section sets out the proposed Event Transport Management Plan (ETMP) measures for the proposed hospitality facility. As noted above, the site is close to central Gloucester and overall is considered to have good accessibility by travel on foot, cycle and by public transport. Nevertheless, some events are likely to draw people from further afield and, whilst the local buses and trains do provide a range of services over much of the day, these will not be suitable for many. The website for the hospitality facility should through provide links to sustainable travel information in a prominent place so that those attending can explore the options in advance.

Events for 600 people or less

7.2 For events of this size, a formal ETMP is not proposed. Notwithstanding this, for significant events with ticketing, it is proposed that the option is provided for the booking of a car parking space on the site or adjoining stadium. A small additional charge would encourage people to car share and maximise the vehicle occupancy. The benefit of pre-booked parking means that directions can be provided to the driver avoiding unnecessary journey distance searching for the venue and parking spaces.

7.3 It would be useful to undertake simple travel surveys for those attending to establish the origin postcode for the journey, mode of travel, parking location etc. This would provide useful data to manage future events, especially larger events.

Events for more than 600 people

7.4 For events of this scale it would be important for the organisers to plan for increased levels of off-site parking. Gloucester Rugby is well used to managing crowds of over 16,000 people for home games and has off-site venues for parking and a park-and-ride option from the EDF overflow car park.

7.5 The ETMP will therefore need to consider:

- Timing of the event and availability of existing public transport services;
- Availability of the matchday parking options for the event and any coach service needed for a park-and-ride;
- How travel information will be disseminated to those attending events, including options for sustainable travel;
- Advising taxi companies of the event and potential demand for their services;

- Consideration of local highway safety conditions for those attending and to be cognisant of serious pedestrian collisions that have occurred nearby in dark and wet conditions;
- Liaison with Gloucestershire County Council regarding the need or otherwise for temporary parking restrictions.

7.6 This list is not exhaustive and as part of the risk assessment required for the events, other matters relating to transport might be identified that need to be managed as part of the ETMP.

8. CONCLUSIONS

8.1 Key Transport Consultants is retained by Gloucester Rugby Club to advise on transport matters associated with the proposed use of the hospitality facility within the new club training centre.

8.2 The training facility site is located almost immediately south of Gloucester Rugby's Kingsholm Stadium and enjoys good accessibility to local residential areas by non-car modes of travel. The existing cycle parking will be upgraded and the number of spaces increased, located close to the main entrance. The site provides a shelter for motorcycle parking.

8.3 The existing car park will be amended to include the provision of disabled parking spaces and electric charging facilities. The number of spaces provided is forecast to cater for the likely parking demand of the proposed training facilities. This should mean that car parking does not spill out onto local residential roads, which would be prevented by existing parking restrictions for much of the day in any event. Matchday hospitality will be provided in the proposed development but no additional car parking will be available.

8.4 On non-matchdays and outside of the training centre opening hours, there will be parking available on the site and in the nearby stadium car park for about 300 people attending a hospitality event by car. Outside of day-time use, the nearby Hare Lane car parks have been observed to have available spaces meaning that, allowing for 20% of visitors using sustainable travel modes, events of some 600 people could be hosted without causing any significant local parking problems. The different parking locations will also spread traffic flows meaning that if event organisers are cognisant of existing peak hour traffic conditions in Gloucester and avoid these times, severe traffic conditions will not occur.

8.5 For events in excess of 600 people, an Event Transport Management Plan is proposed. This will look to utilise some of the existing matchday parking arrangements that Gloucester Rugby already has in place when dealing with crowds of some 16,000 people. This ETMP is considered to be appropriate to mitigate the potential transport impacts of large events at the hospitality facility.

8.6 It is considered, therefore, that there are no transport reasons why the application should not be approved.

FIGURES

HARTPURY COLLEGE

A38

M5 TOWARDS WORCESTER

A4019

N

A417

CHELTENHAM SPA TRAIN STATION

CHELTENHAM

M5 JUNCTION 11

A417

A38

SITE

A430

A40

GLOUCESTER RAILWAY STATION

5km

GLOUCESTER TRANSPORT HUB

GLOUCESTER

M5 JUNCTION 11A

A48

Madam's Pool

Madam's Pool

M5 TOWARDS BRISTOL

KEY:

5km CYCLE ISOCHRONE

KTC
KEY TRANSPORT CONSULTANTS LTD
26 BERKELEY SQUARE
BRISTOL
BS8 1HP
[redacted]

GLOUCESTER RUGBY
SITE LOCATION PLAN

1:50,000@A3
FIGURE 1

CAD FILE NAME: F:\DATA\Jobs\1110 Gloucester Rugby\AutoCAD\FIGURE 1.dwg

KINGSHOLM STADIUM

KINGSHOLM STADIUM CAR PARK

SKINNER STREET MAIN ACCESS

SKINNER STREET EMERGENCY ACCESS

SITE

SITE CAR PARK

HARE LANE NORTH CAR PARK

WESTGATE STREET CAR PARK

BLACK DOG WAY

HARE LANE SOUTH CAR PARK

GREAT WESTERN ROAD CAR PARK

10 MINUTES

5 MINUTES

KEY:

- NEARBY LOCAL BUS STOPS
- NEARBY CAR PARKS
- SITE BOUNDARY
- WALKING TIME ISOCHRONE
- NCN 41

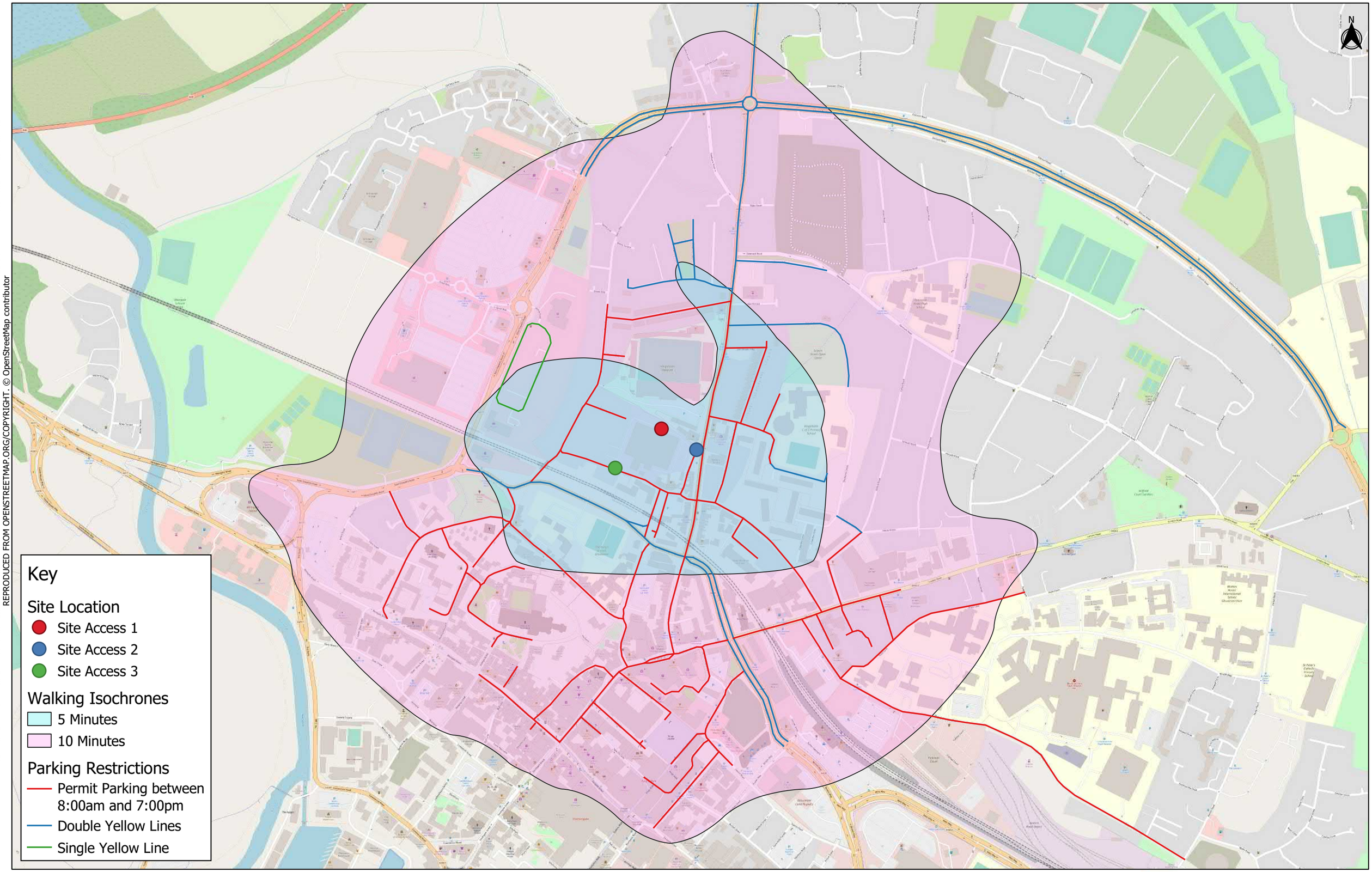
KEY TRANSPORT CONSULTANTS LTD
26 BERKELEY SQUARE
BRISTOL
BS8 1HP
[redacted]

GLOUCESTER RUGBY
LOCAL TRANSPORT NETWORK

1:5,000@A3

FIGURE 2

CAD FILE NAME: F:\DATA\Jobs\1110 Gloucester Rugby\AutoCAD\FIGURE 2A.dwg



1:10,000

0 100 200 300 m

F:\DATA\Jobs\1110 Gloucester Rugby\QGIS\1110 Gloucester Rugby.qgz

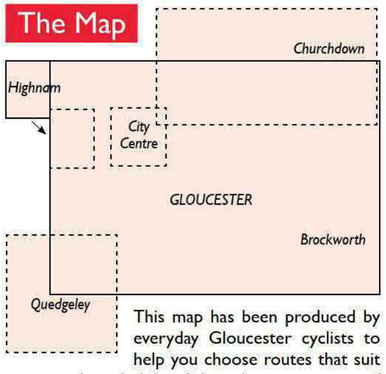
Gloucester Rugby
Parking Restrictions
Figure 3

Key Transport Consultants LTD
26 Berkeley Square
Bristol
BS8 1HP
[redacted]

APPENDIX A

Gloucester Cycle Map

The Map



This map has been produced by everyday Gloucester cyclists to help you choose routes that suit your needs and ability. Select the green routes if you are a beginner or have not cycled for a while. Soon you should be able to use the yellow roads. Progress to the orange then the red roads with their heavier traffic as your cycling skills increase.

Cycling is a healthy and cheap mode of transport. Often it is quicker than the car or bus and usually you can park directly outside your destination or very close. Typical urban cycle journey times are shown in the table below, for example a two mile trip at a moderate speed takes twelve minutes.

	Miles			
Speed	❶	❷	❸	❹
Leisurely	*8*	*16*	*24*	*32*
Moderate	*6*	*12*	*18*	*24*
Brisk	*5*	*10*	*15*	*20*

Contacts

Cycle shops in Gloucester

Ⓐ Striking Bikes 01452 522100
1a Morelands Trad. Est., Bristol Road GL1 5RZ

Ⓑ Mitchell's 01452 411888
260-264 Barton Street GL1 4JJ

Ⓒ Discount Cycle Warehouse 01452 381699
1 Kingsholm Road GL1 3AX

Ⓓ Halfords 01452 310055
210 Eastern Avenue GL4 4LP

Ⓔ Eastgate Cycles 01452 300366
76 Eastgate GL1 1QN

Ⓕ Slam 69 07941 784430
Hurricane Road GL3 4FF

Ⓖ Gloucestershire Bike Project 01452 690979
16 Commercial Road GL1 2EA

Reporting potholes, broken glass, etc.

Gloucestershire Highways 08000 514514
highways@gloucestershire.gov.uk

Gloucester City Council 01452 396396
enviro@gloucester.gov.uk
(overgrown vegetation within city)

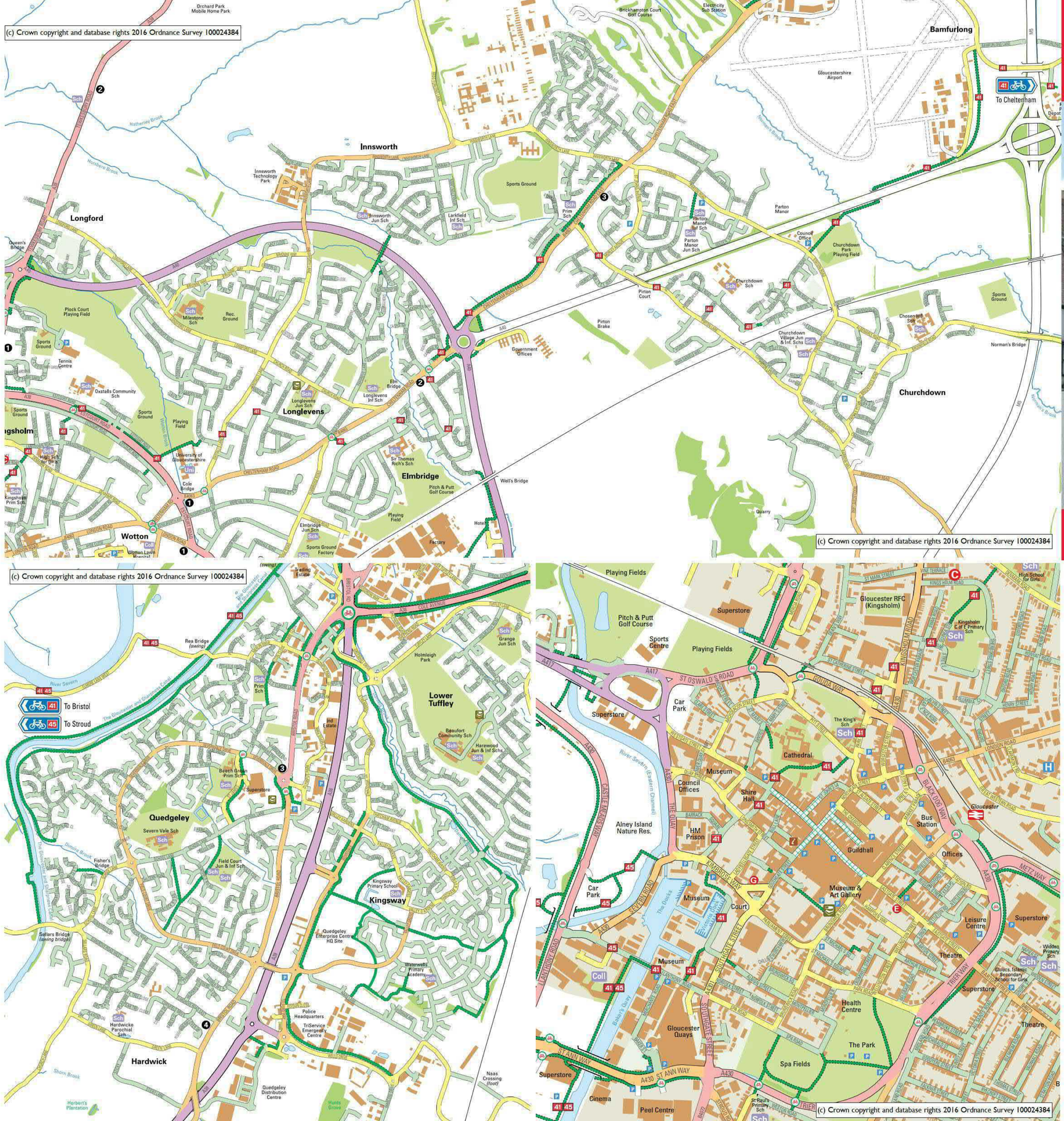
Cycle training

Gloucestershire County Council 01452 425532
www.gloucestershire.gov.uk

Life Cycle UK, Bristol 0117 353 4580
www.lifecycleuk.org.uk

Gloucester City Cycling Club

The club organises rides for various abilities every Sunday, rides or events on most Tuesday evenings and Wednesday evening time trials in the summer
www.gloscitycc.co.uk 01452 423078



Gloucester Cycle Map

Revised and updated January 2016

Includes Kingsway, Highnam, Churchdown and Brockworth

Cycling brings enormous health benefits:

- Increased cardiovascular fitness – regular cyclists enjoy better fitness than non-cyclists 10 years their junior!
- Increased muscle strength and flexibility combined with an improvement in joint mobility.
- Decreased stress levels – people who cycle into work are more alert and more productive; they have fewer sick days too.
- Improved posture, coordination and bone strength.
- Decreased body fat levels – cycling for 20 minutes at 10mph burns 90 calories.

thinktravel
New sense of direction.
www.thinktravel.info

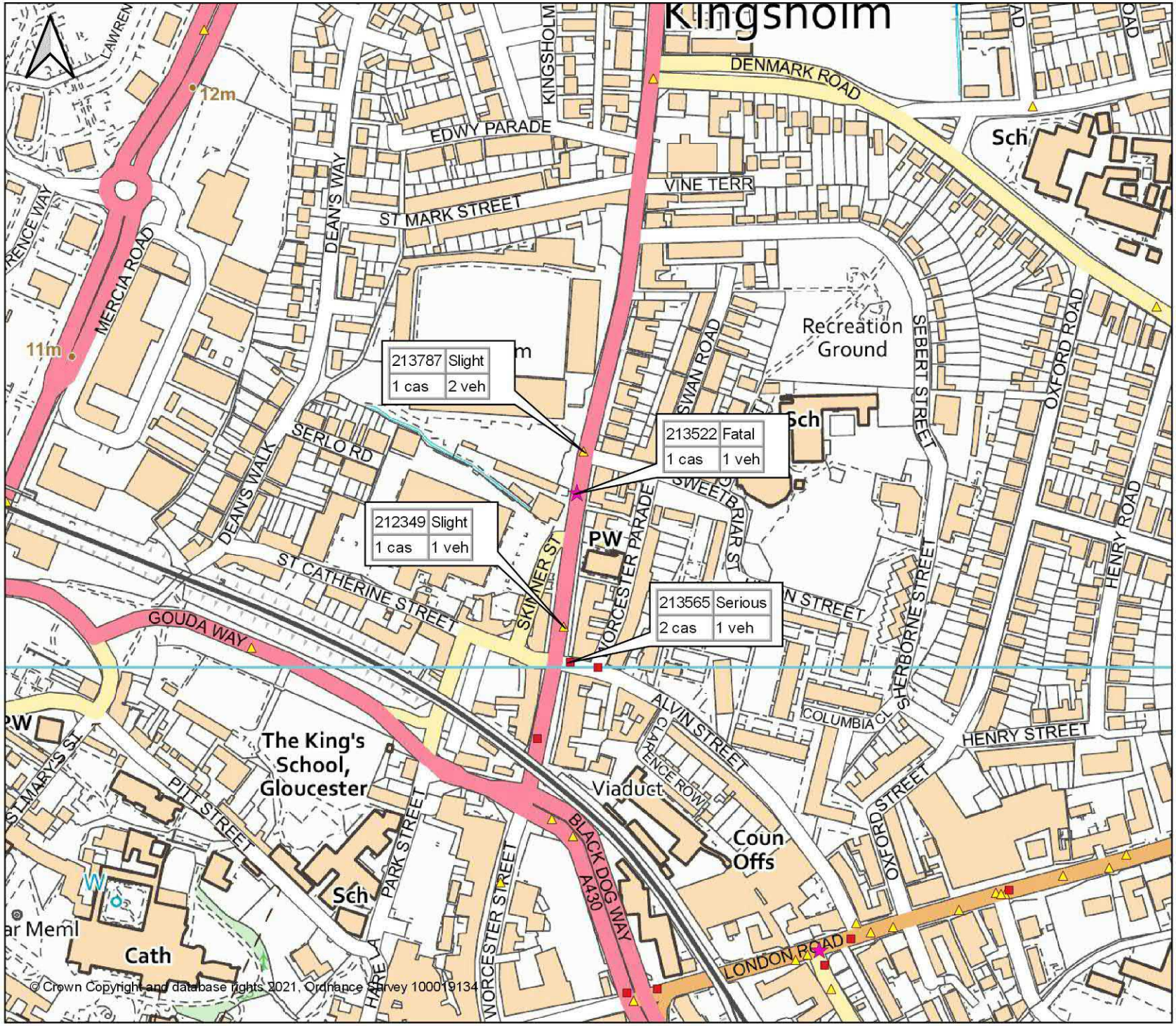
Gloucestershire COUNTY COUNCIL
www.gloucestershire.gov.uk

www.gloscitycc.co.uk

This reprinted and updated edition was produced with the support of Thinktravel , Gloucestershire County Council and Gloucester City Cycling Club.

APPENDIX B

Personal Injury Collision Data



Gloucestershire COUNTY COUNCIL

Kingsholm Rd & Catherine St. Collision Plot

Date Range
2016 to Present

Accidents

- **Fatal**
- **Serious**
- **Slight**

DRAWN BY **Graham simpson**
Road Safety and Transport Data Team
DATE: **12/04/2021**
SCALE: **1:4030**

RTA2480 Detailed Collision Report

Compiled from an original report by Gloucestershire County Council

Accident Investigation and Prevention Section

Database as at 12-APR-21

Collisions within GLOUCESTERSHIRE

For period 01-JAN-2016 TO 12-APR-2021

DETAILED COLLISION REPORT

Ref	212349	Severity	SLIGHT		
Day	FRIDAY	Date	01 JUN 2018	Time	1705
Light	DAYLIGHT	Weather	FINE	Surface	DRY
Grid ref	383432 219031	Major rd	A 430	Minor rd	
Control		Junction	NOT WITHIN 20M	Speed lim	30
Lighting	LIGHTS	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	302173	Type	P	Hazard	NONE

LOCATION

WORCESTER STREET, GLOUCESTER (POLICE PLOTTED AT AND CODED ZEBRA CROSSING NEAR ALVIN ST)

DESCRIPTION

V1 HAS CLIPPED A PEDESTRIAN WHO WAS WALKING ACROSS THE ROAD, WHO WAS NEARLY AT THE OTHER SIDE. V1 IS AN AMBULANCE WHICH WAS ON ROUTE TO GRH

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Other Vehicle Type	GO AHEAD OTHER	N S	56

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SLIGHT	30	1	PEDESTRIAN

DETAILED COLLISION REPORT

Ref	213522	Severity	FATAL		
Day	SATURDAY	Date	28 SEP 2019	Time	2040
Light	DARKNESS	Weather	RAIN	Surface	WET
Grid ref	383442 219132	Major rd	A 430	Minor rd	
Control		Junction	NOT WITHIN 20M	Speed lim	30
Lighting	LIGHTS LIT	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	883559	Type	P	Hazard	NONE

LOCATION

KINGSHOLM ROAD (A430) - 32 METRES FROM JUNCTION WITH SWEETBRIAR STREET, GLOUCESTER

DESCRIPTION

V1 HAS COLLIDED WITH PEDESTRIAN CROSSING THE ROAD AND HAS FAILED TO STOP AT THE SCENE. PEDESTRIAN DIED ON 18 OCTOBER

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Car	GO AHEAD OTHER	S N	22

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	FATAL	54	1	PEDESTRIAN

DETAILED COLLISION REPORT

Ref	213565	Severity	SERIOUS		
Day	FRIDAY	Date	11 OCT 2019	Time	2245
Light	DARKNESS	Weather	RAIN	Surface	WET
Grid ref	383437 219004	Major rd	4 80537	Minor rd	A 430
Control	G WAY/UNCONTROLLED	Junction	T/STAG/Y JUNC	Speed lim	30
Lighting	LIGHTS LIT	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	888384	Type	P	Hazard	NONE

LOCATION

ALVIN STREET NEAR JUNCTION WITH WORCESTER STREET (A430), GLOUCESTER

DESCRIPTION

TWO PEDESTRIANS (C1 & C2) WHO WERE CROSSING ALVIN STREET WERE HIT BY V1, TAXI, WHICH HAD JUST TURNED RIGHT INTO THE MINOR ROAD.

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Taxi/ Private hire car	TURNING RIGHT	S E	65

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SERIOUS	42	1	PEDESTRIAN
2	SLIGHT	46	1	PEDESTRIAN

DETAILED COLLISION REPORT

Ref	213787	Severity	SLIGHT		
Day	THURSDAY	Date	09 JAN 2020	Time	1815
Light	DARKNESS	Weather	RAIN	Surface	WET
Grid ref	383447 219164	Major rd	A 430	Minor rd	4 80534
Control	G WAY/UNCONTROLLED	Junction	T/STAG/Y JUNC	Speed lim	30
Lighting	LIGHTS LIT	Condition	NONE	C'way	SINGLE CWAY
UNIFI Ref	917551	Type	G	Hazard	NONE

LOCATION

KINGSHOLM ROAD (A430) AT JUNCTION WITH SWEETBRIAR STREET, GLOUCESTER

DESCRIPTION

V1 HAD BEEN PULLING OUT OF A JUNC WHERE IT DROVE INTO THE SIDE OF V2 WHICH WAS TRAVELLING ALONG THE ROAD.

VEHICLE DETAILS

No	Type	Manoeuvre	From-to	Driver Age
1	Car	STARTING	E N	20
2	Car	GO AHEAD OTHER	N S	59

CASUALTY DETAILS

No	Severity	Casualty Age	Veh	Further Details
1	SLIGHT	20	1	DRIVER

Collision Types

Letter	Description of Collision
A:	Collision with or due to an animal.
B:	Deliberate action / Emergency vehicle involvement.
C:	Pedal cyclist collision.
D:	Right turn from main road crash into an opposing vehicle.
E:	Overtaking: vehicle in front turning right.
F:	Right turning vehicle hit from behind.
G:	Vehicle from side road hits vehicle approaching from its right.
H:	Vehicle from side road hits vehicle approaching from its left.
I:	Loss of Control.
K:	Overtaking: vehicle hits vehicle travelling opposite direction.
L:	Overtaking: vehicle hits vehicle travelling same direction incl. lane changing.
M:	Miscellaneous, including reversing and bus passenger.
N:	Overtaking: vehicle in front turning left.
P:	Pedestrian collision.
Q:	Head to tail collision.
R:	Roundabout collision.
T:	Head to head collision, not overtaking.
U:	Collision when vehicle does ‘U’ turn.
V:	Collision when vehicle leaving kerb.
W:	Collision with or due to parked vehicle.
X:	Vehicle crossing the carriageway (second code only)
Z:	Two Wheeled Motor Vehicle collision.