

# The Sands Leisure Centre

## *Scrutiny Panel Presentation*

06/06/19- First Issue



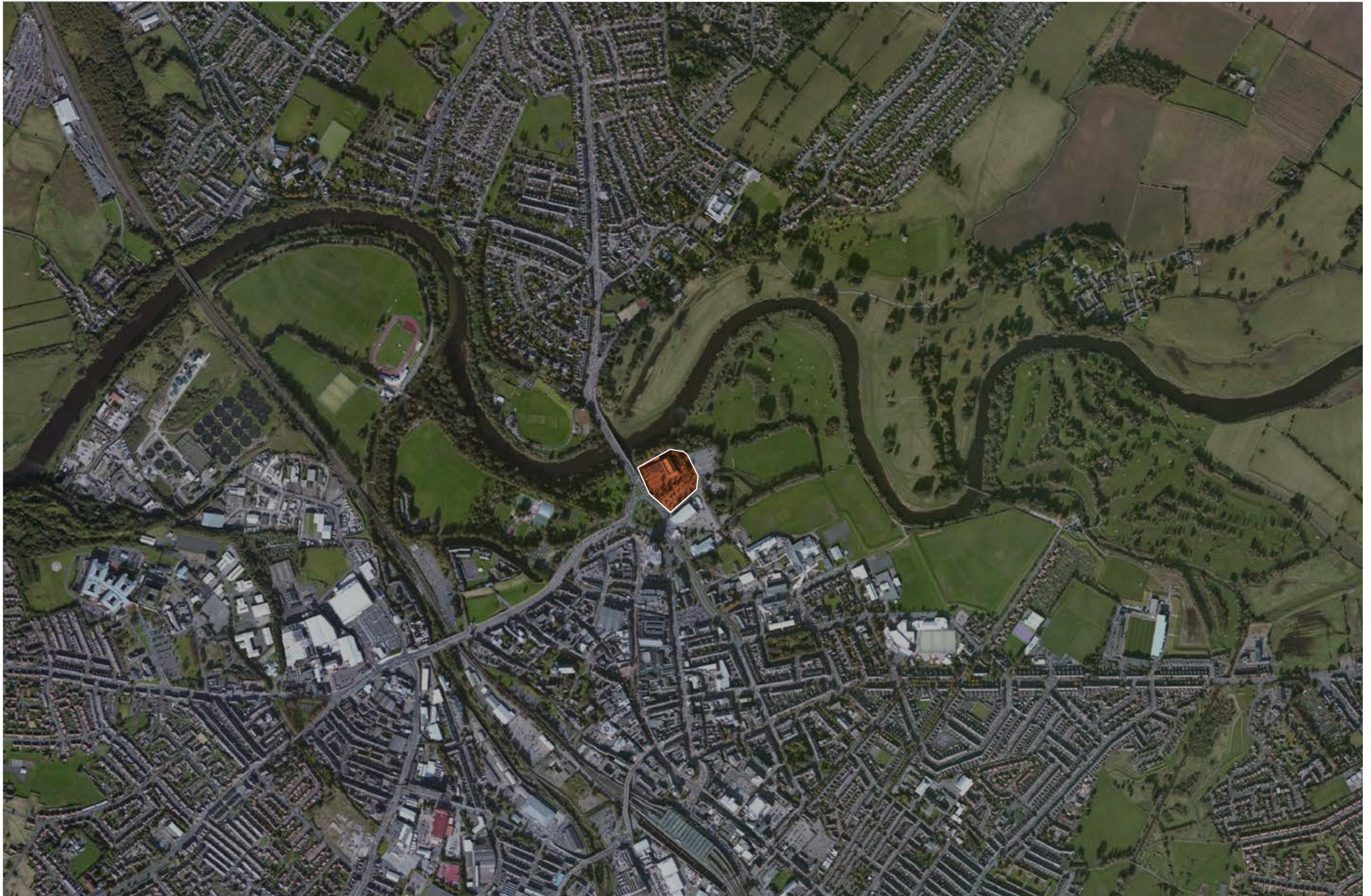
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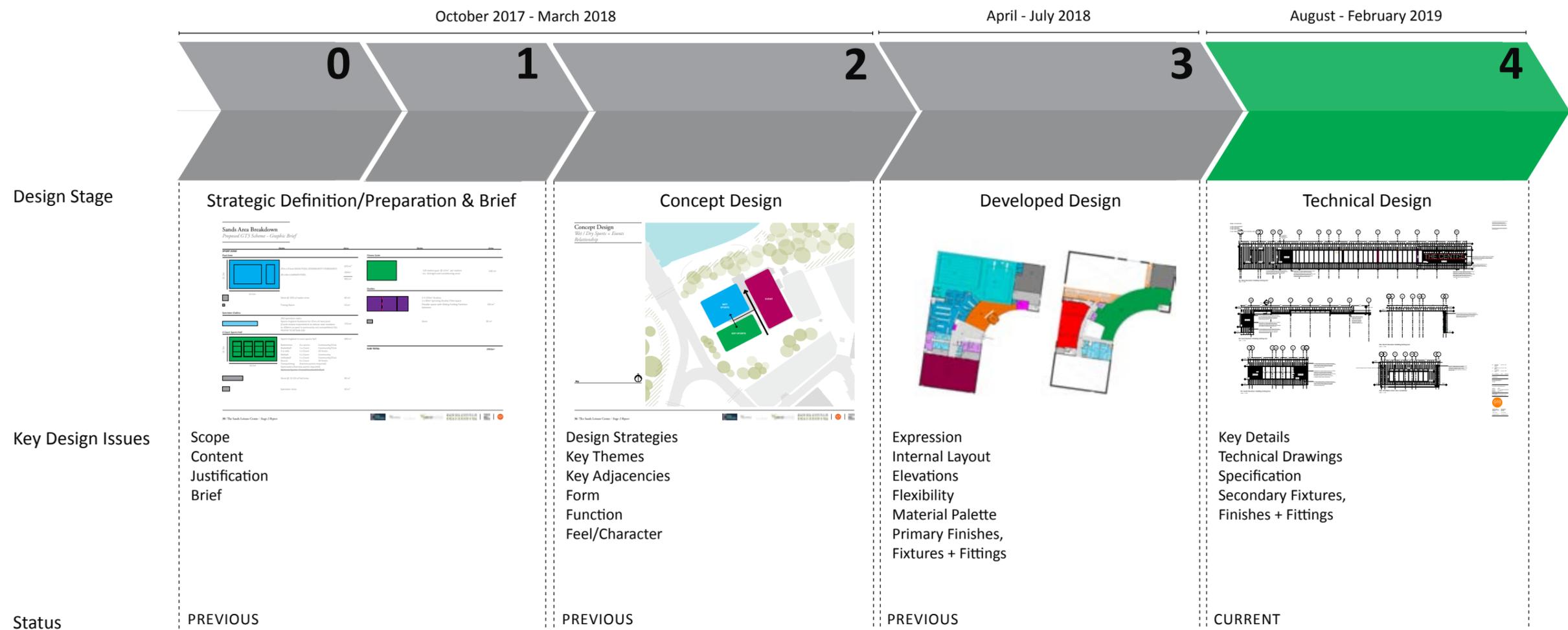


Checked by: PMR  
Issued by: PMR  
Project Number: 17024



# Project Overview

## RIBA Plan



# Site Analysis

## Location



### Key

- |  |  |  |   |  |
|--|--|--|---|--|
|  Site location        |  Railway line     |  Carlisle Castle    |  Area of investigation |  Hadrian Way Path |
|  Carlisle Town Centre |  Carlisle station |  Carlisle Cathedral |  Major road            |                   |

# Site Analysis

## Constraints

The site has a number of key constraints that are highlighted on the adjacent diagram.

Firstly the site is constrained by the requirement to retain the existing events centre, with the new build re-providing the support facilities.

The North of the site is bounded by a flood defence wall, protecting the site and the wider area.

The existing substation location must be taken into account, this will be replaced as part of the works however will be re-provided in a similar location.

There is an existing water main to the west of the existing building. This will require diversion and a sum of money has been allowed for.

The design should give cognisance to the listed structures on and around the site.



### Key

- |                       |                            |
|-----------------------|----------------------------|
| Leisure Centre        | River Eden                 |
| Site Boundary         | Embankment                 |
| Trees                 | Existing Water Mains       |
| Existing Concert Hall | Listed Structure           |
| Flood Defence Wall    | Pollution and noise source |
| Existing Substation   | Current Carpark            |
| Slope Direction       |                            |

\*Site Boundary taken from 2010 planning application. TBC.

# Site Analysis

## Opportunities

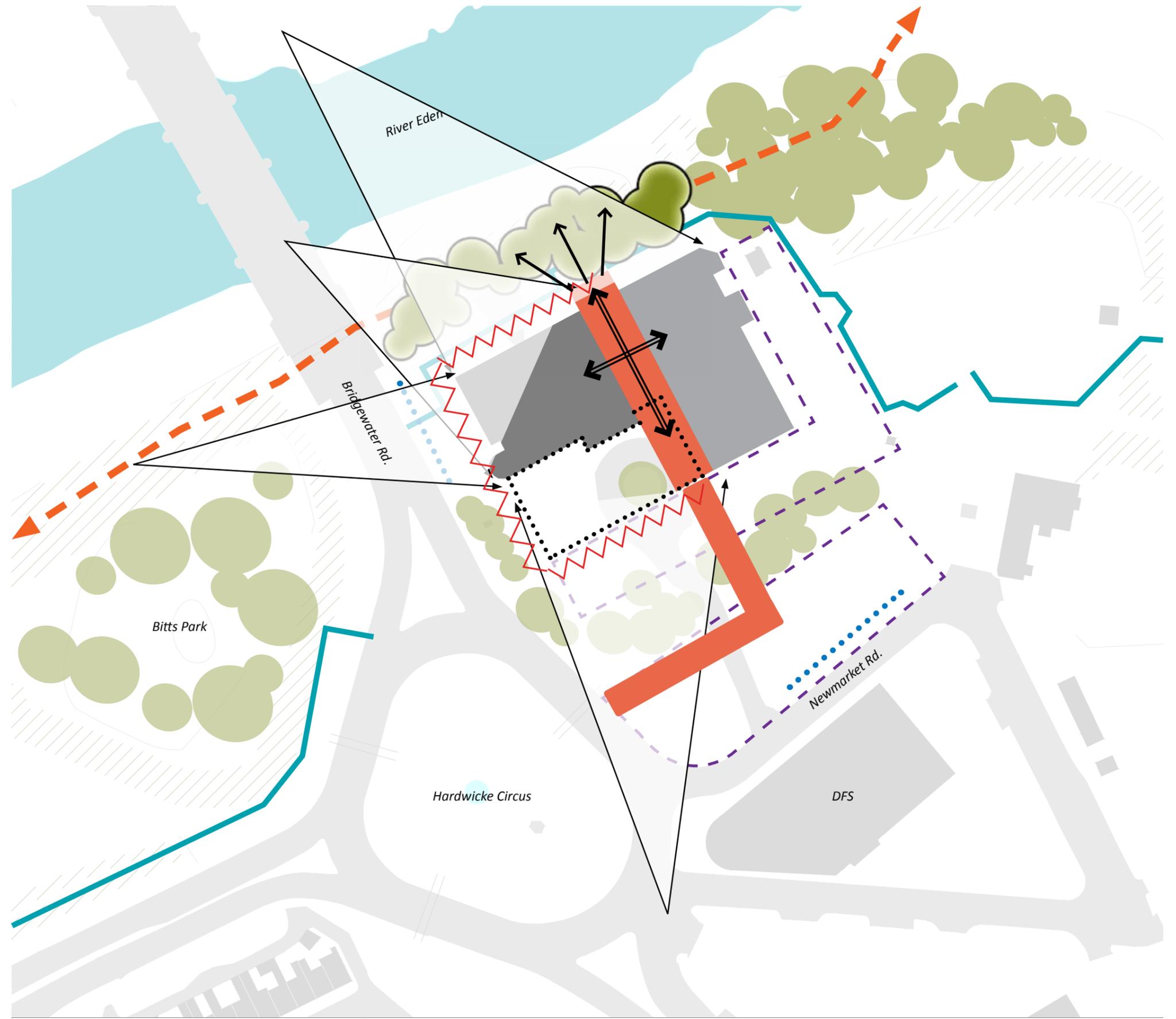
The proposed design looks to respond to the following opportunities:

Provide a more legible and direct route for pedestrian visitors from Hardwicke Circus.

Utilise a central public street zone to mediate between the sporting and events areas.

Maximise the views towards to provide a landmark facility.

Maximise views from the facility to make the most of the park land setting and views of the River Eden.

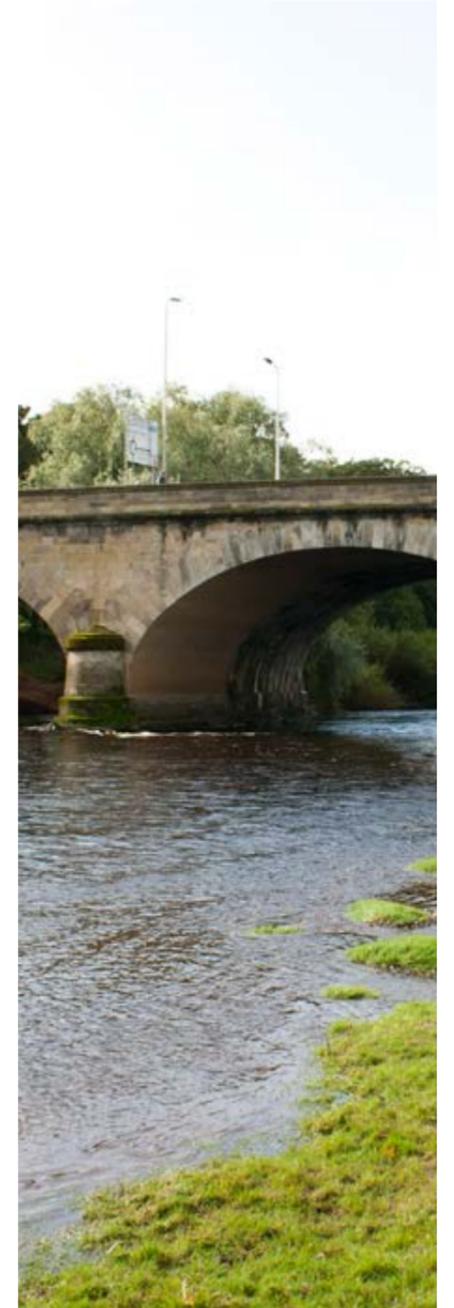


**Key**

Leisure Centre	River Eden
Connecting "Street"	Embankment
Trees	Hadrian's Way Footpath
Active Elevation	Potential Landscaping opportunities
Key Views	Development Area
Flood Defences	Enhanced building connections
L01 Views	

# Local Colour Palette

*Urban Landmarks*



# Local Colour Palette

*Rural Landmarks*



# Sands Centre

## *Elevation Material Proposals*

### External Building Appearance

The external materials selected are intended to complement the wider natural setting in which the building is situated alongside the urban proximity of the city. The materials proposed respect the local context, utilising a natural and recessive palette to allow the building to sit comfortably within its context.

Brick has been chosen as the preferred material for the plinth material due to its appropriateness for use within the flood plain location. The colour / tone of the brick has been carefully chosen to fit the local vernacular. The Flemish brick bond provides a link to local brick work within the close proximity.

Brick piers with coloured fin infill has been chosen for the sports hall areas to reflect and compliment the urban context of the southern aspect of the site towards the city.

Brick piers with hit and miss/projecting perp ends (Flemish brick bond) infill has been chosen for the core areas to allow a cross fade between the urban and rural aspects of the façade. The hit and miss brick work allows light to penetrate to windows beyond.

Timber has been chosen as the preferred material for the upper elements of the Pool hall façade due to its appropriateness within the rural context of the northern end of the site. The colour/tone of the timber has been developed to be sympathetic to the existing site context.

Metal mesh panels are utilised at the fitness box, back lit to provide a glowing box. Small gauge to ensure a filigree nature. Utilised over some openings to provide a veiled privacy.

### Material Proposals

The elevation treatment has been considered in line with simple visual concept for the scheme utilising high quality materials and simple crisp detailing alongside the requirements for ease of maintenance and robustness at low level.

**Facing Brick** – Red/Purple Flemish bond brickwork to the plinth areas, piers and infill panels to the core zone.

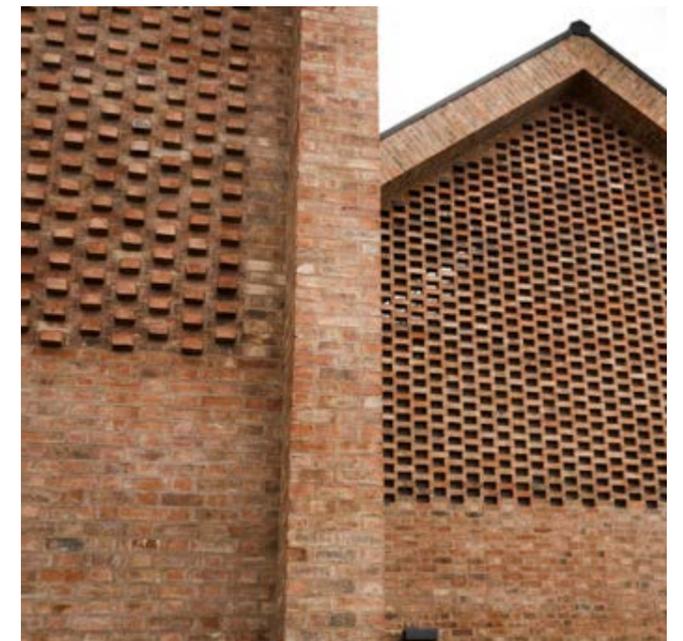
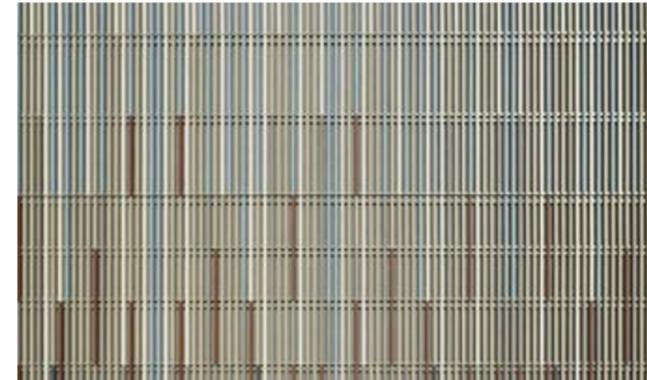
**Vertical Coloured Fins** – Varying colours to the infill areas to the sports hall.

**Vertical Timber batten Façade** – to the pool hall 2 distinct articulations/sizes across the facades providing sympathetic materiality with the natural setting.

**Metallic mesh** – small gauge, panelised and back lit.

Polyester powder coated aluminium frames in a metallic colour with double glazed windows / curtain walling, with high performance solar control and thermal insulation glass in a neutral colour.

The concept design represents a high quality addition to Carlisle, a building which responds to its City gateway location and functional importance with simple and elegant architecture.



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# Sands Centre

*North Elevation*

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# Sands Centre

*South Elevation*

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# Sands Centre

*West Elevation*

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# Sands Centre

*External Visualisation*

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# Sands Centre

*Street Visualisation*

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# Sands Centre

## *Pool hall Visualisation*

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# Sands Centre

## *Sports hall Visualisation*

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# Sands Centre

## *Coffee corner Visualisation*

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# Sands Centre

## *Fitness suite Visualisation*

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# Sands Centre

*Studio Visualisation*

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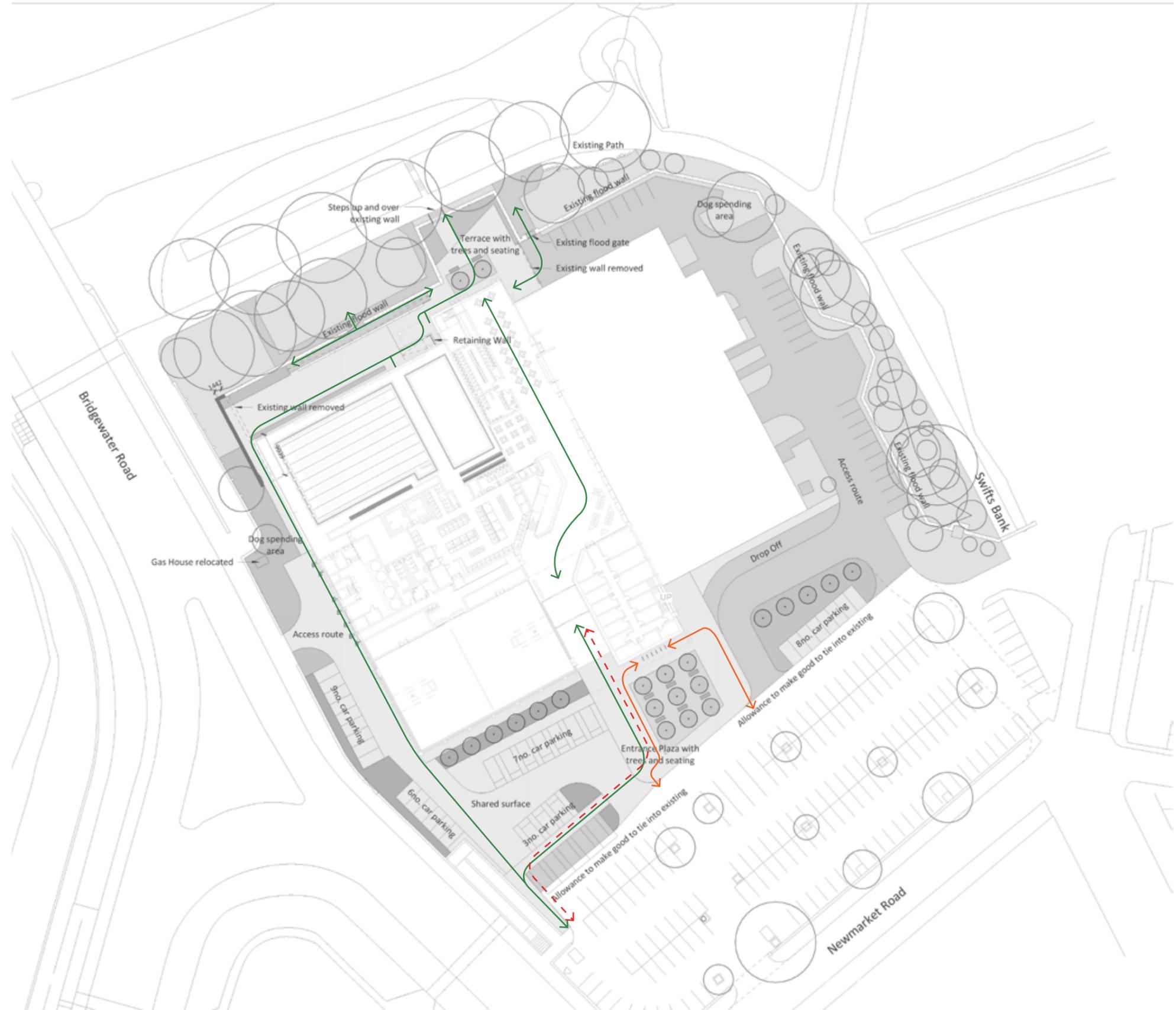
# Sands Centre

## Access - Site Circulation

### Pedestrian and Cycle Access

Pedestrian access to the main entrance has been afforded a more direct and more legible route from the site entrance at Hardwicke Circus providing a simple accessible route for all. Hard standing to the building surrounds allows unimpeded access to the perimeter of the building and easy access to the riverside Hadrians Way.

Cycle Access is via the main site entrance from Newmarket road with cycle parking gathered adjacent to the main entrance



**Key**

-  Cycle Access
-  Pedestrian Access
-  Accessible Route

# Sands Centre

## *Inclusive Design / Compliance*

### External Access

The site access is relatively flat providing good access from Newmarket Road and accessible access is available via ramps from Hardwicke Circus. The spacious public realm around the building provides a pleasant entrance to the building.

The entrance itself is two sets of sliding glazed doors either side of a draught lobby providing clear and level entry and egress from the building.

### Parking and Drop-off

The main car park is located to the south of the building, accessible parking bays have been positioned adjacent to the main entrance to minimise distance. A drop off location is located adjacent to the main entrance which incorporates the coach drop off.

### Main Building Circulation

The main building is fully accessible with 2no. 8 person passenger lifts located near to reception and centrally within the building. They layout of the building is deliberately simple to aid wayfinding and improve legibility. All circulation areas are generous in width to allow for comfortable movement around the building and for sports wheelchair users. The Sports wheelchair zone is limited to the ground floor sports hall zone.

### Changing Provision

Within or adjacent to all changing areas there are accessible changing rooms with a shower and WC. Located within the wet changing village is a Changing Places facility. Its position within the entrance of the wet change allows both pool users and other centre users to access the facility with minimal diversion.

### Pool Access

The main swimming pool is accessed by both standard ladders and easy access walk in steps. This pool also has a lifting platform. The learner pool is accessed via standard ladders, a lifting platform and also features a moving floor. The height adjustable floor allows for larger numbers of wheelchair users to move onto the floor before it is lowered. This allows specialist groups to operate sessions within the pool without having to access it one at a time.

### Spectator Seating

The spectator seating area on the first floor has dedicated accessible bays within the seating area. These are located at the top tier of seating and are adjacent to standard seats allowing users to be seated with non-wheelchair using companions.

### Wheelchair Storage

Both wheelchair and buggy storage areas are provided within the building.

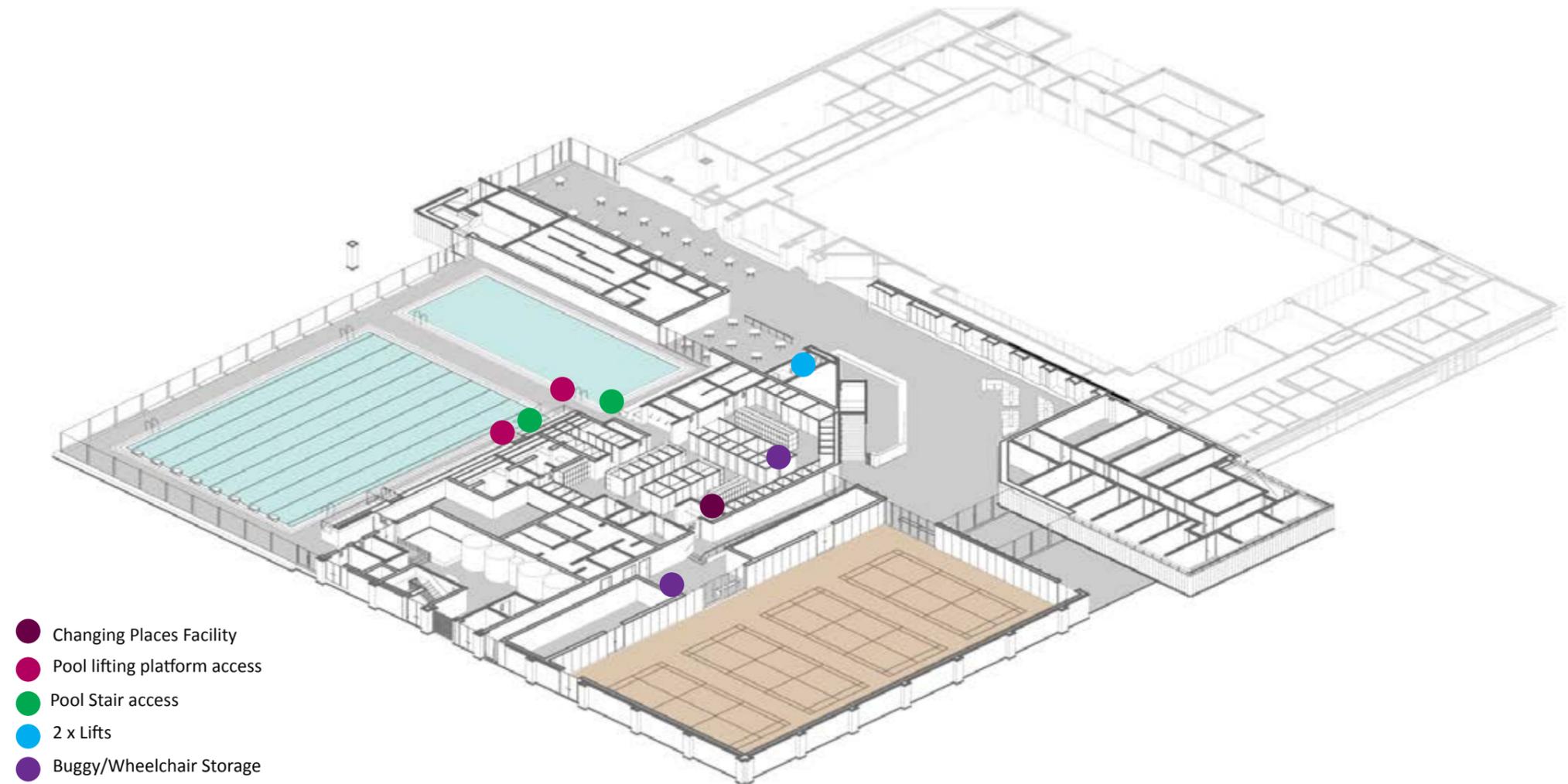
### Sport England Compliance

As the Sands project is being partly funded by Sport England they have been engaged in the design process at every stage. The current design is deemed as compliant and will be monitored moving forward to ensure compliance is maintained.



### NHS design guides

NHS HTM and HBN guides have been utilised as the basis for the design of the NHS physiotherapy zone within the centre.



# Sands Centre

## *Flood Resilience*

### Flood Resilience

As previously described the building sits within a flood zone 3 (defended).

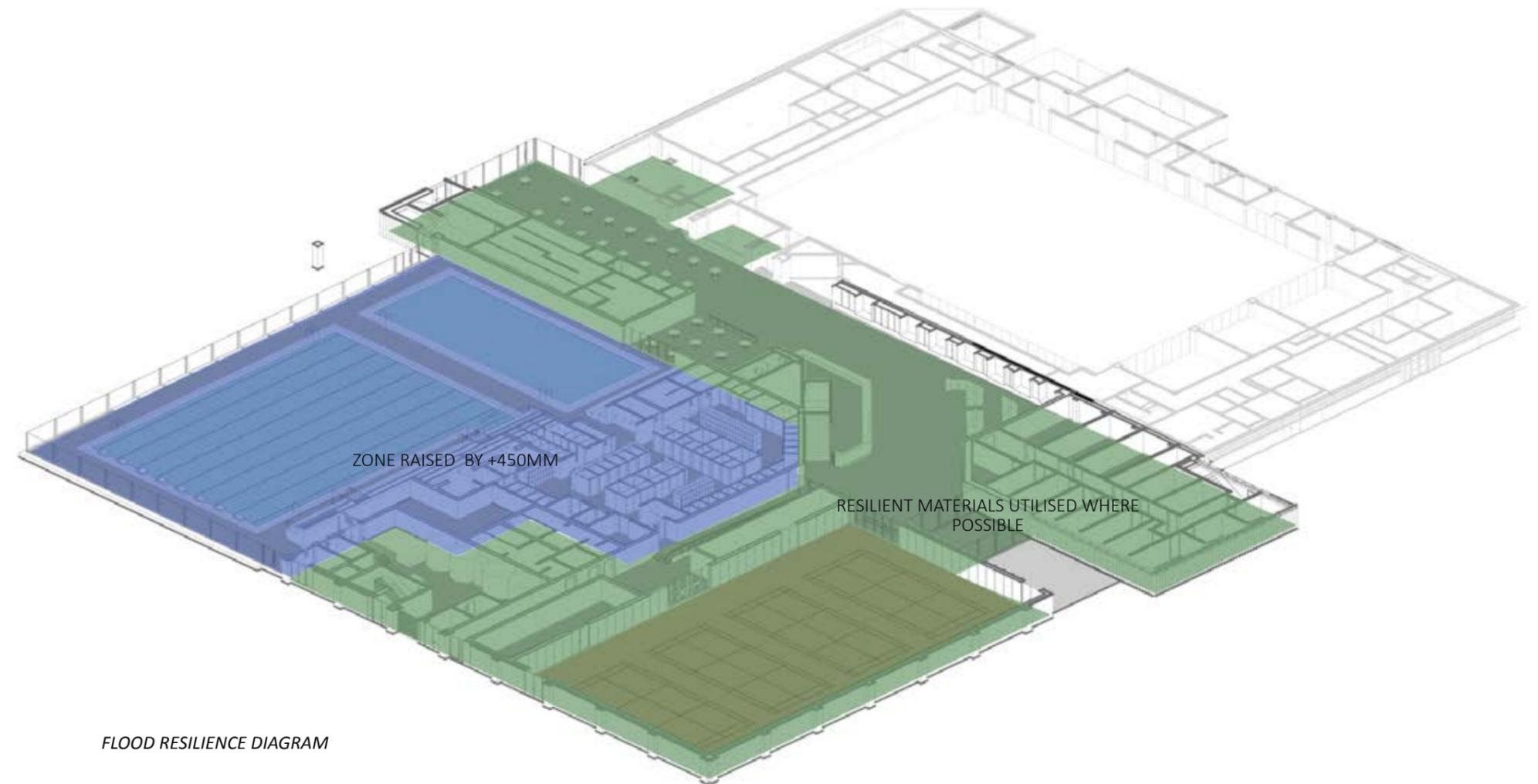
An FRA has been carried out for the site and is included as part of the planning application. This Flood Risk Assessment has informed the overall design of the building levels and materials chosen.

The flood defence strategy for the building is a water entry strategy. Meaning that water will be allowed to enter the building in the event of a flood rather than actively kept out.

This decision has led to the choice of materials utilised at L00 to be resilient in nature, ie can be easily cleaned after a flood to ensure the centre can open at the earliest possible moment.

Externally the flood resilience has manifested in the material choice of a robust brick plinth to the scheme.

A further key move that has been a result of the FRA is to lift the pool and associated changing areas of the building out of the flood zone to a level of +450mm above the rest of L00. Ensuring that the pool areas are at minimal risk of flooding.



# Sands Centre

## Design for Wellbeing

### Environmental Factors

As part of the overall concept for The Sands centre we would like to ensure the project is designed with users' overall health and wellbeing in mind. As such we are looking to incorporate some simple solutions and ideas based on principles from Environmental Psychology to enhance the users' interaction with the spaces within the building.

Stress Reduction theory looks to apply opportunities for 'natural' stimuli for the user either directly - from plants, trees and views to surrounding green space - or indirectly - for example, through use of natural materials in the build, installing large scale visuals of nature, or by producing dappled shade via patterned brise soleil.

In addition to this we are looking to create environments that feel safe in that there are good opportunities for users to satisfy their varying needs for 'prospect' (ability to observe surroundings) and 'refuge' (not feeling overly exposed).

Providing users with these kinds of experiences / stimuli is deemed to have a positive physiological effect - reduced blood pressure, stress hormones, improved mood. For example, views of nature can help reduce high heart rate.

Another perspective to consider is Attention Restoration theory (ART, a complementary theory to stress reduction theory which is more about recovery from mental fatigue), the 5 factors that make a place restorative are as follows:

**Soft fascination:** A place containing stimuli that are relaxing (neither boring nor threatening or over-stimulating). 'Natural' places typically have lots of these - leaves, bird-song, dappled shade, fractal patterns, rippling water. Some kinds of people-watching can also serve to provide opportunities for soft fascination.

**Being away:** A place physically or emotionally and mentally removed from everyday life and associated stresses.

**Scope:** A place large enough, and containing enough stimuli, to encourage user engagement and avoid inducing boredom.

**Coherence:** A place that holds together thematically enough to not become stressful, overstimulating or confusing.

**Compatibility:** A space that provides for the activities the user wants to engage in, and enables them to feel confident about interacting successfully with their environment. With the above in mind we are looking to focus on certain areas within the design:

**Fitness suite -** natural stimuli and low stress improves exercise performance. We have incorporated views out from this zone toward natural stimuli (trees) to aid this. We have also created dappled shade here by extending the perforated metal panels across some of the curtain walling to this area.

**Street area -** Places to stop, wait, rest, observe, socialise in small and big groups. We are aiming to maximise variety of experience here by providing options - some shaded space, some sunny space, some outdoor space, some large open space with views, some space that's enclosed/ back to wall. Each of these types of space have been incorporated into the street scape design. Care has been taken to ensure the street will be an active space, producing plenty of opportunities for soft fascination for users.

The 'ribbon' materiality strategy for the street will enhance its coherence, ensuring it is an attractive environment to inhabit.

A great deal of recent research suggests providing views of / access to the river (a 'blue space') would be particularly beneficial. We have maximised views from the street areas toward the river.

The proposed façade design and interior material strategy have been carefully designed to maximise coherence. The design incorporates consistent proportions and repeated vertical elements to ensure the overall effect is satisfying and easy to comprehend.

We will continue to review opportunities surrounding these ideas throughout the design process by looking to provide as many different 'user experience' nature opportunities within the practical constraints around size, maintenance, budget, ease of building operation.



### Designing for Dementia

Alongside the work around environmental factors we have looked to follow various rules around designing for dementia, and will look to integrate the following ideas further as the design continues where possible.

- Use an open-plan layout that is easy to understand, orientated around a garden.
- Minimise the amount of long, artificially lit internal corridors.
- Make sure there is natural daylight and views from the building.
- Ensure there is easy access to secure gardens.
- Use 'landmarks', such as plants or artwork, to help people navigate their way around.
- Clearly mark all glass doors; glass may not be seen by people with dementia.
- Use clear and attractive signage in a bold face with good contrast between the text and the background.
- Ensure that toilets are designed so that someone with dementia is able to get assistance without causing embarrassment.
- Use contrasting colours - white or magnolia do not help with way-finding. Toilet seats that are of a contrasting colour to the walls and rest of the toilet are easier to see if someone has visual problems.
- Do not use sparkly materials, stripes, dark patches or mats on floors - and avoid any variation in flooring.
- Mark the edge of each step on any stairs.
- Create a homely, familiar environment; this increases the sense of security and comfort. Try to create a safe environment without it being institutional.
- Don't use swirly patterns on floors or walls; for dementia sufferers they can appear to be moving.

# Sands Centre

## Sustainability

### Renewables

It is proposed that the building includes a gas fired CHP unit and retains the existing extent of the PV panel array to provide on-site renewable energy generating technology. The electricity generated by these technologies as reported by the National Calculation Methodology (NCM) has been calculated to be just under 10%.

### Materials/U-Value

The Building is subject to a SBEM/BRUKL calculation which has provided targets for renewable energy and U-values to the building fabric.

### Water

Swimming pools by their nature utilise a large amount of water, both in the showers and WCs of changing areas and in the backwashing of filters. Details of systems and sanitarywear will be developed at the next stage but the target is for low consumption products to be used throughout the building. Opportunities to reuse backwash water for toilet consumption and rainwater harvesting will be investigated at the next stage.

### Pollution

The first step towards reducing air pollution has been to make the building as efficient as possible to reduce consumption at the start rather than target emissions at the end. A CHP has been selected as the heating load on the building is quite high and this method is efficient at achieving this.

The site is located a good distance from any local residential properties. The building has been assessed as part of an Environmental Noise Survey to determine the effects of noise breakout taking into consideration the facade buildups and construction. The effect was found to be negligible and the report is submitted with this application.

### Biodiversity

A pre-design ecology survey and tree survey have been carried out and are submitted with this application. A further extension to the tree survey has been carried out and further details of this and the implications of the development can be found in the Arboricultural Impact Assessment.

Lighting around the site will be kept to a minimum; striking

a balance between providing a safe site and creating light pollution.

### Consequential Improvements

As the scheme is an extension to an existing building a consequential improvements study has been completed to highlight areas of the existing building that can be improved to provide a more holistic approach to the building regulation compliance. There are a number of opportunities to improve the carbon emissions of the existing building that will be explored in detail with the building control officer.

### Daylight

The building utilises daylight into a number of spaces to improve the overall wellbeing of the spaces within. The main street space has a number of roof lights allowing daylight to penetrate the deeper plan areas of the building. The Sports hall utilises glazing at high level on the western facade to allow natural daylight into a space that is usually black box. The pool hall has expansive low level, north facing glazing to make best use of both daylight and views toward the river beyond.

### Natural Ventilation

The building utilises a natural ventilation strategy in both the public street and sports hall areas which minimises the requirements for mechanical ventilation to both of these large volume spaces.

The sports hall utilises roof mounted ventilation chimneys with the street utilising the roof lights with air entering the facades at both the North and South ends of the zone.

### New Build Elements

#### Subject to Part L CO2 Emissions Standards

Adopted Measures Include:

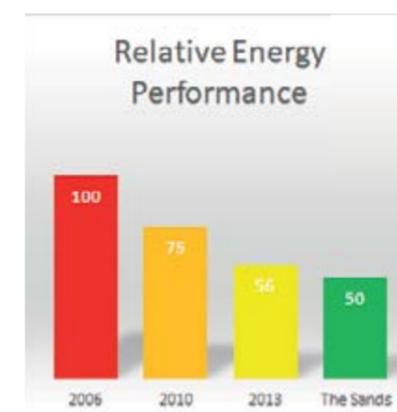
- Enhanced Building Fabric U Values
- Enhanced Air Tightness
- High Efficiency Gas Condensing Boilers
- Combined Heat and Power
- Natural Ventilation to Street
- LED Lighting and Energy Controls
- Photo-voltaic Panels (retained/relocated)
- Sub Metering to assist Energy Management

### Retained Elements

#### Subject to Part L Consequential Improvements

Adopted Consequential Improvements include:

- Enhanced insulation to existing hall roof
- New Air Handling Equipment to main hall with enhanced energy performance
- Heat Source derived from new Boiler/CHP Plant within the new build
- Replace remainder of lighting with LED
- Sub Metering to assist Energy Management



The Sands new build energy performance vs comparative build with comparative facilities built pre-regulation change in 2006.

