



The Grandstand: A Platform For The Community

Group H

Who Are we?

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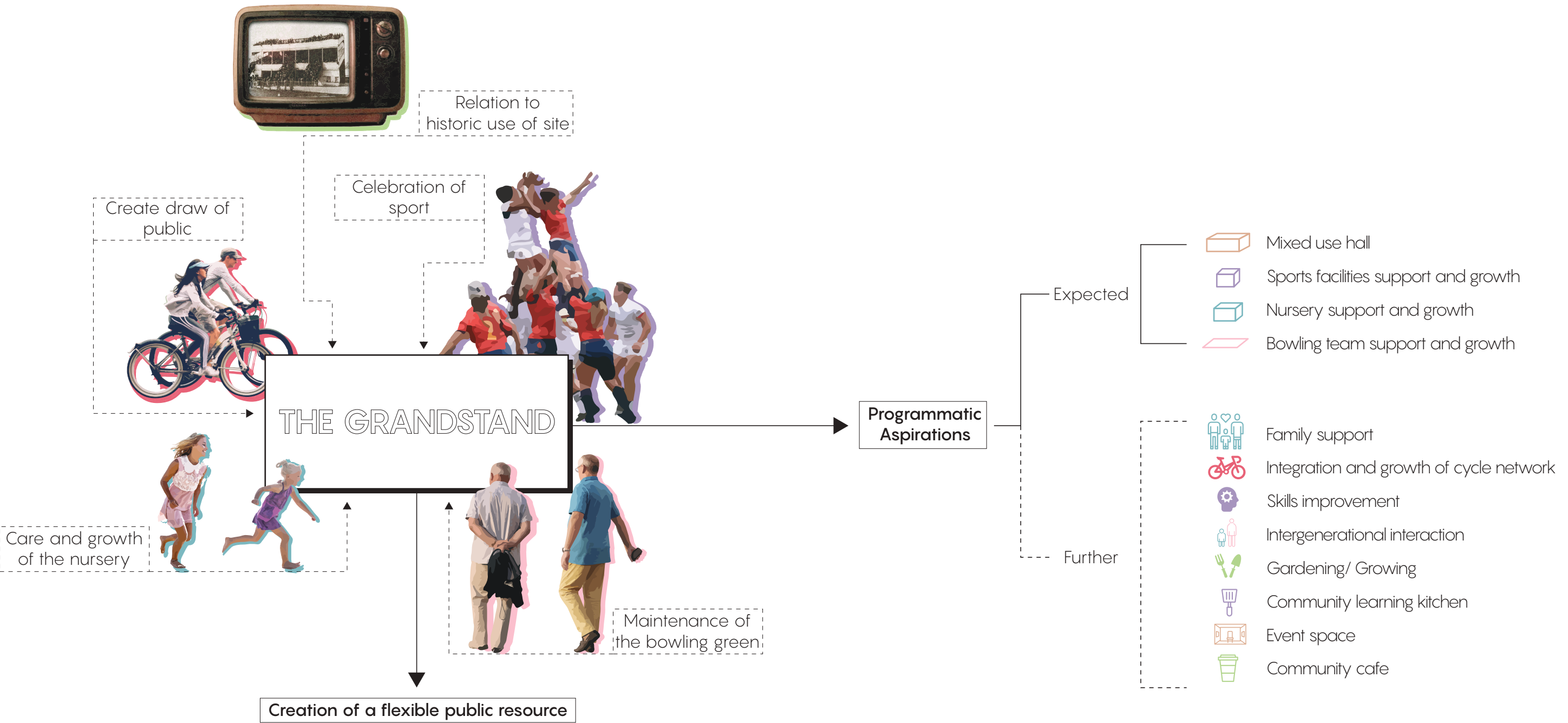
Strategic Definition

Interpretation of Brief and Programme

Identification of client and programme through brief

The client group has expressed an interest in the development of a multi-functional space that acts as a social hub and open public resource for the local community. There is desire to provide further space for

the existing nursery and bowls club, and provide much needed space for administrative offices, community café and support spaces for local sports teams.



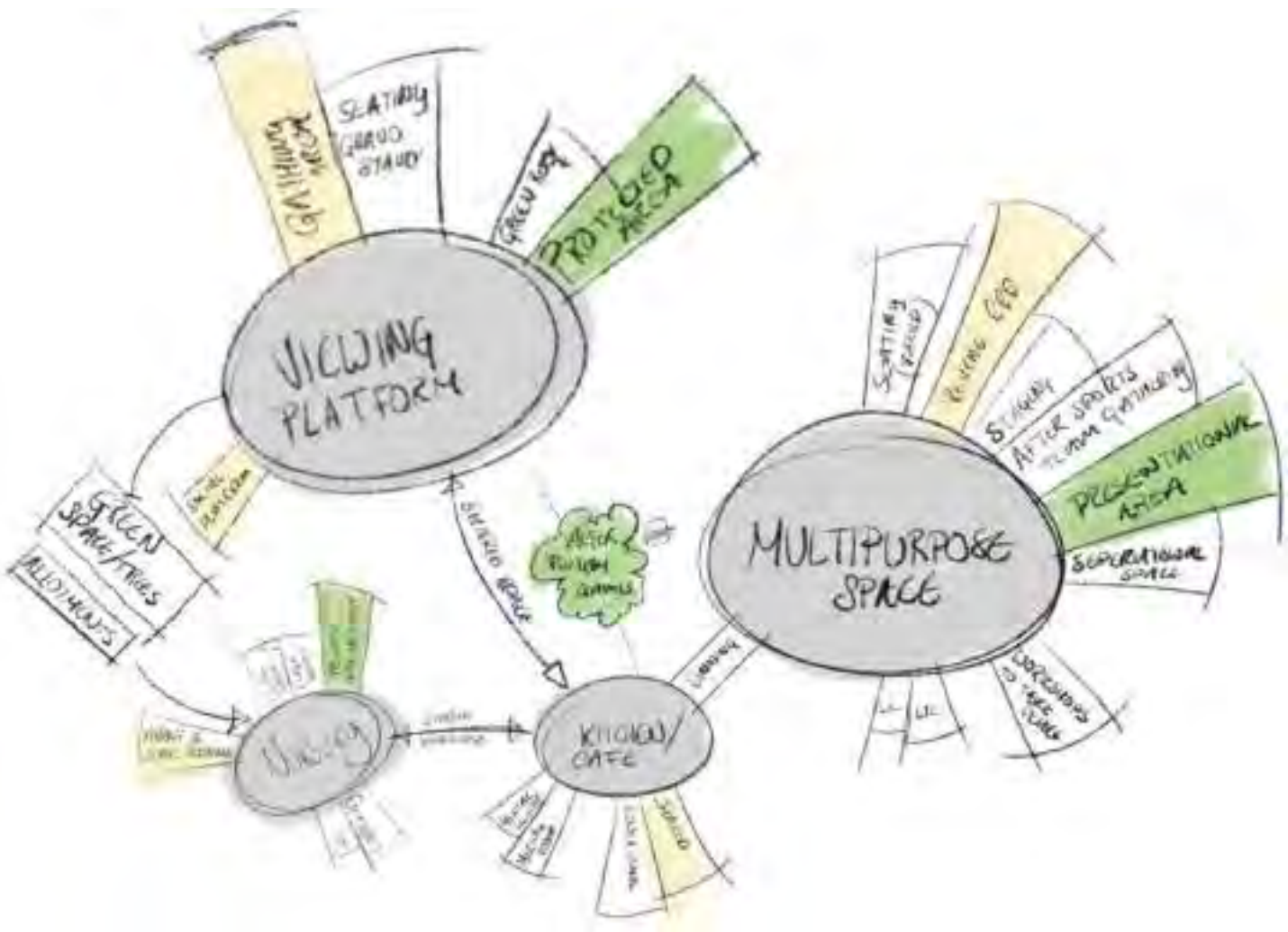
Strategic Definition

Our Vision

Spatial bubble diagram

Following our conversations with the client, we mapped out our initial response to the client's needs as well as the site's historical and environmental conditions. Our bubble

diagram reflects our thoughts on how the subsequent spaces and activities could connect.



Programmatic College

The recreation of a lost icon, "The Grandstand", relating to the historical usages of the site. The structure will provide an iconic symbol for the area, that enhances the neighbouring sports facilities and will act as a community support hub for the locality.

The collage creates a visualisation of how different demographics in the area would utilise the platform and its symbolic nature within the community.



The Site

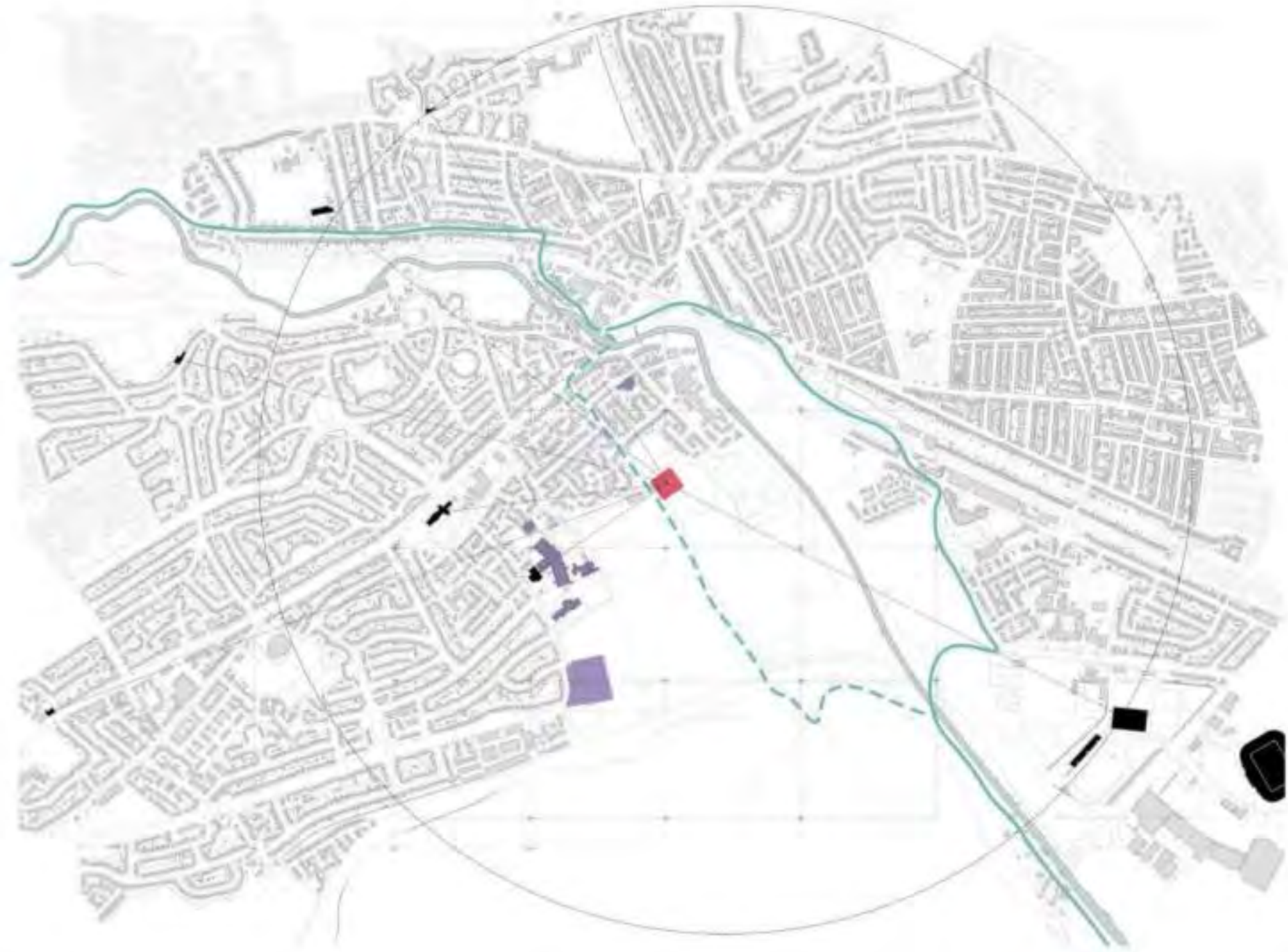
Community Analysis

A key aspect to our design process

With this type of project and client needs, we wanted to thoroughly analyse what the community's current situation regarding the existing spaces, places and programmes.

The map below maps out existing schools and

community centres. This enabled us to identify crucial programmes which helped us understand how the design could connect to the community and what potential cost/funding strategies could be implemented.



Site Local Schools Community Centres Proposed Cycle Connection to Ely Trail



The Nursery

Relocation and redesign of existing facilities
Landscaped gardens and outdoor learning



The Bowling and Elderly Community

Inegration with different generations
Classes and groups
Reconnection to local area



Families

Supoort services
Reconnection with community
Classes and groups.



Passers - by

Developed connection to local area
Cafe and social space



Sports

Changing facilities
Celebration and Presentation spaces
Spectator environment



Youth

Educational support
Job opportunities
Youth club, classes and groups

The Site

Immediate Environmental Conditions

Our scheme aims to benefit the environment by:

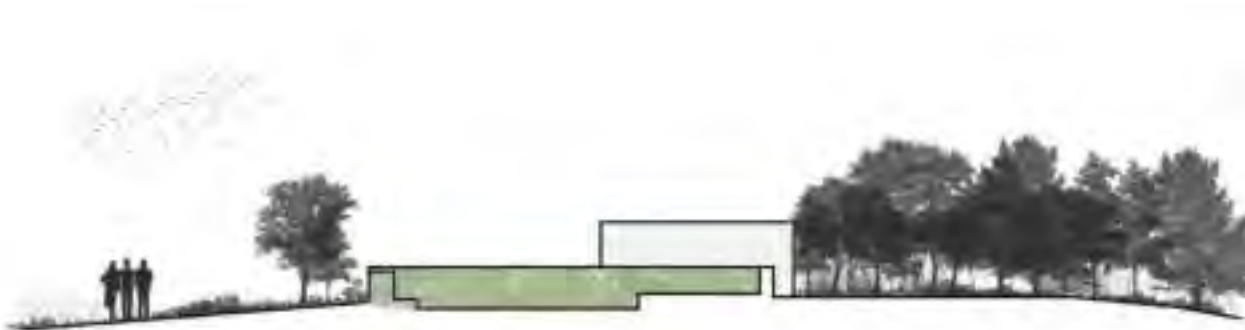
- Minimising the carbon footprint of the building: Using local and re-purposed timber and limecrete
- Incorporating renewable energy resources: using solar panels on the roof & solar water heating for changing rooms
- Rainwater harvesting: Taking advantage of the precipitation throughout the year and recycling that into the building
- Community cycle scheme as alternative transport: Encouraging cycling beyond the immediate area to

reduce overall emissions from cars and buses, which currently feature heavily in the area



Current Environmental conditions of site.

- | | |
|---|---|
| ① Location of site within the bowling green and nursery | ③ The likelihood of having more sun in the afternoon |
| ② Prevailing winds from the south west | ④ Large trees providing shade to the east of the building |



Section A-A



Section B=B

The Site

Vernacular

Materiality study of the sites immediate surroundings



Residentic —————> Site

Local typologies



Majority of the residential area surrounding the site consists of detached houses with simple gable roofs



Amongst the detached houses, some houses are semi-detached with a hip gable roof.



The boxing gym is housed within a large steel structure over one story with a slightly pitched roof.

Journey to Site



North Approach

Narrow into expansive, Residential to public.

Tunnelling

The small path from the car park focuses your attention on the site and current facilities.

Open Landscape

The view north towards our site and boxing facilities is focused through the alignment of trees.

The Site

Our Initial Response

Responding to Site/Client Conversation.

We carried out fundamental research of the surrounding areas, vital historical points, landmarks and landforms before visiting the site for the first time. Anything that we felt could subconsciously inform our movement and response to the site was documented. The site's history of

hosting a racetrack and connecting the community stood out to us as a group as this historic landmark represented more than just a physical landmark. Visiting the site cemented this link. We responded to conversations with the clients visually,

through producing sketches/colleges. These drawings communicate conceptual, atmospheric and programmatic interpretations and ideas of the spaces and functions of a potential proposal — all of which have a successful supporting precedent and have

been implemented into similar schemes.



Gather/Communication

The elevated steps and platform separate the gathering space from the footpath, creating a potential viewing platform and a place for people to congregate and communicate.



Sharing of skills

There are many transferable skills held by various generates currently on the site, with the potential to build upon this through shared gardens/growing spaces to share knowledge.



Multiuse

The area lacks a multifunctional space; our multifunctional hall has the ability to be the heart of the programme. Providing a space the community can be proud of, as well as offering the community revenue, identity and an efficient use of space.



NYC - High Line Section 2



Community garden



Sands End Arts and Community Centre

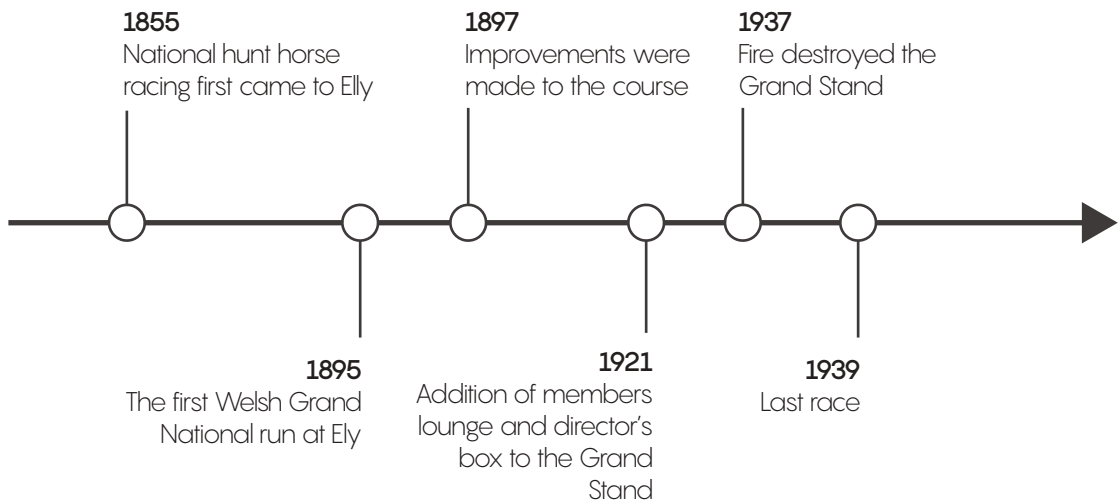


The Site

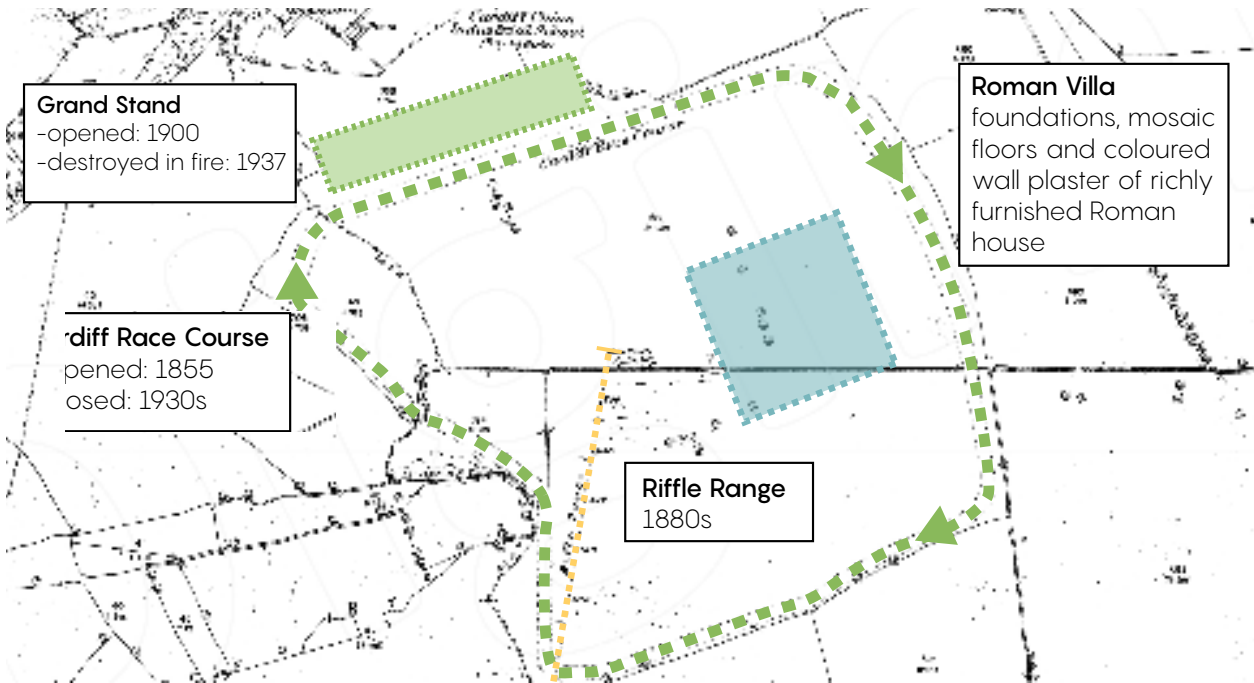
Historical Analysis – Grandstand and Horse Racing Course

Historic landmark

For many people, Ely Racecourse was more than just a place to win money or see great horses and jockeys in action — it was a kind of open-air club, a great gathering where you met your friends and an exciting part of growing up. This place and the grand stand itself was an important landmark and icon for many people, not only in the community but Wales itself. Unfortunately a great fire in 1937 reduced the main stands, including the Grandstand, to smouldering ruins in less than an hour.



1880s map of the area



Gather

Horse Racing brought together communities from all around the world through the sport and grandstand.

Connect

Introducing a new cycle connection along the Ely Trail

Interact

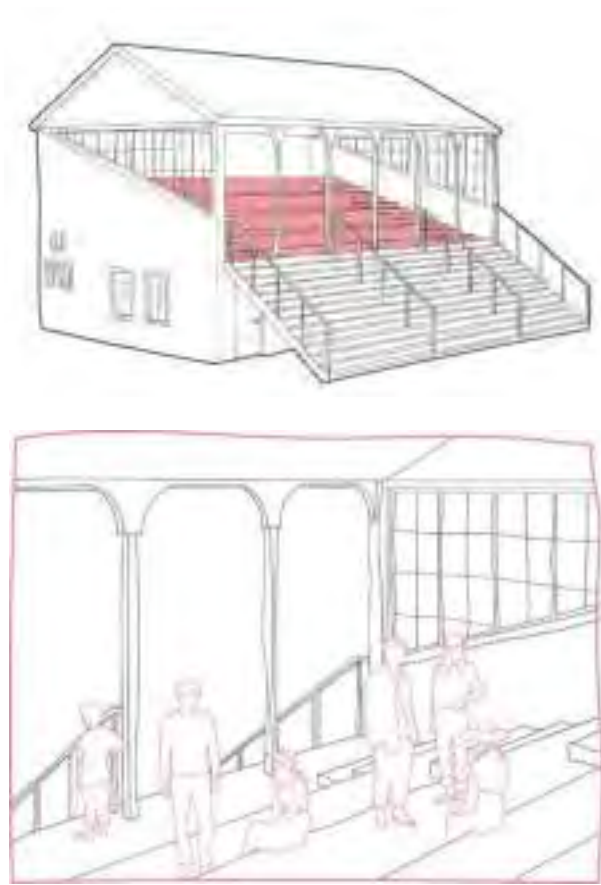
Incorporating the communal grandstand environment with a new permeable connection through the site.

Strategic Definition

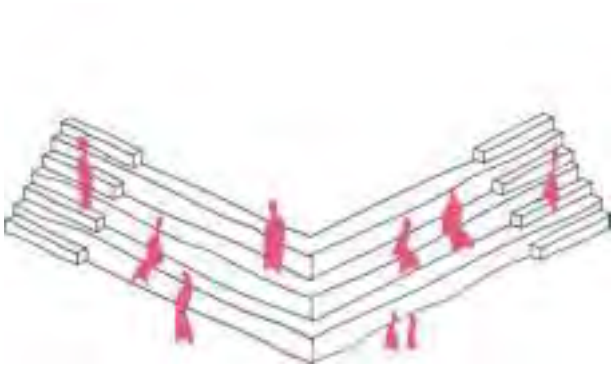
Historical Interpretation

Conceptual analysis and interpretation of Ely Grandstand

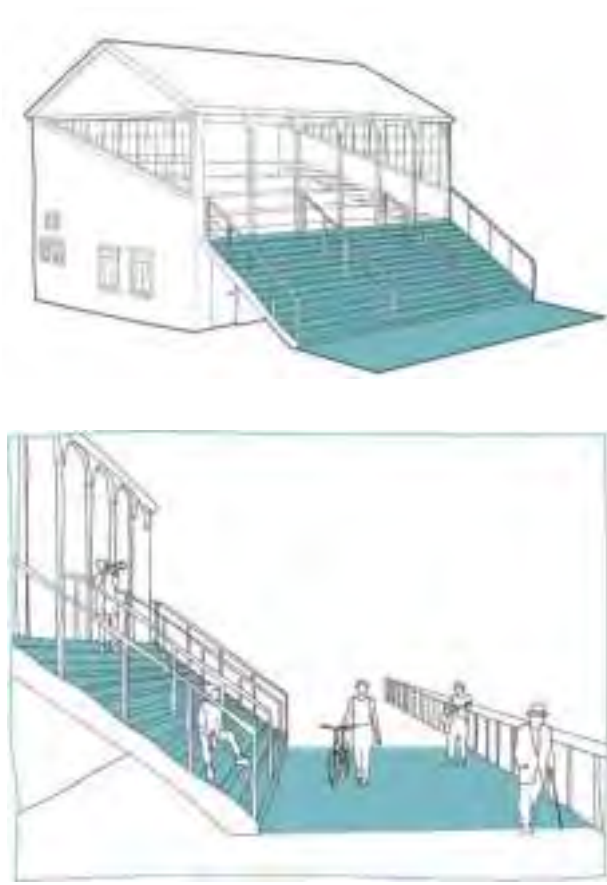
1. Community Interaction
Areas for interaction of public while sitting, viewing, eating and socialising in the stands



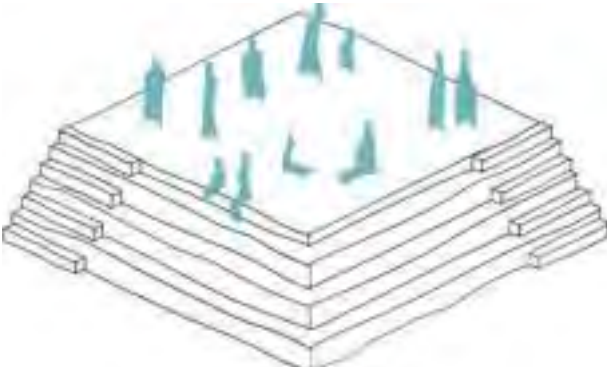
Our interpretation
Create seating and stepped areas to allow for rest and interaction between the public as well as an overall view of the sports



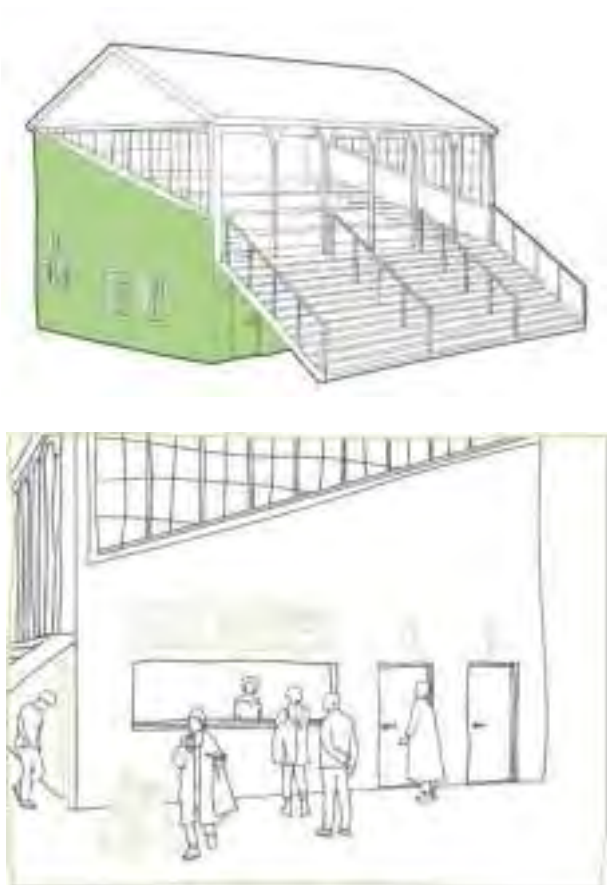
2. Undetermined space
Undefined spaces left for inhabitation by the public



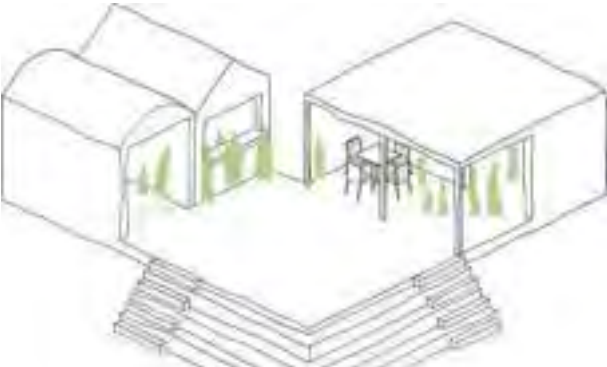
Our interpretation
An allowance for undetermined space that allows the public populate and utilise as they desire



3. Access to facilities
Close proximity to a myriad of facilities to enhance the experience of the Grandstand



Our interpretation
Place desired facilities and usages onto the Grandstand, allowing them to spillover and inhabit the central spaces



Urban Strategy

Connecting to City Centre

Our Urban Design Vision

Our vision overall is to strengthen the connection between Cardiff city centre and Ely/Caerau, and further afield.

- Revitalise some of the connotations associated with these areas of the city.
- Prioritised bike paths to link to the city centre.

- Growing Next bike Network throughout the city.
- Develop an activity as part of the **identity of Ely and Caerau**
- Interactive boards/signs to display stats of individual cyclists based information on the paths.



Connecting to the City Centre

Our overall urban strategy is to provide critical links connecting Ely to the city centre on a human scale. We have identified main routes to focus on the connectivity to the centre, as they have got best and most direct access to the site. Further more, they also have the infrastructure to develop into bike-friendly roads/paths.

We are suggesting that the proposed framework develops into a **precedent itself**. As part of strengthening the identity of the Ely and Caerau, we are proposing to use a newly developed technology, which allows the paths to **self illuminate** in the dark. This technology only harvests energy from the sunlight and paths can stay lit for up to 10 hours. Not only promoting a greener and healthier means of transport, but also a more environmentally friendly means of encouraging the use of this path at night. The driving force is for this technology to **become part of the identity** of these playing fields, as well as for the people of Ely and Caerau to feel proud to be part of an eco-friendly development. Our urban design strategy is to bring to **fruition the promotion of eco-friendly transport** to, from and around the city.



Surrounding Site.

The Nextbike network will be heavily featured in our proposal to focusing on the improvements of connecting the site to the city centre and to develop bike prioritised lanes/Paths. This will provide access to a network for more people and will encourage the use of these bikes. We aim to make Ely not only unique but a destination to visit from the city, via the Nextbike scheme.

Urban Strategy

Unique Identity? Bicycle Use Encouragement

Analysis of Urban bike paths

Our research of successful city-based bike path precedents developed into a series of simplistic diagrams which were then carried through into our urban design. One of the key elements was a physical separation

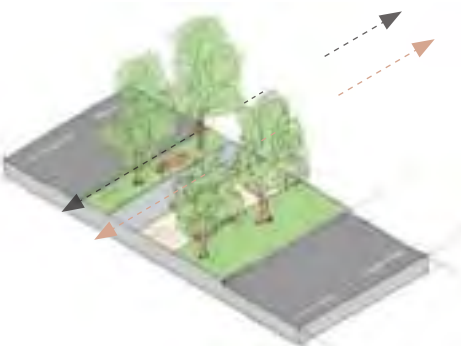
from traffic through the introduction of green spaces as a defence from cars and elevated greenery to form some sense of enclosure.



Proposed Vision of Dedicated Bike Path

The Plan above shows how our design strategy could work on Heol Trelai. Dedicating a space to the cyclists which is purposefully designed and protected will encourage bike use. The drawing also shows the central area being used as hub of this network.

- Proposed Bike Prioritised Bike Path's
- Proposed Dedicated Walking path



Ref A-A



Proposal Occupied

The drawing above shows how we envision these spaces being occupied. Along with the setting of the previously mentioned interventions/Technologies.

Cyclists engagement, providing individual ride stats/info. Simplistic design with simple visual feedback



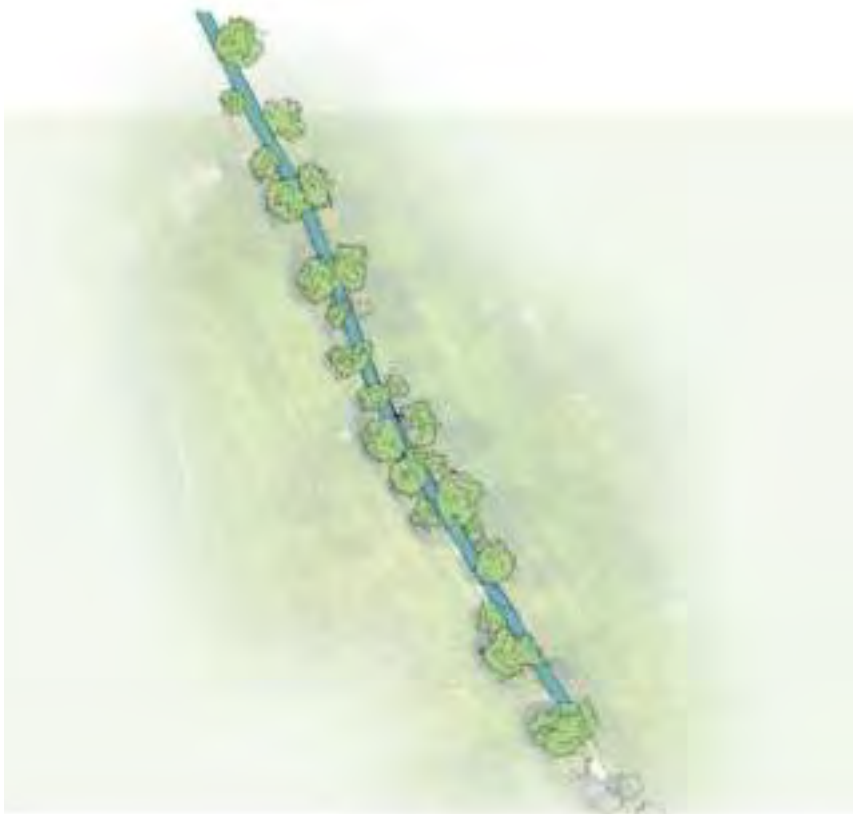
Proposed Vision/ Precedent

These images show the precedent prototype, currently used in Poland, which is being used as a means to encourage the use and increase the safety of cycling during the dark. These sketches are some quick diagrams of how we think this system could be introduced throughout the site.



Ref B-B

"We're playing at the club with the glowing path"



Proposed Vision of Self Illuminating Bike Path

- Our proposal: To use Self illuminating paths within the site.
- Prototyped and tested in a case study in Poland
- Remains lit up to 10 hours after sun down.
- Promote the use of cycling through the site
- Unique feature that people talk about and refer to.
- Emerging technology to set environmental consideration precedent as part of the identity of Ely and Caerau.
- Increase of foot/bike traffic through the site is that the crime and antisocial behaviour will degrease.
- Attitudes towards the site could change.

- Proposed Dedicated Walking path
- Proposed Bike Prioritised Bike Path's



Our Proposal

The Grandstand: A Platform For The Community

Arrival on site

Arriving on site using the glowing blue paths alongside the existing rows of trees



Putting away bikes

The first interaction with the building involves putting away bikes and next bikes overlooking the green



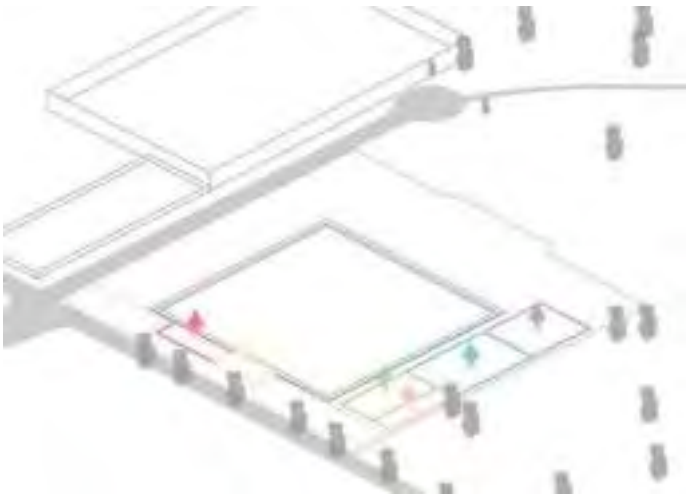
View to fields

The main access point opens on the stand, while overlooking the ongoing sports

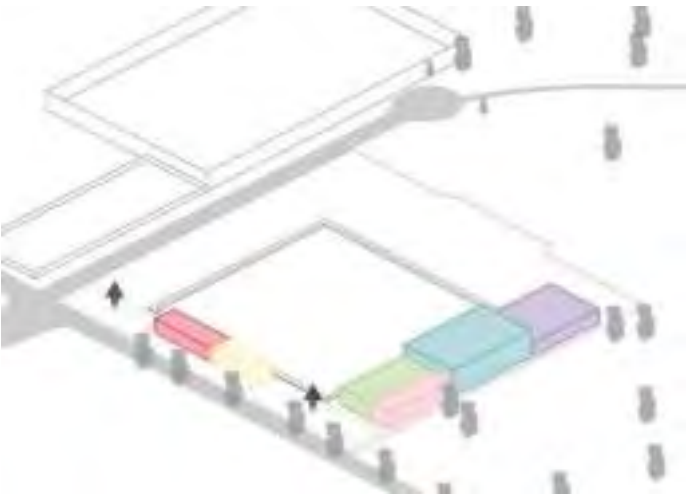


Our Proposal

Progressive Volumetric Diagrams



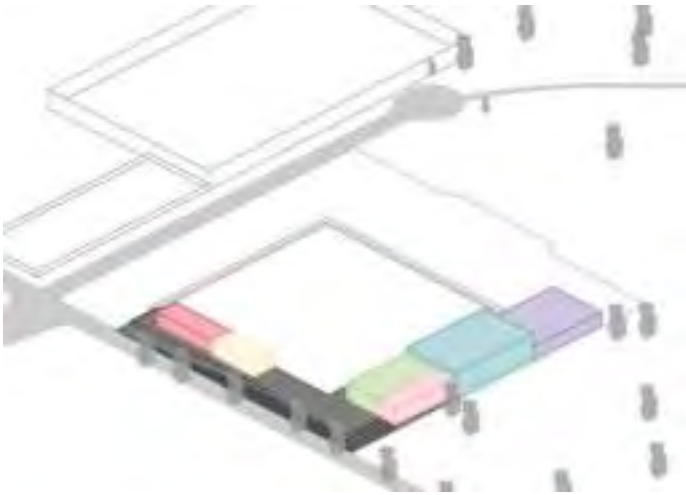
1. Identify locations for programme according to access, view, sunlight and interactions with surrounding programmes



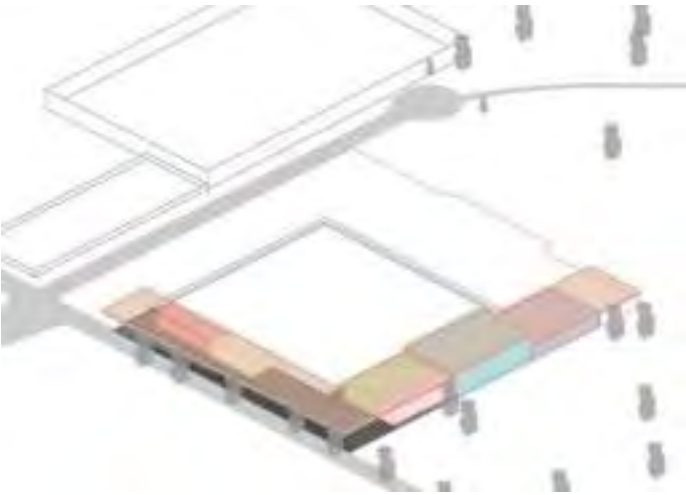
2. Raise heights to programmatic requirements and retain openings for main access and The Grandstand



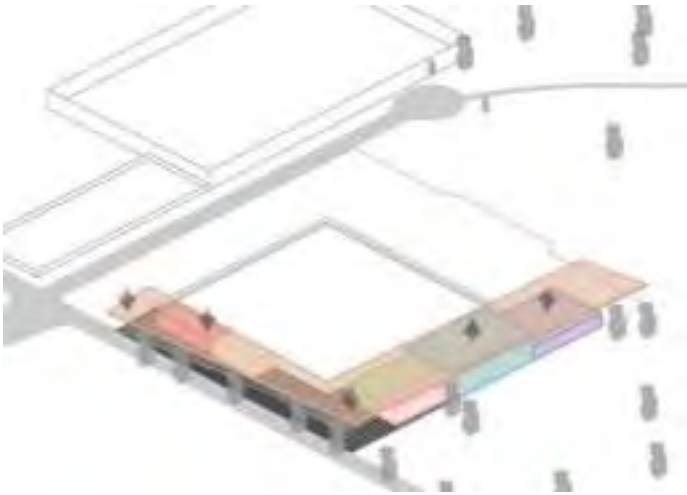
3. Create plinth to raise facilities to the Grandstand height, creating separation of use



4. Create entrance ramp and seating surrounding the plinth, allowing access while creating a statement



5. Apply roof to massing, creating coverage between and around the building



6. Connect and adjust roof to create a cohesive structure that adapts to the needs of the programme

Costs

The estimated overall cost of the building is £1,297,500. which translates to £10,895.12 per sqm. The initial funding of the project is £1,250,000 donated by the Lottery Community fund and Sports Trust foundation.

Here we can see the average Costs £ / m2, 2019 estimates for the primary programmes of the building:

- Community center	1,875 - 2,350
-Nursery	1,725 - 2,175
-Youth club	2,150 - 2,700



Our Proposal

Ground Floor Plan As Proposed

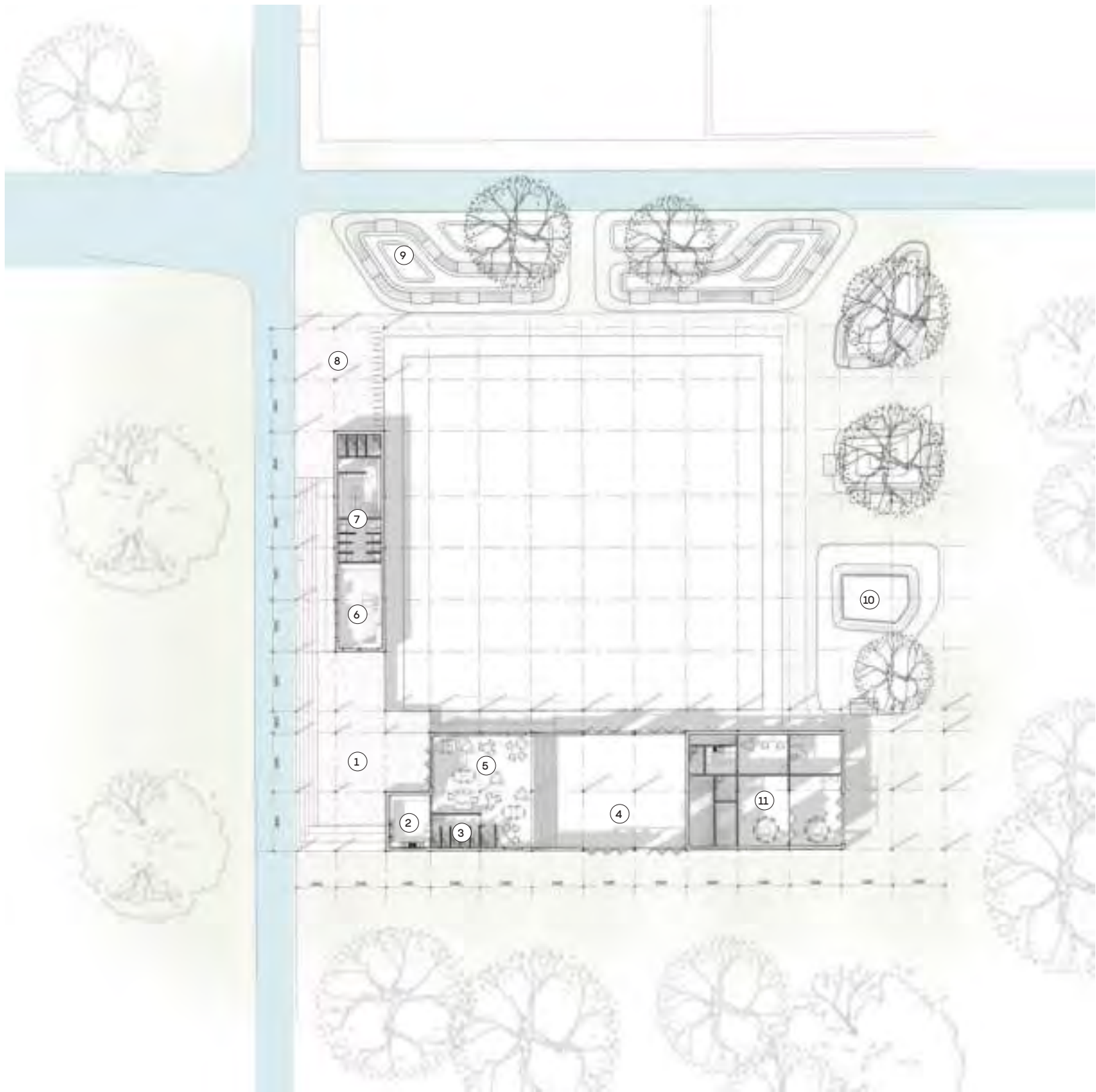
1. Initial programmatic placing and orientating.



2. Group discussions from job titled research and development



3. Architects diagrammatic iteration after group's whole group input



- ① 'Grand Stand'
- ② Kitchen
- ③ WC
- ④ Multi-functional space
- ⑤ Multi-functional space/cafe
- ⑥ Bike Repair workshop
- ⑦ Changing rooms
- ⑧ Next Bike park
- ⑨ Accessible planters/seating area
- ⑩ Nursery outside space
- ⑪ Nursery

Ground Floor Plan as Proposed
1:100

Our Project

Proposed Week

A timetable of a week within our proposal


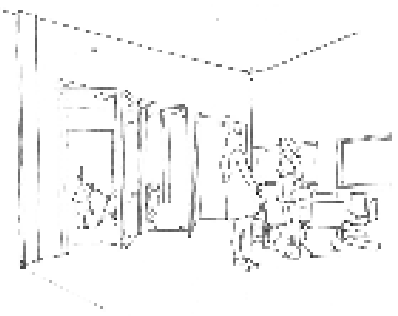

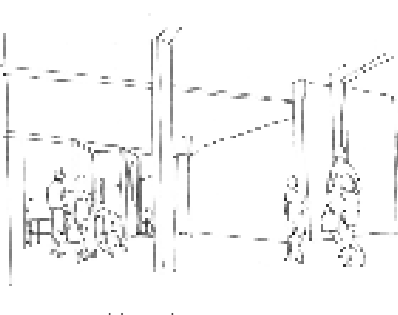



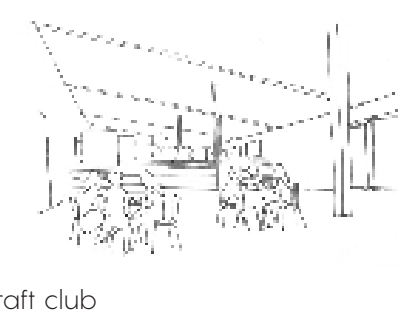
We have mapped how we envision the spaces being occupied over a potential week to include the things we can see happening within the proposal. Also, a 'typical

Tuesday' is communicated via plan form to show how we intend the building to be used throughout the different times of the day.

Morning	Nursery Breakfast Club 8-9:15	Nursery Breakfast Club 8-9:15	Nursery Breakfast Club 8-9:15	Nursery Breakfast Club 8-9:15	Nursery Breakfast Club 8-9:15	Sports sessions on Trola field with spectators seating and viewing from communal seating and cafe 9-12	Sports sessions on Trola field with spectators seating and viewing from communal seating and cafe 9-12
	Cooking workshop for parents provided by volunteers after nursery drop off 9-12	Onsite coffee morning for visitors and bowls teams 9-10		Cooking workshop for parents provided by volunteers after nursery drop off 9-12	Outside learning morning 10-12		
		Half hire from local school 10-12	Book Club 10-11				
			£				
Midday	Communal lunch 12-1	Communal lunch 12-1	1 on 1 support and advice for students 12-1	Communal lunch 12-1	Communal lunch 12-1	Gardening Club 12-2	Birthday Party Hire 12-5
		1 on 1 support for families 1-2		Half hire from local school 1-5	1 on 1 support for families 1-2		
							£
Afternoon	open office spaces 2-3	Book Club 2-3	open office spaces 2-3		open office spaces 2-3	work organised by volunteers 2-4	
			£				
	After school club 3-5:30	After school club 3-5:30	After school club 3-5:30	After school club 3-5:30	After school club 3-5:30		
	CV workshop for students 4-5					Passionation evening for sports in multifunctional hall 4-5	
Evening	1 on 1 support group 5-6		CV workshop for students 5-6	Physiotherapy and Rehabilitation 5-6	CV workshop for students 5-6		Talk from C&ER Heritage Centre 5-6
							£
	Talk from Quilly Forge and local Pantry 6-7	Craft club 6-7	Youth club of ages 6-8	Evening cooking workshop provided by volunteers 6-7	Family support and advice group 6-8		Physiotherapy and Rehabilitation 6-7
	£	£	£	£			£
							£

Costs	
Book club	
Fee £5 per session, Profit £520 annually	
Crafts club	
Fee £10 per session, Profit £520 annually	
Physiotherapy Rehabilitation	
Fee £20 per session, Profit £2,080 annually	
Cafeteria	
Workforce : £38,000 annually (2 people)	
Suplies : £3,000 monthly / £36,000 annually	
Profit : £500 / monthly on week days, £6,000 monthly on weekends	
Multifunctional Space Rent	
Local rate £250 / per day, Profit £9,000 annually	
Premium rate £500 / per day, Profit £18,0000 annually	

A Typical Tuesday

Morning		
		Nursery breakfast club
		
		Communal lunch
Afternoon		
		After school club
		
		Craft club

Total Potential Profits	
£95,120 (with only local rate in renting and for only 1 person per club)	
£104,120 (with only premium rate in renting and for only 1 person per club)	

Our Proposal

The Uses of the Grandstand

The Grandstand being used in multiple ways

With the 'Grandstand' being a significant aspect of our design, we wanted to communicate its inhabitation in a variety of different ways. The idea of the grandstand is for

this to not only symbolise a physical space to gather and connect, but to a symbolise a primarily social space for the community to take ownership of and make their own.

School use of multifunction room



Weekend Club Rugby Game



Presentation Evening



Costs

Potential Revenue
Up to 50 people
Least £1,200
Maximum £2,500

Potential Revenue
Up to 150 people
Least £3,750
Maximum £7,500

Potential Revenue
Up to 15 people
Least £ 225
Maximum £450

Our Proposal

Internal Spaces

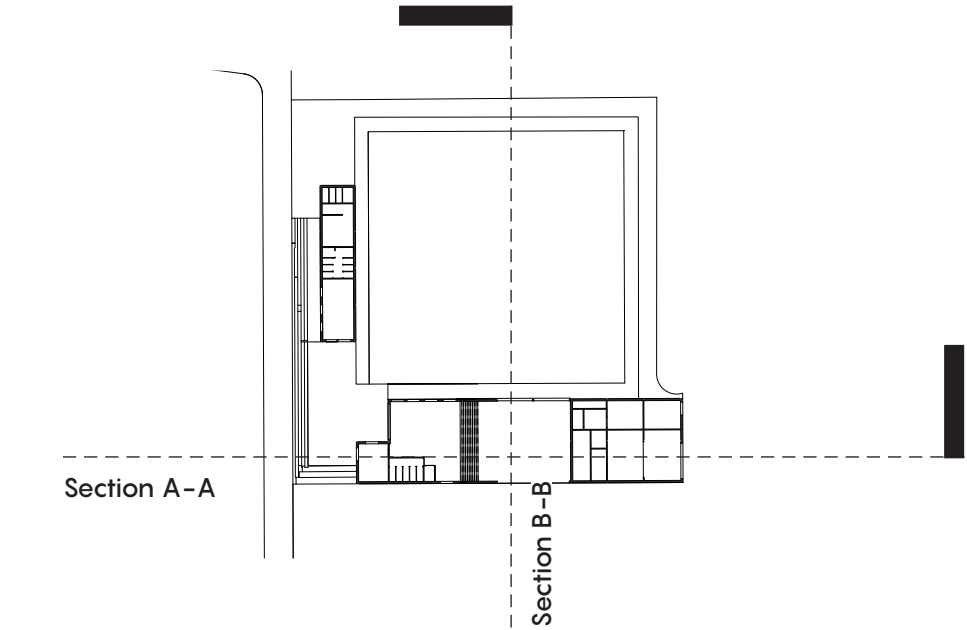
Perspective Sections and Key internal aspects of design.



Section A-A



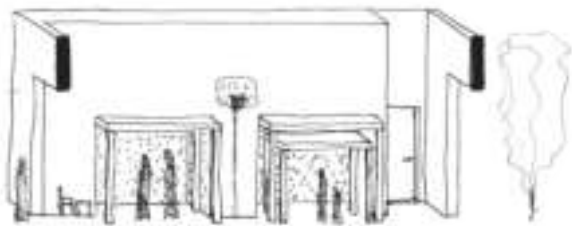
Section B-B



Creation of flexible hall and movable coverings



1. Using bifolding doors to open up the main hall to the artificial grass bowling green and landscaping on the exterior.



2. Utilising a large empty wall that can store the movable coverings and other furniture for the hall (i.e tables, chairs, etc).



3. Each movable covering could be enclosed using curtains or shutters to create private/ quiet spaces.

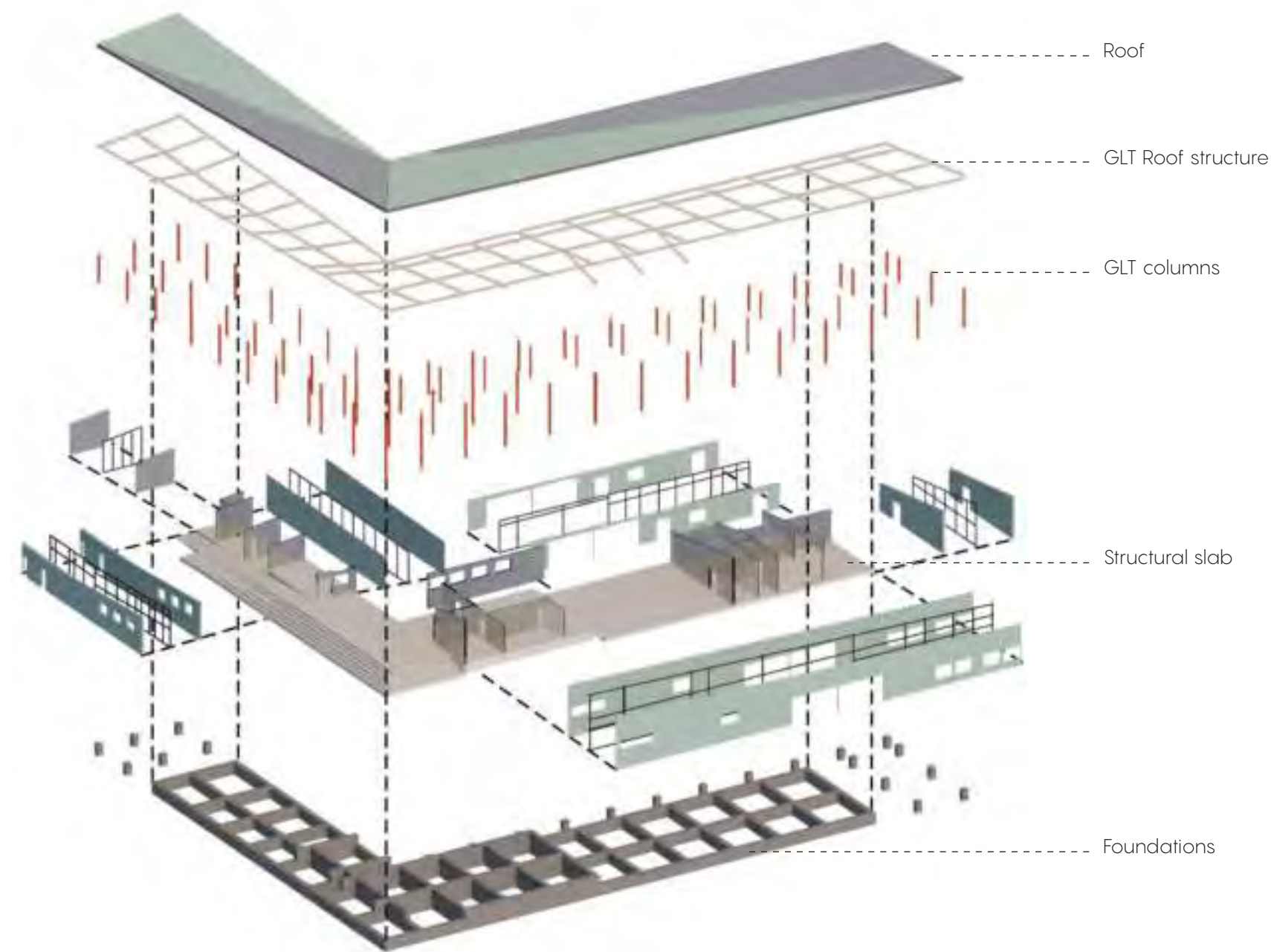
Our Proposal

Structural/Material Typologies

Using Structural typologies as an informative for materials and spaces.

Throughout the design process and at each key stage, the relationship between materials and structure was considered in great depth. Knowing this was a vital aspect of the design, we wanted to build the structural typologies

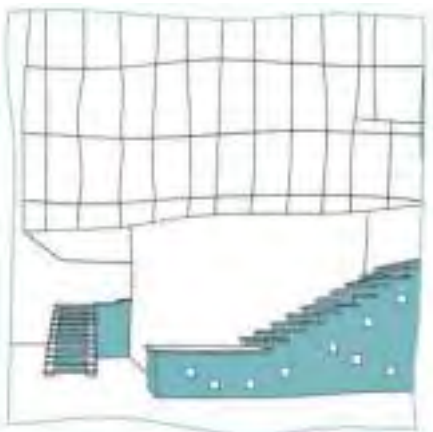
into the design. We used these newly discovered typologies to inform materials, cost and structure, but also incorporated these typologies into spatial arrangements.



Material Aspirations



Micasa Vol.C – StudioMK27 – Sao Paulo – Brazil
Exposed structure creating atmosphere and tectonic understanding throughout the building.



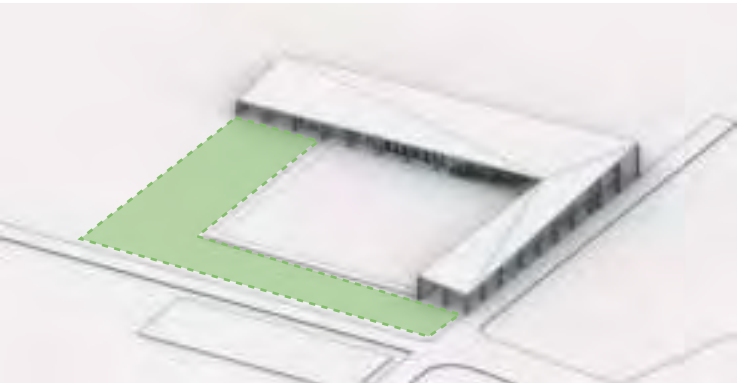
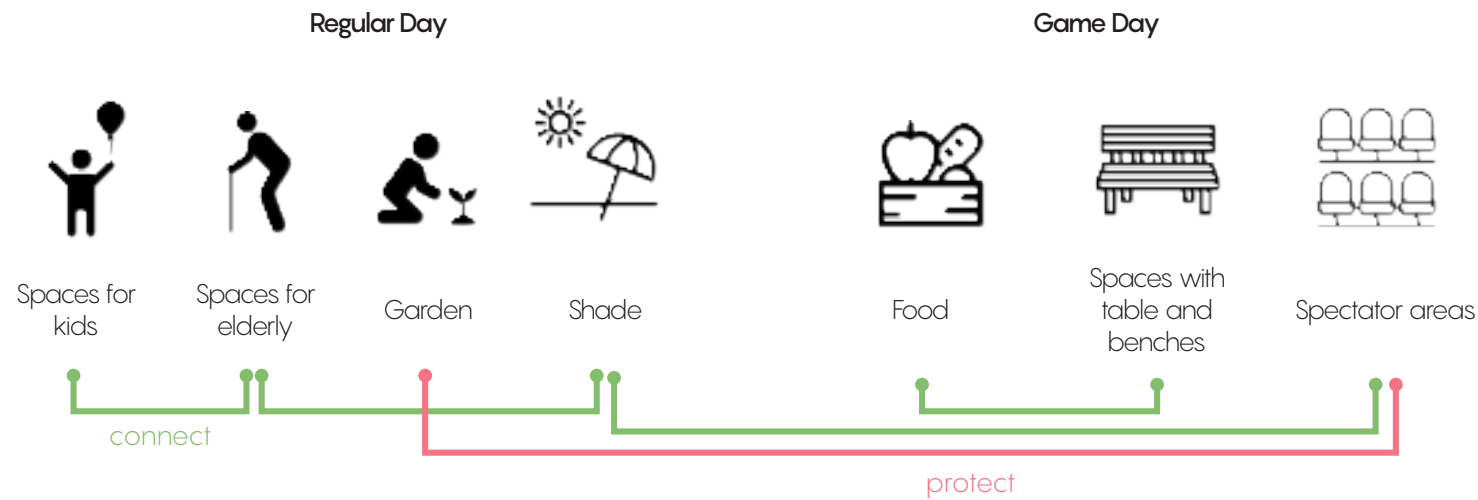
Nest We Grow – Kengo Kuma & associates – Takinoue – Japan
Use of clay and cement to create natural material strong plinth at the base of a lightweight structure.



Grace Farms – Sanaa – New Canaan – United States
Undulating connected roof that create coherence between the usages and structures underneath

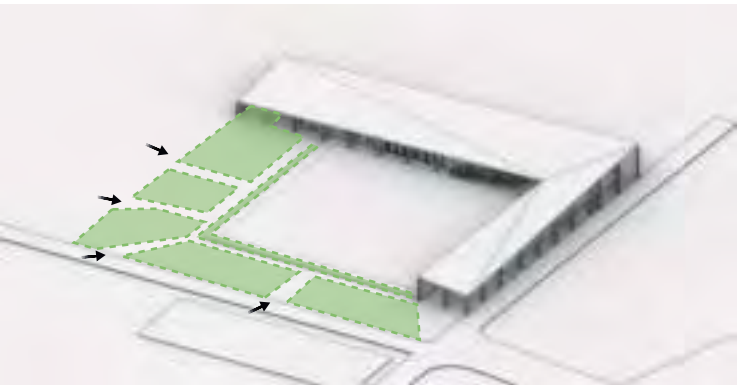
Landscape

Proposed Space Strategy



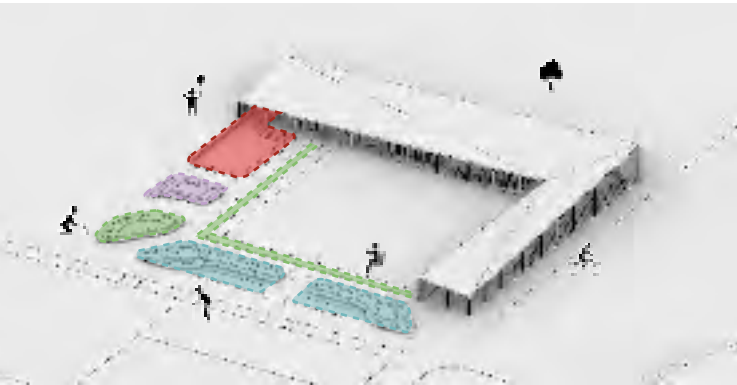
Areas for landscaping

The main area for landscaping frames the site close to the playground and the football field. The second area is the one closer to the 'grand stand' itself that will be merging the site with the shaded area with trees.



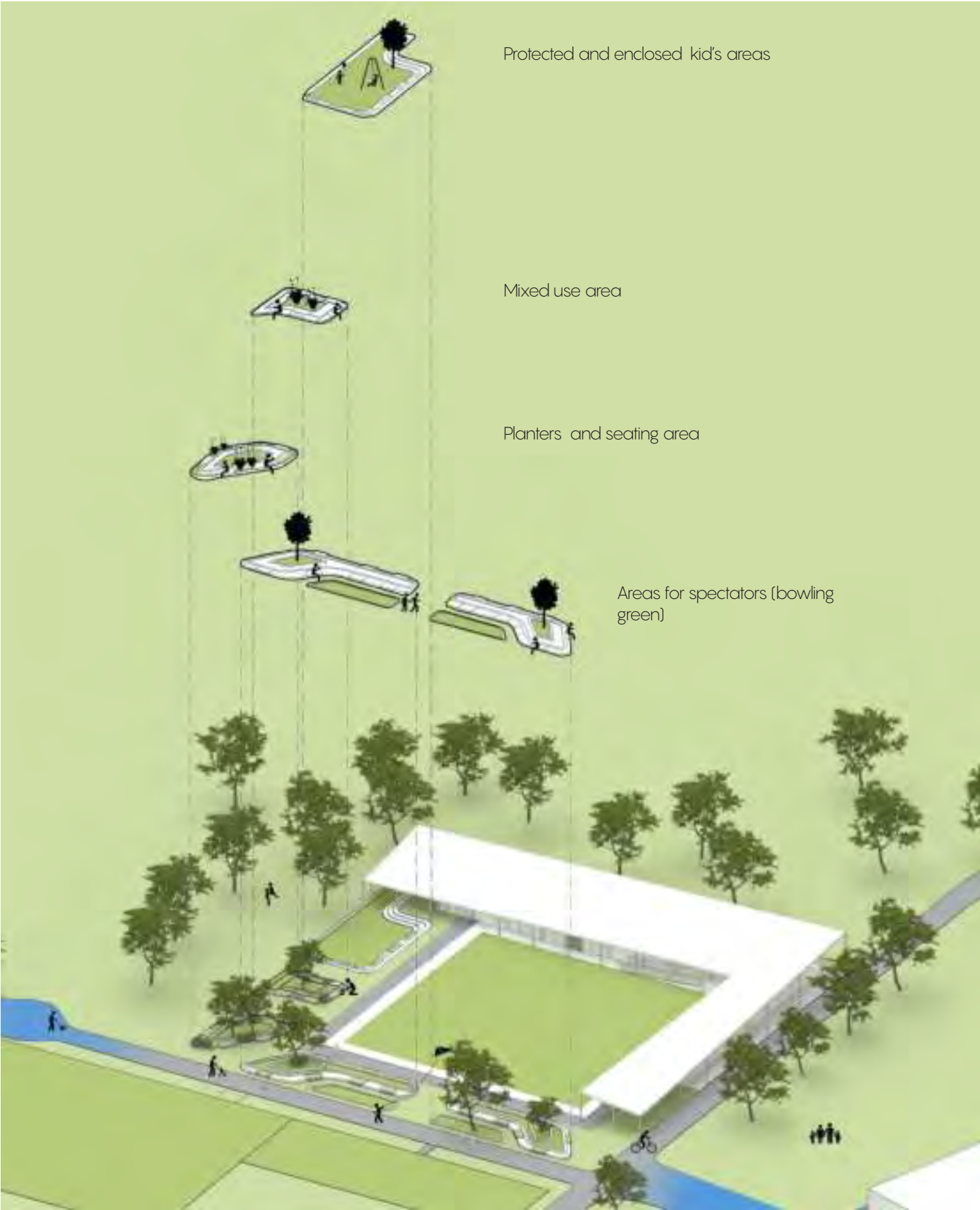
Routes identification

The landscape in our proposal derived from focusing on accessibility and a mixed use design, which is why identifying the main paths that people will take to access the proposal was one of the crucial steps.



Allocation of activities

Our proposal is a mixed use design that connects strongly to the use of site and the areas around it.



Landscape

Proposed landscaping Strategy



Seating and spectating area



Planters



Kids area



Precedents



Technical Considerations

Environmental Considerations

Our Response to the Environmental considerations for the future of the building.

We are proposing the use of several systems throughout the building to help reduce the carbon footprint of the building. One of our main focuses regarding environmental considerations is the harvesting of the rainwater. We have investigated the rainfall within the area and deemed

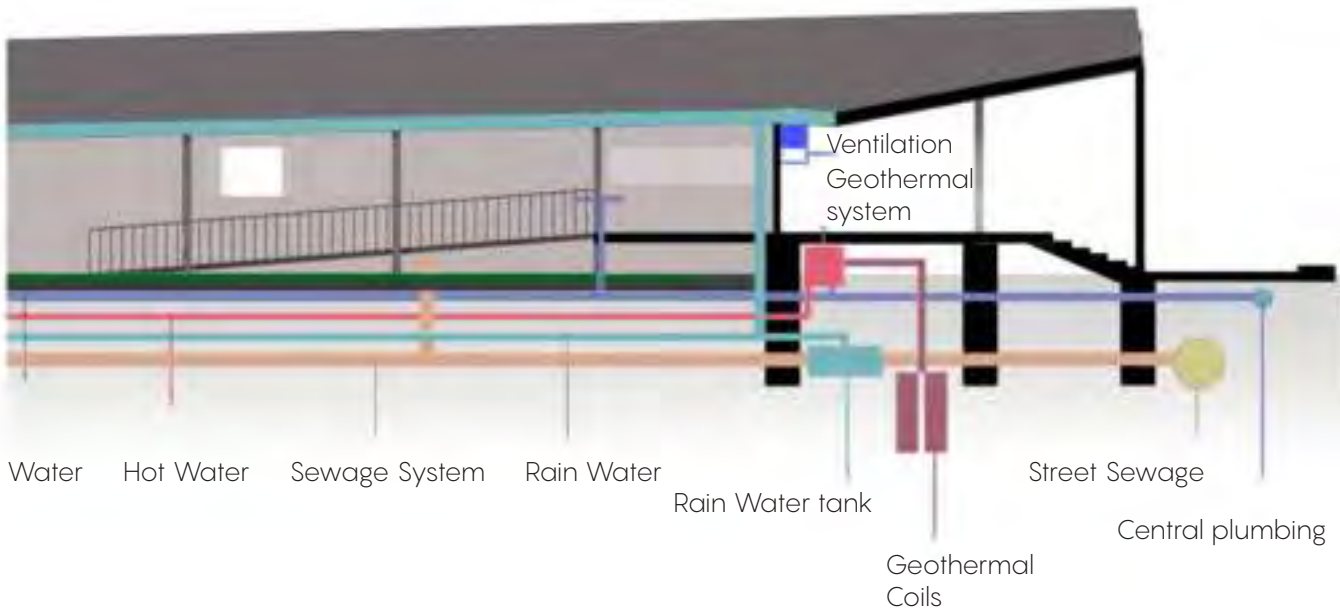
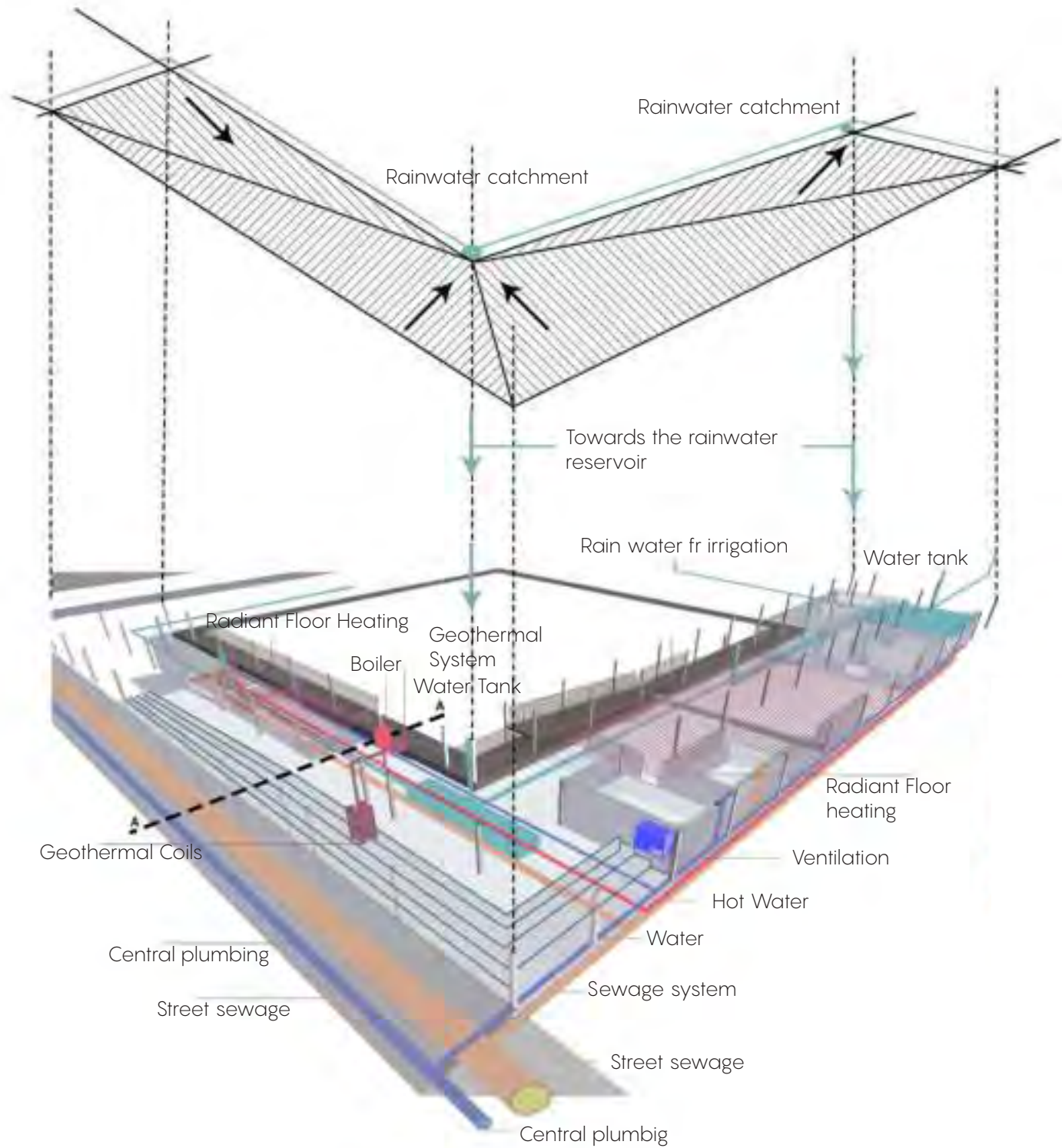
it a potentially useful asset to the project. Programmes proposed within the project are those of high water consumption, therefore being able to offset this is a valuable environmental consideration. We are utilising the design of the proposals large roof to make this possible.

Rain Water Harvesting

squearmeters of the roof		
Squearmeters of the roof	$S (m^2)$	1273
Percentage of gathered rainwater out of all	$\psi (\%)$	0.9
Rainfall per square meter for the area	$q_5 (l/s m^2)$	0.0355
The volume of water gained for 1 second	$V = S * \psi * q_5 =$	40.7
The volume of water gained for 1 houer	$V * 3.6 =$	146.4
The volume of water gained for 24 houers	$V * 3.6 =$	3514.1
The volume of water gained for 10 days		35141

Table for rainwater water consumption per day		
1.Greenery	liters/m ²	m ²
a) Grass	3	1200
b) Shrubs	10	100
c)Trees	15	80
Total consumption for watering:		5800
2.Cleaning of public spaces	liters/m ²	m ²
Road	0.5	450
Total consumption for Cleaning:		225
3.Toilets	liters/person	persons
a)Main building	3	50
b)kindergarten	5	20
Total consumption for Toilets:		250
Total consumption of rainwater per day:		6275
Water needed for 5 days:		31375

For 5 days usage of water is 31m3 which could be provided by two rainwater tanks of 16,m3 (filled in for 10 days).



Costing

Our Proposed Cost Strategy

Funding Strategy

The initial budget is exceeded by £47,500, leaving us with a need for extra funding. Some potential stakeholders are the Trusthouse Charitable Foundation and the CharitiesAid Foundation.



£60,000.

The Trusthouse Charitable Foundation is offering Community Centres in deprived urban communities and Village Halls in remote and economically deprived rural areas the opportunity to apply for capital grants of £60,000.



£5,000

The Charities Aid Foundation has announced that the Tourle Foundation Fund will re-open for applications on the 1st October 2019. The CAF Tourle Foundation Fund seeks to award grants of up to £5,000 to local charitable organisations delivering services for local people within the UK.



This extra £65,000 can be used to cover the extra expenses and the rest can be saved for future maintenance costs or for risks that could occur during construction.

Cost Breakdown

Elements	£
Demolition	10,000
Substructure	150,000
Superstructure	400,000
Internal Finishes	105,000
Fittings	40,000
Services	125,000
External Works	280,000
Preliminaries	120,000
Contingencies	67,500
Total costs	1,297,500

The main expenses of the project stem from the roof as it covers the most of the construction and connects between and around the building. This is highlighted on the substructure, superstructure and external works estimates which are all quite high. We're aiming to keep the project on budget by using economically sustainable materials such as cross laminated timber, but simultaneously make it durable with a high life span and minimal maintenance costs through the use of concrete and steel frame construction

Total Potential Profits

£95,120 (with only local rate in renting and for only 1 person per club)

£104,120 (with only premium rate in renting and for only 1 person per club)

Total average profits: £99,620

Annual Running Costs

Cleaning £3,450 annually

Utilities £4,000 annually

Maintenance £6,000 annually

Decoration £1,000 annually

Total costs: £14,450

Total potential profits : £85,120s



Community Centre in Reinoso

Project | Multi-purpose community centre

Architects | Carlos García Fernández and Begoña de Abajo Castrillo

Built surface | 1,500 sqm

Budget | €950,000

Timing | 2014-in progress

Location | Reinoso, Spain



Tŷ Pawb in Wrexham

Project | Arts and Culture community centre

Architects | Featherstone Young

Built surface | 3,705 sqm

Budget | £ 4.3 M

Timing | 2017-2018

Location | Wrexham, UK

The two main design precedents have helped the project form in terms of materiality and strategic development of the spaces.

The community centre in Spain's grid plan is organized by the strategic location of the mentioned boxes, and a courtyard that polarizes the interiors. The courtyard is decentralized to generate different spatial scales on the ground level. The floor is lowered and moved in relation with the glass enclosure. This generates shaded sitting areas outside during summer and an indoor adjacent bench that receives direct sunlight through the windows during winter. Additionally, the ground floor is in continuity with the site level on the south, extending the public space towards the inside and visually connecting the whole building to the street. Also, the extended use of laminated timber reflects our use of the same material though out our design.

The second precedent from the UK introduces the idea of a main communal multi-functional space which different target groups can use during the day for their purpose. The construction of that space and its budget will inform our approach to our own multi-functional space.

These other precepts have also helped the design decisions with more detailed information while restricting the budget to reach our target.

The Grandstand

Our Proposal at a glance

An Illustration of what our project stands

With strengthened connections to Cardiff City Centre, Ely and its new glowing identity now have a platform for the community to gather, communicate and celebrate; a

place where everyone is welcome. Most importantly, the Grandstand place for the local community to call theirs.

