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Innovative design of birdwatching shelter and bird sanctuary

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Abstract

Birdwatching nowadays is an increasing popularity hobby which has many effects and impacts on environment and economy and culture of the area. Among those, some are good and some are not good for the nature. Back in history we can see a long trace of this activity among people, specially who are above the average income rate.

Birdwatching is divided to different types, in all of them the birds are the main element in the activity. Some people just feed birds in their back yard while others travel thousands of kilometers to watch a new spice or just hear its sound. While origin of the activity is mainly from North America and Britain and Scotland, nowadays we see in all parts of world a kind of practice to promote or encourage the activity.

Bank of river Dee, Chester meadow is very rich in biodiversity and is remained uncovered in terms of observing and interaction with animals and there hasn’t still made any landscape or architecture element. Site visitors are consist of people who come to see river birds, ground nesting birds, small mammals and also aquatic flora and fauna or just come to site for a refreshment and relaxation in the breathtaking beautiful nature. The area is empty of any kind of structure or roads and people walk on natural ground to reach different points of the area.

As in some seasons there will be risk of flood and the ground is not always dry, it is one of the characteristics of the area which give a special challenge to it and has its own advantage and disadvantage for people coming to area and we have to consider It in phase of design and concept.

As architects and landscape designers, we are encouraged to design while minimizing the natural effects. Considering sustainable development goals should always be in our criteria and points of attention, this project is not an exception and I tried to minimize effect on nature not only in terms of design, but also using materials and structures. Designing for both animals and humans and following standards for both of them, make the project a challenge and beside the special character of the site (wetlands), will be lead to special solution which make it unique that you can not put it on any other site.

Keywords: Birdwatching Shelter, Bird sanctuary, Sustainable Design, Organic architecture

1. Introduction

1.1. Birdwatching Definition

Birdwatching or birding, is the observing of birds either as a recreational activity or as a form of citizen science. Birdwatchers observe by using their naked eyes, by using a visual enhancement device like binoculars or a telescope, by listening for bird sounds, or by watching public webcams (Odie, Bill, 1980). Most birdwatchers pursue this activity for recreational or social reasons, unlike ornithologists, who engage in the study of birds using formal scientific methods.

1.2. Terminology

The first recorded use of the term birdwatcher was in 1901 by Edmund Selous (Clifford, Garth C, 2021). bird was introduced as a verb in 1918. The term birding was also used for the practice of fowling or hunting with firearms as in Shakespeare's The Merry Wives of Windsor (1602): "She laments sir... her husband goes this morning a-birding." The terms birding and birdwatching are today used by some interchangeably, although some participants prefer birding, partly because it includes the auditory aspects of enjoying birds (Moss, 2004).

Birder*:* The acceptable term used to describe the person who seriously pursues the hobby of birding. May be professional or amateur.

Birding*:* A hobby in which individuals enjoy the challenge of bird study, listing, or other general activities involving bird life.

Bird-watcher*:* A rather ambiguous term used to describe the person who watches birds for any reason at all, and should not be used to refer to the serious birder. (www.merriam-webster.com)

Twitching is a British term used to mean "the pursuit of a previously located rare bird." In North America, it is more often called chasing. The term twitcher, sometimes misapplied as a synonym for birder, is reserved for those who travel long distances to see a rare bird that would then be ticked, or counted on a list. The term originated in the 1950s, when it was used to describe the nervous behaviour of Howard Medhurst, a British birdwatcher Earlier terms for those who chased rarities were pot-hunter, tally-hunter, or tick-hunter (Poole, Steven, 2019). The main goal of twitching is often to accumulate species on one's lists. Some birders engage in competition to accumulate the longest species list. The act of the pursuit itself is referred to as a twitch or a chase. A rare bird that stays long enough for people to see it is twitchable or chaseable (Odie, Bill, 1980).

Twitching is highly developed in the United Kingdom, the Netherlands, Denmark, Ireland, Finland and Sweden. The size of these countries makes it possible to travel throughout them quickly and with relative ease. The most popular twitches in the UK have drawn large crowds; for example, approximately 2,500 people travelled to Kent, to view a golden-winged warbler (Vermivora chrysoptera), which is native to North America (Dudley, Steve; Benton, Tim; Fraser, Peter; Ryan, John, 2010). Twitchers have developed their own vocabulary. For example, a twitcher who fails to see a rare bird has dipped out; if other twitchers do see the bird, he may feel gripped off. Suppression is the act of concealing news of a rare bird from other twitchers (Odie, Bill, 1980).

Many birders maintain a life list, that is, a list of all of the species they have seen in their life, usually with details about the sighting such as date and location. The American Birding Association has specific rules about how a bird species may be documented and recorded in such a list if it is submitted to the ABA; however, the criteria for the personal recording of these lists are very subjective. Some birders "count" species they have identified audibly, while others only record species that they have identified visually. Some also maintain a country list, state list, county list, yard list, year list, or any combination of these.

1.3. History of birdwatching

The early interest in observing birds for their aesthetic rather than utilitarian (mainly food) value is traced to the late 18th century in the works of Gilbert White, Thomas Bewick, George Montagu and John Clare. The study of birds, and of natural history in general, became increasingly prevalent in Britain during the Victorian Era, often associated with collection, eggs and later skins being the artifacts of interest. Wealthy collectors made use of their contacts in the colonies to obtain specimens from around the world. It was only in the late 19th century that the call for bird protection led to the rising popularity of observations of living birds. The Audubon Society was started to protect birds from the growing trade in feathers in the United States while the Royal Society for the Protection of Birds began in Britain (Moss, 2004).

The phrase "bird watching" appeared for the first time as the title of the book Bird Watching by Edmund Selous in 1901 In North America, the identification of birds, once thought possible only by shooting, was made possible by the emergence of optics and field identification guides. The earliest field guide in the US was Birds through an Opera Glass (1889) by Florence Bailey (Barrow, Mark,1998).

Birding in North America was focused in the early and mid-20th century in the eastern seaboard region, and was influenced by the works of Ludlow Griscom and later Roger Tory Peterson. Bird Neighbors (1897) by Neltje Blanchan, an early birding book, sold over 250,000 copies. It was illustrated with color photographs of stuffed birds (Shearin, Gloria. 2008).

The organization and networking of those interested in birds began through organizations like the Audubon Society, which was against the killing of birds, and the American Ornithologists' Union (AOU). The rising popularity of the car increased the

mobility of birdwatchers and this made new locations accessible. Networks of birdwatchers in the UK began to form in the late 1930s under the British Trust for Ornithology (BTO). The BTO saw the potential to produce scientific results through the networks, unlike the Royal Society for the Protection of Birds (RSPB) which like the Audubon Society originated from the bird protection movement. Like the AOU in North America, the BOU had a focus mainly on collection-based taxonomy. The BOU changed focus to ecology and behaviour only in the 1940s. The BTO movement towards 'organized birdwatching' was opposed by the RSPB, which claimed that the 'scientification' of the pastime was 'undesirable'. This stand was to change only in 1936 when the RSPB was taken over by Tom Harrisson and others. Harrisson was instrumental in the organization of pioneering surveys of the great crested grebe. (Johnson, Kristin, 2004)

Figure 1: Birdwatching photographers, New South Wales, June 1921, Source: www.wikipedia.org

Increased mobility of birdwatchers ensured that books like *Where to Watch Birds* by John Gooders became best-sellers. By the 1960s air travel became feasible and long-distance holiday destinations opened up. By 1965, Britain's first birding tour company, Ornitholidays had been started by Lawrence Holloway. Travelling far away also led to problems in name usage: British birds such as "wheatear", "heron" and "swallow" needed adjectives to differentiate them in places where there were several related species. The falling cost of air travel made flying to remote birding destinations a possibility for a large number of people towards the 1980s. The need for global guides to birds increased, and one of the biggest resulting projects was the Handbook of the Birds of the World, begun in the 1990s by Josep del Hoyo, Jordi Sargatal, David A. Christie, and ornithologist Andy Elliott (Moss, 2004).

Initially, birdwatching was largely restricted to developed countries such as the United Kingdom and the United States of America. Since the second half of the 20th century an increasing number of people in developing countries have engaged in this activity, such as in the Degua Tembien district of Ethiopia. Transnational birding has played an important role in this, as birders in developing countries usually take up the pastime under the influence of foreign cultures with a history of birding. A majority of transnational birders are middle-aged, male, affluent, and belong to the Anglophone countries or Scandinavia (Connell, John, 2009).

1.4. Economic and environmental impact of birdwatching

In the 20th century, most of the birding activity in North America was done on the east coast. The publication of Roger Tory Peterson's field guide in 1934 led to the initial increase in birding. Binoculars, an essential piece of birding equipment, became more easily available after World War II, making the hobby more accessible. The practice of travelling long distances to see rare bird species was aided by the rising popularity of cars. About 4% of North Americans were interested in birding in the 1970s and in the mid-1980s at least 11% were found to watch birds at least 20 days of the year. The number of birders was estimated at 61 million in the late 1980s. The income level of birders has been found to be well above average (Moss,2004).

The Sibley Guide to Birds, published in 2000, had sold 500,000 copies by 2002. It was found that the number of birdwatchers rose, but there appeared to be a drop in birdwatching in the backyard. According to a U.S. Fish and Wildlife Service study, birders contributed $36 billion to the US economy in 2006, and 20% of all Americans are identified as birdwatchers. According to the U.S. Fish and Wildlife Service in 2016, over 45 million Americans consider themselves birders.

North American birders were estimated to have spent as much as US$32 billion in 2001. The spending is on the rise around the world. Kuşcenneti National Park (KNP) at Lake Manyas, a Ramsar site in Turkey, was estimated to attract birders who spent as much as US$103,320,074 annually. Guided bird tours have become a major business, with at least 127 companies offering tours worldwide. An average trip to a less-developed country costs $4000 per person and includes about 12 participants for each of 150 trips a year. It has been suggested that this economic potential needs to be tapped for conservation (Sekercioglu, Cagan H. 2003).

Birdwatching tourism is considered a niche market of nature-based tourism. Birdwatching and other niche tourism markets are good for market diversification and mitigating the impacts of seasonality in a tourism market. It is estimated that birdwatching ecotourism contributes $41 billion per year to the U.S. economy. The large funds generated by birdwatching ecotourism have been suggested as a replacement for tax revenue generated by bird hunting which has dropped to its lowest levels in decades. Birding ecotourism companies are also making contributions to conservation. Birding Ecotours, which runs both international and domestic trips, donates a minimum of 10% of its net profits to bird conservation and communities it operates in. Another tour operator, Hardy Boat, has donated $200,000 to Project Puffin to conserve puffin populations off the Atlantic Coast.

One of the expectations of ecotourism is that the travels of birders to a place will contribute to the improvement of the local economy, ensuring that the environment is valued and protected. Numerous positive and negative impacts of birding have been identified. Impacts include disturbance to birds, the environment, local cultures and the economy. Methods to reduce negative impact and improve the value to conservation are the subject of research (Sekercioglu, Cagan H. 2003).

2. *Case studies*

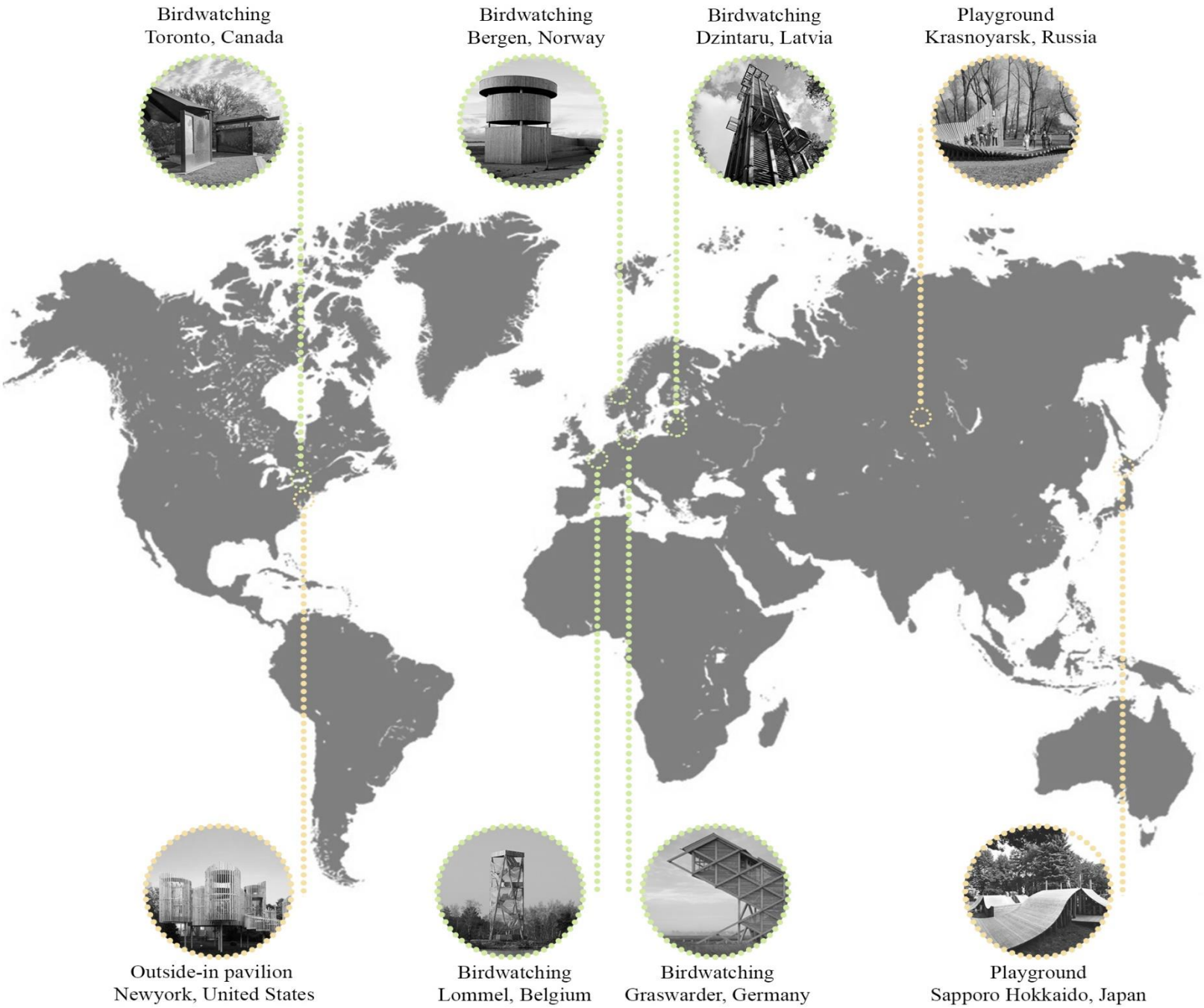


Figure 2: case studies map

Case Studies:

2.1. Functional case studies

2.1.1. Wooden Tower

Bergen, Norway

Herdla Birdwatching Tower is situated at the tip of Askoy , a low-lying island in Hordaland county, off Norway's west coast.

The landscape of open grasslands, shallow sea and freshwater ponds makes the area, called Herdla, an important location for migrating and breeding birds, as well as a popular destination for birdwatchers. The concrete foundations of a structure dating back to the second world war were repurposed as the tower's base, which helped to reduce the overall cost of the project.

This existing structure was adapted to accommodate a pumping station used to control the water level of the surrounding ponds and agricultural land.

Figure 3: Birdwatching Bergen, Norway, View 1, Source: www.dezeen.com

Figure 4: Birdwatching Bergen, Norway, View 2, Source: www.dezeen.com

Figure 5: Birdwatching Bergen, Norway, View 3, Source: www.dezeen.com

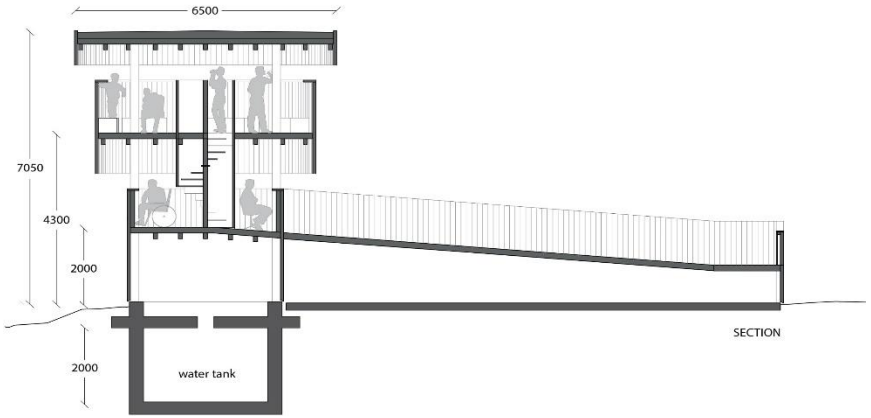


Figure 6: Birdwatching Bergen, Norway, Section, Source: www.dezeen.com

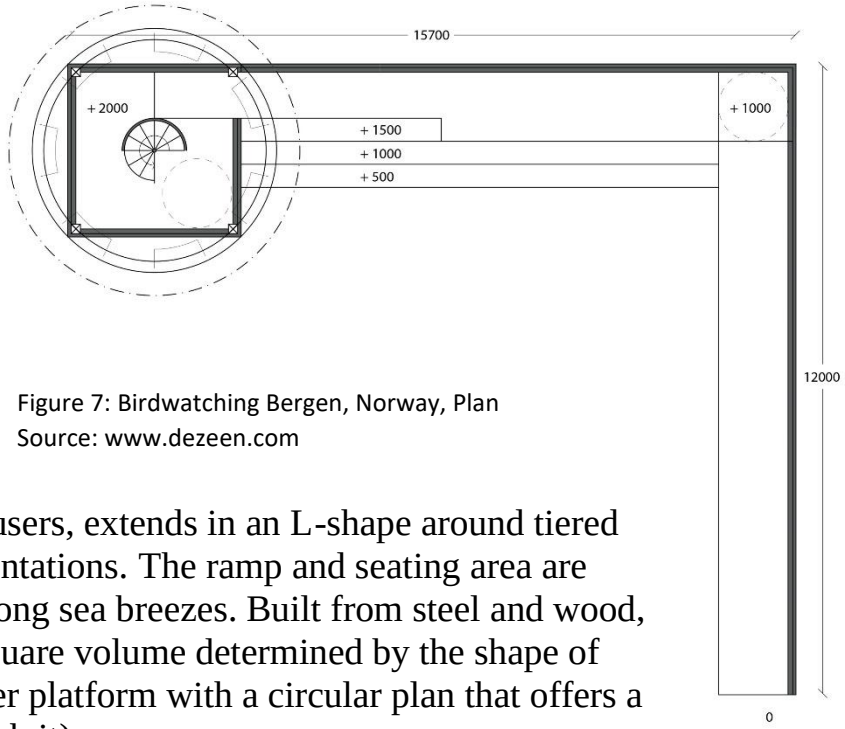


Figure 7: Birdwatching Bergen, Norway, Plan
Source: www.dezeen.com

A gentle ramp, which ensures the tower is accessible to wheelchair users, extends in an L-shape around tiered timber seating that creates a compact amphitheatre for tours or presentations. The ramp and seating area are flanked on the western side by a wall that protects them from the strong sea breezes. Built from steel and wood, the tower rises seven metres above its site. The entrance level is a square volume determined by the shape of the existing foundations. A spiralling metal staircase leads to a higher platform with a circular plan that offers a 360-degree panorama of the surrounding landscape. (www.domusweb.it)

2.1.2. Birdwatching tower

Lommel, Belgium

Figure 8: Birdwatching, Lommel, Belgium, View 1, source: www.designboom.com

Figure 9: Birdwatching, Lommel, Belgium, View 2 www.designboom.com

The 'Lommelse Sahara' is characterized by sand dunes and surrounded by pine trees. It is a very popular nature reserve mainly used for walking and relaxation.

The large steel structure consists of triangles, which is a structural efficient form. This principle also ensures that the shape of the tower changes from different perspectives. From some places the structure appears to be skewed.

The name of the area -Lommelse Sahara- has been inspiration for the façade design of the tower, in which the wavy lines of sand dunes are recognizable. The triangular structure is wrapped with over three and a half kilometers of rope. The rope is quite heavy but also flexible, so it creates playful lines that refer to the dunes. When climbing the stairs the visitor looks between the ropes at the scenery. (www.designboom.com)

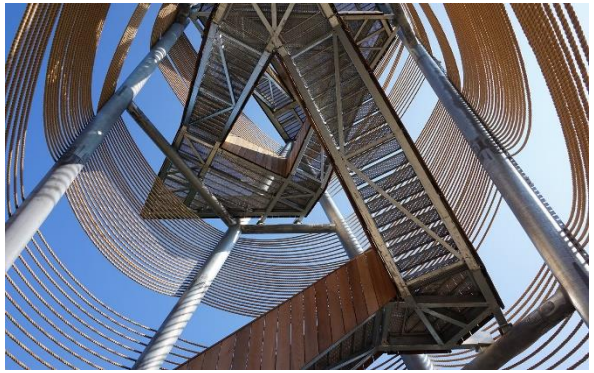


Figure 10: Birdwatching, Lommel, Belgium, View 3

Figure 11: Birdwatching, Lommel, Belgium, View 4

2.1.3. Birdwatching Pavilions

Toronto, Canada

Figure 12: Birdwatching, Toronto, Canada, View 1, Source: www.dezeen.com

Figure 13: Birdwatching, Toronto, Canada, View 2 www.dezeen.com

Plant Architect has used weathering steel to create a series of wing like structures for bird watchers in a Toronto park, which are punctured with both patterns and information about local species. Located in the city's East Point Park Bird Sanctuary, structures were completed by the Toronto-based firm as part of a local initiative to protect and promote bird habitats. The scheme comprises a main viewing space, a bird blind and two entry signposts. These are all made from weathering steel (pre-rusted metal). Each of the structures is made in a different folded form, intended to be "evocative of flight", and has information related to the local environment and wildlife cut into the steel surfaces.

It is made up of two pavilions that mirror each other. Beneath the wing-shaped steel roofs, concrete benches run along the walls to provide visitors with shelter from the elements. (www.dezeen.com)

Figure 14: Birdwatching, Toronto, Canada, View 3

Figure 15: Birdwatching, Toronto, Canada, View 4

2.1.4. Birdwatching tower

Dzintaru Mezapark, Latvia

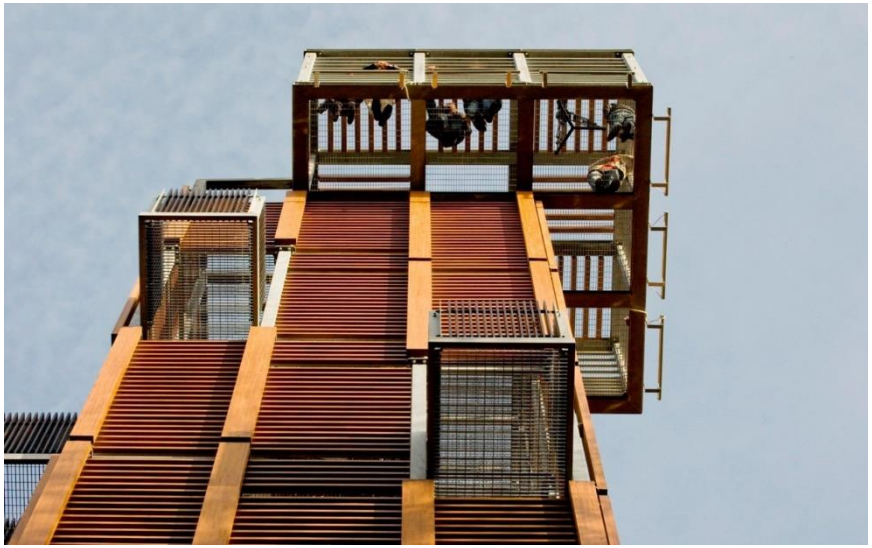


Figure 16: Birdwatching, Dzintaru Mezapark, Latvia, View 1, source: www.archdaily.com

Figure 17: Birdwatching, Dzintaru Mezapark, Latvia, View 2, www.archdaily.com

Following the Jurmala City council's decision, the designed observation tower for the Ragakapa Park in 2004/2005 was moved to a new location -the Dzintaru Mezaparks, and built in the year 2010. Taking in consideration that both locations were different, some changes of color and dimensions were made. The differing environments between the previous hill, covered with common pines, and the forested flat, required changes int he height of the tower, which jumped up to a 33.5 m from ground level. In total, including the cellular operator antenna, the tower has 38m. The rest remained as it was projected: a light, simple parallelepiped tower with a metallic structure covered by glued wooden elements and a comfortable, wide and metallic staircase that whirls around a squared structural core, taking us to an asymmetric platform at the very top. Along the way, 12 balconies allow us rest and enjoy the view feeling the solitary air of the place and view nature through a squirrel's eyes. (www.archdaily.com)

Figure 18: Birdwatching, Dzintaru Mezapark, Latvia, View 3

2.1.5. Birdwatching tower

Graswarder, Germany

Figure 19: Birdwatching, Graswarder, Germany, View 1, source: www.archello.com

Figure 20: Birdwatching, Graswarder, Germany, View 2 www.archello.com

Located on the far-projecting peninsula Graswarder, which belongs to the Baltic seaside resort of Heiligenhafen, is an extensive natural bird reserve that is a favored site not only for ornithologists but for vacationers and other travelers as well. In order to observe birds in this unspoiled environment without disturbing them, the directors of the bird reserve wished to erect a suitable observation tower, which, thanks to its elevated location, would also provide an exceptionally good view of the entire area and would allow visitors to study details with the aid of a telescope.

Figure 21: Birdwatching, Graswarder, Germany, View 3

The resulting wooden construction made of Siberian larch blends in well with the surrounding natural environment. As a sculpture made of beams and ledgers with diagonal bracing, it depicts a stylized figure of a sitting bird. A two-flight staircase provides access to the 15-meter high tower, which, with its glassed-in observation station, is easily able to accommodate large groups of visitors. (www.archello.com)

Figure 22: Birdwatching, Graswarder, Germany, View 4

2.2. Formic case studies

2.2.1. Playground- Climbing wall

Krasnoyarsk, Russian Federation

Figure 23: Playground, Krasnoyarsk, Russian Federation, View 1, source: www.archilovers.com

Figure 24: Playground, Krasnoyarsk, Russian Federation, View 2, source: www.archilovers.com

The platform is designed for children to play on it and climb it. Located in a public park, let users from all types to use and interact with it as a landscape element. Main material is wood while some part of structure made of metal.

Periphery area is covered with sand which decrease risk of heart for children in case of any accident, while providing a diverse environment in a green context. (www.archilovers.com)

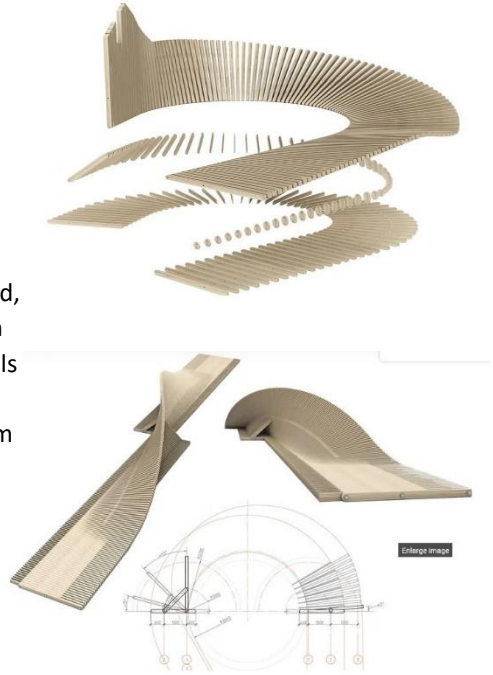


Figure 25: Playground, Krasnoyarsk, Russian Federation, 3D Details source: www.archilovers.com

2.2.2. Outside-in pavilion

Newyork, United States

Figure 26: Outside-in pavilion, NY, United States, View 1, source: www.archdaily.com

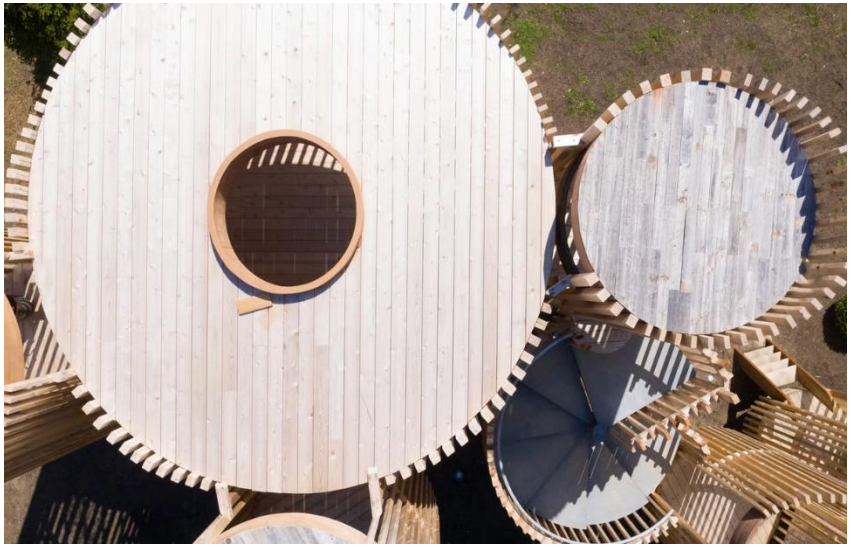


Figure 27: Outside-in pavilion, NY, United States, View 2, source: www.archdaily.com

The pavilion, commissioned by a matriarch to gather her family in nature, is a tribute to the natural world. It encourages one to be in nature as much as possible, whether dining, relaxing, star-gazing, or even sleeping. Located in the East End of Long Island, its form simulates a forest. Ascending cedar wood posts, attached to glue-laminated rings, evoke tree branches of varying heights. The wood material speaks for itself, stripped of adornment. This structure, that activates the front yard of a simple wood-clad cabin, imparts a fluidity between interior and exterior. Rather than insert itself as an object in the landscape, it alters the way one sees that landscape, through its gradient of slits between the wood posts, and its oculi. The structure blurs the boundaries between the man-made and the natural world, forging a stronger connection with nature. (www.archdaily.com)

Figure 28: Outside-in pavilion, NY, United States, View 3

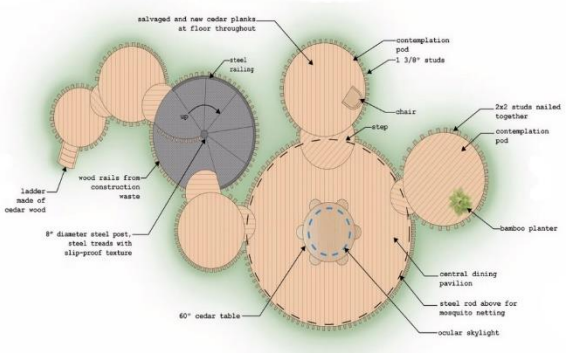


Figure 29: Outside-in pavilion, NY, United States, Plan

2.2.3. Playground, Korogaru park

Sapporo Hokkaido, Japan

Figure 30: Playground, Sapporo Hokkaido, Japan, View 1, source: designboom.com

Figure 31: Playground, Sapporo Hokkaido, Japan, View 2 source: designboom.com

This undulating wooden structure on the Japanese island of Hokkaido has been conceived as a simulated forest. for the design of the temporary project , an immersive play area for children ,architect Jun Igarashi teamed up with YCAM interlab, a group of researchers and developers at Yamaguchi center for arts and media. located among the trees of Sapporo's Odori park, the project uses locally sourced timber to create a series of connected ramps, pathways, and plateaus.

During its stay in the park, workshops were held where children were asked to make suggestions as to which features they would like to see added to the playground. Designed as an alternative to more orthodox configurations, Igarashi's design encourages children to engage more freely and intuitively with the apparatus. (www.designboom.com)

Figure 32: Playground, Sapporo Hokkaido, Japan, View 3

Figure 33: Playground, Sapporo Hokkaido, Japan, View 4

2.3. Conclusion

All the birdwatching case studies (group 1) are located in areas with very highly diverse and variable existence of flora and fauna. Some of them are located near water (sea or river) which enrich the biodiversity of area and are pivotal elements which definitely impact also on design (as we see in samples 1,2 and 5). The ones that are located near water have usually a panoramic view over see or river which let the users to enjoy the fantastic view.

In terms of material, we observe that most of the samples are designed in a complete integrity with peripheral texture which is mostly wood and timber, so that they are in complete harmony with nature and to be sensed as a component of nature, not something external.

In all birdwatching samples, we can see that designers paid special attention to users need and behavior and designed based on that; where to let them enter and walk, where to sit, where to observe nature and maybe where to take rest or drink something in shadow based on different restrictions and necessities of each site.

In the sites that are surrounded with tall trees, we observe that, birdwatching elements are also rose in height (sample 2,4 and 5), in contrary to the ones placed in plains which are usually not very high, but they occupied more area on the terrain (sample 1 and 3).

For second group case studies, I chose them mainly because they are similar in structure to what I want to design and they were close to the shape and form that I want to have in my project although their function is completely different from my project. Maybe it seems that they are irrelevant to my project, but as I have an organic shape which is constructed mainly from wood, it was really helpful for me to see how these kinds of structures are build free from what function they have.

In case number 1 of second part, we have a playground for children which made from wood with all structural consistency that it must have to let children to climb and play on it. On sample number 2, we have a transparent building that consist of different interior functions which is mostly from wood. On third sample again we have playground made completely from wood although the size of this case is smaller compared to previous ones.

As an overall conclusion, in first part I learned how to design a birdwatching element, what are the spaces, necessities and behaviors, while on the second part, I looked how to use and deal with wood, in form of a different and organic shape, as the main material for structure and architecture of the project.

3. Project Site

3.1. Location

Site Location: Chester Meadow, Chester, United Kingdom

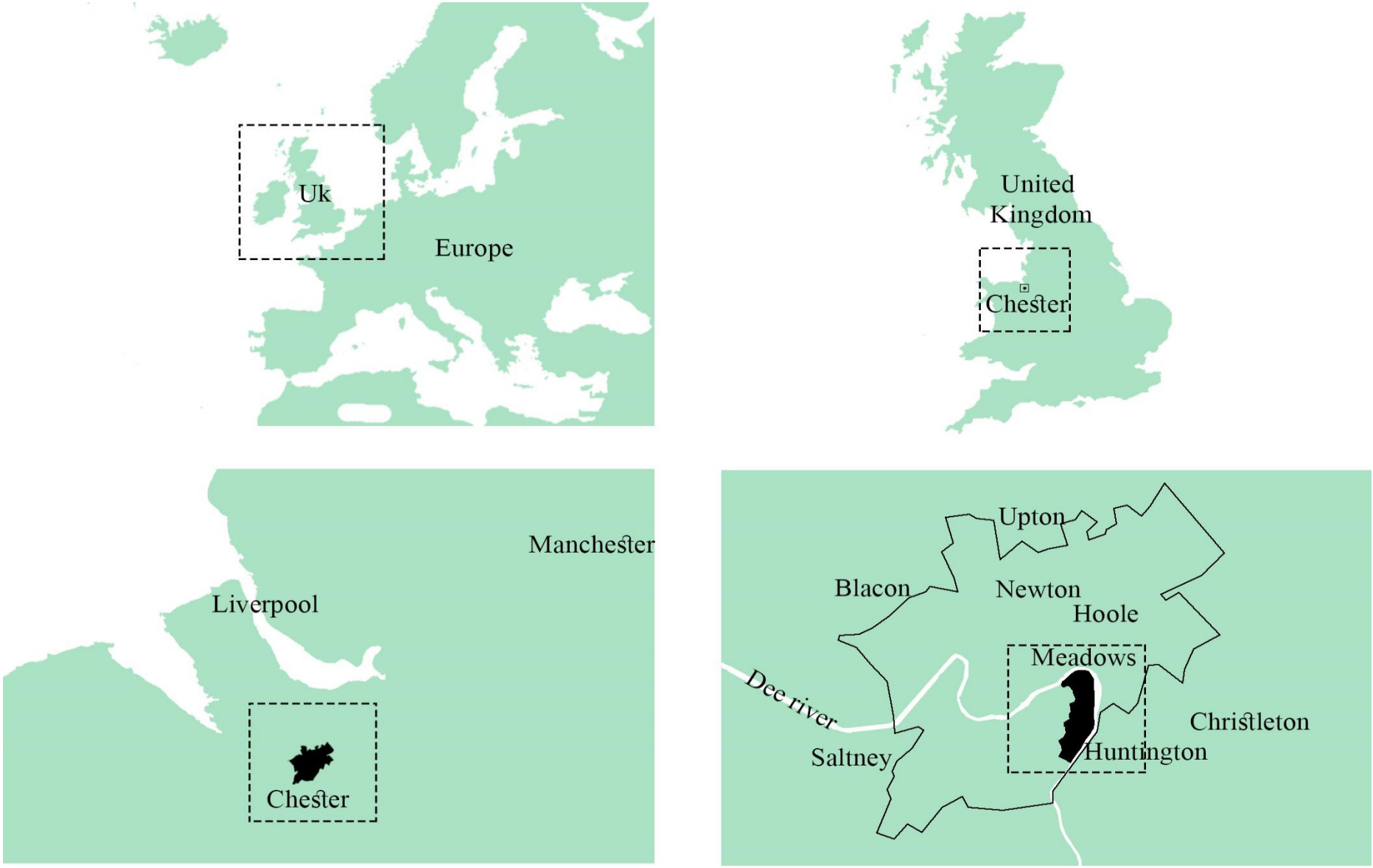


Figure 34: Site Geographic Position

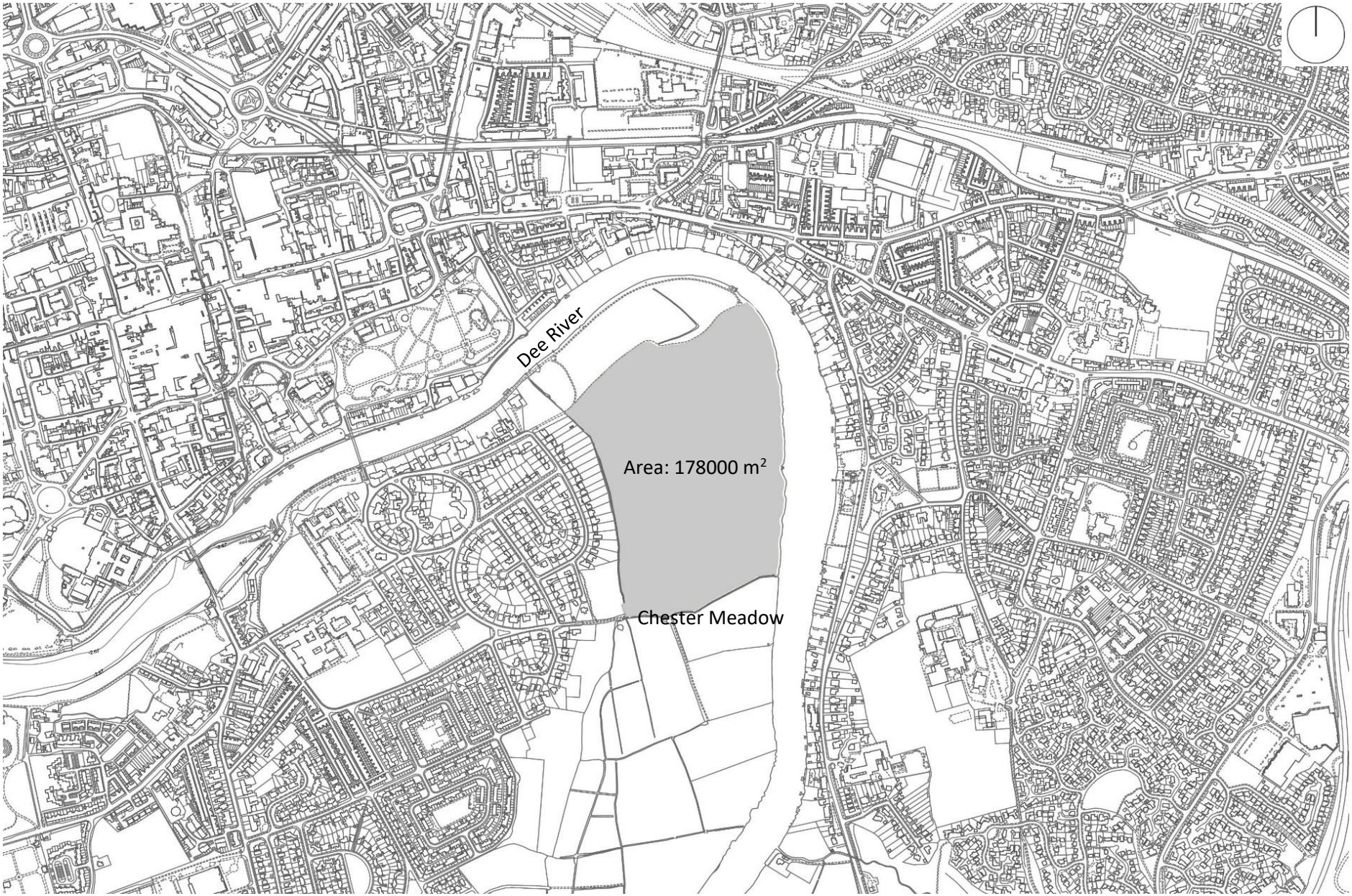


Figure 35: Location Map

0 200 400 600

3.2. Introduction to Project Site

The Meadows are patchwork of grassland and wetlands by the sides of Chester's River Dee in the heart of the city center. Summer grazed by cattle to provide the perfect habitat for a range of flora and fauna, it is a popular area for wildlife lovers. They are regularly enjoyed by walkers, joggers, anglers and bird watchers. There is so much to see: ground nesting birds, river birds, small mammals, aquatic life or just enjoy the breathtaking beauty. Ideally situated by the river, it's a great location in which to relax and watch the boats on sunny days.

Figure 36: Satellite view
Source: Google map

The River Dee is a fundamental and interesting feature of the area, with water sports and other activities happening around the site. There is always risk of floods in the meadows. The Meadows is suitable for users with pushchairs and wheelchairs. It is reasonably level; however due to the purposely unmanaged nature of the site there are no sealed routes across the site.

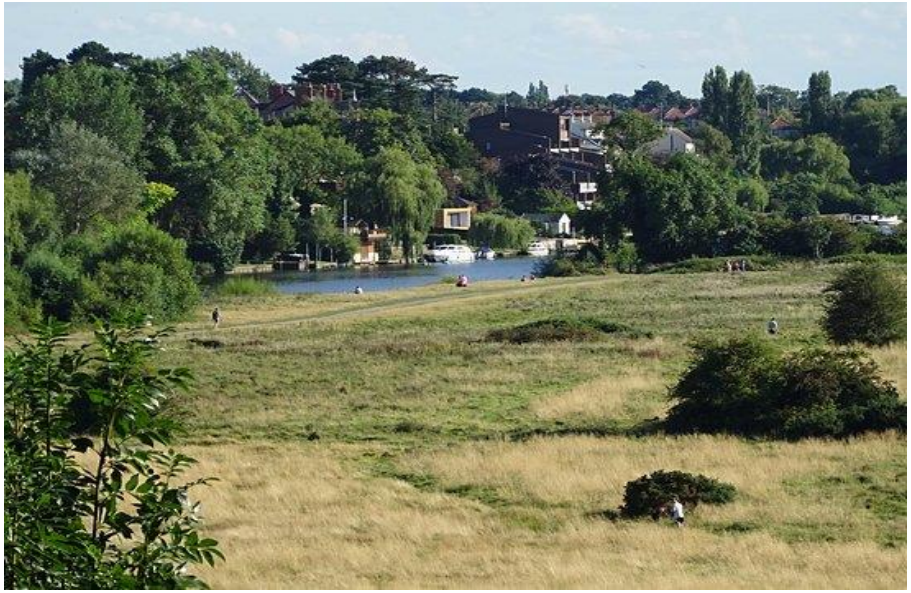


Figure 37: Chester Meadow area photos, source: www.visit-chester.co.uk

Figure 38: Chester Meadow area photos, source: www.psychogeographicreview.com

Figure 39: Chester Meadow area photos, source: www.chesterstandard.co.uk

Figure 40: Chester Meadow area photos, source: www.cheshire-live.co.uk

3.3. Site Biodiversity

Trees

Holm Oak
Quercus ilex

English Elm
Ulmus Minor

Crack Wilow
Salix Fragilis

sessile Oak
Quercus petraea

Horse Chestnut
Aesculus hippocastanum

Sitka spurce
Picea sitchensis

Aspen
Populus tremuloides

Crabb Apple
Malus sylvestris

Field Maple
Acer campestre

Buddleia
Buddleja salvifolia

English Oak
Quercus robur

Common Beech
Fagus sylvatica

Silver Birch
Betula pendula

Bilberry
Genus Vaccinium

Leyland Cypress
Cupressus leylandii

Norway Spurce
Picea abies

Black Thorn
Prunus spinosa

Bird Cherry
Prunus padus

Sycamor
Platanus occidentalis

Wych Elm
Ulmus glabra

Elder
Sambucus

Shrubs

Holy
Ocimum sanctum

Common Box
Buxus sempervirens

Broom
Cytisus multiflorus

Sea Buckthorn
Hippophae rhamnoides

Wild Privet
Ligustrum vulgare

Common Juniper
Juniperus communis

Common Osier
Salix viminalis

Figure 41: Area Vegetation

Birds

Grey Shrike
Lanius excubitor

Common Tern
Sterna hirundo

Northern Gannet
Morus bassanus

Northern diver
Gavia immer

Little Grebe
Tachybaptus ruficollis

Hooded Crow
Corvus cornix

Collared Dove
Streptopelia decaocto

Black Redstart
Phoenicurus ochruros

Wiren
Troglodytidae

wheatear
Oenanthe

GreenFinch
Chloris chloris

Linnet
Linaria cannabina

Greylag Goose
Anser anser

Swallow
Hirundinidae

Figure 42: Area Common Birds

Fishes

Salmon
Salmo salar

Roach
Rutilus rutilus

Dace
Leuciscus leuciscus

Tench
Tinca tinca

Chub
Squalius cephalus

Common Carp
Cyprinus carpio

Figure 43: Area Common Fishes

3.4. Green-Blue Analyse

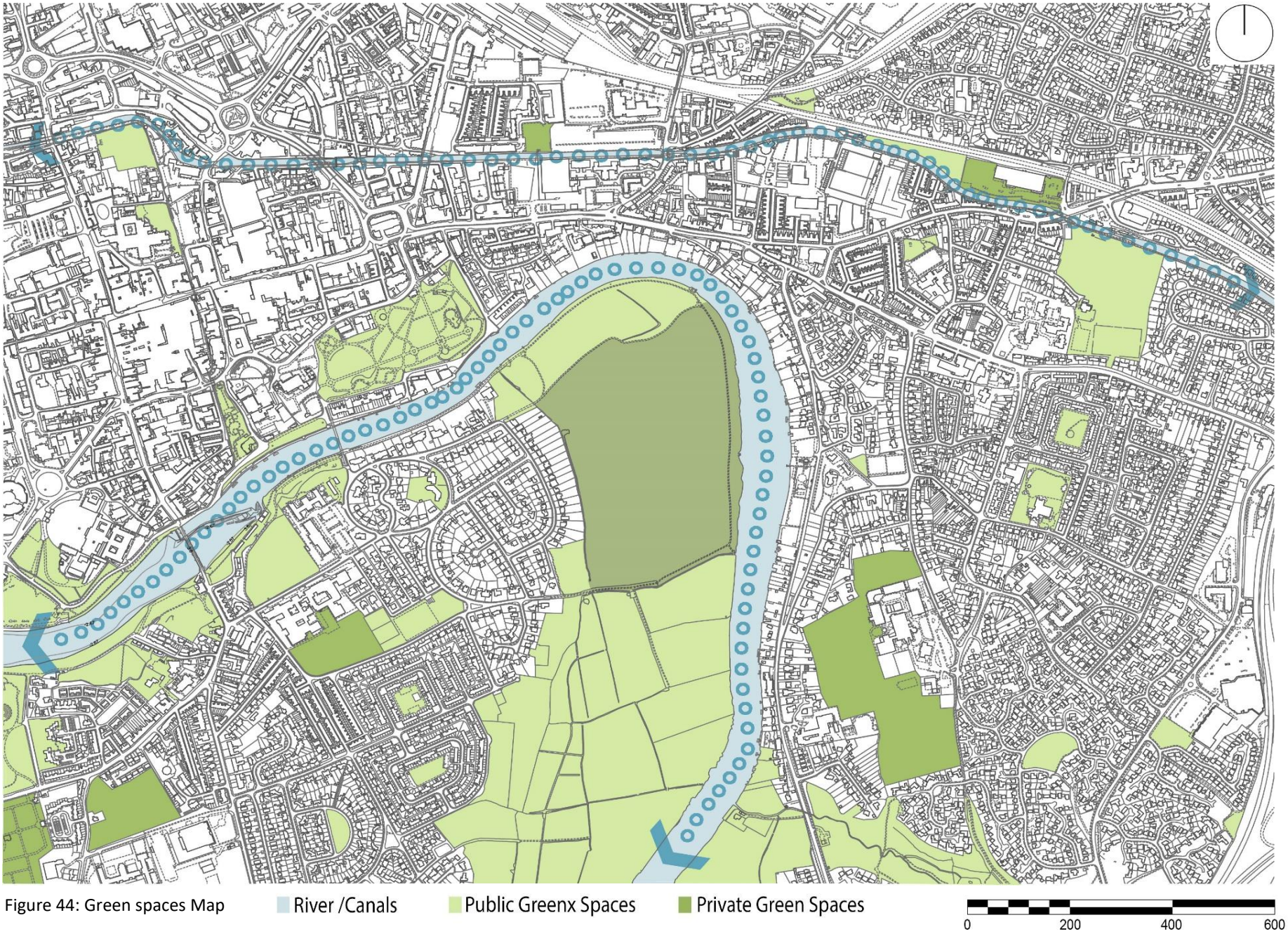


Figure 44: Green spaces Map

3.5. Traffic Analyse

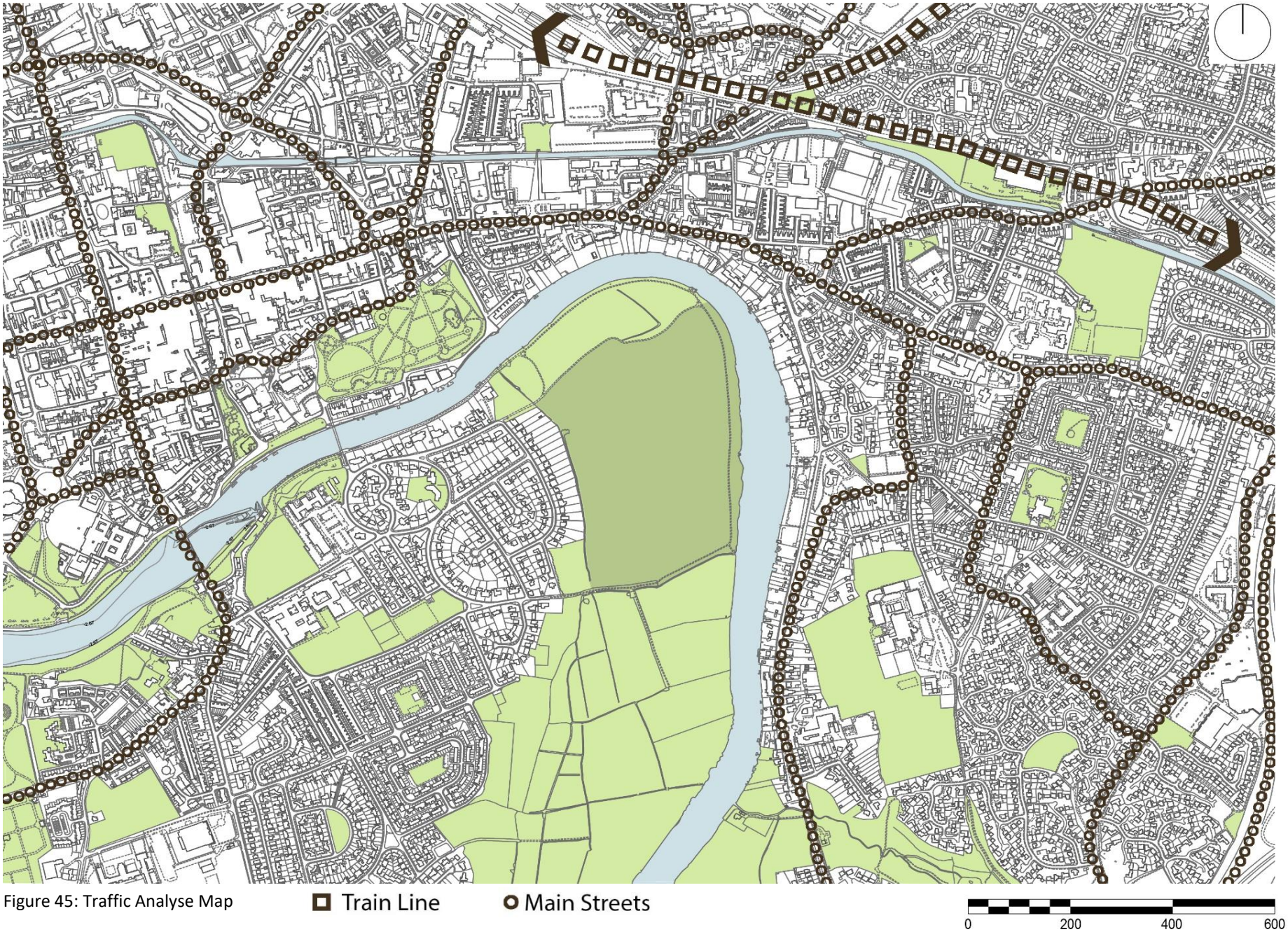


Figure 45: Traffic Analyse Map

3.6. Height Analyse

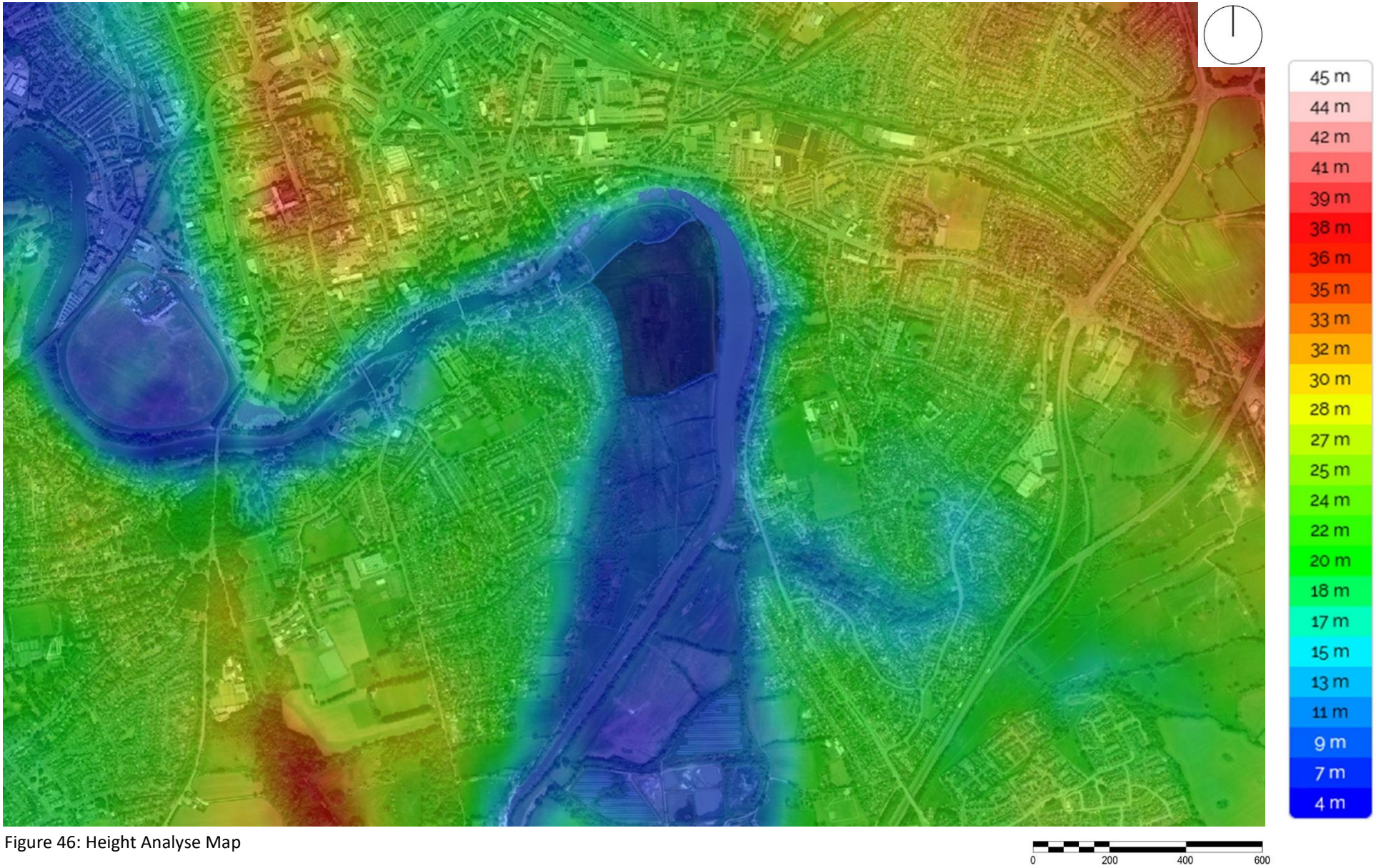


Figure 46: Height Analyse Map

3.7. Function Analyse

Figure 47: Function Analyse Map

3.8. Areal views

1

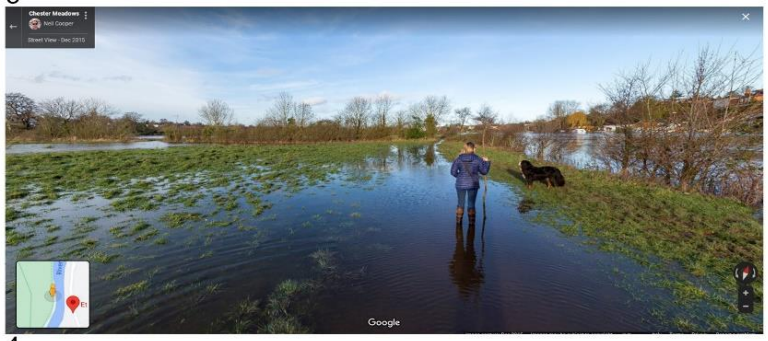
5

2

6

3

7



4

8

Key Map
Source: Google map

Figure 48: Areal Views

4.Concept and Design

4.1. Concept

As it was mentioned in the competition catalogue to have the less intervention as much as possible which can be removed or taken down easily, my design idea for the site consist of two main elements: 1-birdwatching shelter which is the main object to design and 2- two main elevated wooden roads which allow people to reach the bird watching part that can be used both in case of floods and in dry weather as it is located 60 cm above the ground level.

I placed the main birdwatching part exactly beside the river to have the most interaction with water and river view and also water entertainment facilities existing on other side of the river. To be completely integer with surrounding nature and as have been asked to use a completely recyclable and green material, I chose wood for the main material.

Figure 49: Concept Diagram Map

4.2. Site Plan

As in this area there is always risk of floods and we have been asked to use this as an opportunity in a creative way, I have designed some floating elements which are connected to the main roads and are used for sitting and feeding birds for people who come for walking which can be used also during dry seasons when the meadows are free of flood water. There are nineteen of this element that are scattered along the main roads which will be explained in following pages.

Figure 50: Site Plan

0 50 100 150

4.3. Plan

As the first aim was the minimum intervention in the site to have the pure nature itself, on the other hand for better fluidity that lead people to main element, in dry days that ground is not wet and is walkable I have rows of plantation consist of 3 type of shrubs that not only made the necessary connections to peripheral area, but also enhance the biodiversity and attract more wildlife.

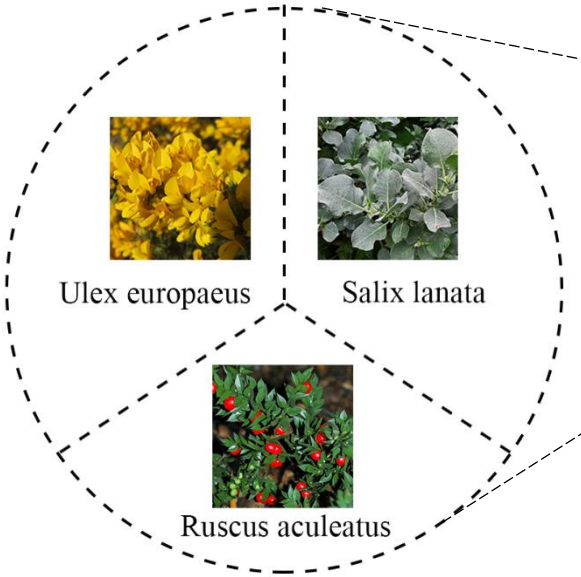


Figure 51: Plan

4.4. Plantation Strategy

Other trees species which are selected to plant in the area to attract birds and improve biodiversity are listed below. (All are compatible with the area climmate.)

White birch
Betula pendula

Rowan
Sorbus acuparia

English hawthorn
Crataegus laevigata

European crab apple
Malus sylvestris

Figure 52: Vegetation Suggestion

Based on different elevation of the tower we need different trees so that at all levels we will have view of birds beside the panoramic of the meadow view which also is effective on controlling sun and create the necessary shadow in different seasons and different time of the day (As we do not have much covered area).

Figure 53: Tree plantation planning

Tips for a birdfriendly Landscape design:

Native Plants: The best types of plants to use to attract local birds are the plants they are most familiar with. Native landscaping uses local and regional trees, shrubs, flowers, and grasses, and those are the same plants that birds recognize as rich food sources and appropriate shelter.

Layered vegetation: A bird-friendly landscape is one that offers different layers of plants for different birds to use.

Dense plants: Birds will feel more secure and safe when there is adequate shelter in your backyard. To provide that shelter, create dense areas of vegetation that will shield smaller birds from hawks, cats, or other predators.

Plant diversity: Different birds prefer different types of plants, and if you choose to landscape with a wider range of plant species you will also be able to attract more types of birds.

Mess is the best: A bird-friendly landscape is never perfectly manicured and neatly trimmed. Leaf litter, longer grass, and discarded brush piles are highly attractive to birds because they are rich sources of insects, nesting material, and shelter. (www.thespruce.com)

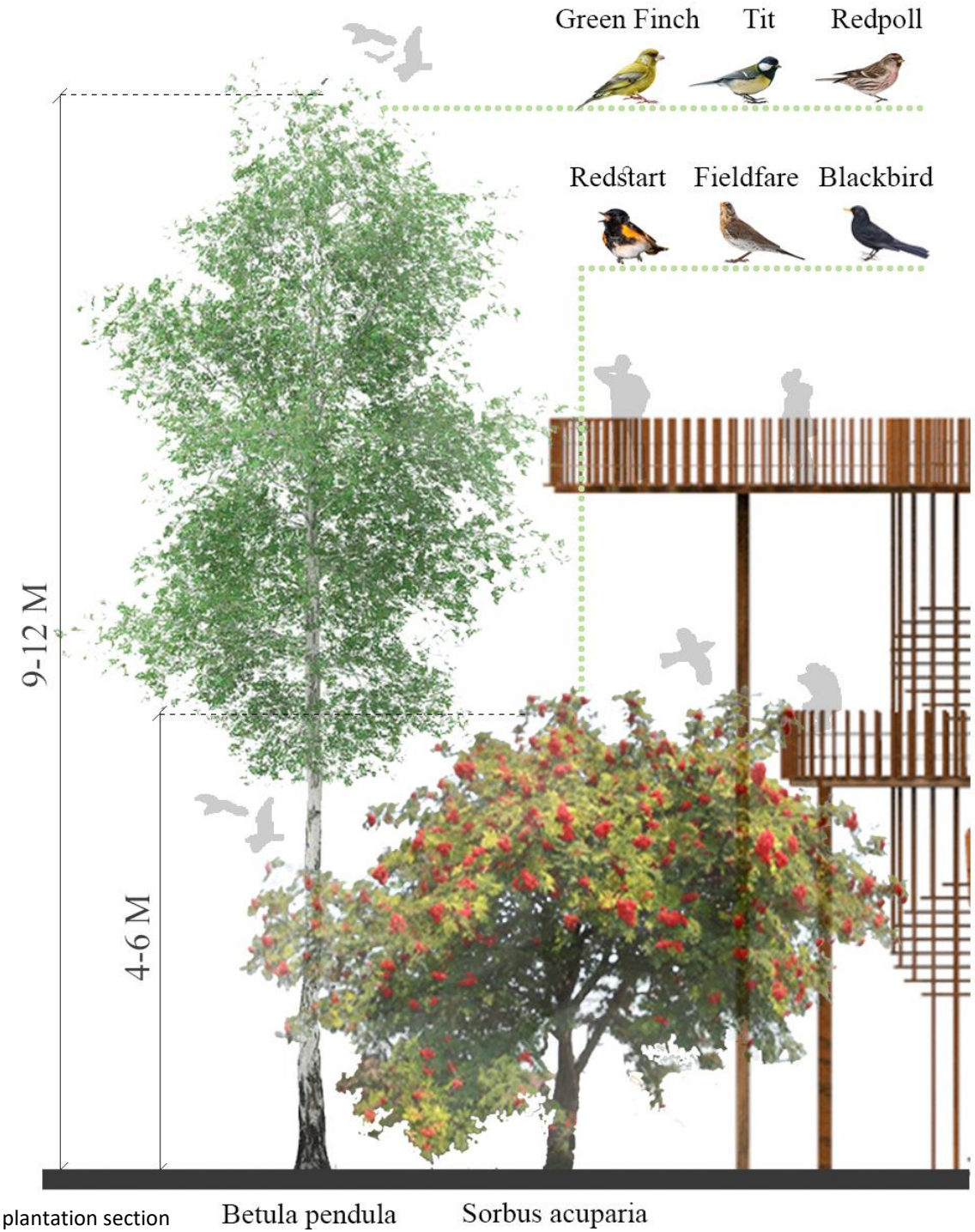
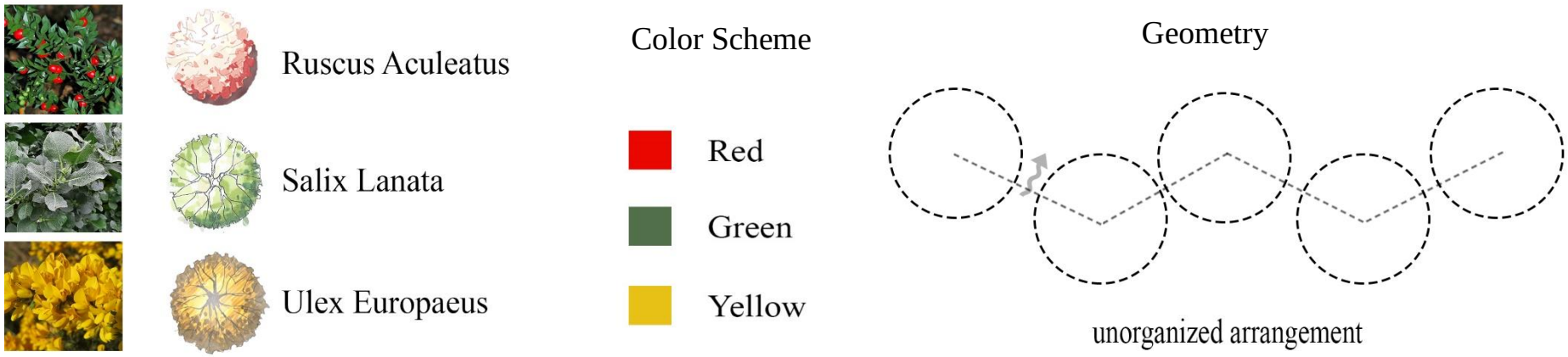


Figure 54: tree plantation section

Connection Vegetation



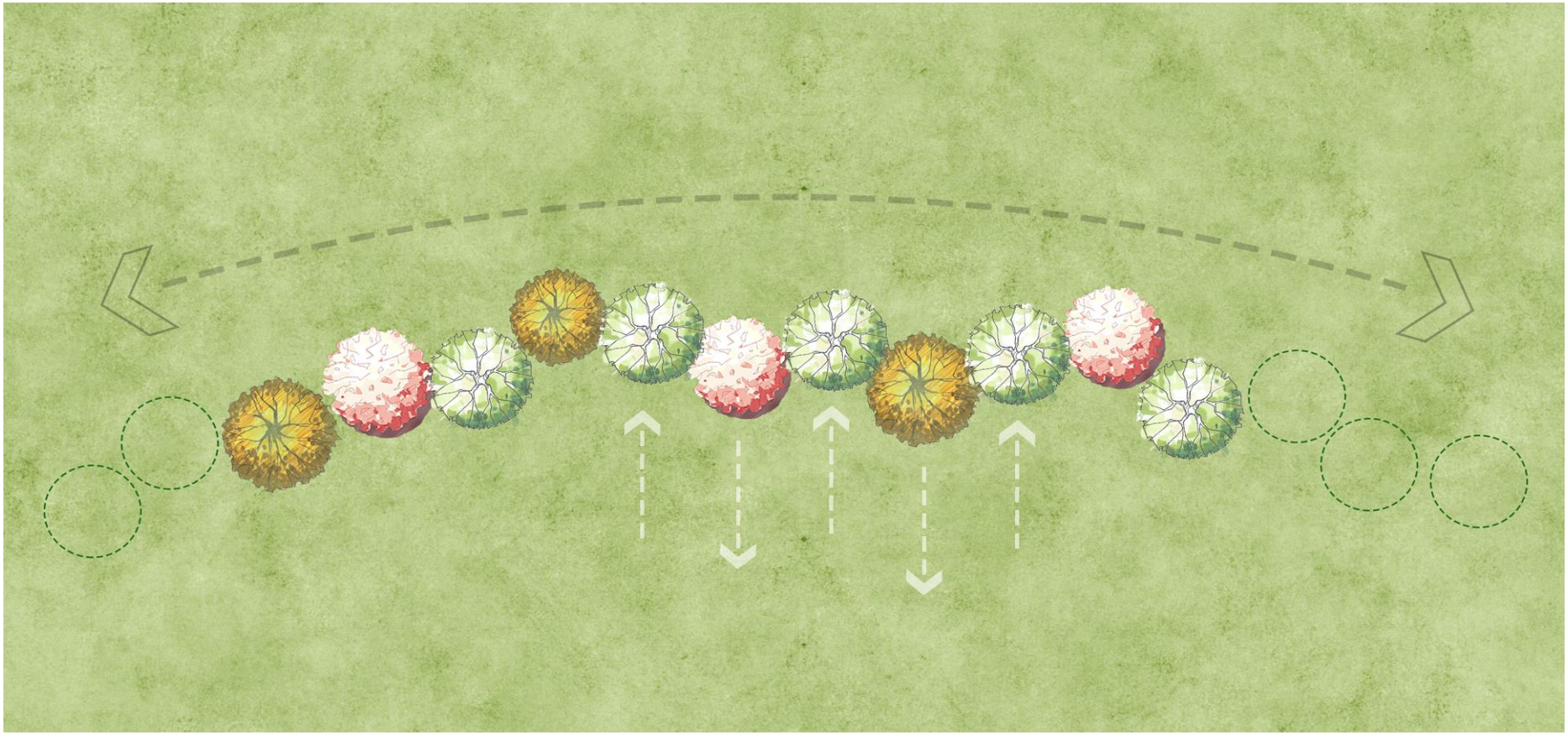


Figure 55: Shrub plantation planning

4.5. Birdwatching Tower

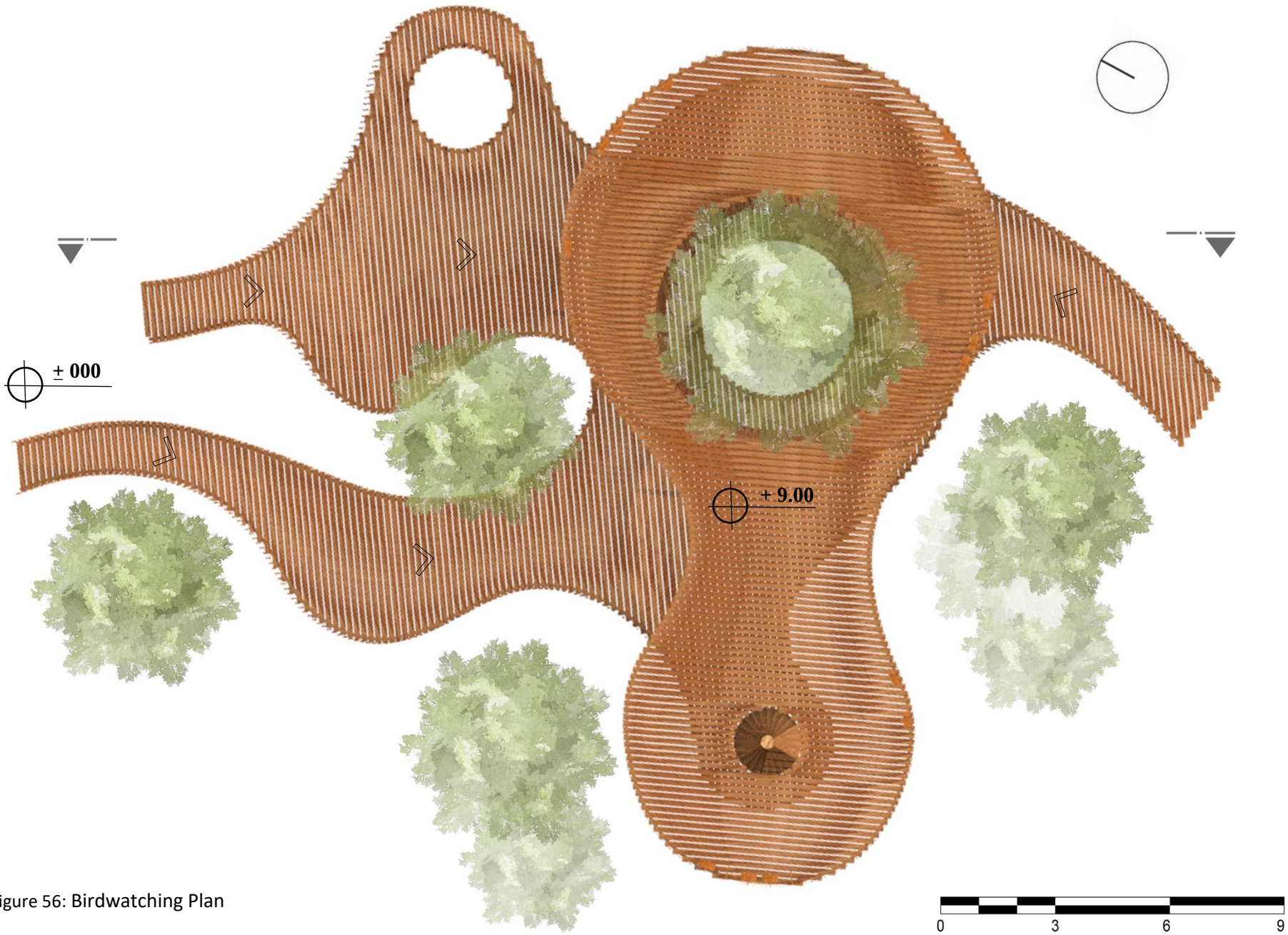


Figure 56: Birdwatching Plan

Main volume

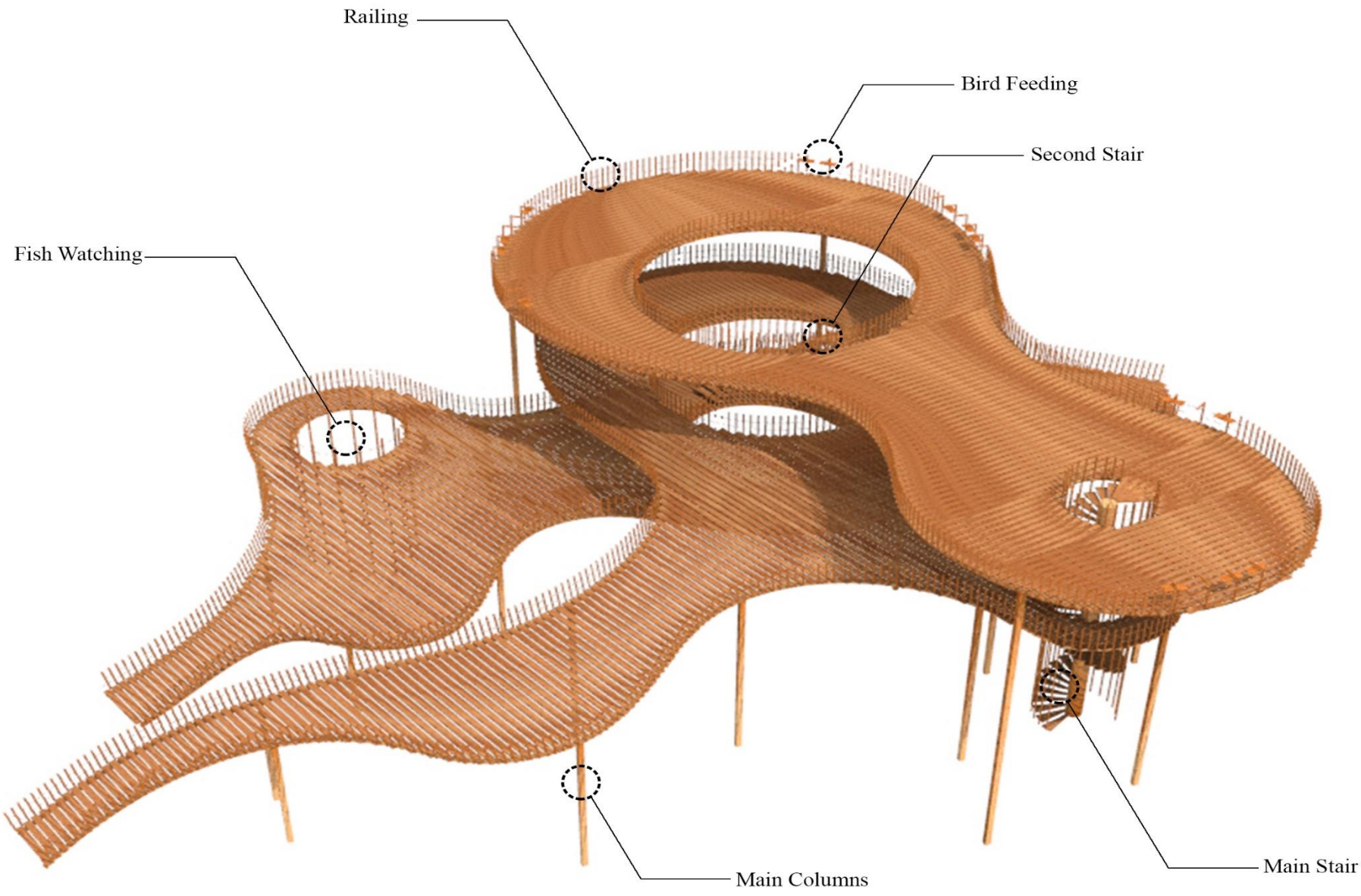


Figure 57: Main Volume Perspective

Main Components

Figure 58: Main levels Isometric

Vertical Elements

3

2

1

Connection between ground, level 2 and level 3

Connection between level 2 and level 3

Figure 59: levels Connections

4.6. Elevations

Figure 60: East Elevation

Figure 61: South Elevation

Figure 62: Section

The main shape of the volume formed based on trees location with an organic shape that there will be no need to cut any tree.

As it can be seen in the section some parts are covered and completely in shadow during sunny days which lets users to rest or sit in shadow. As all slopes have been created with timbers with width of 25 cm, in all parts that we have slope, they are actually stairs that shaped the slope and all of them can be used as a sit and no separate sitting part is designed.

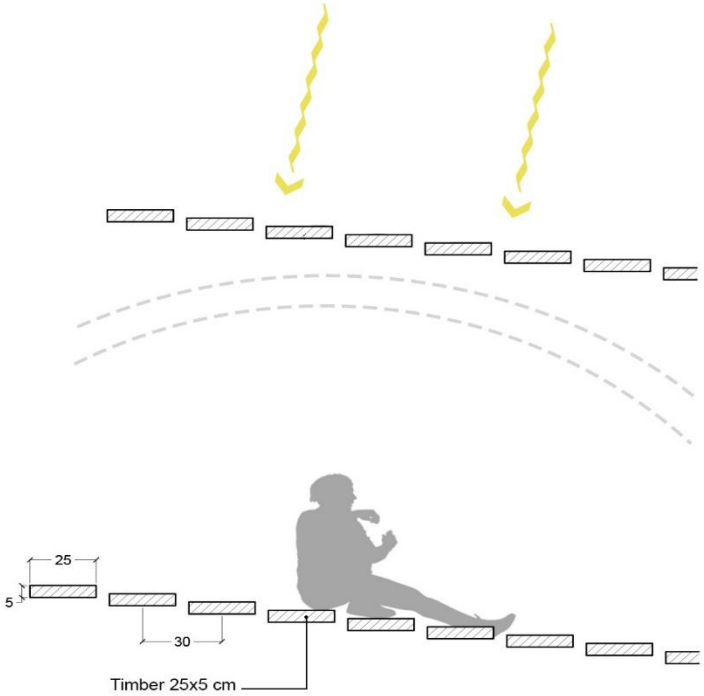
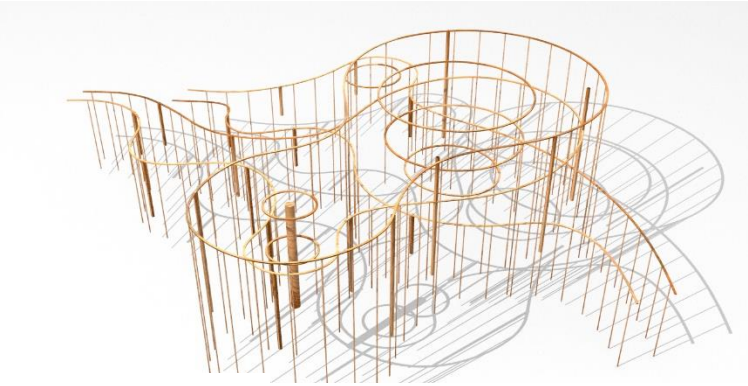


Figure 63: Sitting areas enlargement

4.7. Construction Details

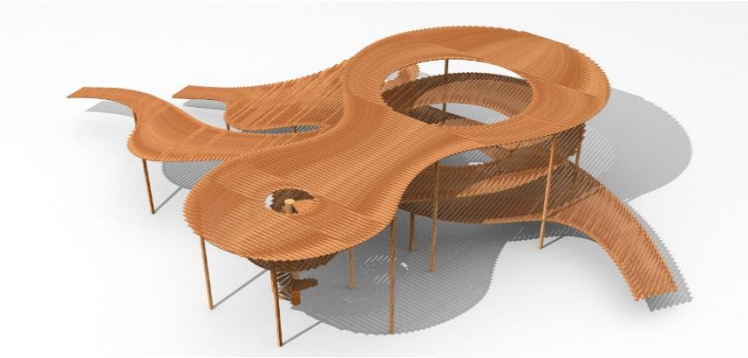
Level 1: Main Pins

Level 2: Edge Frame



Level 3: Lateral Pins

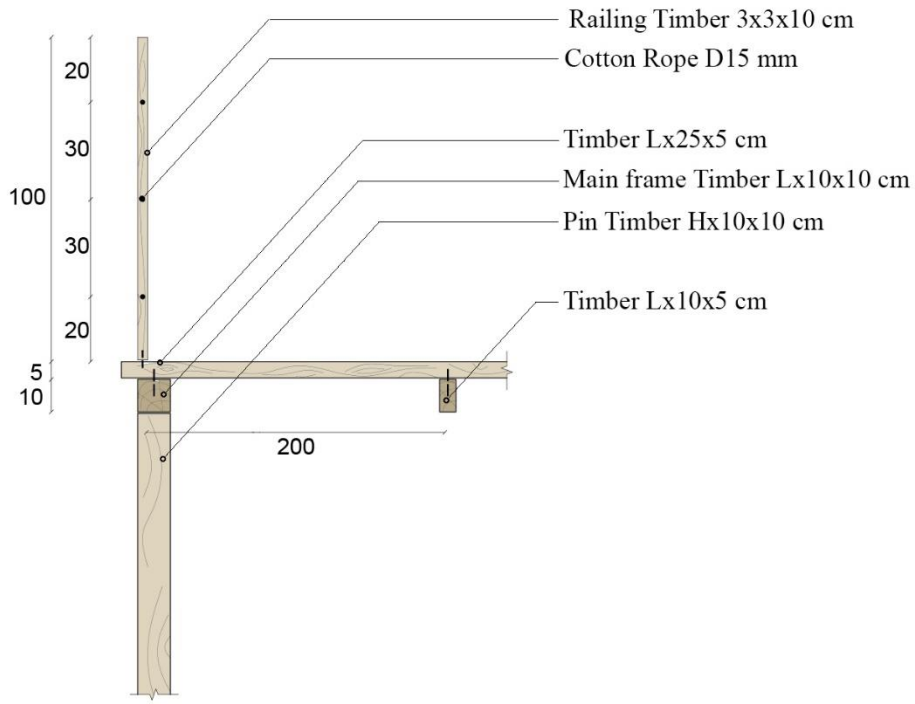
Level 4: Stairs



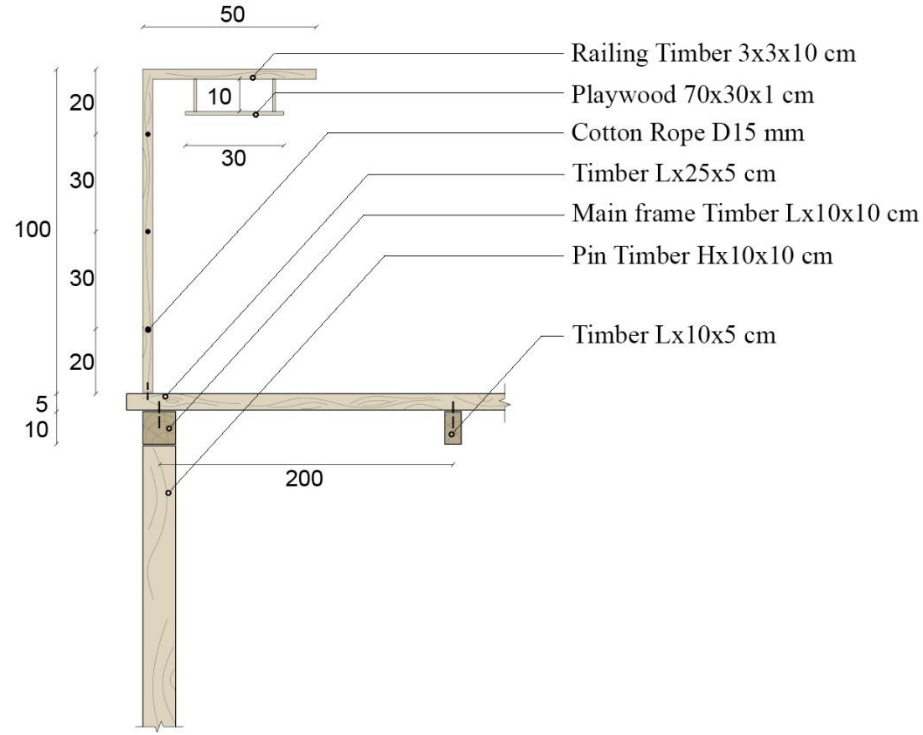
Level 5: Main Body

Level 6: Railing pins and bird feeding elements

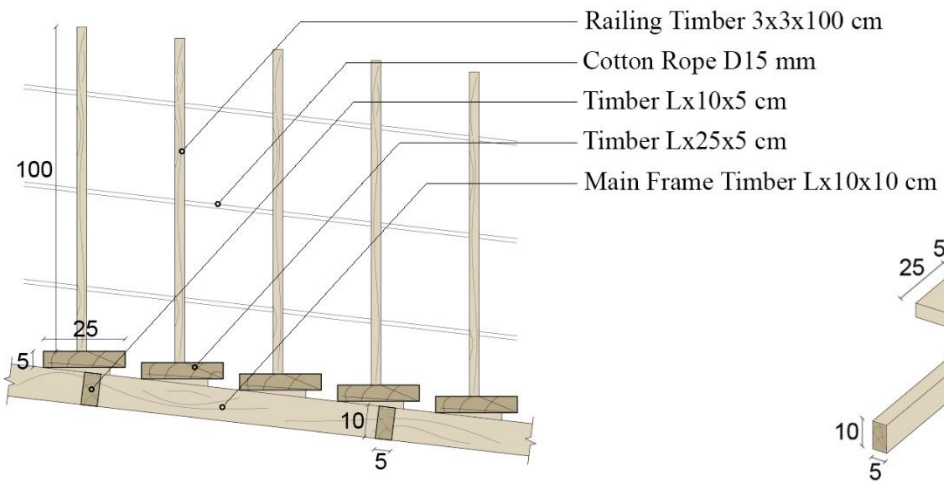
Figure 64: Construction Levels



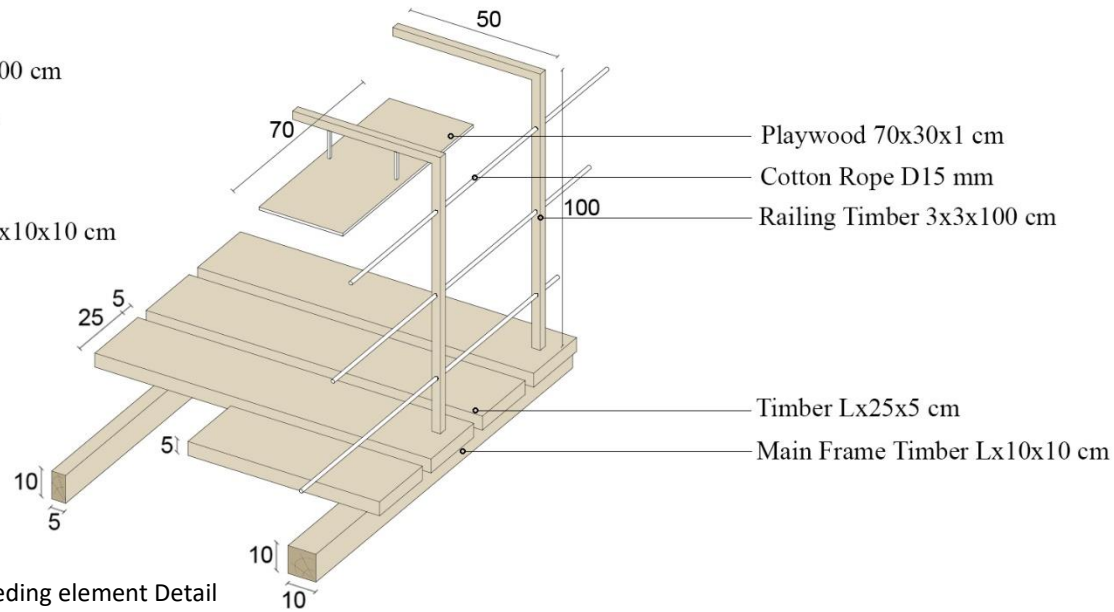
Floor-Railing Joints Detail



Bird-feeding element Detail



Floor Detail



Bird-feeding element Detail

Figure 65: Construction Details

4.8. Bird Feeding

On the third level we have these elements that let people feed birds and have interaction with them. As can be seen birds can sit or eat on them. They are all made of wood and with complete integrity with other materials.

Figure 66: Bird feeding element Detail

4.9. Fish Watching

On the first level we have a void which is completely on the river. There are some wooden pins which reach the water surface and are covered with plants. This area is designed to let people have interaction also with water flora and fauna and watch fishes.

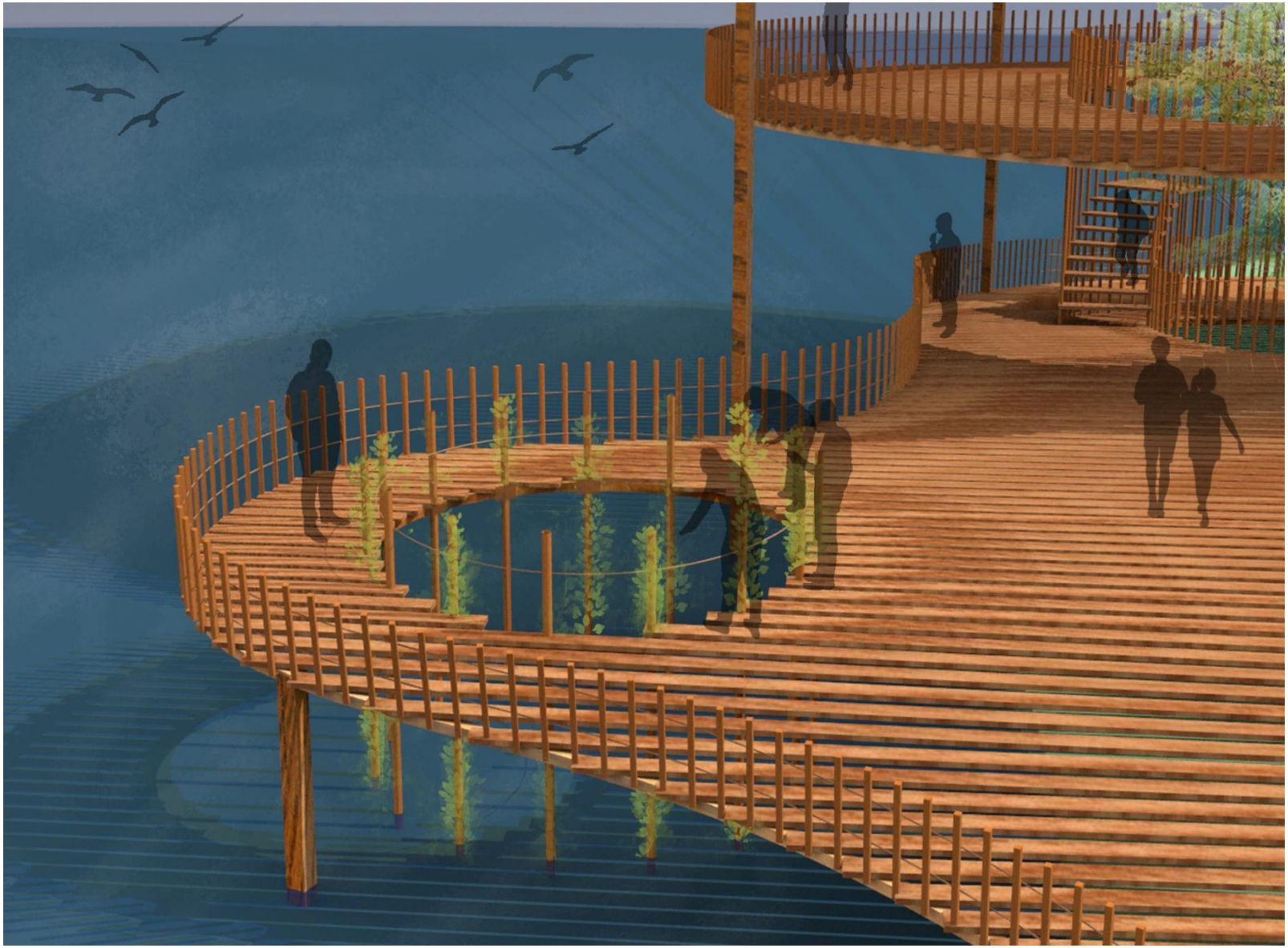


Figure 67: Fish Watching part

4.10. Floatable Bench

This is a wooden floatable element which is designed to be used both in flood cases and also on dry ground. When there is no water on the ground people can normally use it as a sitting and resting place for those who come to walk with dogs or alone. Also in case of floods it can be floated on water and can be reached with the main wooden roads. They are connected with a rope and pulley to the roads and people can use them for getting in or out.

Figure 68: Floatable Bench 3d view

Details

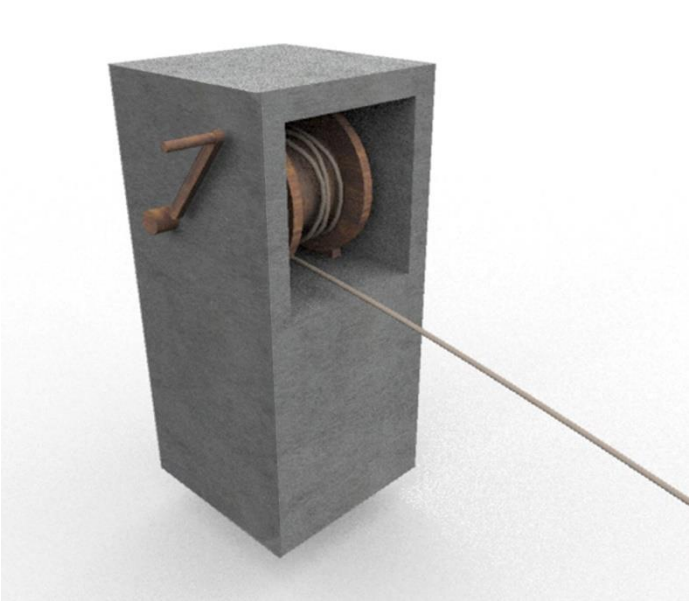


Figure 69: Pulley view

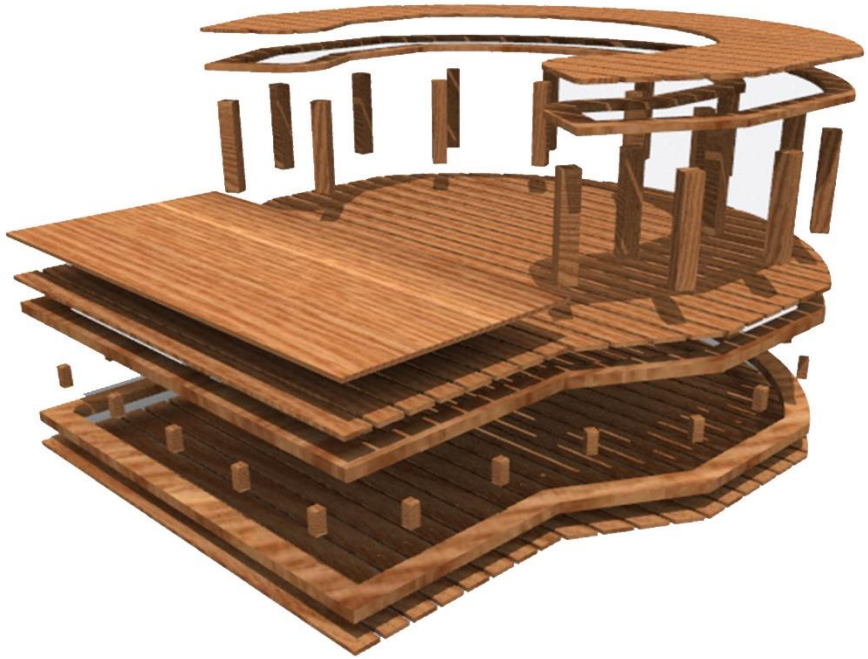


Figure 70: Structural View

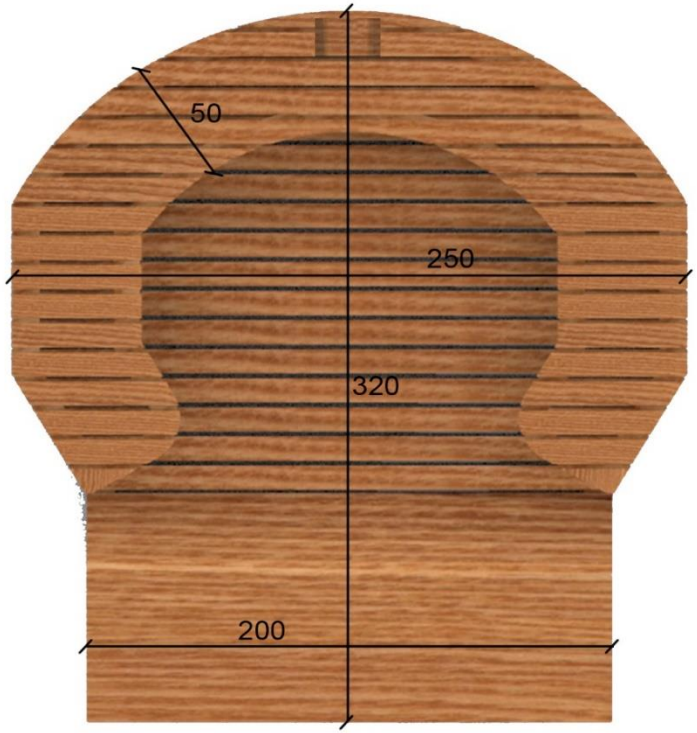


Figure 71: Floatable Bench Plan

4.11. 3D views

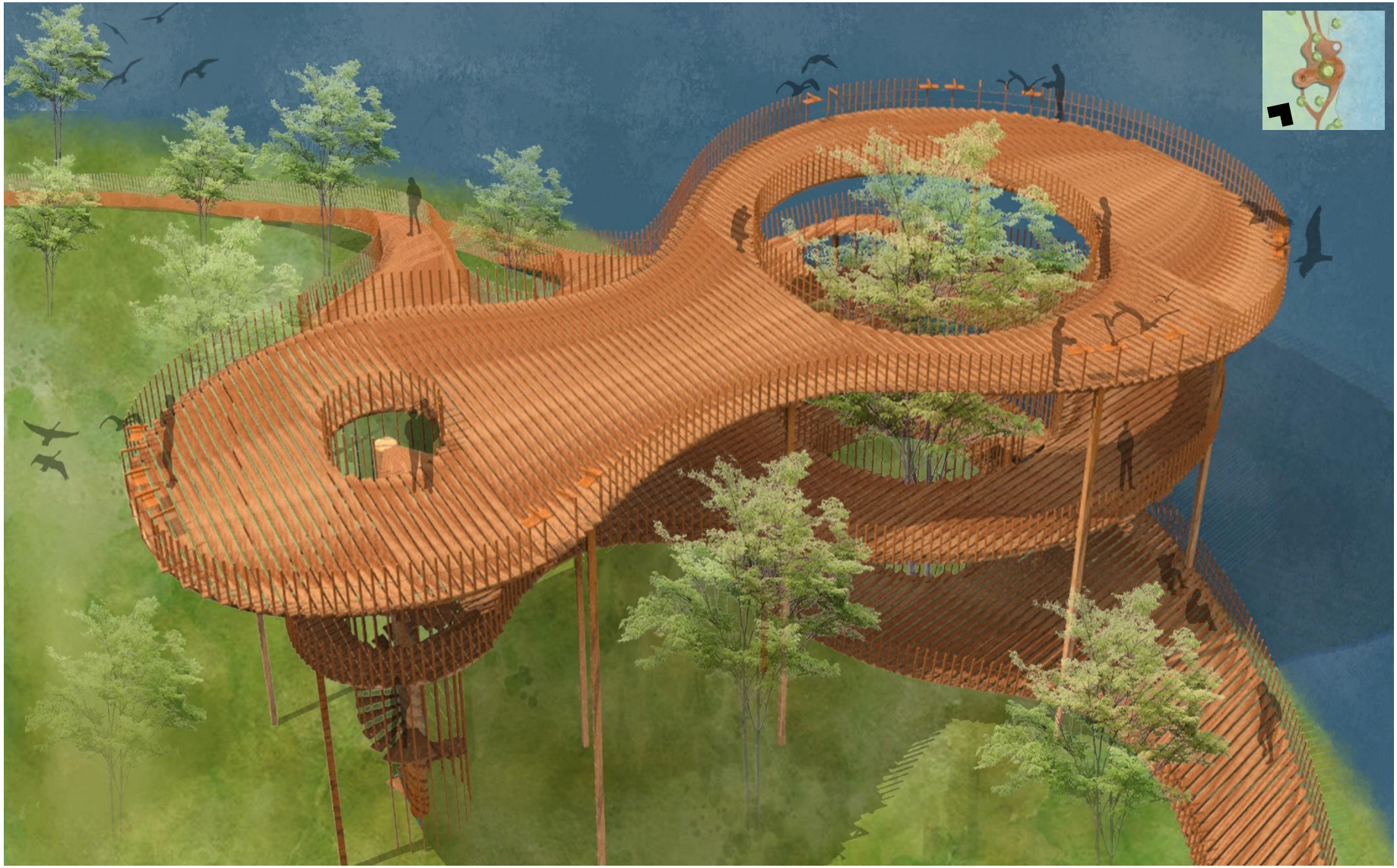


Figure 72: General View 1

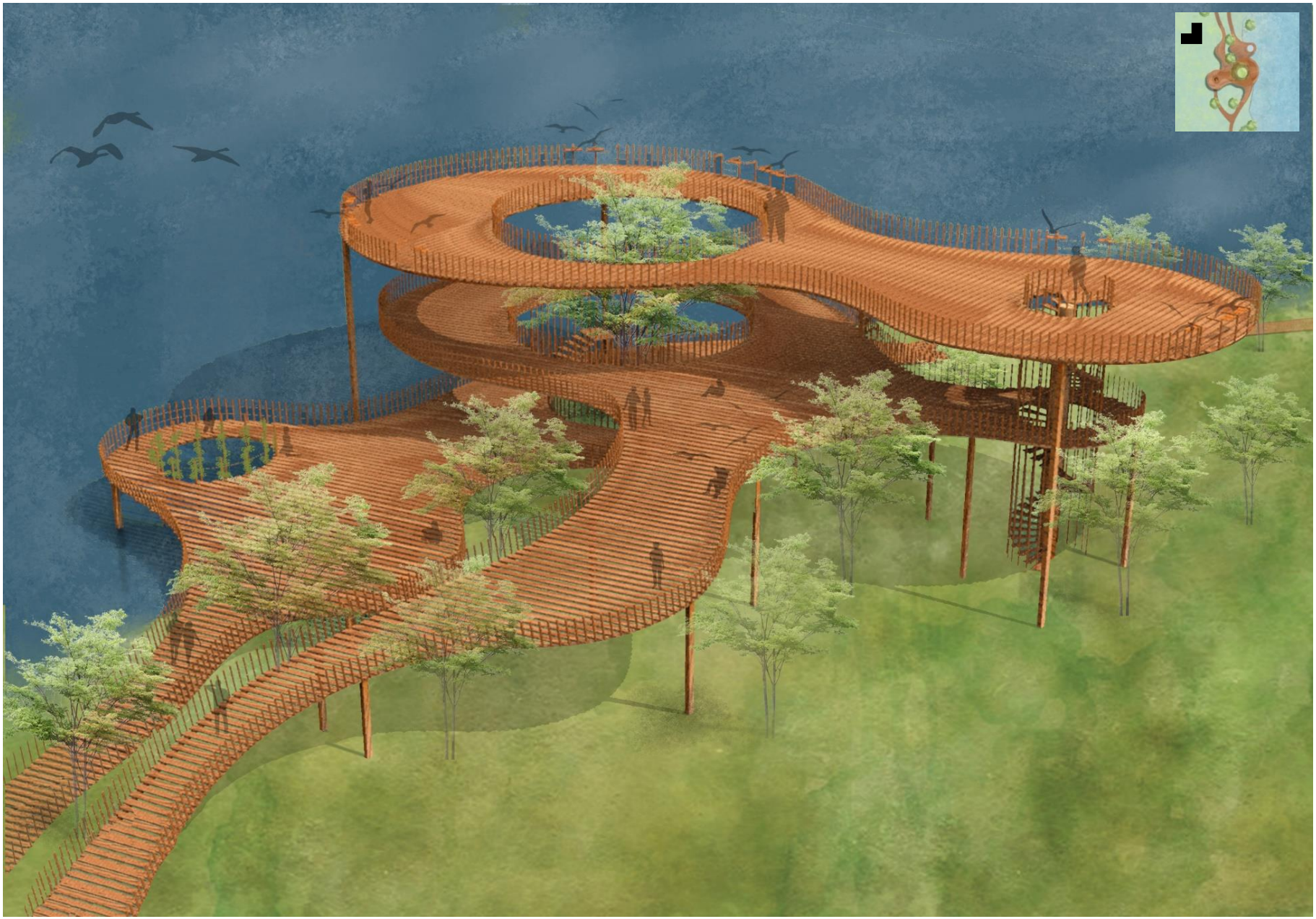


Figure 73: General View 2

Figure 74: General View 3

5. Conclusion

In summary, Chester meadows is really a potential site to be invested for birdwatching activities and can benefit from It a lot. Bird watching is a most promising branch of ecotourism because bird watchers comprise a large and increasing part of educated and wealthy individuals who desire to observe birds in their native habitats and whose activities have relatively low environmental impact. In the 21st century, the ecological education of the society is the basis of socio-economic transformations and improvement of quality of life, according to the rules of sustainable development. Among various kinds of ecotourism, bird watching has the highest potential to contribute to local communities, educate locals about the value of biodiversity, and create local and national incentives for successful protection and preservation of natural areas. The governments of less-developed nations, local and international NGOs, and bird watching companies should give priority to bird watching promotion and education. These organizations should also strive to increase the contribution of bird watching to rural communities and local grass-root organizations since bird watching has a significant potential to generate income through the protection and promotion of natural areas. Tourism is one of the most important problems for contemporary environmental protection, yet it is difficult to imagine that protected areas can function without tourists visits.

Without considering sustainable goals and approaches, any unestimated manipulation could lead to negative effects on the area and nature. Therefore, before making any change, it is necessary to study the sites and research about different aspects and effects of the project

There will be many changes after this project is build and these changes would likely increase interest and the number of visitors to the wetlands considering the wooden path and other facilities that create opportunity to visit and enjoy environment also in flood cases. The two wooden path will allow visitors to reach the main birdwatching part which is usable in all seasons and people aslo can take advantage of being in river shore thanks to approximity of the element to river.

The main groups that are involved in project will be:

birders and birdwatchers, people who come to the site, government and city council, houses in vicinity, investors and related tourism agencies.

Appendix:

Competition Requested Themes and Approaches

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Every time you buy a product from us, we ensure that one tree is planted in a key reforestation project. For more information about our sustainablity efforts and to find out how you could help the fight against Climate Change, visit our website:

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LARSEN LIVERPOOL

Figure 75: Birdwatching Competition Cover,
Source: www.Larsenliverpool.com

This project is an architecture competition with approach to sustainability and fight against climate change which is hold by Larsen Liverpool association based in UK. Competition started on October 2021 and ends on may 2022.

Topic is designing a bird watching shelter and bird sanctuary and site is in the bank of River Dee, Chester, UK.

The project site is very rich in biodiversity and it is very important for jury to have less human impact while having a quite indigenous and integer design with nature and occupy spaces that inspire harmony with the natural environment. It was important for us as designers create an architecture that avoids destruction of the natural periphery while benefiting our environmental impact.

We now live in a world where architecture takes valuable resources and causes destruction of the natural environment. Jury is looking for a design scheme that builds a connection between humans and nature and gives back to our natural surroundings, rather than only taking from them. They ask for an innovative and creative design focusing on the user experience and connection to the surrounding nature and wildlife with a minimal environmental impact. The challenge is to create a sustainable and a 100% natural structure that sits peacefully within the meadows and allows both humans and birds to share the same space.

The vernacular structure should be made from natural materials and should be temporary so that it can be taken down/moved if necessary. The River Dee is a fundamental and interesting feature of the area, with water sports and other activities happening around the site. Competition encourage designers to include this within their design and consider the continual flood risk of the meadows.

All of the profit from holding these competitions will be dedicated to fight against climate change and more green future. As it is mentioned in their brief: “every time you buy a product from us we ensure that one tree is planted in a key reforestation project”

The meadows are rich in biodiversity and offers a fantastic opportunity for designers to challenge themselves and explore their creativity within this sustainable and vernacular based competition. How can humans occupy spaces that inspire harmony with the natural environment? What can be done to accomplish this and create architecture that avoids destruction of the natural world while also benefitting environmental impact? We now live in a world where architecture takes valuable resources and causes destruction of the natural environment.

This competition is looking for a design scheme that builds a connection between humans and nature and gives back to our natural surroundings, rather than only taking from them. Our brief asks for an innovative and creative design focusing on the user experience and connection to the surrounding nature and wildlife with a minimal environmental impact. The challenge is to

create a sustainable and a 100% natural structure that sits peacefully within the meadows and allows both humans and birds to share the same space.

The shelter should provide a calm, reflective space for city dwellers to temporarily leave their hectic city lives to reconnect and interact with nature. It also asks for a sanctuary for the native and passing birds of the area. The sanctuary should be a place for birds to take shelter and encourage breeding, with some consideration for the various roosting and dietary needs of differing species.

The form of the structure is open to interpretation, and we encourage designers to be creative and think of innovative solutions to this design task. There is no need for toilets, or any kind of waste disposal system as this should be a temporary passing place for visitors to enjoy the surroundings.

The meadows are protected and are home to a number of different species of plants and wildlife, therefore, the impact on the site should be MINIMAL. This includes considerations for foundations, transport, and public access. No vehicle access is permitted, including during construction. There are many walking routes already visible throughout the meadows as this is a popular area for nature trails and dog walking.

The area contains historic wells and there is ample opportunity for extraction of the natural surface water for drinking. The vernacular structure should be made from natural materials and should be temporary so that it can be taken down/moved if necessary. The structure can be open or closed to the elements but the bird watching platform should have a covered seating area. There is no maximum size for the base and there is no limit on height.

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