

# LANDSCAPE URBANISM

Research Project



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# INTRODUCTION

## Research question

In what ways do blue networks such as canals impact communities in and around urban areas?

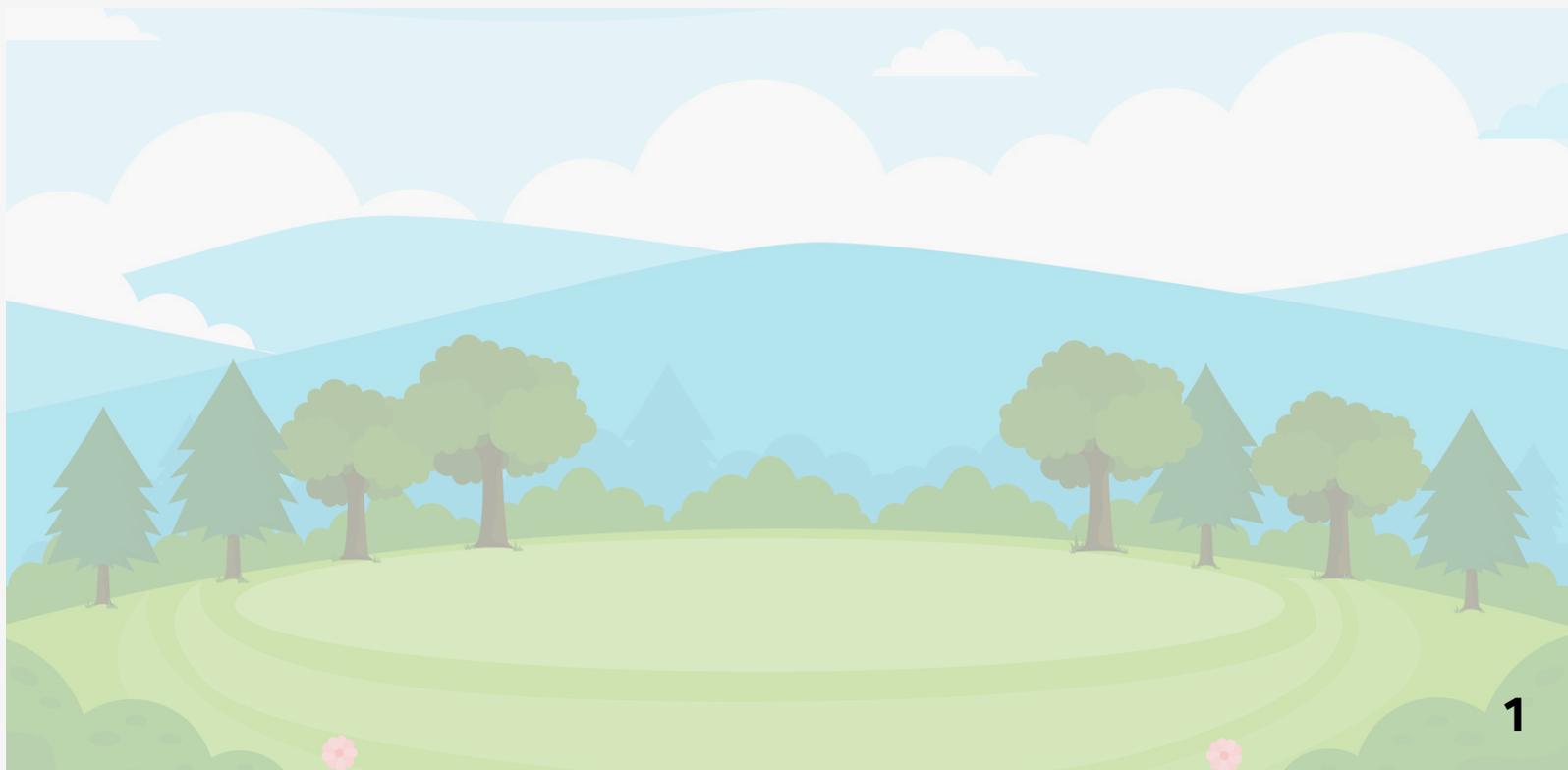
This research question directly relates to our group's vision of 'creating a development that celebrates Fish Island's distinctive character and legacy, by prioritizing affordable and adaptable living'. This report examines how canals like those surrounding Fish Island (Figure 1) are redeveloped in order to benefit the communities that surround them as well as the further areas.



Figure 1 - Hackney Canal

## HISTORY OF CANALS

Canals were originally historic waterways that transported goods between cities. However, due to roads and rail networks being introduced, there was a decline in their usage. They turned into more derelict, underused and under-appreciated spaces. They are now being redeveloped into lively, multifunctional waterways designed to encourage public use and social activity. There has been extensive research and there are ongoing projects into the development of urban canals today. This is especially transforming them so they can be spaces that are used more frequently by people living in the urban areas and people visiting the urban areas. One example of the redevelopment includes Tow paths. They are often associated with crime but schemes today are trying to develop them into connected and social spaces that can be used along the canals (Crompton, 1993).





# AIMS AND OBJECTIVES

## AIMS

The aim of this study is to explore how urban canals can improve social well-being and act as multifunctional spaces. By looking at the Amsterdam canals, Regents Canal and the Birmingham canals, the research will examine how redevelopment, regular maintenance, and landscape design help make canal-side areas enjoyable, accessible, and useful for people throughout the year. The case studies will help to support the research by providing real life evidence. A set of design principles will then be developed from the research showing how urban canals can benefit communities and help connections and social spaces to be formed. These design principles can be applied to the Fish Island masterplan.

## OBJECTIVES

- 1 To identify how urban canals can support social well being.
- 2 To compare examples of canal redevelopment to understand what makes them successful multifunctional spaces.
- 3 To explore how existing canals are maintained to ensure that people can use them all year round.
- 4 To evaluate how landscape design and management can enhance the character and identity of canal-side urban area.



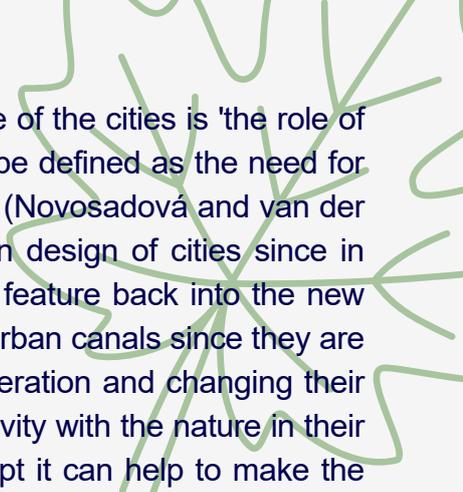
# LITERATURE review



There has been much research into the blue networks in cities and how they are being regenerated to create more liveable urban spaces. This literature review aims to join up the areas of research found specifically within the blue networks and how it links to social well-being and creating multifunctional spaces. It will also look at the regeneration of canals and their impact on the community surrounding them, the landscape and the wildlife that live there. Within the literature there are benefits as well as possible gaps that open more questions surrounding the topics.

Blue infrastructure, multifunctionality, social wellbeing and connectivity are all key themes within this research. Blue infrastructure (often labelled blue-green infrastructure) can be defined as infrastructure that aims to manage water in a sustainable way which may include a network of natural and semi natural spaces. Research by Architecture & design Scotland found that these may include canals, rivers or ponds. They also mentioned that the infrastructure aims to enhance biodiversity, provide recreational spaces which therefore supports urban sustainability and resilience. Multifunctionality (within an urban environment) can be defined as the ability of urban spaces to serve multiple purposes at the same time (Aynaz Lofata, 2022). Research from a PHD landscape architect has specified how since the rate of urbanisation is increasing spaces in cities will need to become 'multifunctional' in order to be sustainable for the future (Ghafouri and Weber, 2020). Social wellbeing within urban environments can be characterised by population density of the specific space, the infrastructure and the level of social interactions (Sinclair, 2021).

The report 'Visions for development and management of urban green and blue infrastructure: a citizen's perspective' supports this research project since it focuses on green and blue infrastructure being at the heart of development. It is mentioned that there is an ongoing rapid rate of urbanisation in cities today which leads to increased pressure on the infrastructure, this is both natural and man-made infrastructure. The report states how new city concepts rely on blue and green infrastructure for reasons such as transportation, education and recreational activities. This shows that this report recognises the importance of the green and blue networks for cities and urban areas and shows that they are often at the heart of developments and needed for urban areas to continue to thrive.



Another article which is similar in the concept of nature being at the centre of the cities is 'the role of biophilic agents in building a green resilient city'. The term 'Biophilia' can be defined as the need for humans to connect with nature, this is especially in an urban environment (Novosadová and van der Knaap, 2021). In recent years this concept has become more present in design of cities since in order for cities to be more sustainable they need to incorporate biophilic feature back into the new developments that are emerging. This aligns with the regeneration of the urban canals since they are being brought back into city design and development through new regeneration and changing their usages. The article focuses on humans having more respect and connectivity with the nature in their cities (Novosadová and van der Knaap, 2021). By introducing this concept it can help to make the city more resilient towards the biophilic approach which is going to be key when looking forward into the future of city planning.

Another piece of literature that contributes to the research is 'Multidimensional Visual Preferences and Sustainable Management of Heritage Canal Waterfront Landscape Based on Panoramic Image Interpretation'. This literature mentions how canals have been strategically built in cities in order to provide services for people living there. They also contribute to the economy, landscape and recreation which are all essential services within cities today (Jiang et al., 2025). It has been found that 80% of human experience are based on sensory experience which is why the need to combine canals with nature is so important since green-blue networks and visually appealing outdoor spaces have such great impact on human perception on the spaces that they live in.

Even though all these pieces of literature provide evidence of cities integrating nature and canals into the urban environments there is still limited evidence for exploring how people interact with the regenerated blue networks. For example even with the new developments there is a noticeable research gap about how the canals will be maintained and be sustained for future usage. This may be due to the fact that canals are historical features and have only recently been incorporated back into urban design in cities. In some places the government is cutting funding for canal systems which may lead to their decline due to the correct maintenance not being available (Canal and River trust, 2023). The funding for these canals is clearly beneficial since the canals have proven to benefit people, biodiversity, nature and the economy. This cut in funding may be due to the fact they they have not had enough time to prove the full long term benefits.

Overall there is enough evidence to support past and current use of canals in urban areas. Their initial use is being down to come back and help to reconnect urban areas whilst encouraging social well-being and multifunctionality. These are all well supported by evidence throughout the literature. However evidence is lacking for the future and maintenance of blue networks for local communities.

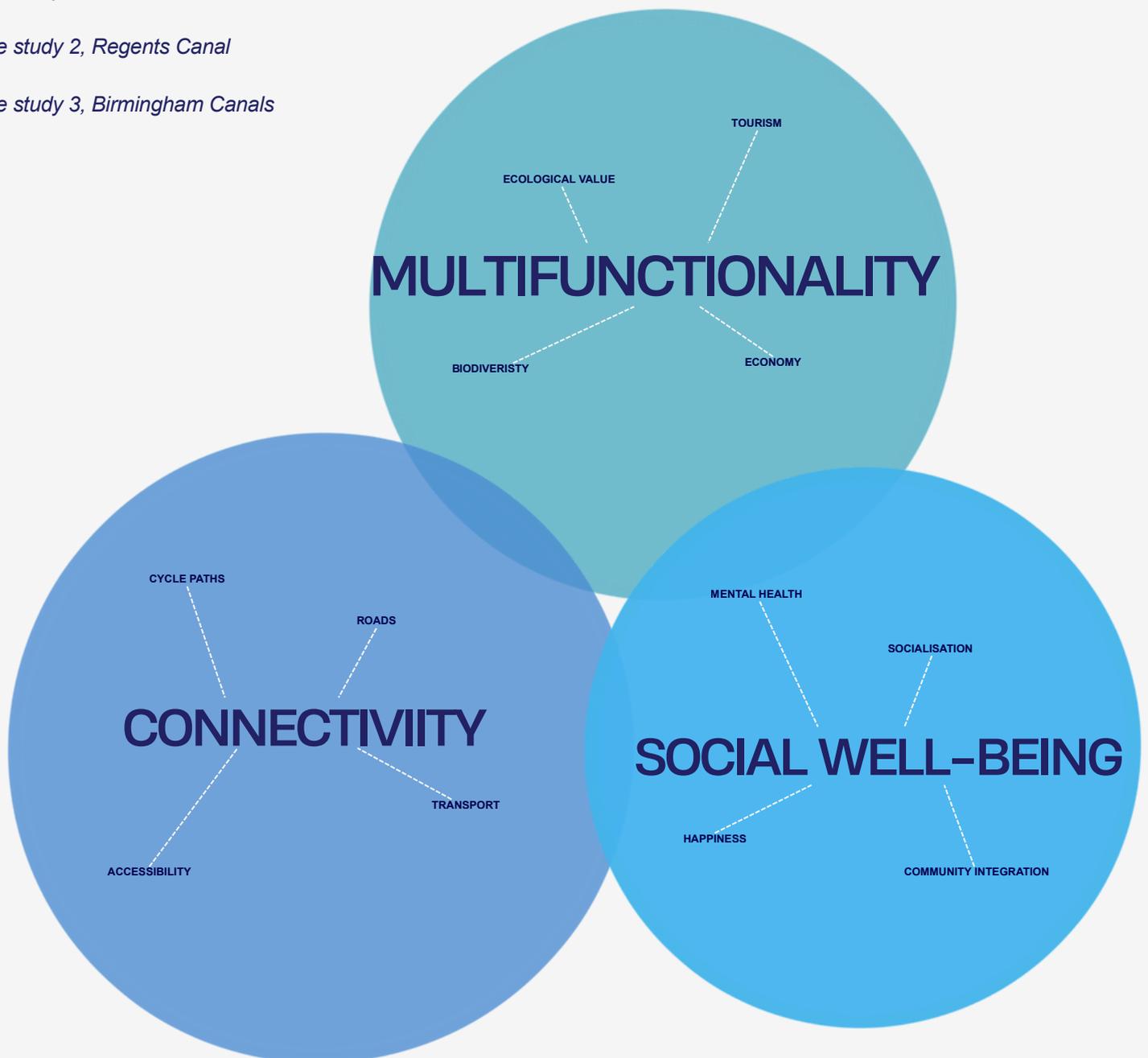
# FRAMEWORK + Case studies

The literature that was reviewed raised the themes for the framework. These are multifunctionality, social wellbeing, and connectivity. These themes were decided so that a framework for conducting the research could be established. This will then help to create design principles that can link back to our design as well as reflect the framework themes.

*Case study 1, Amsterdam Canal*

*Case study 2, Regents Canal*

*Case study 3, Birmingham Canals*





# CASE STUDY 1

## Amsterdam Canal

FOCUSING ON MULTIFUNCTIONALITY  
WITHIN LANDSCAPE AND ECOLOGY

### Introduction

The Amsterdam canal system was developed during the 17<sup>th</sup> century to cope with the city's rapid growth. It helped to transform the marshland into an urban space that is the City of Amsterdam today. The canal system features 100km of canal as well as 1500 bridges which offer a scenic features for tourism, recreation as well as connectivity around The City of Amsterdam. They are a vital part of the city's landscape and the waterways provide not only transport but connectivity, tourism and economic stability across the city as well. The canals are also recognised today as a UNESCO world heritage site (Fabrique, 2025).

### Multifunctionality Examples

The canals in Amsterdam are the main blue network that runs through the city. The canals act as the 'blue print' of the city, supporting the public space and ensuring habitats that thrive in the waterways. Whilst they have their initial function they go beyond this. For example the canals provide a large amount of tourism for the city each year. This includes shops, restaurants and hotels that run along the canals, making them perfect places for people to socialise and relax on the waterfront. The multifunctional Quay project is an example of this. Quay walls act as a huge infrastructure importance for Amsterdam. However, in the new project the ecology and landscape of Amsterdam need to be taken into account. the city held multiple workshops allowing designs to be tested. Some examples included floating platform sand sloped embankments and energy generation in the canal showing how the blue networks can provide a multifunctional system for the city (Fabrique, 2021).

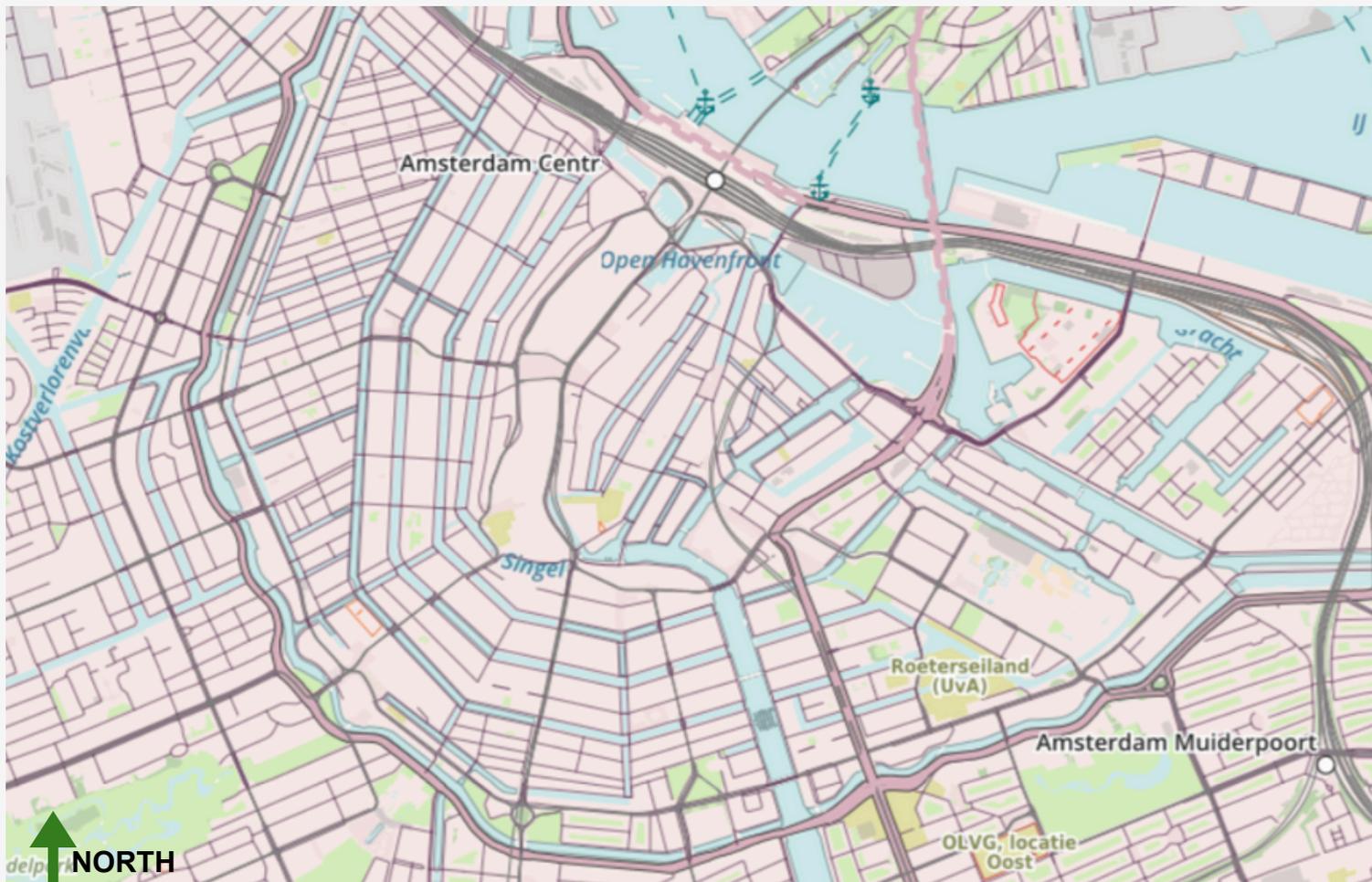
### Issues regarding the Blue Network

Due to the canals attracting tourists, The City of Amsterdam have created a blueprint assessment to ensure that the city is able to manage its water in terms of quality, sanitation, biodiversity attractiveness and scarcity. This is to ensure that the canals (being one of the main blue networks in the city) are sanitary for people who are socialising in the areas that surround them and for the wildlife that live in them. Despite the efforts to improve the water management in Amsterdam the water quality and biodiversity are still areas that need improvement since they are facing ecological, social and environmental pressure (The City Blueprint of Amsterdam an assessment of integrated water resources management in the capital of the Netherlands, 2015).

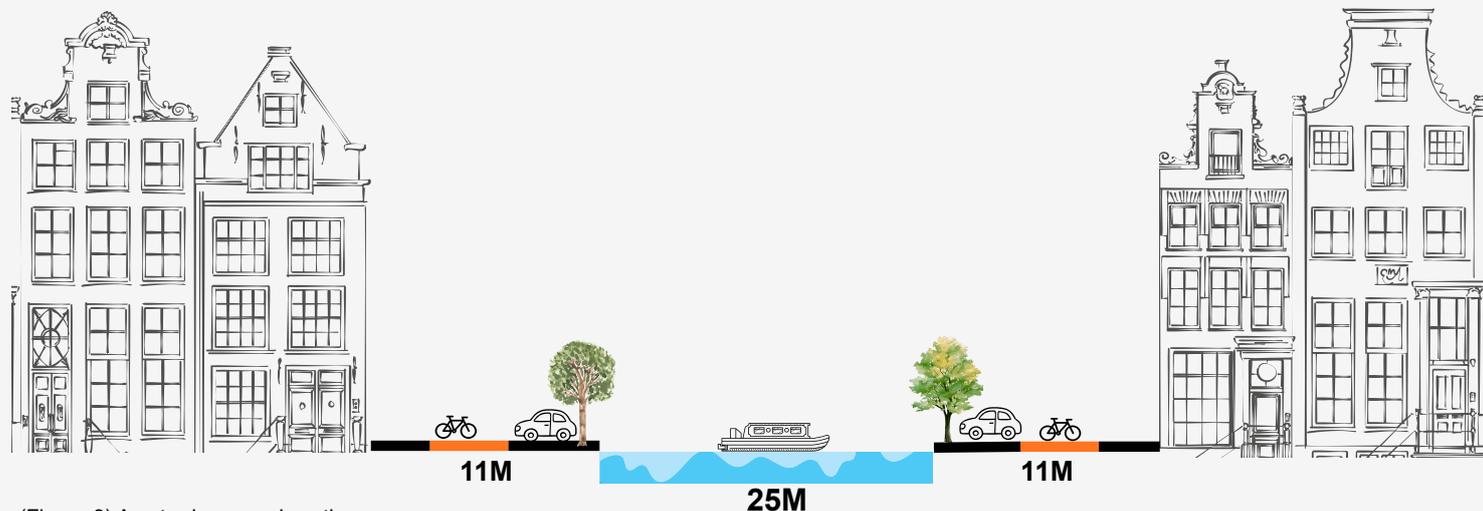
### Links to the framework

The Amsterdam canal system links to the other aspects of the framework. For example, shops and restaurants provide areas to socialise along the canal. There is lots of outdoor furniture that people use to sit along the canal. This contributes to social well being. It also provides connectivity across the city including bike paths that people can cycle along.

# Amsterdam Canal- Spatial evidence



(Figure 2) Amsterdam canal map (Digi map)



(Figure 3) Amsterdam canal section



Amsterdam outdoor seating (Heinrich, 2025)



Amsterdam canal section (google earth)



# CASE STUDY

## Birmingham canals

FOCUSSING ON CONNECTIVITY WITHIN  
LANDSCAPE AND ECOLOGY

### Introduction

Birmingham used to be a small market town but by 1800 it was a well-established settlement with a navigable blue network running through it. During the industrial revolution (Web Editor, 2024). The Birmingham Canal network allowed coal to be entered cheaply from the mines as well as manufactured goods from across the country. When Digbeth was transformed into an industrial area this opened up the Grand Union Canal which allowed access into the capital. The Canal development meant that Birmingham was connected to the surrounding cities of Liverpool as well as London via the blue networks. Since deindustrialisation occurred, the usage of the blue networks for connectivity decreased in Birmingham (Council, 2025).

### Canal Redevelopment

Today Birmingham's Canals are being redeveloped to re develop them since they have been underused and could offer lots of benefits to the city. One example includes the Soho Wharf scheme (see figures 4 and 5) which has introduced a £165 million development of homes and offices. Due to this development being created new connectivity routes including cycling, pedestrian and vehicle routes have be put in place along the canal. This means that the blue network running throughout the city increases connectivity to different areas via walk/cycle routes. For this specific project within the housing development a canal bridge offering a direct towpath into the city centre has been created. By Offering easy commuting access for people it means that their connectivity to jobs in the city centre is increased. This shows how blue can enhance life styles by offering increased connectivity within cities.

### Issues

Whilst the 100 mile Canal network that runs through Birmingham (see figure 6, 7 and 8) provides connectivity routes to and from the city it can be extremely expensive for the council to maintain. Since the network covers such a large area, places that are more rundown outside of the city centre may take more funding which the city does not have. A narrowboat owner also reported getting stuck on a certain section of the lock since it had not been replaced for a certain amount of years (Preece, 2023).

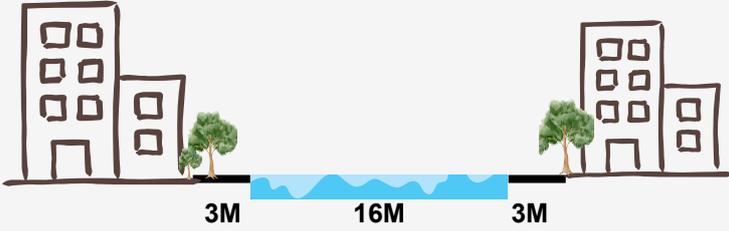
### Links to the Framework

Furthermore, the Birmingham Canal network includes aspects of the framework. It has links with multifunctionality and social well being at the section of the canal that runs through Brindley place in Birmingham. The Brindley place water front was redeveloped and finished in 1994 providing a vibrant sociable area for residents and people visiting the city ([History - Brindley place, Birmingham \[author here instead\]](#), 2025). This new development highlights social wellbeing and multifunctionality because the area brings people together to socialise whilst offering other activities such as boat tours and a shopping area.



# Birmingham Canals - Spatial evidence

Soho Wharf is an example of a new development that has prioritised regeneration of the nearby canal so that residents can use it for connectivity purposes.



(Figure 4) Soho Wharf section



(Figure 5) Soho Wharf - Birmingham (Heimstaden, 2025)



(Figure 6) Old print works map - Birmingham

This cycling map shows routes along the Birmingham canals from areas on the edge of the city that are connected to the main city centre



(Figure 7) Birmingham Canal



(Figure 8) Birmingham Canal



# CASE STUDY

## Regents Canal

FOCUSSING ON SOCIAL WELLBEING  
WITHIN LANDSCAPE AND ECOLOGY

### Introduction

Regent's Canal is the major blue network next to King's Cross rail station. Regent's Canal has always been a major transport hub for the city and has been redeveloped in order to transform the canal so that it could be used for transport, community use and for wildlife uses. This has led to the creation of public spaces, including King's Cross redevelopment and Coal Drops Yard (see figure 9). These spaces have contributed to the social aspect that the redevelopment is trying to achieve.

### Context

Today part of the blue network has been regenerated and is used for a social hub. Whilst the initial function of Regent's Canal was to transport goods across London and offer a connection via a blue network to the North of England it has now changed significantly (Doyle, 2021). Granary Wharf is the area next to the canal, this space is now home to restaurants, shops and Coal Drops Yard which is a lively social hub. This area also houses the Google headquarters, part of UCL university as well as a large shopping area with a huge variety of shops and restaurants that people in King's Cross train station or the local community can use as a social space. (The King's Cross Estate celebrates 10-year anniversary, 2021). Due to the different uses for the space it creates an area used by all age groups. One feature that integrates the blue network is the Everyman's Canalside cinema screen (section shown in figure 13). This cinema offers free showings of films as well as encouraging socialisation between citizens. It is located on the bank of Regent's Canal and shows how blue networks can be integrated into urban environments to benefit people (Semlyen, 2025).

### Issues

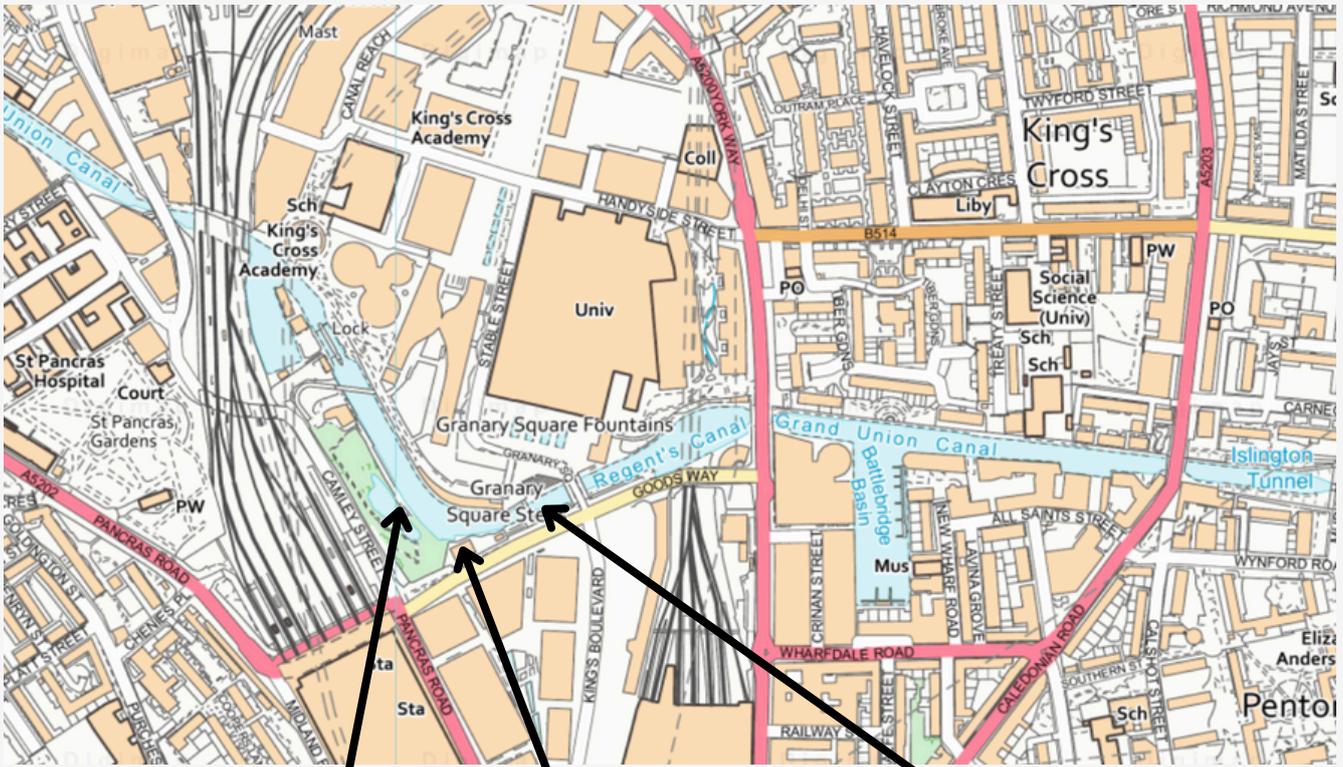
Whilst the attraction to these canal areas is positive for many reasons, it can also lead to a series of negative outcomes. These include, littering, pollution and cost of maintenance (Heely, 2025). Sadly even though regeneration has taken place in the surrounding areas of the canals, London's water management schemes have no mention of the actual canals themselves. The canal water is not drinkable therefore the main maintenance area would be the management of the litter so that wildlife can thrive and the canals continue to support social hubs and connections throughout the city.

### Links to the framework

As well as linking to the main theme of social well being, Regent's Canal offers connections to the other main themes from the framework, these are multifunctionality and connectivity. The multifunctional aspect is shown through the demand for a large transport hub whilst incorporating the blue network and also creating a social space (King's Cross, 2021). The connectivity aspect is demonstrated through the transport hub, but more linked to the blue network the canal paths themselves offer a connectivity. for pedestrians and cyclists to other parts of London. For example it runs through Camden and Little Venice, two large tourist areas in London (Canal & River Trust, 2025).



# Regents Canal- Spatial evidence



(Figure 9) Everyman open air cinema (S. Barker, 2025)



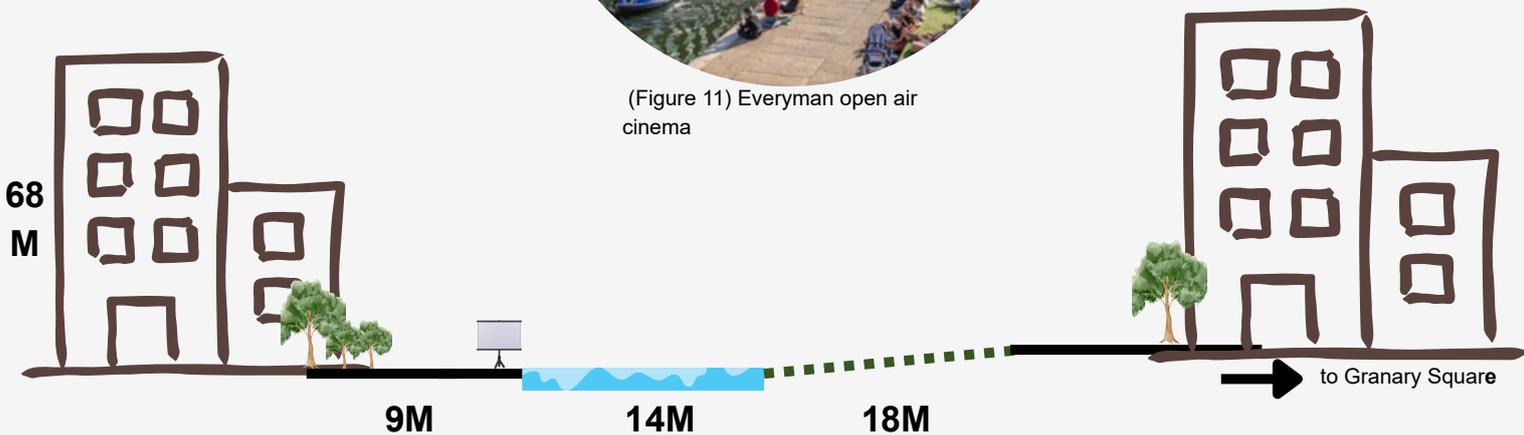
(Figure 10) Everyman open air cinema



(Figure 11) Everyman open air cinema



(Figure 12) Everyman open air cinema



(Figure 13) Section of regents canal including the cinema screen, demonstrating how it is incorporated into the blue network

# DESIGN Principles

## In relation to the framework

The design principles are all features that should be addressed when analysing the designs or creating new project



(Figure 14) Multifunctionality through the quay side project (AMS, 2025)

### Multifunctionality

- Spaces for a range of age group and people within the urban areas
- Offer types of multifunctional spaces
- Build climate resilience into canal corridors
- Encourage flexible and adaptable spaces
- Integrate some green infrastructure surrounding the canals to attract people and wildlife

### Social Well Being

- Aim to integrate communities by using canals as hub spaces
- Make the space attractive so people are more inclined to use it leading to social interactions
- Integrate some health and wellness features such as outdoor gyms and spaces to walk
- Enhance safety in the area
- Create inclusive and easily accessible spaces



(Figure 15) Granary Square (King's Cross, 2019)



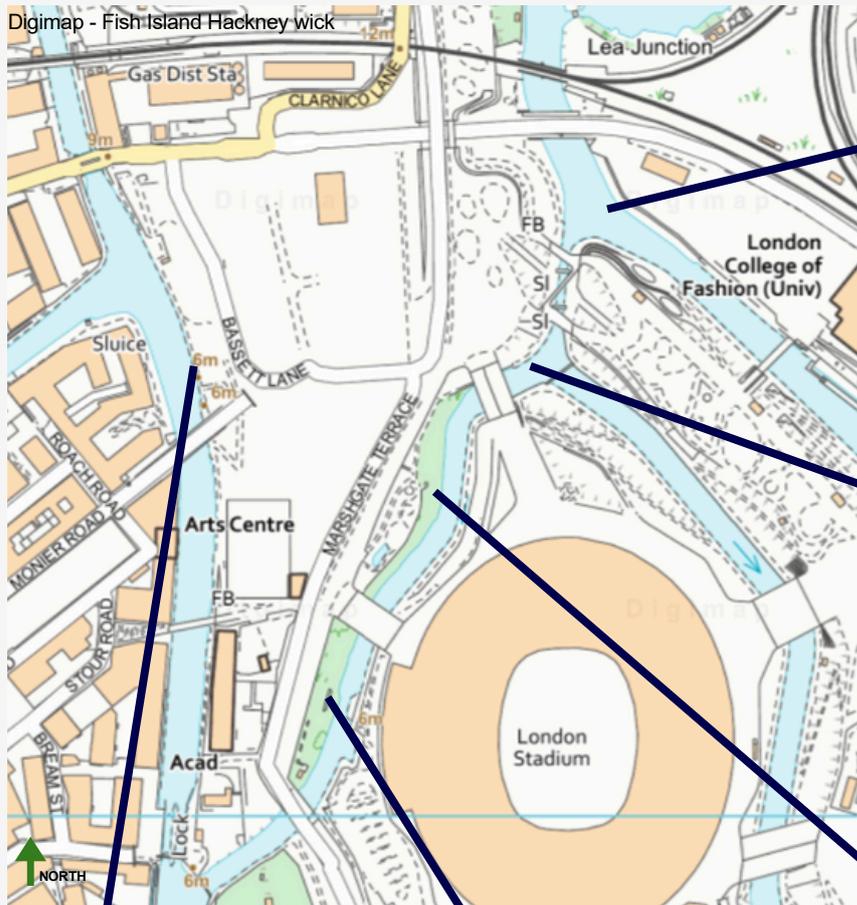
(Figure 16) Birmingham Canal (Canal and river trust, 2025)

### Connectivity

- Ensure different pathways are provided for both walking and cycling
- Paths and signage encouraging the use of the connections
- Make sure major areas are connected
- Improve physical connectivity along and across canals

# LINKS TO Fish Island

The research that has been provided throughout this project has demonstrated the relation and relevance to the Fish Island case study that is being focussed on in the masterplan project (map shown in figure 17). Since the site is surrounded by urban canals it is important to understand the impacts that they have on the surrounding communities. The research shows how they are used in different ways to meet the needs of the local community but also a larger area of people.



(Figure 17) Hackney Wick (Digimap 2025)

Connectivity across the whole site via the canal helps to support the research of blue networks supporting communities



(Figure 18) Hackney Wick

Canals surrounding the site this links to the blue network example being a canal



(Figure 19) Hackney Wick

Having a school and a football pitch helps support the idea of multifunctionality along the site

Areas alongside the Canal banks linking to all of the framework, since it is providing spaces for people to socialise

Green space to promote social well being



(Figure 22) Hackney Wick



(Figure 21) Hackney Wick



(Figure 20) Hackney Wick

# CONCLUSION

In conclusion, this research demonstrates that blue networks such as canals have a significant and evolving impact on communities in and around urban areas which has been demonstrated throughout all three case studies (Amsterdam Canal, Birmingham Canal and Regents Canal). It is important that the canal areas are well respected and maintained so that biodiversity is able to thrive all year round and they can be continued to be used by communities throughout all seasons. The research also highlights how the canals serve and support cities for many different purposes. By linking these features with the design principles it can show how this research can be integrated into the Fish Island master planning project and act as supporting evidence for the canals that surround the Hackney Wick local area.

Together these findings show that canals, when planned and managed effectively, are more than leftovers of industrial infrastructure. They are urban assets that enhance wellbeing, expand multifunctional urban space, and strengthen connectivity.



(Figure 22) Amsterdam Canals



(Figure 23) Birmingham Canals



(Figure 24) Birmingham Canals



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