INTRODUCTION

In 2017 the Isle of Wight development department invited Portsmouth School of Architectures’ Master of Architecture programme to contribute to its regeneration strategy through a research engagement investigating the island’s economic, social and environmental spatial design. A research study programme developed, drafted and co-ordinated by Walter Menteth and Francis Graves, lecturers at the school architecture, was subsequently launched.

The study has sought through physical research and spatial analysis to develop test and posit social, environmental and economic development, through architectural design strategies that deliver long term regeneration, improvement and betterment. An aim has been to extend knowledge and thinking, identify and seek potential and opportunities, and raise public and stakeholder awareness to support and promote qualitative improvement.

Three waterfront towns, Newport, Ryde and Shanklin, each at risk from climate change induced rises in sea level, where initially selected for investigation. Each town was then explored by separate teams working in collaboration. In 2018 the research extended to encompass Cowes while also seeking to address fluvial flooding in Newport.

This leading Ryde Masterplan Report contains overall summary findings from the study of Ryde collaboratively undertaken by the team comprising Paul Moss, Ida Rovick and Tadeusz Jasinski.

Each of the three architectural researchers then developed three areas of further detailed study, and these are recorded in three additional reports.

1. Ryde Town Square, interchange and Pier.
2. Ryde Seafront and beach
3. Mixed use, conference and theatre space

Restoring the beach, resolving the transportation interchange, improving the towns approach from the sea, delivering year-round employment opportunities and activity, accounting for an increasingly elderly population, along with population growth, and improving the towns offer so it becomes a destination of preference rather than a transit hub, are among the issues which have been addressed.

The findings show how better integrated forward economic, spatial and architectural planning can open opportunities for all and enhance the town’s economy and release potential, whilst also securing the town against impeding climate change impacts – such as sea level rise and fluvial flooding.

This research has been developed to contribute through analysis, designs, benchmarking and discourse, to raising public and stakeholder knowledge of the sustainable, qualitative and practical developmental potential of Ryde.

At the invitation of the Isle of Wight development department a public exhibition of this design research was held at 30 High Street, Newport from 19 - 30 July 2018, with the work presented at the Isle of Wight annual regeneration conference in July 2018.

Walter Menteth and Francis Graves
Research supervisors and editors
July 2018 (r.2. 12/18)

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A masterplan reporting a design research investigation of Ryde, Isle of Wight

This Ryde masterplan of June 2018, report the findings of Paul Moss, Ida Rorvik and Tadeusz Jasinski. It is to be read in conjunction with the three authors individual reports which each take areas of the masterplan (outlined in Red in the adjacent figure) and develop the detail design of these areas further, to RIBA Stage 3.

The three complimentary reports are numbered 1-3, as described below (and Keyed on the adjacent location plan). The projects, outlined in Blue, are other sites also investigated further as part of this collaborative group research study.

1. RYDE TOWN SQUARE, INTERCHANGE & PIER -
The main interchange and travel hub that includes the hoverport, bus, tram and cycle services. Point of wayfinding.

2. BEACH & SEAFRONT
including the landscaping design of the sand dune sea dyke, shared surface esplanade, and commercial outlets within dyke.

3. CONFERENCE CENTRE, THEATRE & MIXED USE
Including landscaping of mixed use development, junction between esplanade and monktonmead brook, and theatre & mixed use tower project.

4. PIER NECK
Including the pier renovation, shared surface composition, structure, and commercial pod design.

5. PIER HEAD
Including the development of a new marina, ferry port, public space, and commercial attractions.
**RYDE – GATEWAY TO THE ISLE OF WIGHT**

**MASTERPLAN STRATEGY**

- Reformat inter-town travel
- Establish cost-efficient connection to mainland
- Provide attraction to gateway locations to
  i) boost tourism
  ii) encourage inward investment
- Provide infrastructure to deal with rising sea levels and adverse weather conditions
MAINLAND CONNECTION

- <5% travel to mainland
- Almost 0% travel from mainland to IOW

The connections between the mainland and island are wholly by sea travel. Services exist through Wightlink and Hovertravel from:
- Portsmouth - Ryde
- Portsmouth - Fishbourne
- Southampton - Cowes
- Lymington - Yarmouth

To improve connections to the mainland the strategy suggests additional services;
- Portsmouth - Cowes
- Southampton - Ryde
- Southampton - Yarmouth
- Lymington - Cowes

These are ideal routes considering the travel pattern evident in the above datashine census map, and will establish a more competitive market within the sea travel sector, and disperse current traffic loads on the island during peak times as alternative destinations for travel are available.
INTER-TOWN TRAVEL

COWES
1576  16% Work in town
1090  11% From Home
789   8%  No Set Place
5924  60% Out of town

RYDE
1084  12% Work in town
904   10% From Home
861   9%  No Set Place
5825  63% Out of town

THE BAY
1782  17% Work in town
1375  13% From Home
1047  10% No Set Place
6147  59% Out of town

FRESHWATER
1164  35% Work in town
552   16% From Home
407   12% No Set Place
1236  37% Out of town

NEWPORT
2183  21% Work in town
963   9%  From Home
851   8%  No Set Place
6630  62% Out of town

KEY
- Guided Busway
- Bus Route
- Minor Town
- Major Town

RYDE – GATEWAY TO THE ISLE OF WIGHT
GUIDED BUSWAYS

The proposal incorporates a **network of guided busways** to connect major towns on the Island. These busways are dedicated lanes for public transport made from concrete beams forming the main busway route.

The dedicated busways will **alleviate the existing road network**, decreasing commuting times and increasing employment prospects.

It will challenge the monopoly on public transport currently held by Southern Vectis operating on the island, lowering the cost of travel and **encouraging high quality transport** for the public.

EXISTING ROAD NETWORK

In addition to the guided busways the Island will benefit from an **upgrade of the existing public transport network** connecting to towns and villages with less frequent traffic build-up. This includes frequent and reliable links from major towns through the existing bus service.

A review of the existing bus service will identify areas of potential improvement, achievable through road upgrades and the incorporation of i.e. High Occupancy Vehicle (HOV) lanes where appropriate to encourage carpooling and lessen congestion.

The Island should strive to **future-proof** its public transport links and any proposed roadwork should incorporate **sustainable and innovative solutions** i.e. solar roads, green roads or kinetic technology for the production of electricity.

CAMBRIDGESHIRE GUIDED BUSWAY

- Longest guided busway in the world
- Special buses guided by guidewheel-on-concrete-kerb lanes
- Narrower lanes than conventional all-purpose roads
- Multiple operators
- Park & Ride
- Smart-card ticket service
- Increase in local trade as a result of connecting villages to the busway
- Several expansions currently planned

SMART ROADS

- Increased research into ‘smart roads’ leading to innovative technologies for road surfaces
- Main focus is;
  i) To reduce carbon footprint
  ii) To produce energy
  iii) To reduce maintenance costs
- Technologies include;
  i) Harvesting kinetic energy from moving traffic
  ii) Installing solar panels
  iii) Self-Healing concrete
  iv) Electric lanes changing electric cars
  v) Intelligent transport systems using fibre optics
  vi) Driver-less transport inc. buses & cars
EDUCATIONAL SAILING

EDUCATION LED TRAVEL

To further establish alternative travel from the mainland to the Island, an educational sailing scheme will be made available in partnership with the University of Portsmouth. This scheme has two aims;

i) Enable a novelty way of travelling not only between the mainland and Island, but round-island, as well as internationally to nearby coastal locations in i.e. France. This will diversify the modes of travel, further reducing travel costs for the user.

ii) Bring the university to the Isle of Wight, boosting research and employment on the island.

KEY

Sailing Route
10% of the island’s residents work within the tourism industry. In coastal towns such as Shanklin and Bembridge, this figure increases to approximately **50% of residents in seasonal employment**.

**TOURISM BOOSTS**

Due to the nature of seasonal tourism on the island and the amount of people employed in this sector, it is a priority to **boost the length of the tourism season** through innovative, year-round attractions. This boost should happen in towns where tourism is already a high contributor to the local economy, as it is important to keep these residents employed.

Investment within these towns will have a natural effect on the local economy throughout the island as **improved inland connections will encourage tourists to visit a larger number of sites**.
**CLIMATE CHANGE**

**FLOOD RISK**

Sea levels are expected to **rise by 1m by 2100**. This will have an adverse **retreating effect on the island’s coastline**, mainly the Northern and Eastern coastal towns, as the topology sees less level changes in these parts of the Island than the South, where a cliff landscape is more common. However, an increase in sea level doubled with an **influx of adverse weather will inflict erosion damage** to these areas equally as damaging as the flood prone north.

The climate induced rise in sea level and increased adverse weather will incur **irrecoverable damage to the coastline**, costing millions in damages and putting lives at high risk.

Rather than retreating coastal facilities inland, it is **more cost effective long-term for the island to invest in flood defences** that will secure the existing shorelines from flooding. There is no single method of sea defence that will fit the entire island, and extensive flood risk assessments should be carried out to determine the best solution for each afflicted area. Flood defence methods include dikes, sea walls, boulder barriers/rock armours, cliff stabilisation and beach nourishment.

There is scope to **implement public facilities and infrastructure to these flood defences** that can benefit society in multiple ways as part of the defence, as such these structures hold possibilities for economical and societal growth for the island. Where feasible such integration should always be considered.

**KEY**

- Existing Coastline
- 1m Searise Coastline
- Flooding

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RYDE – GATEWAY TO THE ISLE OF WIGHT
The Island Strategy presents solutions to varying issues pertaining the whole island and its relationship to the mainland on a macro scale including:
- Mainland connections
- Inter-town travel
- Tourism
- Education
- Employment
- Climate Change

Further this investigation will tackle these same issues in the coastal town of Ryde, north east on the island, on a more immediate scale that allows for a new Masterplan of the town. The Ryde Masterplan is a case study to the Island Strategy, further informing the choices made at macro scale.

Please also note that this masterplan will be used to inform the individual design projects in U.402.
1.0 SITE ANALYSIS

Existing Town

1. Pier Head - Current Pier head is dominated by travel. The large car park, train, and ferry port leaves very little public space.

2. Pier Neck – Priority given to Cars and Train with pedestrian constrained to small central path.

3. Pier Base/Seafront - Large Disused development, excessive car parking, Train tracks, hover port, bus, and train station create cluttered seafront separating town from beach.


5. Roads - Duel carriage way dividing town and seafront.

6. Population - Generally the Ryde Population suffers from low rates of employment, high levels of welfare, and an ageing population.

7. Travel – Town dominated by priority given to car.

8. Flood - Poor flood infrastructure separating East and West Ryde.
EXISTING URBAN ANALYSIS

Ryde is a seaside town with a surprisingly detached relationship to the sea. There are few streets facing the seafront, with only the Esplanade street having its active frontages towards the beach. Even so, these frontages are set back from the seafront with the large irregular hard landscaped promenade in front of it, thus losing this connection to the beach. Other active frontages are largely determined by the road layout, facing whichever way the road passes it by.

The buildings surrounding the main historic town are largely of residential nature, with the main commercial street being mixed development starting on the Esplanade and trailing up Union Street. The sea front has scattered public or cultural buildings, though they are sparse far between the road infrastructure. Industrial buildings are mainly focused around the river in Monktonmead Brook, snugly sited in-between residential buildings. Much of Monktonmead Brook remains undeveloped due to the fluvial flooding of the river.
1.2 POPULATION

Population

The hover port and associated public space is focused on the development of Ryde and benefiting its residents. Population assessment of Ryde helps demonstrate some of the issues the Hover Port Scheme aims to tackle in Ryde; Employability, Population Age, Education. The following graphs show a percentage ratio of the population against a variable.

Employment –
Graph A shows that ~ 40% of adults in Ryde are employed on a part time basis. Graph B shows that ~30 of the adult population are employed full time. Together these stats show that in Ryde there is a 30% unemployment rate.

Population Age –
Graph C shows that nearly 40% of the general population is ages 65+. Because of the aging population ~30% of Ryde residents are considered of poor health putting a strain on the council.

Education –
Graph E shows that ~ 28% of the adult population has no formal education, and <1% has a higher education degree, shown in graph F.

KEY
Key graph showing 100% of the 8500 people surveyed
1.3 TRAVEL

TRAVEL

Ryde is a town dominated by travel, the town is one of three gateways to the IOW connecting to Portsmouth through the Hovertravel service and White link passenger ferry service. In addition to the ferry and hover connections the town hosts the South Western Railway line to Shanklin and the Southern Vectis Bus Station. The abundance of public transport in the town has been fuelled by demand, the lack of job prospects means that the majority of resident’s commute either to a different town or off the island for work.

Of the 8500 residents surveyed;
12% Work in town
10% Work from home
9% Have no specific place of work
63% Commute out of town

Travel Destinations -

The majority of commuters travel to Newport.
The other most common destinations are Bembridge, The Bay, and Cows.

Travel Analysis.

~ 50% of commuters travel by Public Transport

~ 50% of commuters travel by Public Transport
EXISTING TRAVEL PLAN

The Map show the current travel conditions in Ryde. The Ferry arrives at the top of the pier connecting with the train and bus station at its base. The Hover port is located east of the pier also connecting to the train and bus station. Routes out of the town are provided by the train along Monktonmead Brook and the bus along the routes shown in solid red. The town itself is served by local buses along the dashed red line. As you can see there is a priority on routes out of town with little dedicated in town public transport.
THE HISTORY OF RYDE

In the 1300’s, ‘La Ride’ fishing village was recorded on the Isle of Wight. This comprised of two hamlets linked by a rough road, approximately where St Thomas Street runs.

The Pier was opened on the 26th July 1814, which was and still is a timber planked promenade. Measuring the length of 527m/1740 feet. Which was extended in 1833 to 681m/2250 feet.

In 1855 a proposal for the esplanade was submitted, this was built over the course of 1855-1857. Creating new public gardens on the seafront.

In 1864 the lengthening of the Pier was so successful, there was a proposal for a second pier. Creating a tramway that allowed passengers to be taken from the pier head to the esplanade.
THE HISTORY OF RYDE

In 1868, negotiations took place for the development of the railway from St Johns Station to the esplanade.

In 1871 the Theatre Royal was Built. Located at the top of Union street. This theatre ran as a theatre and a club. At the time it boasted as one of the best provincial theatres in the county and was the only one on the Isle of Wight. However on May 19, 1961 a catastrophic fire burnt down the theatre.

In 1876 approval came though for the new railway pier, connecting the pier head and St Johns Station, through a tunnel under Monkton Street.

In 1878 a plan of the proposed extension of the Esplanade from the Sluice at Cornwall Street to the Eastern Borough boundary at Appley Slipway was approved. This work, together with the construction of the Caroe Lake, was completed in 1880.

On 12th July 1880 the third pier was opened, alongside the first two, providing a direct steam railway link to the pier-head from St John’s Station.

In 1895 a concert pavilion was constructed at the pier-head and over the next sixteen years the original wooden piles were replaced in cast iron.

A more in depth history timeline is attached as appendix A
1.5 FLOOD RISK

RYDE TIDAL FLOODING

Currently the Isle of Wight, Ryde has a large history of regular occurring floods that are due to the combined threat of tidal and fluvial flooding.

These floods have occurred fairly regularly, causing a large amount of properties located close to the seafront and the river to flood. Due to the low level ground surrounding these sites, the homes are regularly flooded when tidal floods occur.

Ryde has a long history of flooding dating back 100 years, these incidents have been recorded and had occurred in; 1914, 1962, 1971, 1974, 1975, 1989, 1993, 1999, with more and more incidents occurring.

Ryde now has to take into consideration the threat of climate change and how it will affect the tidal flooding that currently affects Ryde. The ice caps are now melting at a faster rate which has an increased impact on the way the rising sea levels will affect the seafront of the town.

The consideration of the rising sea levels for the next 100 years need to be implemented into the defense of the town to ensure that zone 2 and zone 3 on the map are not a regular flooding occurrence. Whilst considering the threat of the 1 in 20 year storm, and how this will have adapted to the rising sea levels.

In addition to the rising sea levels the coastline at Ryde currently comes under a classed medium risk of wave exposure. This is where the homes come under threat of airborne beach material and corrosive effects from the sea spray.
RYDE FLUVIAL FLOODING

Within Ryde, there is a risk of fluvial flooding to the town. Monkton Mead Brook River is considered a main contributor that causes flooding within the town. This is due to the low lying lands surrounding the river.

This area is flooded when there are sea storms. The ground gets saturated from the rainfall and the sea levels rise, causing the water pump located on the sea front to get backed up. This means the water from the river is not able to be extracted into the sea. As an effect the water then builds up within the ground and river, in which the river bursts its banks. Causing various floods that occur on a regular basis within the town. (Refer to appendix B)

The cause of the many floods that affect the town are when the pump fails to work, or there is a build-up of debris, causing inadequate drainage for the water. Currently to the south of the town there is an active flood plain that enables some of the water to gather without causing more damage to the town.

If this active flood plain could gain a larger area of water for the water to drain to in the case of the pump not working. This would allow the water to be extracted from the town to flood the area in which contains fields, without a drastic affect on the population within Ryde.

This extracted water from the seafront would enable the town to deal with the flooding situation in a way where a designated area is flooded to ensure the town isn’t flooded. Creating certain flood plains by the river would enable the water to gather, ensuring the river doesn’t burst it’s banks and reduce the major fluvial flooding that occurs within Ryde.
1.6

SITE VISIT

SITE PHOTOGRAPHS

1. Train station and ferry terminal seen from pier
2. Approach to Interchange from pier
3. Marina
4. Beach
5. Current pumping outlet from Monktonmead Brook
6. Canoe Lake
7. The Interchange
8. Hoverport
9. The grade II listed Pavilion and esplanade
Based on the site analysis conducted, certain elements of the existing Ryde plan became the drive for our proposal.

1. There is an **established xy-grid system** to the oldest part of Ryde which is largely present today, though has been somewhat lost in the modern development of infrastructure. The proposed masterplan will **re-instate the grid system** of streets, opening up new access routes to the seafront and eastern parts of the town.

2. The **irregular growth of the seafront** has been driven by the needs of the time, and the recent additions of vehicular parking and low quality amenity have shaped the seafront, but **without clarity or purpose**. These spaces are hard to navigate and especially the **marina is inadequate** for its location. The masterplan addresses these issues by **stripping the seafront back** and relocating services to more appropriate locations.

3. The transport infrastructure in Ryde is a **key issue** that must be addressed. The site analysis identifies a **makeshift boundary ring-way** of roads that link to key areas of the town. This informs the pattern of travel in and out of the town, and **highlights areas of flooding**. A **drainage system serving this ring-way** can reduce flooding loads and strain on the current system.

4. **Green amenity space** is scarce in the town, and the proposal should aim to **re-introduce amenity on the seafront** in a way that provides more **green and sustainable places** for people to dwell.

5. **Flooding of the town** is the main issue long-term. The proposal seeks to **create a flood defence system** that safeguards the town from tidal and fluvial flooding.
1. The initial proposal tackles the issues of transport, indicating routes of traffic and relocating the Interchange west of the pier for better connections. An indication of development pertaining to the pier in form of pods and moving the marina to the pier head are indicated, but needs further study of scale and positioning. The seafront is stripped back as intended and treated with a hard flood defence structure with intermediate access points to the beach informed by expanding the existing town grid. There are clear issues with the connection between the seafront and beach, and the spaces created by the hard landscaping are undefined, leaving them exposed to end up as the current seafront with unconnected structures and dead spaces. Some indication of development in the Monktonmead Brook area is shown following the grid extension principle, but the massings are not scaled or oriented purposefully. This area must be further explored.

2. The second proposal develops the initial plan, treating the traffic with the same intent as the initial proposal, though with more clearly defined routes for specific modes of transport, giving a better idea of circulation. The pier is largely as the previous proposal but with more appropriate scales and defined spaces. The seafront is re-done to include a wider range of defined spaces. A larger amount of green emphasis is added and appropriate locations of potential buildings, though the flood defence still remains a hard solution. There is still an issue of the connectivity with the seafront and the beach to be explored. The Monktonmead Brook development is better defined with the grid and existing grain of the town.
Arrival – A memorable first and last impression of the island.

Seafront – Sea defence infrastructure, the seafront will enforce the connection between the town and beach.

Way-finding – Re-organising the foot of the pier, providing a physical connection with the high streets and along the sea front.

Travel – Dedicated bus roads in and out of town to ease congestion and replace the old train-line.

Travel - Circular bus route around town to reduce the reliance on cars within the town.

Housing Retail – The re-purposing of industrial land along Monktonmead brook will house a new development to establish better links across town.

Green Cycle Route – This will follow the route of the old trainline, linking the three areas of the development.
Proposed Masterplan

1. Arrival – memorable first and last impression of the Island, hosting the relocated marina, ferry and sailing transport routes, and station for the town tram replacing the train.

2. Pier – Re-surfacing the pier creating one seamless shared surface for people cars and trams. Along the piers length an array of floating commercial pods hosting restaurants and shops will reference the Victorian pier’s original stalls and also the high street.

3. Way-Finding – Reorganising the foot of the pier creating a new primary route to the high street and a secondary foot bridge to the top of the sand dunes referencing the route of the old pier. The layout will provide a clear and legible connection to the high street and seafront, as well as a new town square and travel centre.

4. Seafront – Sand Dune Dyke Sea defence infrastructure to elevate the seafront level to protect against rise in sea level. Along the seafront there will be a number of connections to link the town and beach through the dunes, as well as an array of commercial outlets set within the dunes.

5. Mixed use development – at former location of Canoe Lake to provide commercial investments in the town regeneration.

6. Mixed use development – across Monktonmead brook connecting the town and providing much needed fluvial flooding infrastructure.

7. Tram – tram route replacing train service, will run along primary town roads to reduce dependence on the car.

8. Green Cycle Route – Continued development of green areas along Monktonmead brook to help develop ecology in the town. Cycle route along former train line, connecting Ryde pier to the Bay.

2.1 Pier Masterplan

Pier Development

The pier is the starting point for development in Ryde, it is the first and last point of Ryde and the Island and is a key opportunity to trigger outside investment. Investment in the pier will lead to further investment in the town, so creating spaces capable of hosting low risk investment is vital. The Pier can be logically divided into three key areas, the head (1) the neck (2) and the base (3).

1. Pier Head - If travelling by ferry the Pier Head will be the first point of arrival, it is important to celebrate this and create a memorable first and last impression.

2. Pier Body – is a unique path of arrival, and an opportunity to advertise the town to those not intending to stay.

3. Pier Base - is the knuckle joint between the pier and town, it is also the junction between the two primary axis of the town; the high street, and the sea front.

The New development on Southend-on-sea Pier by White Arkitekter + Sprunt is a good example of how investment into a pier can help boost tourism. Since completing the project to renovate the pier and construct the cultural centre, paid admissions have risen to their highest level. Investment such as this in Ryde pier, will add an additional layer of drama to the excitement of arriving by ferry or hovercraft.
2.2 PIER HEAD

PIER HEAD

The current pier head is cluttered and dominated by parking, the train station, and the ferry port. The new proposal aims to address this by giving priority to pedestrians. The pier head is the gateway to Ryde for those arriving by ferry. Historically the pier head had more traditional contents including a pub apperly named “the first and last pub”. Our pier head proposal aims to once again celebrate this gateway through the introduction of new public spaces capable of hosting an array of events. The west of the pier is designated to public space. (4) The east of the pier will host the relocated marina, (5) with the ferry port to the north. (1) The parking will be relocated to the base of the pier with a park and ride tram connecting it to the port.

1. Ferry port
2. Commercial space
3. Marina Parking
4. Undefined Public space
5. Relocated marina now capable of 24h use
6. Marina enclosed by pontoons.

EXISTING PIER HEAD

PROPOSED PIER HEAD MASTERPLAN

KEY LEGEND
- Vehicle Route
- Tram/Train Line
- Pedestrian boundary line
- Pedestrian Path
- Ferry Route
- Sailing Route
- Parking

Scale 1:1500

N
PIER NECK

The pier is a unique means of arrival for any town and a big selling point for Ryde. Typically Victorian seafront piers such as this are pleasure piers, however Ryde pier is a heavily trafficked working pier. The nature of the pier is reflected in its design, the 25m wide pier is separated into two sections with a priority given to transport. The centre, currently a void, was traditionally the route of the railway before it became structurally unsound. In order to maximise the pier’s potential while retaining its functionality, we have used the layout of a high street as a precedent.

Our proposal is to remove the remains of the centre section, replacing it with a contemporary structure creating a seamless shared surface. The railway is being replaced by a tramway which will run along the new centre section of the pier along with all other vehicle traffic. At each side of the pier, taking inspiration from the Victorian original, will be a series of commercial pods projecting over, or floating on the water. This layout will retain the functionality of the pier, while allowing it to become a pedestrian friendly destination, and an additional point of outside investment in the town.

Scheveningen Pier - Netherlands

Although on a much larger scale, Scheveningen Pier is a good example of how investment into pier based attractions can turn a pier into a focal attraction. Taking this principle and applying it to Ryde pier, we are proposing an array of projecting and floating pods either side of the pier. We believe a layout such as this will create a similar public situation to that of a high street, with the choice to travel straight along or stop and explore.
PIER BASE

The pier base is a key point of orientation and a major cross road between the town, seafront, pier, and public transport. The current pier and hover port are tailored primarily toward transport with its base connected directly to the train station and bus stop.

As points of arrival, it is vital that these have a clear and inviting connections to the town and seafront. Our proposal is to de-cluttering the seafront by removing and relocate all the excess development from north of the esplanade. Removing developments such as the ice rink, and relocating the hover port west of the pier, will open up the beach to seafront property south of the esplanade.

In place of the removed developments, we are proposing a sea defence dyke constructed to mimic natural sand dunes. These sand dunes will help to both create a more beautiful seafront and protect the town for the next 100 years.

To celebrate the connection with the town, we are proposing extending the pier toward the high street creating a direct link to the town. Next to the new pier base we are proposing a town square, this will create a dynamic meeting point for the town, capable of hosting public events and activities. These measures will mean that all arrivals will be greeted at the pier base by an enticing view of the town, high street, and seafront.

1. Pier Junction
2. New Pier Extension
3. Hover Port Slipway
4. Foot Bridge connecting to path
5. Hover terminal
6. Bus Station
7. Foot Path Along Dyke
8. Bus Stop
9. Town Square
10. Sand Dune Dyke
11. Shared surface Esplanade.
2.5 TRAVEL STRATEGY

TRAVEL - BUS

Bus is the most commonly used means of public transport on the island and in Ryde. Currently Ryde has a bus station on the seafront and a bus depot further out of town at the bus museum.

The Seafront bus station is vital for the town's connectivity, however, is poorly located at the base of the high street opposite the esplanade. Its location along with the train station aids in separating the town from the beach, causing clutter and confusion to the seafront.

Our masterplan proposal for the bus station is to reduce its size and relocate it west of the pier, opening up the beach and pier to the town and high street. In order to reduce its size we aim to reduce the load of traffic scheduled from it.

By introducing a local tram system to the town we lose the need for local bus routes reducing the number of services required. To ease strain on the major bus routes at rush hour we are proposing a network of dedicated bus lanes and an inter-town bus service as part of the island masterplan. These changes will mean that bus routes through town will be reduced easing congestion, and inter-town routes will be streamlined reducing commute times.

1. Relocated bus station
2. Reduced bus routes within town
3. Dedicated bus routes between town

KEY LEGEND

THE BUSWAY

The Busway Cambridge is a network of dedicated bus routes connecting towns around Cambridge. A system like this would help significantly reduce the commute times of people travelling between towns on the island. If a dedicated lane could be introduced through Ryde as well as between towns, this would reduce the strain on the bus service in Ryde and reduce congestion.
TRAVEL - CAR

Currently Ryde seafront is dominated by transport and parking creating a rift between the town and beach. Access to the parking is by a duel carriage way along the seafront esplanade adding to the separation between town and beach.

Image of Ryde seafront - the parking is so dominant that it removes any sense of connection to the town or beach.

As part of our masterplan we are proposing an overhaul of all transport in the town, making public transport more legible and reducing the impact of the car.

To reduce the impact of the car on the seafront while still allowing parking, we are proposing a horse shoe layout of primary roads and parking. Utilising the developments are the pier base and monktommead brook, we are proposing two large underground car parks each end of the esplanade. Access to these car parks as well as the pier base, and monktommead development will be via primary vehicle roads at the east, south and west of the town.

This layout will allow equal access to the town and seafront without having to use the esplanade or monktommead brook development. Reduced traffic in these areas will allow them to become pedestrian focused shared surface roads.

1. Underground Car park
2. Shared surface esplanade
3. Primary vehicle town access.

Scale 1:10000

GUNWHARF KEYS

The underground car parks at each end of the esplanade are a vital aspect of our travel strategy. Creating underground car parks in such proximity to the water is a potentially risky strategy in a town prone to flooding. Gunwharf keys has been voted consecutively the UK’s best car park and is a great precedent on how to create a big functional underground car park next to the coast.
TRAVEL - TRAM / CYCLE

The current train service between Ryde and Shanklin is at best characterful, but in reality is another ageing link to a past decade. The Rolling stock is dated and the line is incompatible with newer trains. To compensate the ageing train the island has developed a comprehensive bus service. Any development would be better spent on improving the bus service rather than the full overhaul that would be required to update the train.

Based on this information our island proposal is to fully replace the train with a dedicated inter-town bus service, combined with tram systems serving the larger towns. The tram system in Ryde will form a grid within the outer bus route, providing residents with a quick, cheap means to navigate the town. The tram will circle the town starting and finishing at the pier head, continuing to provide commuters with a link between the bus and ferry service.

To utilise the former train track we are proposing creating a green cycle route, connecting Ryde to Shanklin, along with the islands other cycle routes. This green cycle route will both serve as a further tourist attraction to Ryde along with increasing health in the town.
1. Tram line down Pier
2. Cycle route starting on pier
3. Tram and cycle routes along shared surface esplanade.
4. Tram service through town grid.
5. Cycle route out of town west.
6. Green cycle route out of town along former train track.

RED SQUIRREL ROUTE

The Red Squirrel Trail is a successful example of how a former stretch of train line on the island can be transformed into a destination for cyclists. The route runs for 32 miles and connects between Cows, Newport, Wroxall, Shanklin, and Sandown.
Converting the Ryde to Shanklin line into another cycle route will allow Ryde to join the list of destinations on the Red Squirrel train, bringing in tourism and increasing health.
EXISTING CONDITIONS

The existing seafront spans the length from the Hoverport to the Ryde Beach Sand Playground and includes the Ryde beach, the promenade and the A3055 spanning the same length.

The current promenade has been expanded to accommodate low quality leisure facilities and is dominated by open car parking. A marina east of the main car park is only usable during high tides.

The Grade II listed Pavilion has been converted to a bowling alley with a large architecturally insignificant extension to the back. The whole promenade is predominantly hard landscaping i.e. paving and asphalt with little green areas and trees of low ecological value.

Though an A-road, the Esplanade has problems with congestion due to the proximity to the pier and the main parking being on the promenade. There is little space for buses at the Interchange, and the roundabout opposite the Pavilion mainly serves buses turning. The promenade is not pedestrian-friendly with priority given to vehicular activity, and the train tracks deny access to the current promenade and beach for a large portion of the site.

Access to the beach is limited to designated areas with the primary boundary to the beach being concrete wall elements, acting as the current flood defence however the promenade is not tall enough to protect from the expected rise in sea level by 2100, as shown on the section. A storm surge will mean the entire promenade could potentially flood by 1.5 meters, reaching beyond the current streetfront to the Esplanade.
The proposed solution to the seafront strips back the existing frontage to the street of the Esplanade, which is reconfigured to become a shared surface. The waste from demolishing the hard landscaping will be used to create a 2.5 meter tall dike which will be a linear structure running the length of the seafront to create sufficient protection from tidal flooding. The dike will be covered by a dune consisting of soft landscaping, mainly sand from the existing beach and dune flora. This is a soft engineering approach, creating another layer of transference between the natural beach and the town.

Different topologies of the dike construction will enable the dike to function with different purposes in appropriate locations along the seafront. The dike could become an active streetfront to the existing, hosting commercial activities within it, and be set back in other locations to become a soft, walk-able access to the beach. A third topology with the dike having habitable space facing the sea can host activities specific to the beach. The shared street requires resurfacing to become permeable and to fit the main drainage ring-way system underneath the road.

The existing streetfront of the Esplanade will be kept as is but be given frontages onto the street for outdoors activities, on the condition that the façades of the frontage are restored where necessary.

The dike-in-dune system is a successful part of the Katwijk flood defence strategy.
The beach is the driving asset of Ryde for tourism and local enjoyment. As such it is crucial that the beach be utilized to its potential and scope to extend the seasonal use of it is important to secure an economically viable solution to the proposed masterplan.

The soft engineering aspect of the dike-in-dune-system connects the beach to the town by eliminating hard boundary treatments and harsh level changes that make it difficult to access the sands. Additionally, the vegetation on the dike will help keep the sand from blowing into the streets.

To extend the season alternative activities to traditional beach use should be a priority. The grade II listed Pavilion has been kept in its original location with the bowling hall extension removed. Centered around the Pavilion, lido pools are proposed to take advantage of the tides and extend the swimming/bathing season either end of the year. Ryde has prevailing winds from the South East, and the beach would be a prime location, as at low tides it is a vast expanse, for activities such as beach kiting, regardless of time of year.

Introducing makeshift or easily transportable beach structures add an innovative way to explore the beach.

It is also important that the new Esplanade encourages use of the beach, and through careful consideration of the functions of spaces on or within the dike, this is achieved.
REARRANGING THE STREET

The current Esplanade is an A road and main through-way through Ryde. This busy road is situated on the seafront and consists of 4 lanes for two-way traffic. Pedestrian access is to either side of the lanes, with sparse crossings available. The street is an impervious surface with hard-standings and dominantly biased towards motor vehicles. Surface flooding and sand build-up are common issues along with traffic congestion.

The proposed new Esplanade aims to reduce motor traffic by implementing a better road network for sustainable traffic methods.

- The suggested tram will run the length of the Esplanade with tracks on a grassed surface, which will alleviate surface flooding.
- Cars and buses will be two lanes, two-ways.
- A new dedicated cycle path runs the length of the esplanade and connects to the suggested green route of the re-purposed train tracks.
- Soft traffic i.e. pedestrians will have main priority to the street and obstacles such as kerbs and fencing will be removed to make way-finding more efficient.
- All surface materials to be SUDS, draining into the underground pipes forming the suggested drainage system of the town.
- The different dyke topologies create spaces for people to walk and dwell, and can be alternative routes from the shared street to the beach and town.
2.10 THE FLOOD DIVIDE

NEW DEVELOPMENT

Due to the current floods that affect this part of Ryde, a proposal has been put into place to create a new defence to flooding. Allowing the revitalisation of Canoe lake and the river. Investment into the river development will connect the two sides of the town, whilst creating a new route that will follow the river. This route starts at the Pier, and follows the seafront, creating a knuckle joint (1) that invites people towards the new development down Monkton Mead river (2).

1. Canoe Lake Mixed-Use Development - is the knuckle joint between the seafront and the new development down the river. This development will draw people to the East of the town whilst creating new retail units to support the population within the East of Ryde.

2. River Development – using the river as a feature, a new housing development will connect the two sides of the town that are currently divided. The new travel route will revitalise the riverfront and create more foot traffic.

The New development on the river Wisła, in Warszawa, Poland by RS Architekcura Krajobrazu is a great example of a river development that can improve on tourism to the river. This has revitalised the riverfront creating an increase in foot traffic.
NEW DEVELOPMENT
CANOE LAKE AND RIVER PROPOSAL

The new development on Canoe lake will create a new mixed use development on the seafront. This will draw people from the pier to engage with the East side of the town. Currently the main retail area is the the West, up Union street. Tourists usually arrive and only engage with the shops located close to Union street. The proposal is to create a shopping area that has the addition of night-time activity, drawing tourists and the public to the East of the town.

Ryde is currently struggling with the continous threat of flooding upon the town. We have proposed to come up with measure that battles flooding whilst creating a new devlopment for the town. To achieve this, we are proposing to strip back the seafront from all the clutter of the existing structures and build a sand dune. This defence will allow the town to be defended against the predicted flooding for the next 100 years, whilst retaining the beach.

The proposal with Ryde is also to combat fluvial flooding. The proposal is to remove the existing industrial buildings from the river and re-locating the buildings. We will create a new raised ground level that will act as a defence for when the river levels rise. This will allow for the development of the river edge. Enabling the river to connect the two sides of the town, whilst creating a new feature along the river edge.

The new mixed use development contain retail units on the ground and first floor. Allowing the two levels to compliment the two changing levels of the North and South side of the development. Apartments are located above the retail units, they have private gardens with the addition of an underground carpark. This carpark will also accomodate the public coming to the seafront whilst accomodating the retail units.

1. Footpath Along Dyke
2. Bus Stop
3. Improved Pumping Station
4. Shared Surface to Follow River
5. New Mixed-Use Development
6. New Residential Development

KEY LEGEND
- Underground Carpark
- Seafront Removed
- Tram Line
- Bus / Car Route
- River
2.12 CANOE LAKE

PROPOSED NEW MIXED-USE DEVELOPMENT TO COMBAT TIDAL FLOODING

Currently the main location of the key flooding area within Ryde is at Conoe lake. The low lying nature of the site is due to it being located by the river, which means this is the main point of flooding. When the pump is faulty or cannot perform it creates the build up of water creating a flood within the town.

Our proposal for the site is to create a new sea defence that spans across the whole of the town. This sea defence will raise the seafront by 3m causing creating a defence that will protect the town for the next 100 years.

Creating the New Mixed-use development will allow the existing lake to remain underneath the new development but it will be changed into storm water attenuation tanks. This will allows the area located under the development to retain the element of the drainage of the river whilst creating a new attraction to the town.

As the new development for a better flooding strategy the attenuation tanks will provide an area for the flood water to be collected with the addition of the flood plains that will act in support. In addition to this there is a proposal for a new pump room. This will ensure the river water can be pumped out to see and prevent any blockages that will affect the system.

The improved pump system and flood attenuation that will be put into place will allow for a new mixed-use development to sit on to the site. The flood defence will protect the town from tidal floods, whilst creating a new retail development. A new feature that will draw people across the seafront.

POLYSTORM SYSTEM USING A DEEP GEOCELLULAR SYSTEM

Using this system beneath the new proposal on Canoe Lake will provide a functioning flood prevention system that will act as a flood plain beneath the new development.

This system will allow a defined area to collect all the storm water whilst providing a structural floor level for the new proposal upon Canoe Lake. This system will connect with the new development by Monkton Mead Brook river and provide a new and improved flood defence system. This will meet the requirements of sustainable drainage systems (SuDS) across its application within Ryde.
MIXED USE DEVELOPMENT

PROPOSED MIXED-USE DEVELOPMENT

Currently the main shopping area is located around Union Street. This draws people off the pier into the historical part of Ryde. However, the currently cluttered and disorganised seafront is not getting the tourists to engage more with the seafront. Creating a new retail area to the East will create a boost in night activity on the sea-front whilst creating new shops for the East of the town.

The retail units are located on the ground and first floors of the buildings, allowing the town to circulate through the shops to get to the seafront. This will create more foot traffic that will bring in money to the businesses. Whilst placed on top of the shops will be seafront apartments. These will all have views over the sea, private gardens and underground parking.

The creation of the seafront apartments will bring in money for the town and fund the new river development. This new development will create a destination point that will draw tourists across the seafront to engage with the new retail stores.

Once the public follow the seafront to the mixed use development area, there is a multifunctional theatre space that creates a knuckle point. The public are then invited along the new river development, or they can continue across the rest of the beach towards Appley.

At this knuckle point the river will terminate allowing the public space located next to the mixed-use theatre to have an open hard and soft landscaping space. Creating the connection between the hard landscaping and the natural landscaping located up the course of the river.

PRECEDENT - GUNWART QUAYS, PORTSMOUTH

Gunwarp quays was constructed in early 21st century and it has created a large retail area with the addition of housing. This is an ideal location as it is located on the waters edge, providing a great place to go for the weekend. This precedent contains a lot of similarities with Ryde, as it has the great feature of the water being in close proximity of the retail and housing units, whilst providing a great view over the water.

This area brings tourists from various locations and provides the iconic focal point of the city, the Spinnaker tower. As the scale of the city is a lot larger than Ryde, these elements need to be taken into context with the nature of the town. Ensuring the fundamental elements from Gunwarp play a role within the design of the mixed use development on Ryde seafront.
2.14 FLUVIAL FLOOD DEFENCE

PROPOSED FLUVIAL FLOODING DEFENCE

The river sections show the existing heights of the low lying ground levels. These show why the town is greatly affected by the fluvial floods.

To combat the fluvial flooding along Monkton Mead Brook river, we are proposing to remove the existing industrial units located close to the river’s edge. This will open up the area, allowing for a new raised ground level to be created (shown on sections). Ensuring a new integrated pipe network within the ground will remove the excess river water which will be drained away to allocated flood plains.

This will also fix the issue with the way the foul water is currently backed up to the residential properties when the water levels rise. Within this new defence we plan to create a separate water network to ensure that the water is maintained separately to the river water, ensuring the existing homes within Ryde are not affected.

Creating this new defence along the river front will allow for the creation of a proper flood defence system that will protect the town from fluvial flooding for the next 100 years, whilst creating an opportunity to invest into the riverfront.

Opening up the riverfront allows for a new residential development that will connect both sides of the town. This development will be enhanced with the new shared surface that will follow the riverfront.

The new development along the river will create a new public area that not only protects the town from flooding, but creates a new public area for the East of the town.

RIVER SECTIONS

Creating a new attenuation system will allow for a new pipe system to separate surface water, foul water and alleviate large scale floods. The use of a large diameter pipe system within the new raised ground level will provide the town with a pipe system that alleviates the excessive water during storms and rising sea levels. This pipe system will connect to the polystorm - geocellular system located underneath the new development of canoe lake. These pipes will span to the south where they will be connected to new proposed flood plains that will alleviate the water flow from the town to prevent fluvial flooding.
MONKTONMEAD BROOK

NEW DEVELOPMENT PROPOSAL

We can see from the existing image of the river and the current train how the industrial buildings are ruining the journey around the town. The proposal is to strip back this area and create a flood defense system that can also become a feature.

Valenje City Centre by Enota has created a perfect precedent of this. As it shows how the stepping up of the area allows the water to fill the space rather than flooding the surrounding area.

The new development along the river will allow for the combination of the natural elements already there to co-exist with the new proposed riverfront to try and create a public space similar to Valenje.
DISCLAIMER

All views expressed in this report are those of the authors and arise from an independent research programme to investigate Ryde, undertaken in 2017-2018 as part of a master’s programme at the Portsmouth University School of Architecture. These outputs summarise the findings.

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