**The Solent Harbours, Climate Change Resilience**

South Hampshire: ESCP 162km coastal management zone

ESCP (The East Solent Coastal Partnership) is a partnership of South Hampshire local authorities that has been formed as a regional response to potential coastal inundation arising from climate change. ESCP is a consortium of • Fareham, • Gosport and • Havant borough councils and; • City of Portsmouth

Within the remit of their area, ESCP have begun the process of developing their regional analysis, surveying and coastal strategy; proposing for addressing local climate change induced rises in sea level, and their programme has advanced in many areas. The ESCP remit covers a coastline of 162km (fig 8) that is currently managed & maintained by: • The Environment Agency. • English Heritage • Fareham Council • Gosport Council • Hampshire County council highways • Havant Borough Council • Hampshire County Council highways • Highways Agency • MOD • Portsmouth City Council • Southern Water and • Many private land owners. To date the ESCP strategy is

**Portsmouth and Langstone harbours. Marine + Coastal Biodiversity Action Plan + SSSI sites**

The Portsmouth and Langstone harbours have mudflats and intertidal zones recognised as having special national and European value. They provide unique breeding habitats for a variety of species along with migratory birds.

**Plan of RAMSAR designated sites (ESCP) Chichester, Langstone and Portsmouth harbours**

They are designated:

- **SSSIs** - a Site of Special Scientific Interest (a UK conservation legislative designation).
- **SAC** - a Special Area of Conservation (the EU’s Habitats Directive [92/43/EEC]).
- **SPA** - a Special Protection Area (the EU’s Directive for the conservation of birds)
- **RAMSAR** sites (The Ramsar Convention is an intergovernmental treaty).

These designations are not exclusive to Portsmouth and Langstone harbour, but continue east to include all of Chichester harbour and extend to Pagham harbour further to the east. Projected climate induced rises in sea levels will impact upon these areas and as they become inundated the intertidal zones will reduce in area. How these areas might best be maintained and conserved against inundation in the long term is an issue.

If protection against coastal inundation is positioned along the existing coastline and addressed by hard walls or dykes this will have many adverse consequences. The benefits of this approach are therefore limited. More surface area of the mudflats, both the lower and higher level intertidal zones, will be lost to inundation and suffer destruction, whilst the amenity and recreational value of much of the coastline will in addition be damaged.

**Plan of ESCP RAMSAR sites**

Portsmouth, Langstone & Chichester Harbours aerial view from the west with extent of 227km coastline shown RED
For this study 14 existing storm surge barriers and one under construction are investigated. The concept of the rotating gates was devised by Reginald Charles Draper. The Thames barrier completed in 1984. The Hollandsche IJssel (Krimpen aan de IJssel, The Netherlands, 1958) are listed in chronological order below:

- Hollandsche IJssel (Krimpen aan de IJssel, The Netherlands, 1958)
- Thames (London, United Kingdom, 1982)
- Hull (Hull, United Kingdom, 1980)
- Eider (Tönning, Germany, 1973)
- Stamford (Stamford, Connecticut, USA, 1969)

Better water management might be offered if intelligent sea-defense barriers, (total estimated length 2.6km long) are constructed across the entrances to the harbours.

These could be constructed to protect against both anticipated increases in sea level due to climate change. It is projected that this would reduce the line of coastal defence by approximately 75% (-75%).

These improvements would also obviate the need to restrict access to the waterfront, for instance: 4 new solutions capable of addressing specific contexts. Such examples illustrate how careful consideration to the relevant context of an appropriate engineering solution can deliver robust, innovative and functional design solutions capable of addressing specific contexts.

As of September 2015, five tidal turbines with a total capacity of 1.2 MW have been installed in the Oosterschelde barrier, the largest tidal energy project in the Netherlands and the largest tidal array in the world.

The south coast from Lymington to Brighton

The Thames barrier completed in 1984, protects London and provides shipping access. It is the largest of its kind storm surge barrier.

The concept of the rotating gates was devised by (Reginald) Charles Draper. The Thames barrier completed in 1984.

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Portsmouth is a truly unique Island City. It is one of only two similar island cities in Europe which, like Venice, is founded on maritime power. Yet this distinct legacy is relatively under recognised.

With roughly 12% of Portsmouth’s economy now derived from tourism (2014) it is an imperative that the city continues to maintain, and nurture forward its most valuable assets and amenities, so that for example the Southsea frontage in particular remains one of the UK’s premier sea fronts - into the future.

But the City is at risk from coastal flooding. In response designs were developed in 2016 by the Eastern Solent Coastal Partnership and Portsmouth City Council and these and an alternative are discussed in this exhibition.

Portsmouth is at risk from:
1. Aging sea defence structures
2. Climate change induced sea level rises

Southsea has one of the UK’s premier and most unique urban seafronts, that could be enhanced by more sustainable and resilient planning.

The city’s environment and economy has always been shaped by people and their relationship to the sea, and it is this treasured relationship that should be enhanced.

In 2016 Government had allocated Portsmouth around £86m for sea defence works along roughly 4.5km of Southsea’s frontage, in flood cell 1. A main contractor for the works, Balfour Beatty, had been appointed. Design consultants are scheduled to be appointed in late July 2017, for the further design stages prior to submission of a full planning application later that year.

The sea defence strategies of Portsmouth City Council and Eastern Solent Coastal Partnerships (ESCP) are based on a policy of:
‘Holding The Line’.

Government funding has been allocated on the basis of saving:
Lives and Property.

The funding is not granted on the basis of other ‘social values’, including benefits or dis-benefits to the population, amenity or economy.

When considering the future, realising the overall value of the beach, the frontage and common should be foremost.
The impact of the designed height of the ESCP's proposed sea wall in various locations was surveyed. The impact on Clarence esplanade is shown below.

Research indicates this abrupt vertical cant adverse impacts on the foreshore amenity, tourism, the economy and existing assets, whether or not access stairs and ramps are provided at intervals.

For children, the elderly or any age, descending such revetments is more hazardous than descending a beach.

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The ESCP proposal was preconditioned by retention of the existing roads & parking.

In the C20th many of the UK’s finest cities were destroyed by roads now considered a liability. Are we in danger of doing something similar to our coastline?

When viewed from the land-side this wall section rises 3.1m to the rear and provides an abrupt barrier to access and views for all. The width of the residual beach would also diminish significantly and be entirely lost by 2100.

The research seriously questions the economic, environmental and ecological impacts of the proposals.
As part of the Elephant Cage research particularly informative sea defence exemplar on the Dutch coastline was visited that delivered a unique managed coastal realignment scheme.

In this recently completed project at the town of Katwijk the new defences are seamlessly integrated with the landscape. The design delivers an enviable beach, coastal landscape and parking capacity for the town and beach users and an ecologically rich coastal habitat.

In conjunction with the beach, providing a first line of defence, backing dunes provide the second line of defence and a dike the third defence line. The design provides a 100m wide strand with a further 120m of dunes, a dike and behind this an underground parking facility (total overall frontage depth = 220m).

The underground garage is 0.5km long and provides 663 parking spaces behind the new 0.9 km long dike.

The genius of this sophisticated solution is that it is hardly noticeable. The sea, beach, naturalised coastal landscape and town predominate.

Katwijk illustrates how infrastructure investment has efficiently and effectively maximised benefit. But it is in so many ways quite opposite to what is currently being proposed for Portsmouth.

Case Study: Katwijk, NL

The Southsea common as part of the Elephant Cage research proposal. Key plan identifies the study area and the new Clarence pier.

The alternative vision

This alternative plan for Southsea common responds to known imperatives, with a vision for a long-term solution proposing much wider value and benefits.

It adopts a mixed strategic approach, integrating future sea defences, economic, developmental, social, cultural and environmental priorities. The sea defences hold the line around Southsea Castle and Nelsons redoubt, Clarence pier is developed as a groyne, but elsewhere there is managed coastal realignment.

This strategy is considered better capable of maintaining amenity, securing the assets and attracting inward investment, sustainability into the future and within a phased development programme.

This offers a beach front having unimpeded access across a new naturalised landscape, where it adopts a sea defence approach similar Katwijk.

Augmenting the city economy:

- A lido is provided in the Ravelin Long Moat
- Clarence pier is redeveloped to provide a sea groyne to reduce long-shore drift & create sheltered coves to either side.
- The Pyramids facilities are relocated discretely in the D-Day museum car park, in a better Castle quarter.
- An underground conference centre is proposed in close proximity to the hotels.

Coastal defence strategy:

- A new dike links together, and re-purposes, the Ravelin Wall and Southsea Castle battlements
- East of the Castle another new dike is backed by a water cistern relieving drainage capacity in the ‘Great Morass’, joining hard defences to the east
- New dikes are buried under a naturalised landscape offering unimpeded beach access.
- To reduce the impact from cars, underground parking is provided behind the dike, and this generates revenue.

This strategy is considered considerably better capable of maintaining amenity, securing the assets and attracting inward investment, sustainability as well as the future and within a phased development programme.

The coastal defences offer a beach front having unimpeded access across a new naturalised landscape, where it adopts a sea defence approach similar Katwijk.

Southsea Common an alternative proposal.
PUBLIC TRANSPORT, PARKING AND DROP OFF

A 3.16 hectares, 0.96 km long underground garage is concealed underground below the Common and behind the new dike, with an estimated 1,270 parking capacity. New transport access, parking & servicing is in proximity to all facilities including: Clarence Pier. The conference centre, the relocated Hoverport & the beach front. A public transport terminal & drop off route connect directly with the underground garage. Service vehicles are permitted access over shared surfaces to the beach. Some surface parking could, where indicated, be retained. The proposal removes part of Clarence Esplanade, Pier Road, and Long Curtain road and when accounted along with the re-arrangement of the road network, there is a net gain in usable public space.

LANDSCAPE STRATEGY

The line of the new sea defence structure allows a more naturally graded coastline, offering an improved beach frontage with additional long term economic, social and environmental benefits conserving and enhance historic assets. Existing tree lined avenues are consolidated with new extensions to the tree lined avenues of the Ladies Mile and Western Parade.

RAVELIN MOAT LIDO

A public Lido for bathing is proposed in the Ravelin Moat. Constructed with facilities at the junction knollified between the new dike with the Ravelin Wall, in the north east, this would continue the primary sea defence line, whilst providing opportunity to sensitively mask the new construction to the existing Ravelin wall. Poolside decking, access and piers would float on pontoons within the moat. UK lido structures already contribute to providing sea defences, with other new successful low cost lidos elsewhere. With improvements and repairs to the sea water sluice, for capture and recharging the moat provides an exceptional opportunity to readily provide a sun drenched sea side lido within this historic setting, furthering the visitor experience.

CLARENCE PIER REDEVELOPMENT

Redevelopment of the existing

Higher density redevelopment over the full width of the existing Clarence Pier site (however fragmented) is likely. It can be seen how this would have significant impact on views from the Southsea frontage, effectively creating a wall, between the city and the sea. The heavy black line in the diagram shows its effective length. Sea views from the Clarence Pier site (red line) are limited on redevelopment with one long side land facing (line shown - black). This reduces the site value.

Alternative redevelopment strategy

Rotating the site area 90 degrees significantly reduces the impact on views from the Southsea frontage. A land swap permitting redevelopment to the south and adjacent to the existing site would mitigate programme impacts on any coastal defence works, enabling redevelopment of Clarence Pier to progress and contribute more to the wider benefit at an earlier stage. This also unlocks the opportunity to gain value from longer frontages having better sea views (line shown - RED) with only the shortest side facing the land. (Line shown - BLACK). The new site lies on an axis with the nexus of Western Parade, Castle Road and Kent Road, and by projecting the site modestly forward into the Solent, a groyne is created on the frontage, contributing towards natural beach deposition and recharging either side.

Form and Massing

Distinguished isolated built forms, like light houses and sea side piers, are traditional landmarks of the British coastline. On Clarence Pier such distinction might best be achieved by coalescing the programmes of the disparate functions on site into a single entity, and raising the height of the form. This would also sustain way finding, making the site more readily apparent from within Portsmouth city centre, whilst effectively raising the sites development density. Different functions distributed over the height could provide a range of new facilities. Located within the pier structure itself: ‘black box’ activities such as building service functions, exhibitions, multiplex cinemas, clubs, further parking or the relocated aquarium might then be included.

With free public access on both the pier and at roof level thrilling and distinctive new opportunities for Portsmouth would be opened up.
A new high quality conference centre located below ground in close proximity to both The Queen’s Hotel and the Holiday Inn and a new hotel proposed on Clarence Pier, would be well located for access to the historic town, Southsea, the Castle and the historic frontage. Contemporary conferencing, performance and exhibitions are largely black box activities which may suitably be located beneath ground concealed beneath the common’s landscape, with public areas which could be illuminated from a light well, shown as a green oval in Southsea Common on the plan. Vehicular servicing is provided by the new underground car park.

A high quality conference centre here could significantly enhance inward investment, delivering sustainable growth and do so without adverse impact on the landscape and amenity.

**CONFERENCE FACILITIES**

**THE ISLAND CITY, SOUTHSEA COMMONS SEA DEFENCES**

**NEW VISTAS AND AXES**

New vistas, and views are opened up to enhance orientation from within Portsmouth and Southsea, ease access and to provide improved alignments with significant elements. Wherever possible routes from the city are taken on direct alignment to the sea front, offering clear and expanding views on approaching the frontage. The proposed Clarence Pier also provides a landmark identifying the seafront from inland locations.

**BUILDING AND ENCLOSURES ON SOUTHSEA COMMON**

New vistas, axis and views on Southsea common, as shown, would store 46m litres of clean water, and more than the existing storm water storage currently provided at Fort Cumberland. In this particular location it could reduce susceptible surface water flooding risks in the area of the Great Morass, storing sufficiently clean surface water for pumping directly into the Solent. It could also provide emergency pump storage backup for low lying ground, in event of any failure of the sea defences.

**SITING THE HISTORIC MONUMENTS**

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It is proposed to reposition The Portsmouth War Memorial further inland on the new dikes, along its existing navigational alignment. This offers better protection for the monument against salt water erosion, whilst increasing its stature. Sea defence works require the relocation of the many other significant listed Clarence esplanade memorials. Forgetting these, with the War Memorial into a considered landscape ensemble might offer a more powerful and evocative setting, improving their stature and strengthening their historic narrative.

**BLUE-GREEN STRATEGY**

Portsmouth has a dedicated Victorian sewer network which combines both rainwater and wastewater. Known as combined sewers these can have up to 25 times more water in them during storms than during dry weather. Climate change has increased the intensity of rainstorms which, along with projected rises in population, place pressure on this system.

To provide for the future, it is proposed to supplement the existing system with new capacity by capturing surface water from intense rainfall storms in a Sustainable Urban Drainage system (SUDS), with excess water then stored in a cistern comprising a large diameter sewer pipe buried within the rear of the sea defence wall. This principle could also be extended elsewhere around Portsea Island, in a manner similar to the London ring main. The 370m long, 4m diameter pipe shown, would store 46m litres of clean water, and more than the existing storm water storage currently provided at Fort Cumberland. In this particular location it could reduce susceptible surface water flooding risks in the area of the Great Morass, storing sufficiently clean surface water for pumping directly into the Solent. It could also provide emergency pump storage backup for low lying ground, in event of any failure of the sea defences.

Termed a ‘Blue/Green’ strategy, this could complementing the city’s future drainage management capacity, irrespective of the coastal sea defence typology otherwise adopted.

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RYDE, GATEWAY TO THE ISLE OF WIGHT

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 active frontages building uses.

3. Pier Base/Seafront - Large Disused development, pedestrian constrained to small central path.

4. Marina - In wrong location and predominantly unusable.

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

6. Population - Generally Ryde has 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.

Coastal erosion and drift has seen Rydes MLW line extending seaward, from increasing depositions of sand.

Ryde is a seaside town yet has a surprisingly detached relationship to the sea. There are few streets leading directly down to it, or facing seafront, with only the Esplanade having an active frontages towards the sea. A detritus of miscellaneous facilities and transport infrastructure, frequently direct water front connections.

The water side frontages are also set back with large poorly laid out and irregular hard landscaped promenades to the seafront. Other active frontages are largely disposed within the traffic ring (3 below) with the most prosperous areas appearing towards the towns north west.

The buildings surrounding the historic town core are otherwise largely residential, with mixed development on the main commercial street, Union Street, starting on the Esplanade and extending up and to the south. The sea front has a scattering of public buildings interspersed between transport infrastructure. Modern industrial buildings are mainly along the Monktonmead Brook valley, and between residential areas. Much of the Monktonmead flood plain remains undeveloped because of the fluvial (river) flood risk.

Summary elements of Ryde's spatial form, driving future change, are:

1. The oldest part of Ryde has an established grid plan, yet has been somewhat lost through urban growth. The grid pattern has been maintained in the eastern and northern extremities of the town, but has been compromised by opening up land to the north. Where the grid is lost, the plan is not.

2. The haphazard seafront growth has been driven by expediency with recent additions of vehicle parking and low quality amenity shaping the frontage, without the capacity of opening up wider. The lack of development to the seaward and offshore has led to disconnection.

3. Ryde’s transport infrastructure is a key issue to be addressed. A flood defence ring-way of roads that link in key areas of the town to the seafront. A drainage system serving this ring-way could reduce flooding risk and strain on the current system.

4. Usable public amenity space within the town is scarce. Amenities is proposed including along the seafront to improve the provision for people and provide sustainable places.

5. Flooding of the town is the main long-term issue. The proposal seeks to create a resilient and robust flood defence system that enhances the town from tidal and fluvial flooding.

2 - PROPOSAL

Addressing resilience & making a destination by re-envisioning ryde, its frontage & beach

Lead UoP School of Architecture researchers: Walter Menteth, Francis Graves, with Paul Moss, Ida Rorvick and Tadeusz Jasinski
## 2 - Proposal

### New Town Square & Transport Interchange

For resilience offshore sand deposits are used in this proposal as a resource.

### Section through new town square, looking west

The seawall is destabilized by removing and re-routing development north of the esplanade and lowering the lower part west of the pier to open up the town and esplanade to the beach.

A new short length of pier on the high street is proposed - It supports the existing pier structure. The land between the pier and the beach is a transitional zone between the primary view of the narrow valley and the sea.

A new narrow valley route following the river creates a valley route following the river, provides a new housing development will connect the two sides of the town that are currently divided, the new route will also enable the river front and create more foot traffic.

### New Pier Extension

The new pier extension is designed to create a new route on the high street axis and a link bridge accessing the ridge of the dunes. The new pier extension will be a number of connections to link the town and beach throughout the town, as well as an array of commercial outlets set within the dunes.

### Hover Port Slipway

New hover port slipway will be provided to existing occupiers, to increase public realm street activity, with planning conditions attached for restoration of the façades, in lieu.

### Foot Bridge

Foot Bridge connects with the town.

### Shared surface Esplanade

Shared surface Esplanade along primary town roads reduces car dependence by providing a tram route running over shared surfaces shared and is provided with a drainage system for stormwater. The esplanade becomes a shared space and is provided with a drainage system for stormwater.

### Tram, bus & cycle transport

New tram, bus & cycle transport interchange.

### Seafront

Seafront - Sea defence infrastructure protects against sea level rise. Along the seawall there will be a number of connections to link the town and beach throughout the town, as well as an array of commercial outlets set within the dunes.

### Mixed-use development

- Investment for the town regeneration is generated from development at Canoe Lake, providing residential, mixed use and commercial opportunities.

### Mixed-use development

- Urban flooding infrastructure is provided along Montemead and Blackdown, allowing separation of the town and better connection to existing outlets points.

### Town

- tram route replacing train service, will run along primary town roads to reduce car dependence.

### Green Cycle Route

- Cycle route and green-way along former train line, connecting Ryde Pier and the Bay.

### Dedicated Bus

- Dedicated inter-town bus routes.

### For resilience offshore sand deposits are used in this proposal as a resource

### Tram

- tram route down pier.

### Cycle route

- Cycle route starting on pier.

### Tram and cycle route along shared surface Esplanade.

### Train service through town interchange.

### Cycle route out of town west.

### Green cycle route out of town along former track

### For descriptions refer to the detail reports

**Paul Moss, Ida Rorvick and Tadeusz Jasinski**

[www.portsmouthisland.uk/ryde-gateway.html](http://www.portsmouthisland.uk/ryde-gateway.html)
issues identified

A thorough and detailed site analysis was carried out prior to design commencement. The physical and environmental characteristics of the urban fabric were interrogated at local level and for the Newport area in particular. Of equal importance was the investigation into the economic and the sociopolitical characteristics of the area and key areas around Newport. These investigations identified the key areas of focus below.

A further checklist landscape titled ‘Newport Site Analysis’ is also available.

key issues and opportunities

- The Medina Way dual carriageway creates a division
- Too many car parks and redundant spaces
- Reading affects the quay area
- Good bus connections, but congested roads
- Train connections are good but run down
- Lack of ‘Mixed Use’ areas
- Young population, but lack of education and training
- Low level of academic achievement
- High level of unemployment
- Lack of access to affordable housing
- Lack of top market detached housing
- Town centre contains many listed buildings, restricting development
- Large potential for solar energy generation
- Area not dense, and lacking in height
- Lack of quality retail and leisure

areas of development

The Medina Way dual carriageway creates a division

newport transport solution

The Quay area is prime area for develop and these buildings do not maximise the potential of the area.

newport quay - masterplan strategy

Transport and flood resilience strategy

addressing flood resilience strategically with a barrage (3)

newport transport solution

The Quay area is prime area for develop and these buildings do not maximise the potential of the area.

newport quay - masterplan strategy

Transport and flood resilience strategy

addressing flood resilience strategically with a barrage (3)

changing the existing Medina Way A3020 into a street with pavements

To solve the transport issues the primary return for the railway line connection to Ryde/Isle of Wight is movement to Island a car park and side slip will be added either side in the town centre, these proposals will reduce the traffic congestion around the area.

The existing transport for the Isle of Wight is currently inadequate to support regeneration for the Isle of Wight. The Island currently has three large road routes into the Island; the A3020, the A305 and the A305 via Ryde. The existing transport to the Island is currently expensive for residents and tourists to visit and from the Island, the transport network on the Island is not accessible for most of the Island and many residents are not able to travel around the Island.

The UoP Centre for Blue Governance – Exhibition Feb. 2020

Lead UoP School of Architecture researchers: - Walter Menteth and Francis Graves, with Anthony Hoskins, Kristine Karlsen, Zoe Rees and Jeremy Watson
Further north of the site towards the riverside homes the river water's edge has been retained in its natural form in order to preserve the existing marshland, wildlife and public footpaths.

The proposed scheme incorporates a public park running from the proposed Cultural centre down to the riverside to provide a more open connection from the town centre to the riverside. The harbour has been adapted to accommodate a marina for small leisure sailing boats located near the Pedestrian Bridge. A small pedestrian bridge will link the east of the river to west, again making connections around the town much easier providing a greater infrastructure and urban fabric.

The final scheme aims to address the issues of Newport’s existing social, environmental and infrastructure town. The scheme explores the town’s future expansion, spatial planning and demonstrates the need for adaptive to design changes needed to address the sea level rise which already affects the area and the development of a mixed transportation scheme. All of the proposed individual location projects have enhanced...
Cowes, situated in the north of the Isle of Wight, is a town famous for its yachting tradition. This is particularly true once a year during the Cowes Regatta week in summer, involving a yacht race around the island. Businesses along the high street, which runs along the coast, take advantage of this influx of tourist trade during the summer months. However, during winter business is much slower. The town’s urban grain reflects its yachting legacy due to the numerous boat yards and marinas that open onto the waterfront. There is little provision for the public to walk along the waterfront, with only glimpses of the sea seen from the main high street, which runs like a ribbon along the coast.

Buildings of industrial and marine uses are most common along the waterfront, and some include car parking right next to the water. In the main, buildings are built right up to the coastline, meaning they are most at risk from flooding, particularly by the high street. The active frontages of these buildings face the high street and not the water, leaving the backs of buildings facing the waterfront which is not ideal, leaving no space for the public to engage with the seafront.

There is a relatively dense amount of housing within Cowes, with mainly 2 or 3 storey houses.

Climate change is occurring much faster than was initially predicted, meaning if the high street is to be saved action must be taken sooner rather than later. Sea levels have been predicted to rise by 1m over the next 100 years but this is increasingly regarded as a conservative figure and storm surges exacerbate the real threat.

The centre of the town runs along the water’s edge and largely sits in flood zone 3, and flooding of the town is already a major issue, making it highly vulnerable to any future rise in sea level when it is likely to suffer from increased flooding as climate crisis impacts take greater effect.

A flood resilience strategy for the Cowes high street is proposed, for a flood resilient high street with a new archaeology - section.

A flood resilience strategy for the Cowes high street is proposed, for a flood resilient high street with a new archaeology - section.
Mary King’s Close

During the 17th century, Edinburgh’s Old Town suffered major overcrowding. The city walls which had been built to protect its residents meant there was no space for it to expand outwards.

So instead houses were packed in ever more tightly, and grew upwards to eight stories high. A web of narrow side streets called ‘closes’ led off the Royal Mile, which could be locked up at each end at night to keep the undesirables out.

The 17th century city authorities were worried about losing trade to Edinburgh’s New Town, so they decided to build a grand new Royal Exchange. And they found the perfect spot opposite St Giles Cathedral. There was just one small problem – the streets of houses that were already there off Mary King’s close.

But rather than knocking these houses down, they took the top floors off to a level and used the existing lower floors as the foundations for the new Royal Exchange.

The houses pre-dating the Royal Exchange remain to this day beneath, and are open to the public.

The catacombs of Rome

Like Europe’s other ancient cities, Rome is perched on one vast archaeological site. The modern city literally sits on top of its predecessor cities, arching back into time almost three millennia.

As each city took form, existing structures were collapsed or filled in with earth to form the foundation of the buildings of the next stage of the city’s evolution. Buildings rested on other buildings, shown by the red line in the diagram on the left.

Over time the valleys in which much of Rome was built have accumulated a steady layer of debris—the product of erosion from the hills, the sediment left by periodic flooding of the river Tiber and the garbage that was the inevitable by-product of civilization, then and now.

2. Increasing Connectivity

A proposed water taxi gives greater connection to Newport, freeing up the pressure on the roads. Furthermore, changes to bus routes and road design creates better links from the proposed university campus, in the Medina Village site, to the high street.

The UoP Centre for Blue Governance – Exhibition Feb. 2020

Lead UoP School of Architecture researchers - Walter Menteth and Francis Graves, with Thomas Nock, Helena Kranjc, Jacob Majerczak, Athira Chandran and Hannah Furey