

Portsmouth the island city. Southsea commons sea defences



Portsmouth map

Venice (not to same scale)



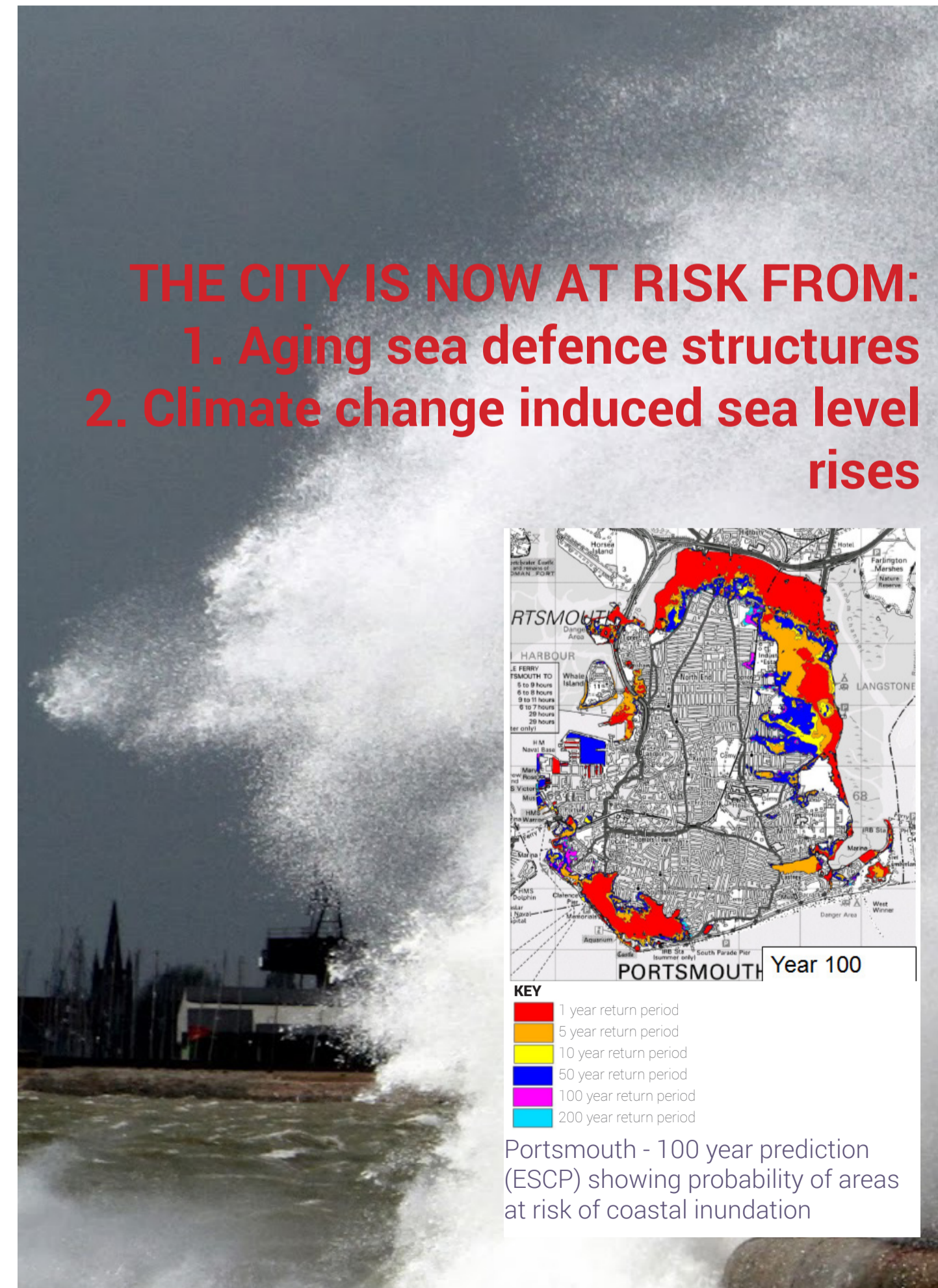
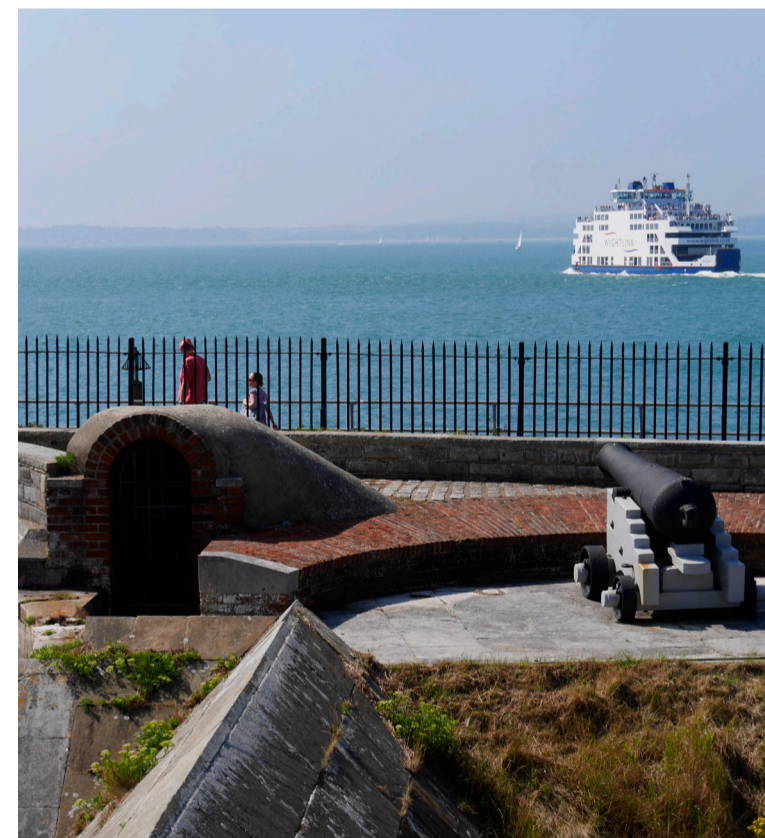
Portsmouth is a truly unique Island City. It is one of only two similar island cities in Europe which, like Venice, is founded on maritime power. Yet this distinct legacy is relatively under recognised.

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.

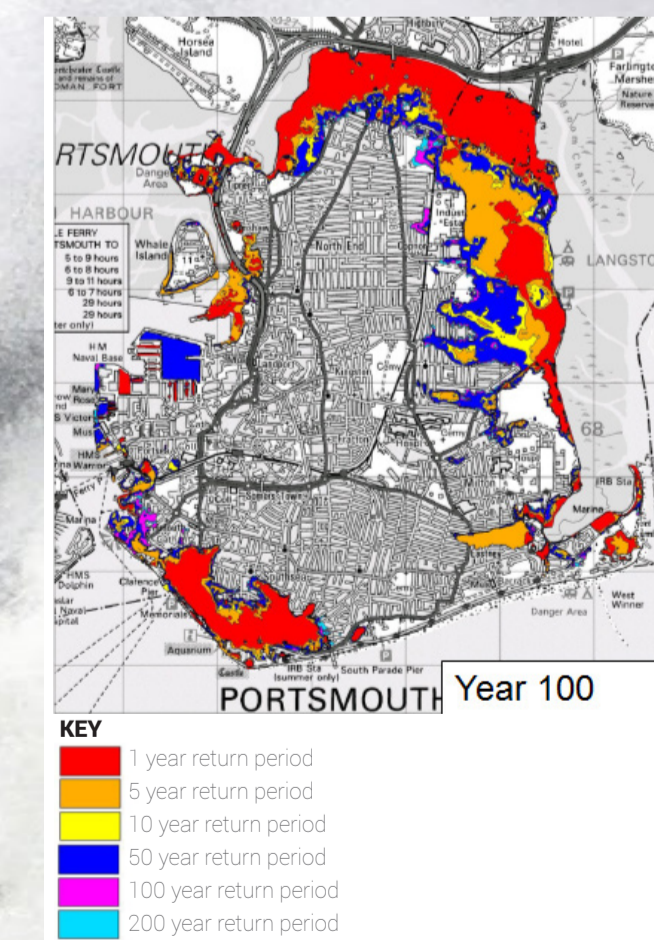
But the City is at risk from coastal coastal flooding. In response designs have been developed by the Eastern Solent Coastal Partnership and Portsmouth City Council.

These and an alternative are discussed in this exhibition.

Southsea has one of the UK's premier and most unique urban seafronts, and it could be enhanced!



THE CITY IS NOW AT RISK FROM:
1. Aging sea defence structures
2. Climate change induced sea level rises



Portsmouth - 100 year prediction (ESCP) showing probability of areas at risk of coastal inundation

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.

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.

Government have now 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, has now been appointed. Design consultants are scheduled to be appointed in late July, for the further design stages prior to submission of a full planning application.



When considering the future, realising the overall value of the beach, the frontage and common should be foremost.

Portsmouth the island city. Southsea commons sea defences CURRENT PROPOSALS

THE CURRENT SOUTHSEA FRONT PROPOSAL

The impact of the designed height of the ESCP's proposed sea wall in various locations has been surveyed. Its impact on Clarence esplanade is shown below. Research indicates this abrupt vertical barrier will have significant adverse impacts on the foreshore amenity, tourism, the economy and existing assets, whether or not access stairs and ramps are provided at intervals. The ESCP design proposals presented in the public consultations cited the recent works completed to the frontage at Cleveleys, which lies just north of Blackpool, as an example. The ESCP design for a concrete terraced revetment with curvature is illustrated in the artist impression. This costly concrete extrusion over the beach continues the length of flood cell 1, to varying heights. Its design frequently appears preconditioned by retention of existing roads & miscellaneous moveable elements, rather than re-considering them.

The new Cleveleys frontage & promenade (north of Blackpool), is cited by ESCP as a coastal design exemplar



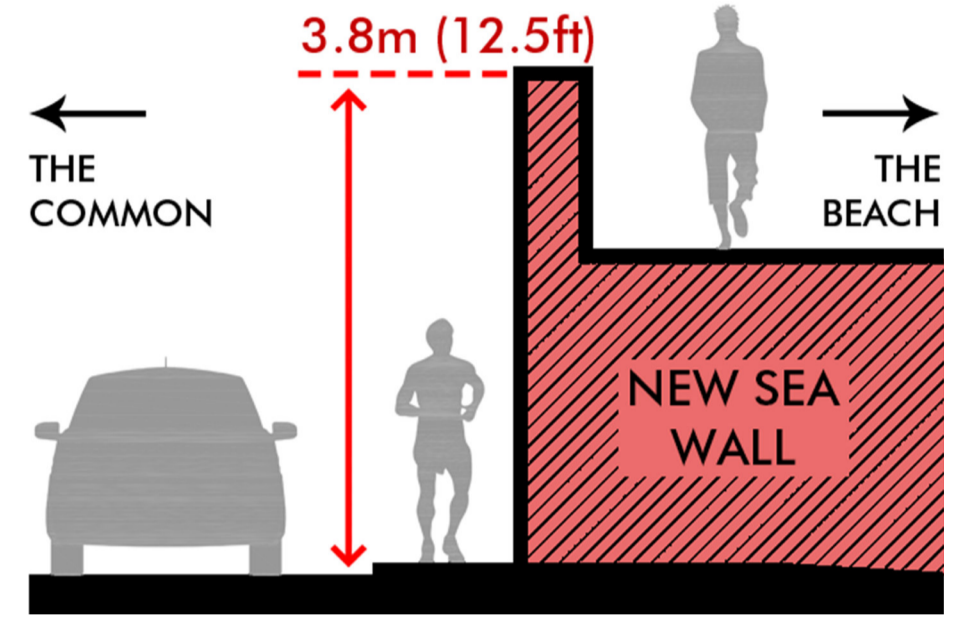
The proposed Clarence esplanade sea front closely follows the Cleveleys example. Image ESCP public consultation



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



Proposed sea wall section at maximum height



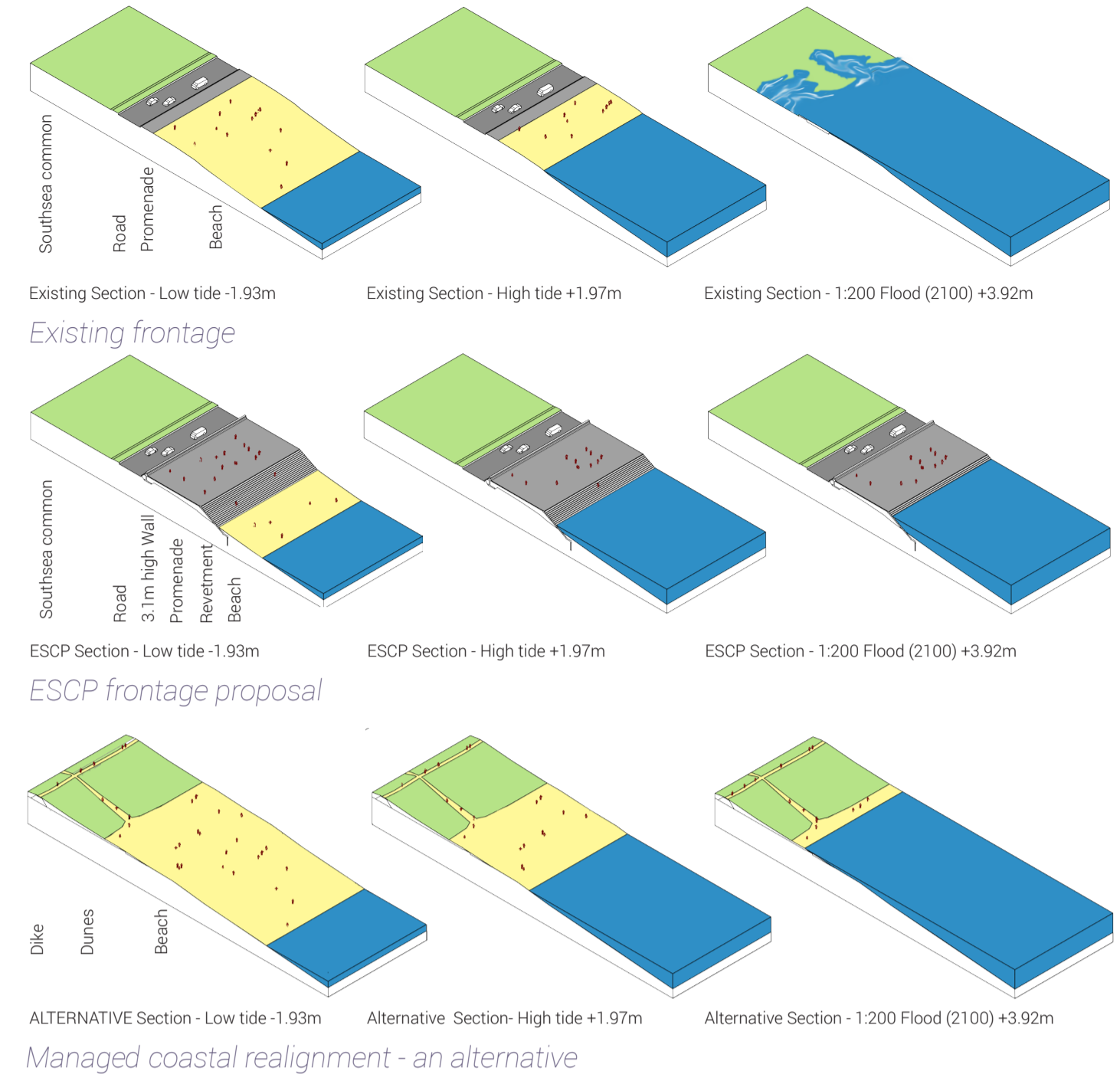
Clarence Esplanade montage looking east showing the proposed new sea wall

THE CURRENT PROPOSAL IN CONTEXT

This alternative considers Managed coastal re-alignment is considered in the adjacent. This is entirely feasible given the width of Southsea common and landscape improvement opportunities. In this version, a multifunctional, unbreachable and adaptable dike is built further back from the coast and road. Landscaping is gently graded over this dike down to a fully enhanced and retained beach. Three lines of defence are provided. The beach allows wave energy to be dissipated safely on its gentle incline, as a first line of defence. Dunes or landscape graded up to the dike provide a secondary defence line, with the dike provides the final defence line.

Frontage promenades may be provided along the beach and on the crest of the dike. The environment, ecology and amenity can be enhanced, with seasonal/transient activity located on the beach side of the dike. From land-side there is threshold and barrier free access for all ages and by 2100 there is still a beach. The dike is more readily adaptable as it can be easily raised in future, if needed. This opportunity exists if the existing road, parking and promenade is reconsidered and there is an appropriate mixed strategic sea defence approach that manage coastal realignment along the frontage.

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



& looking west showing the proposed new sea wall



Southsea Common is inseparably part of the sea front and should be considered conjunctively



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 may also diminish significantly and be entirely lost by 2100

THE PORTSMOUTH ELEPHANT CAGE- THE SOUTHSEA FRONT PROPOSALS WERE ANALYZED & INVESTIGATED IN A COMPETITIVE INTERNATIONAL DESIGN RESEARCH PROGRAMME (NOV. 2016 & MARCH 2017)

addressing the problem...

organised by:

7 Eminent international architects, landscape architects, engineers & planners having expertise in the field of coastal design came to Portsmouth to mentor this innovative design research competition process.

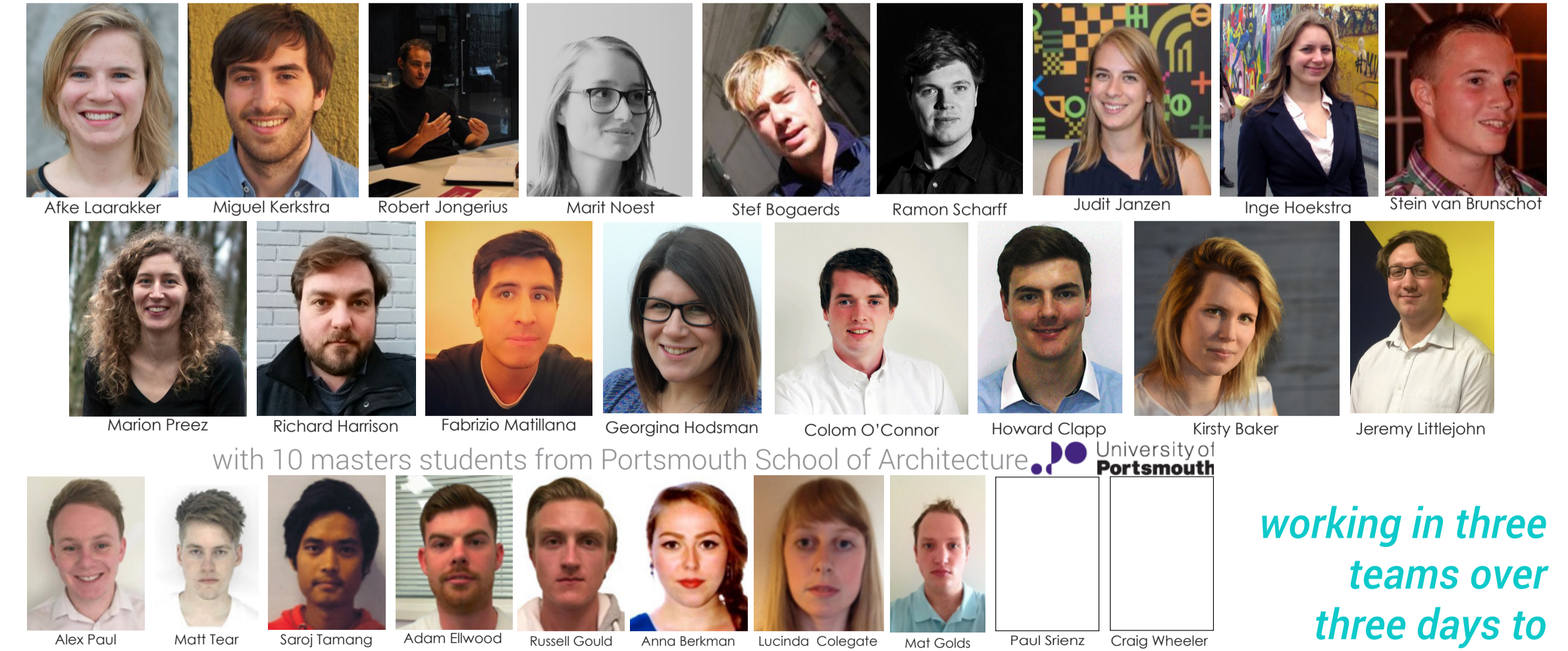
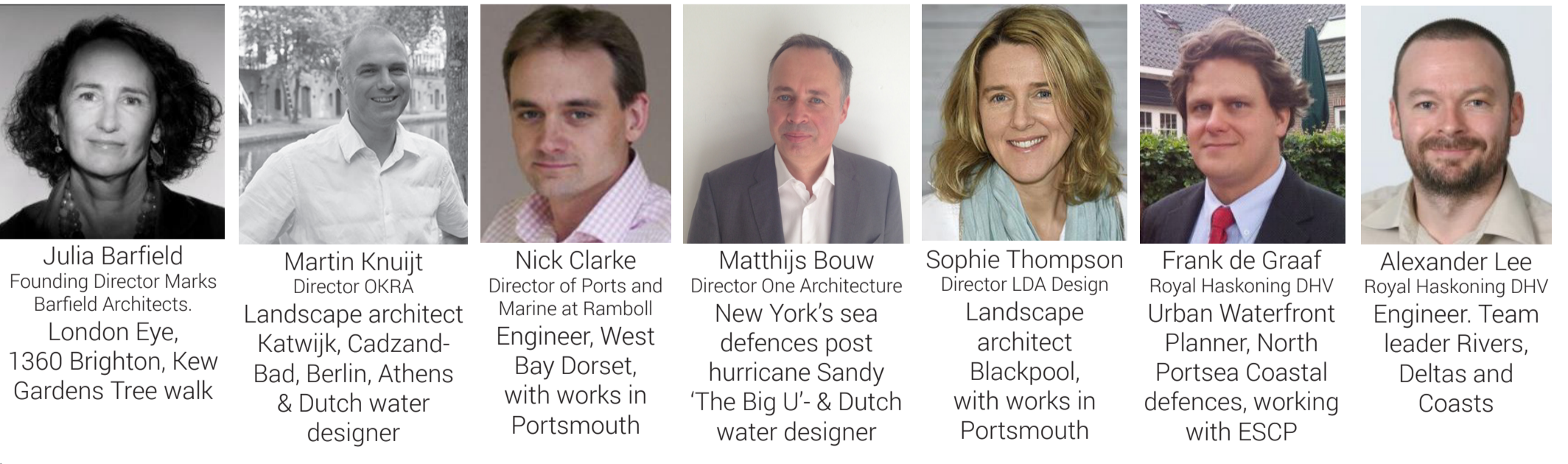
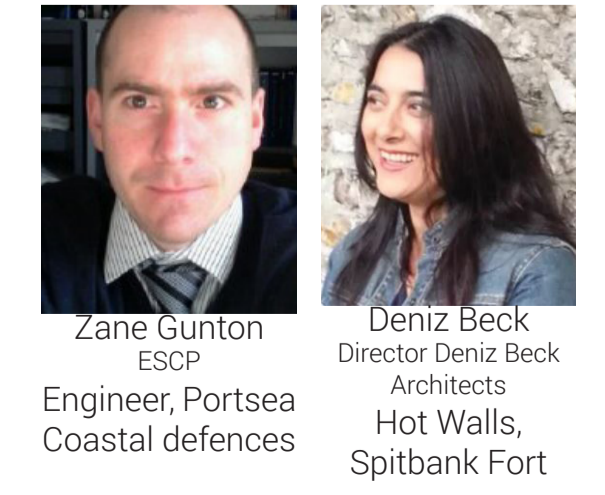
17 early career architects, landscape, engineers & planners, selected by international competition to work beside the mentors on researching design solutions for Portsmouth's sea defences.



& funded by:
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 Project Compass



supported by...



a programme report, with design research outputs, is at:
www.portsmouthisland.uk/the-portsmouth-elephant-cage.html

working in three teams over three days to exploring different scenarios...

CASE STUDY: KATWIJK, NL

As part of the Elephant Cage research a 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.

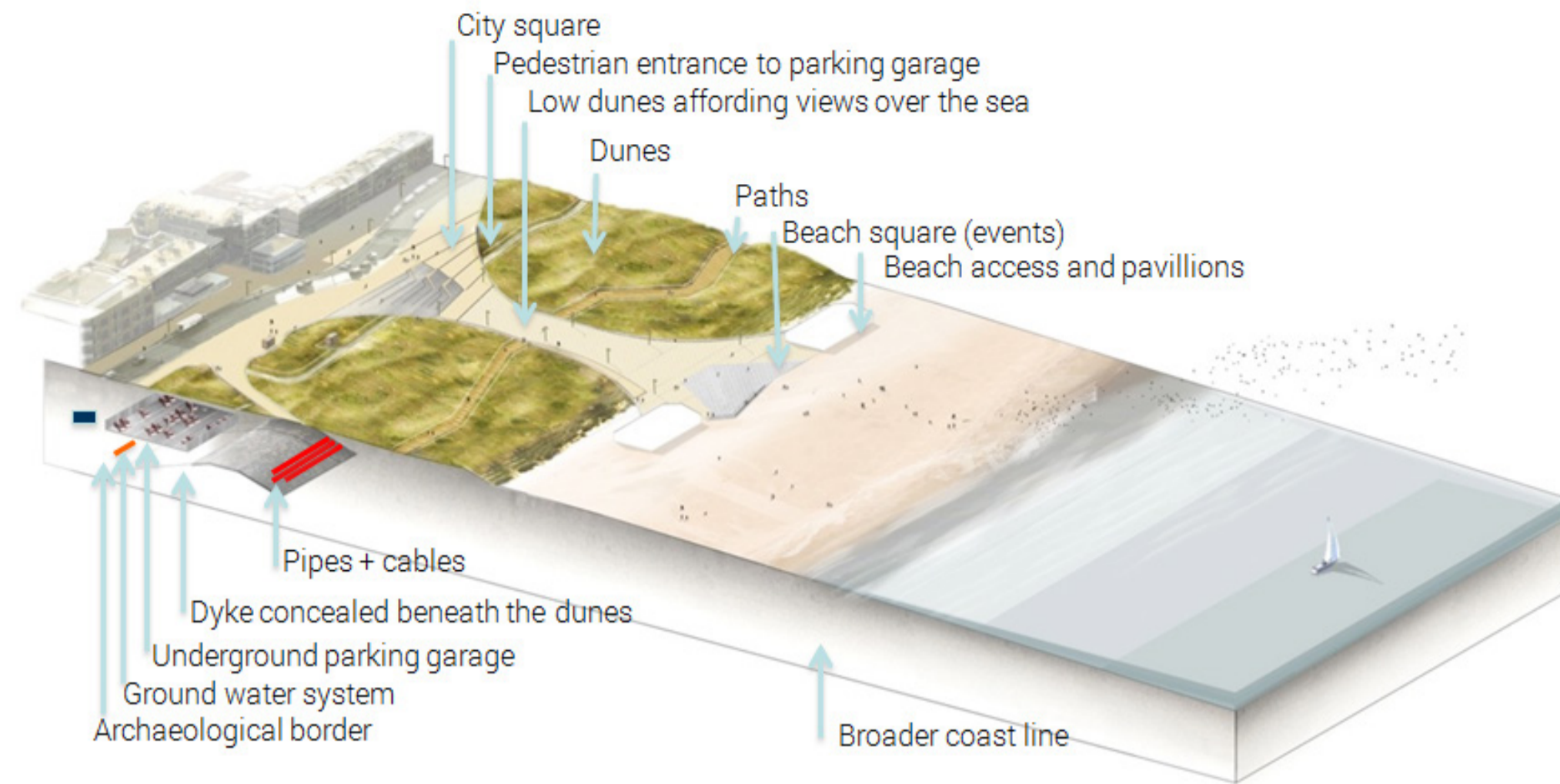
The design provides a 100m wide strand with a further 120m of dunes, a dike and behind this an underground parking facility (total overall frontage depth = 220m).

This provides sea defence for a 1:4000 year flood risk, and significantly higher than is proposed in Portsmouth.

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

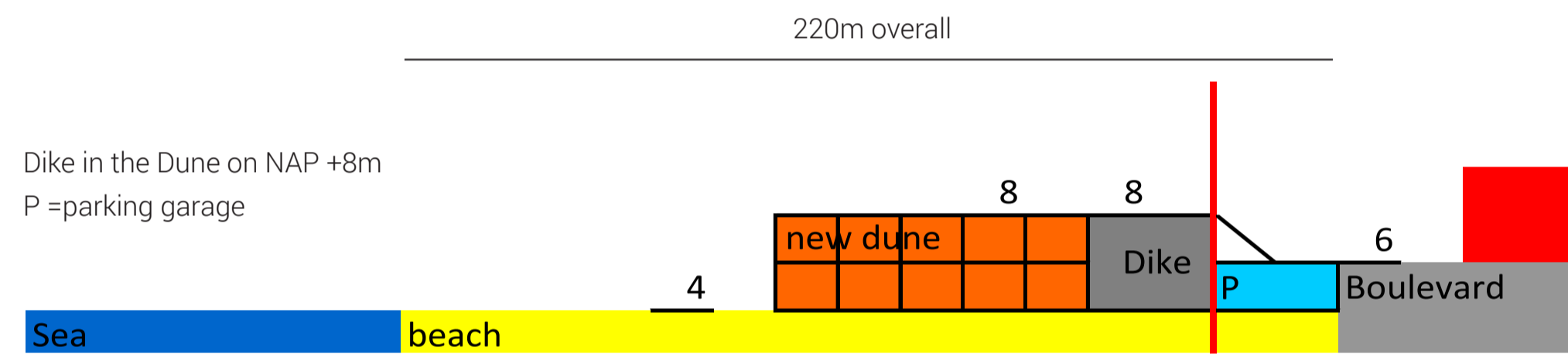
The genius of this sophisticated solution is that it is hardly noticeable. The sea, beach, naturalised coastal landscape and town predominate.

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.



Cut away view showing how different functions are integrated

Schematic beach profile of the sea defence structure



SOUTHSEA COMMON AN ALTERNATIVE PROPOSAL

The Southsea common proposal. Key plan. Red line 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, around 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; sustainably 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.

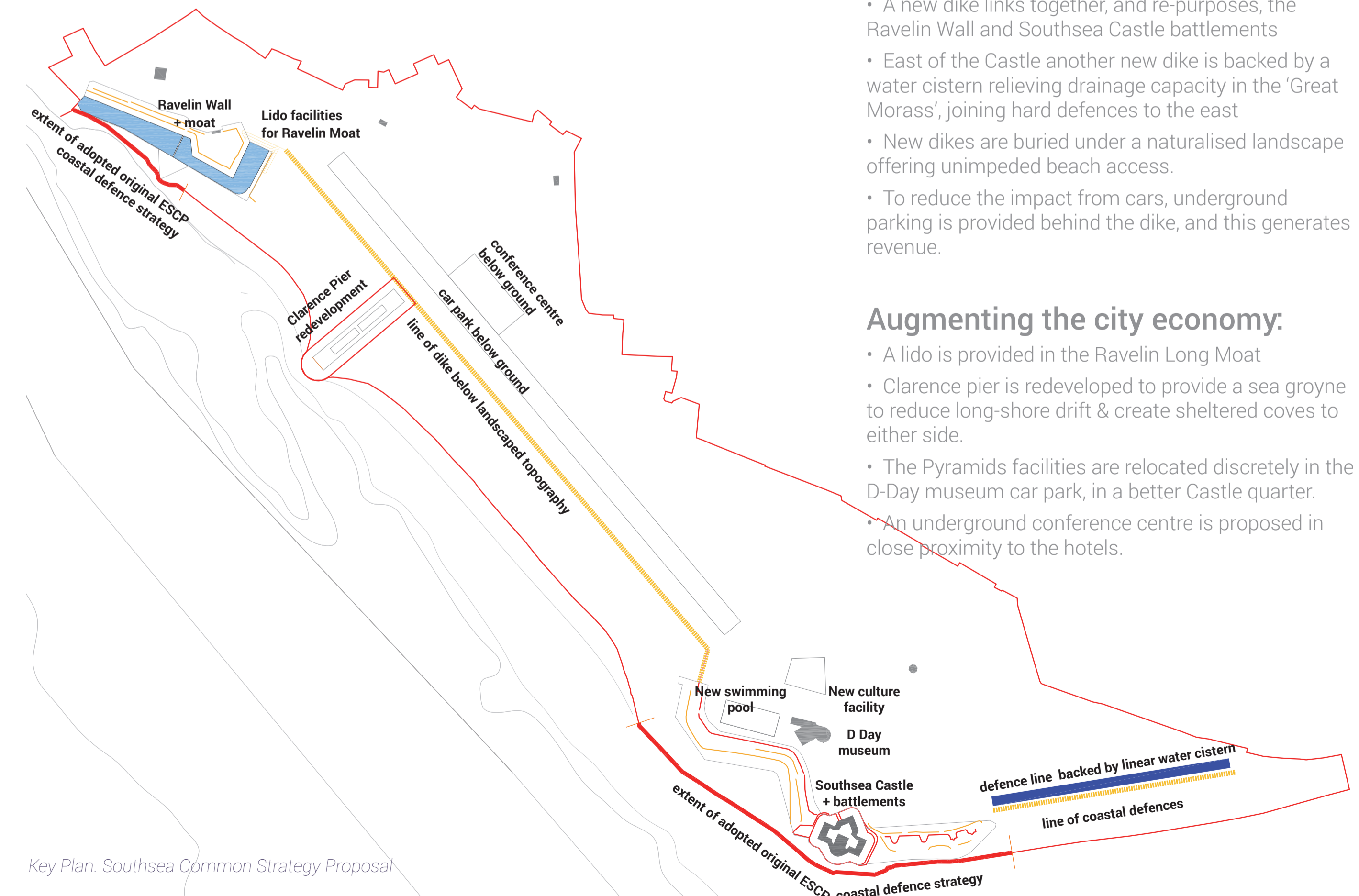
Locations for new facilities are also identified with potential to deliver growth for the city's tourist economy, environmental and ecological improvements, better connectivity with the sea along with a coastal defence strategy that is adaptable and capable of meeting a 1:4000 year incidence of sea flooding. As there is a low degree of confidence in current estimates of acceleration in sea level rise, contingent adaptability is important.

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.

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.



Key Plan. Southsea Common Strategy Proposal



"The genius of this sophisticated solution is that it is hardly noticeable."



"massive tourism potential has been delivered with the best and the most enduringly popular characteristics of the coast, in an extremely robust and environmentally friendly way"

Portsmouth the island city. Southsea commons sea defences

VISION

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 rearrangement of the road network, there is a net gain in usable public space.

with underground garaging, the removal of Clarence Esplanade and the rearrangement of the road network there is a net gain of usable public space

LANDSCAPE STRATEGY

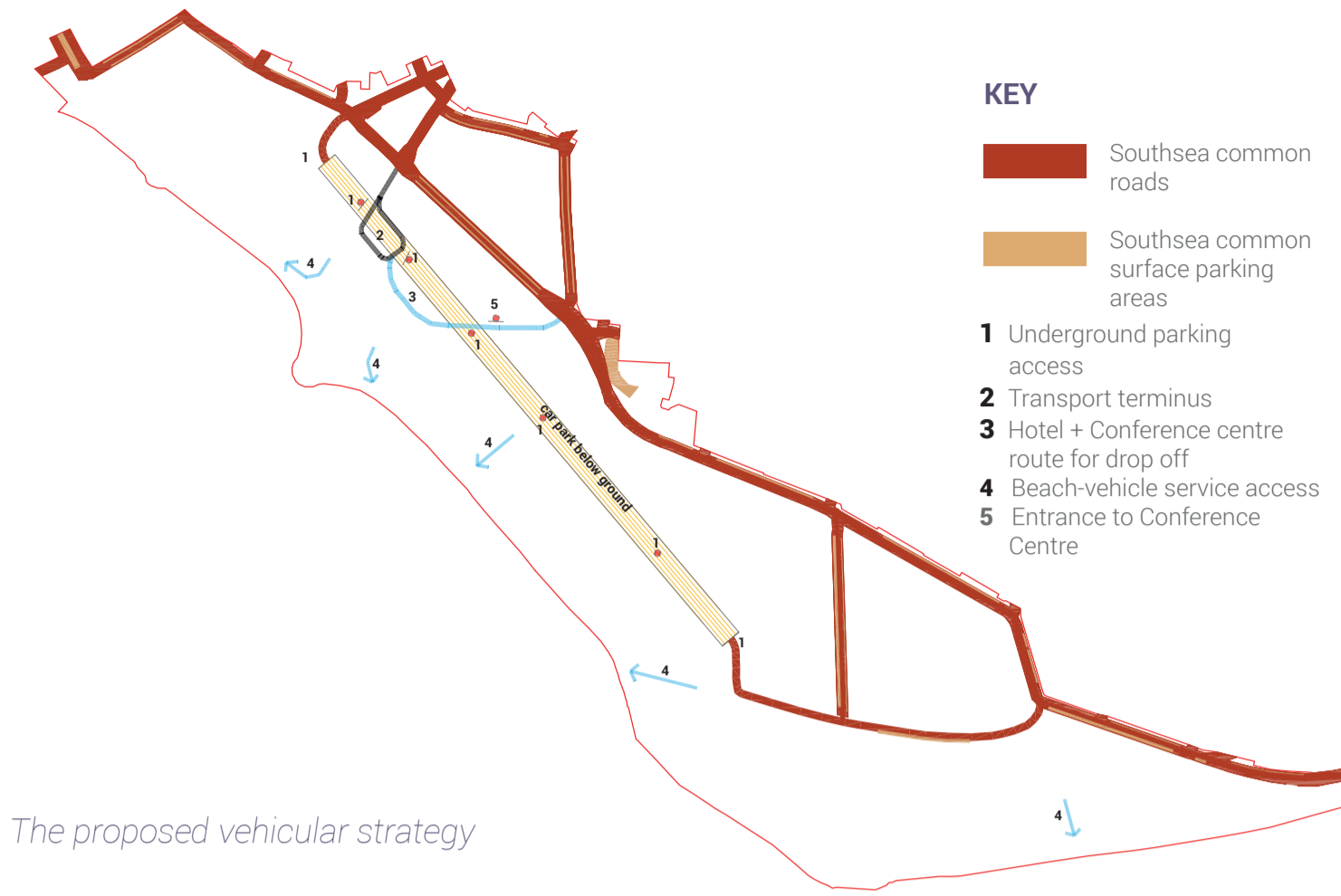
The line of the new sea defence structure allows a more naturally graded coastline, offering an improved beach frontage with additional long term economic, social and environmental benefits conserving and enhance historic assets.

Existing tree lined avenues are consolidated with new extensions to the tree lined avenues of the Ladies Mile and Western Parade.

Adjacent to the Queens Hotel, on entry from the town to the north, and at Castle Road new gateway space are formed at key entry points to the Common.

It is to be anticipated this alternative might be seen to deliver greater long term benefits.

A full comparative economic assessment of this alternative scheme might be commissioned.



RAVELIN MOAT LIDO

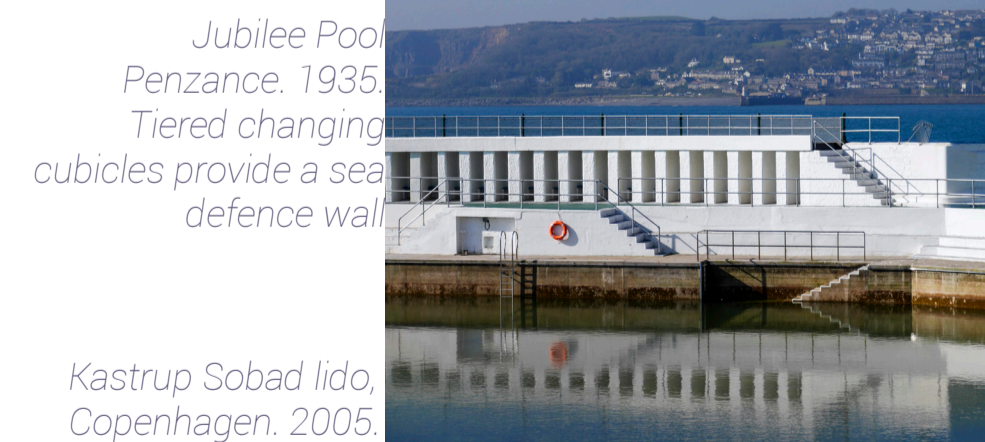
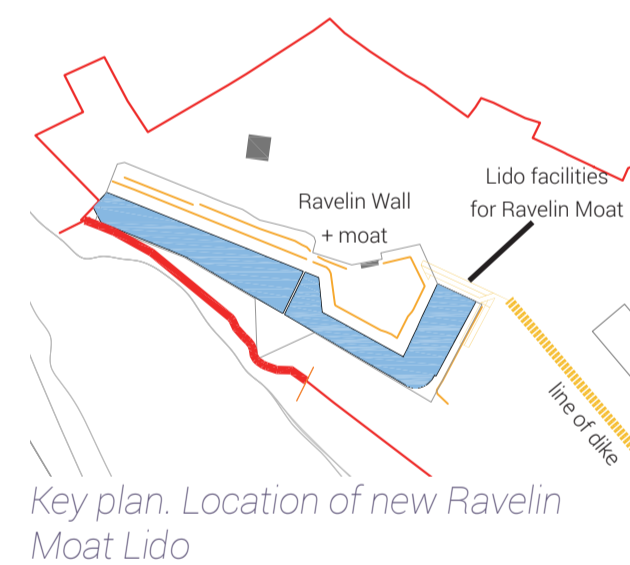
A public Lido for bathing is proposed in the Ravelin Moat.

Constructed with facilities at the junction knuckled 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

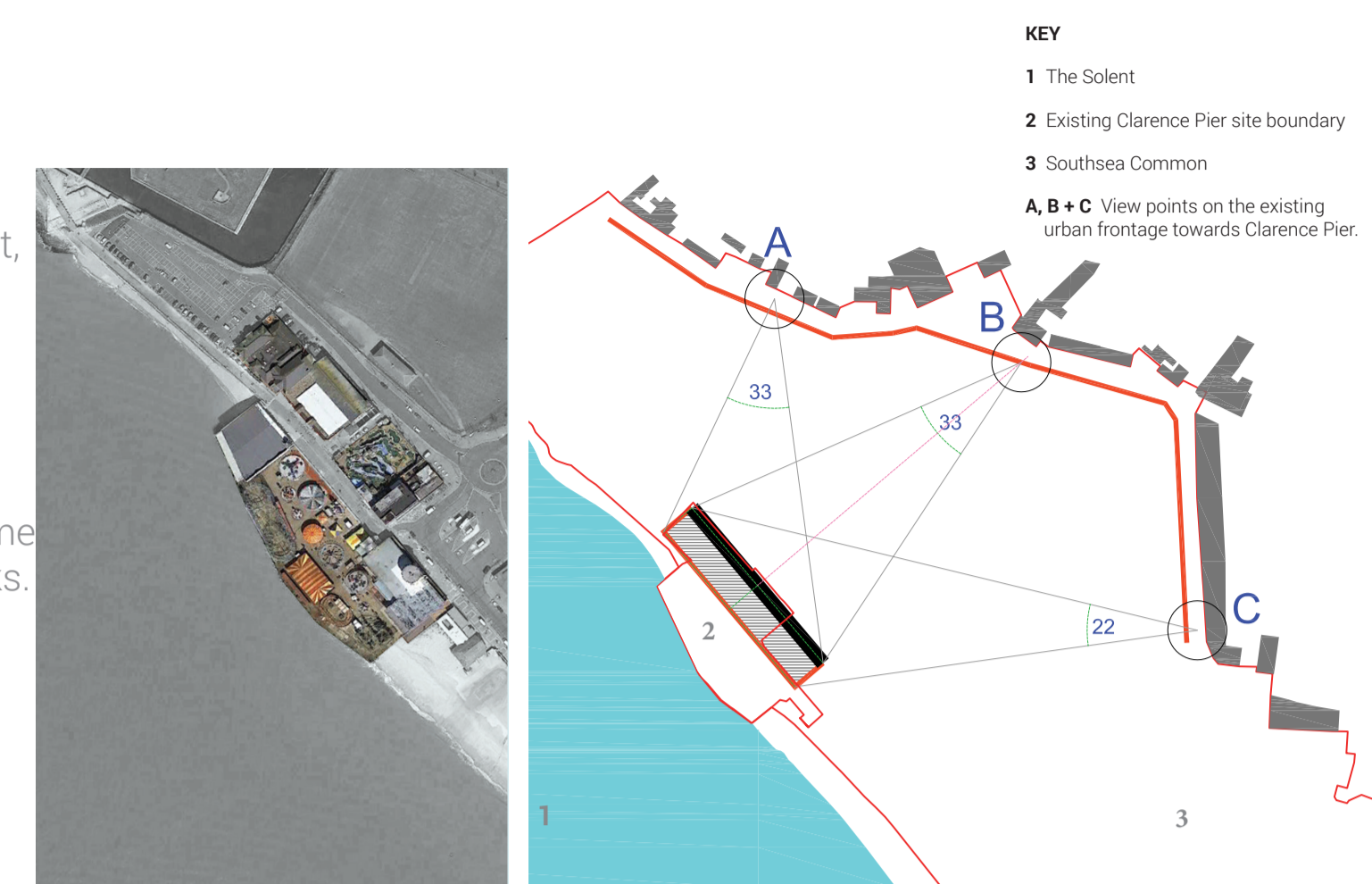
Redevelopment of the existing

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.

The numerous long lease holdings on Clarence Pier may also have adverse impact on implementing the programme for the proposed coastal defence works.



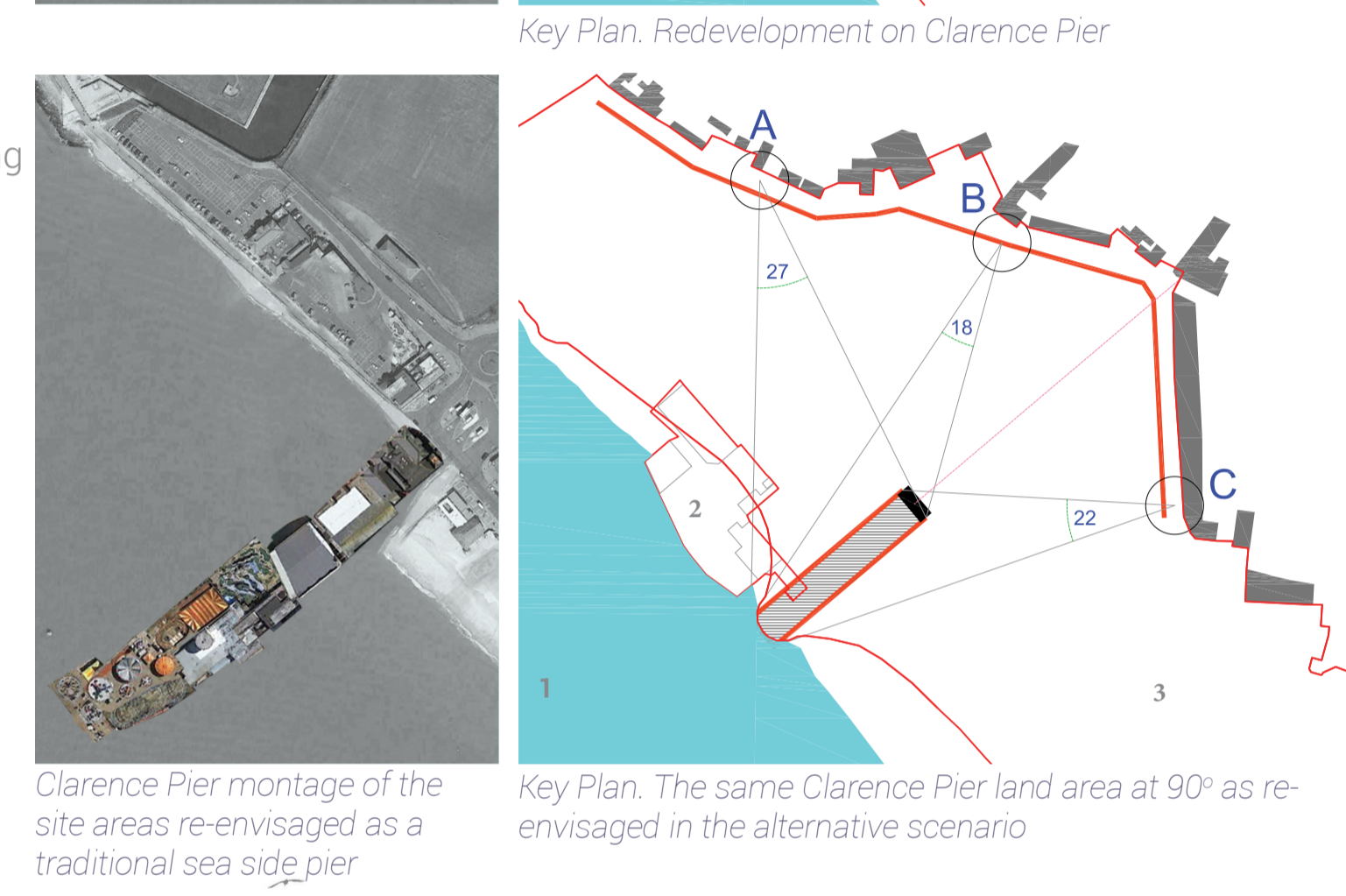
Alternative redevelopment strategy

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.



Rotating the site area 90 degrees significantly reduces impact on views from Southsea frontage

Form and Massing

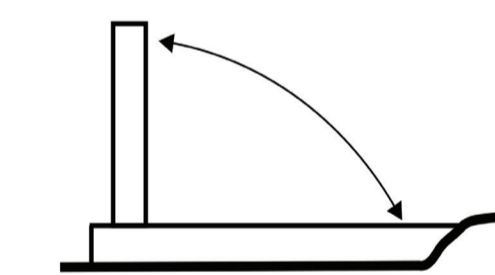
Distinguished isolated built forms, like light houses and sea side piers, are traditional landmarks of the British coastline. On Clarence Pier such distinction might best be achieved by coalescing the programmes of the disparate functions on site into a single entity, and raising the height of the form.

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.



Conceptual view from the public roof top on the proposed Clarence Pier. ©R. Gould

Indicative form and massing proposal for Clarence Pier ©R. Gould



Portsmouth the island city. Southsea commons sea defences

VISION

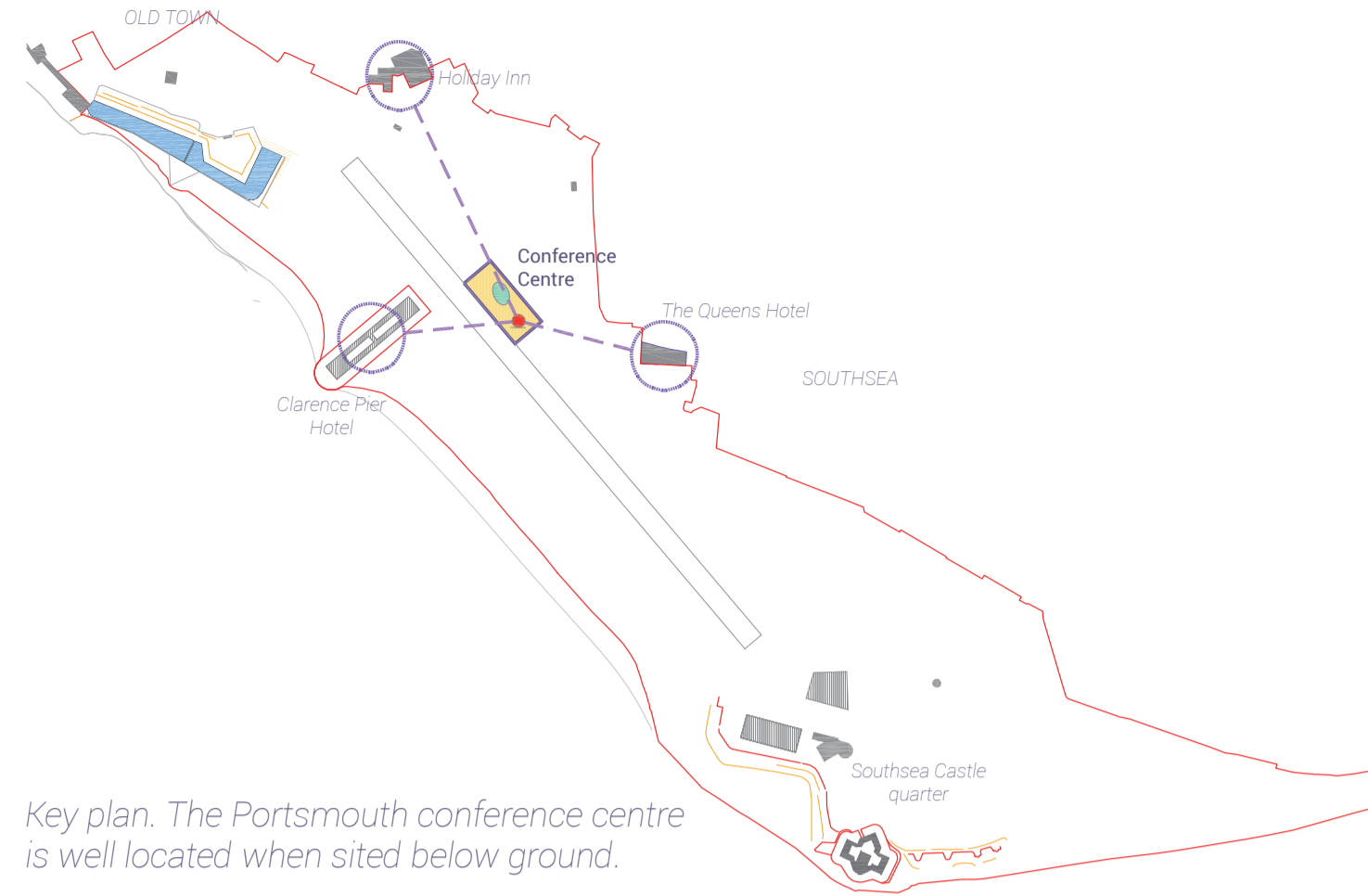
CONFERENCE FACILITIES

A new high quality conference centre located below ground in close proximity to both The Queens 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.



Key plan. The Portsmouth conference centre is well located when sited below ground.

NEW VISTAS AND AXIS

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.

Where ever possible routes from the city are taken on direct alignment to the sea front, offering clear and expanding views on approaching the frontage.

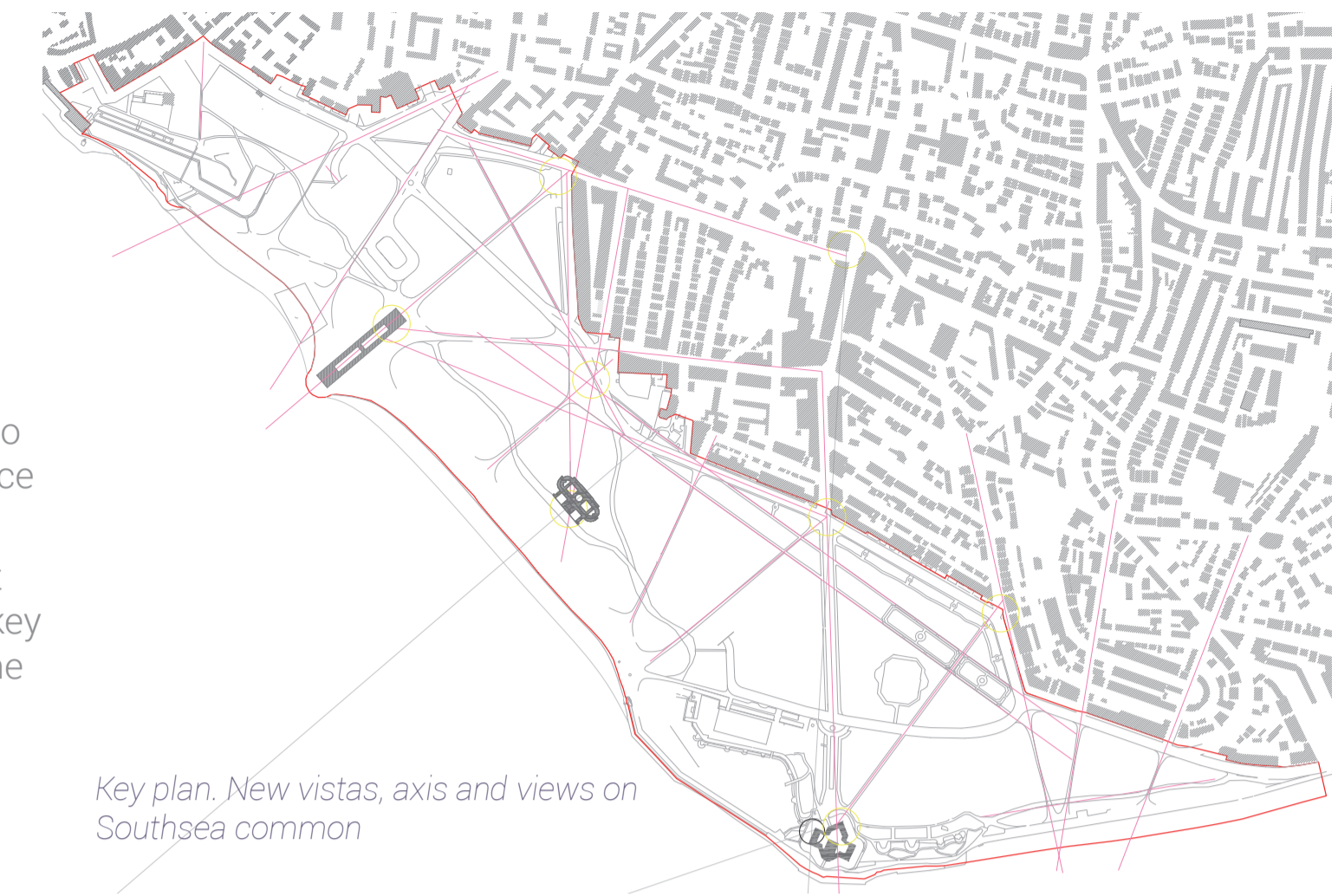
The proposed Clarence Pier also provides a landmark identifying the seafront from inland locations.

Whilst retaining the Naval Memorial

on its existing navigational alignment, its relocation also now becomes more prominent from Western Parade and Nightingale Road, providing an urban signifier.

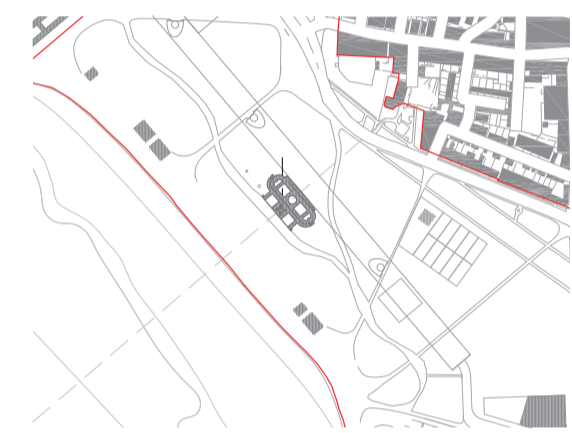
A vista towards Southsea Castle is also opened up from the junction of Clarence Parade and Western Road.

New public spaces are then created at major nodes and confluences, with a key public space developing adjacent to the Queens Hotel.



Key plan. New vistas, axis and views on Southsea common

SITING THE HISTORIC MONUMENTS



Key plan. The Portsmouth Naval Memorial relocated on the dike providing a focus for re-siting the campaign memorials

It is proposed to reposition The Portsmouth War Memorial further inland on the new dike, 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. For gathering 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.



Locating the Portsmouth Naval Memorial on the ridge of the dike and for gathering the campaign memorials together into a considered landscape ensemble

BUILDING AND ENCLOSURES ON SOUTHSEA COMMON



Impression of the proposed Southsea common showing the Pyramids relocated on the D Day museum car park



Key plan. Showing proposed locations of new and existing buildings and enclosures, and relocations

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.

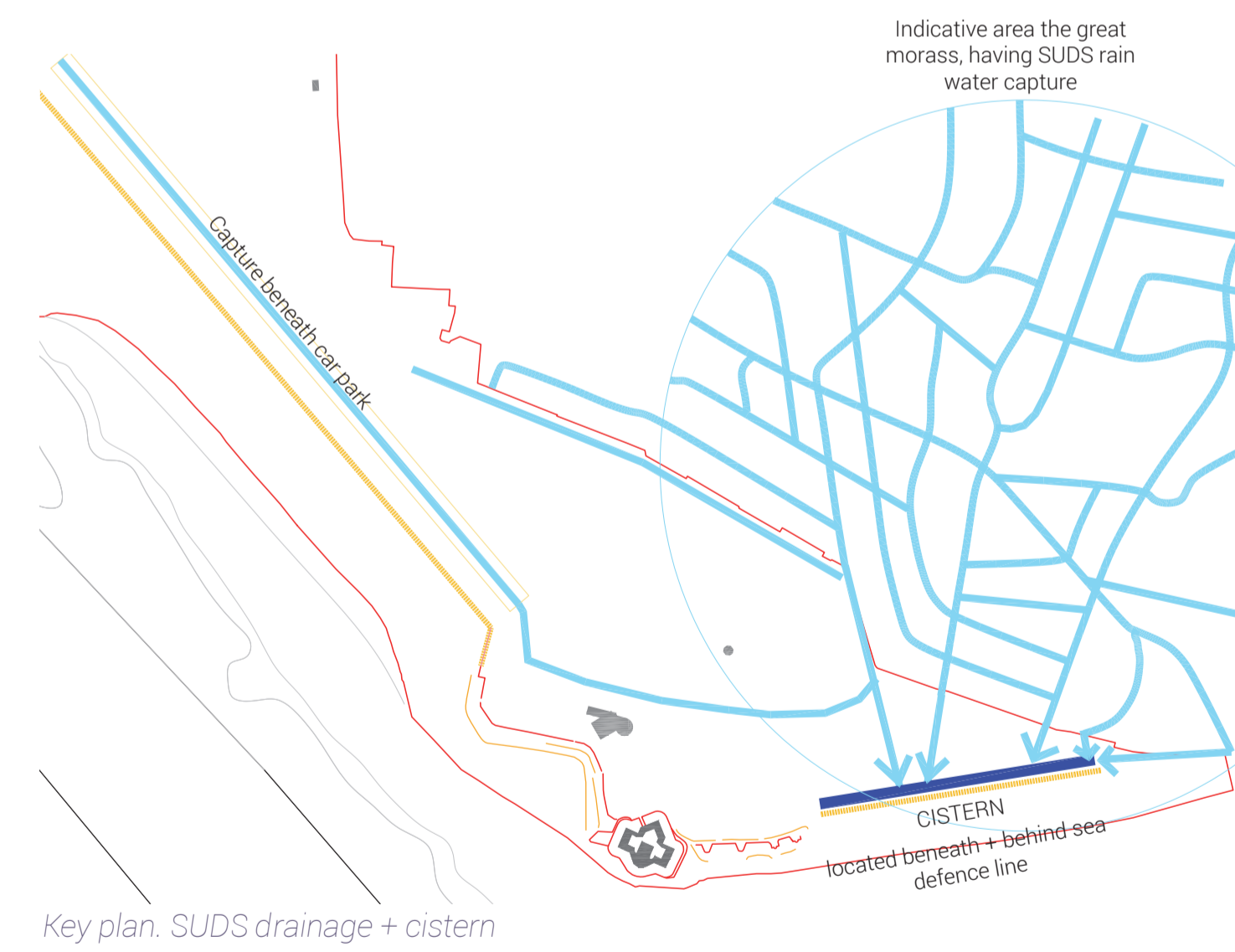
This principle could also be extended elsewhere around Portsea Island, in a manner similar to the London ring main.

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.

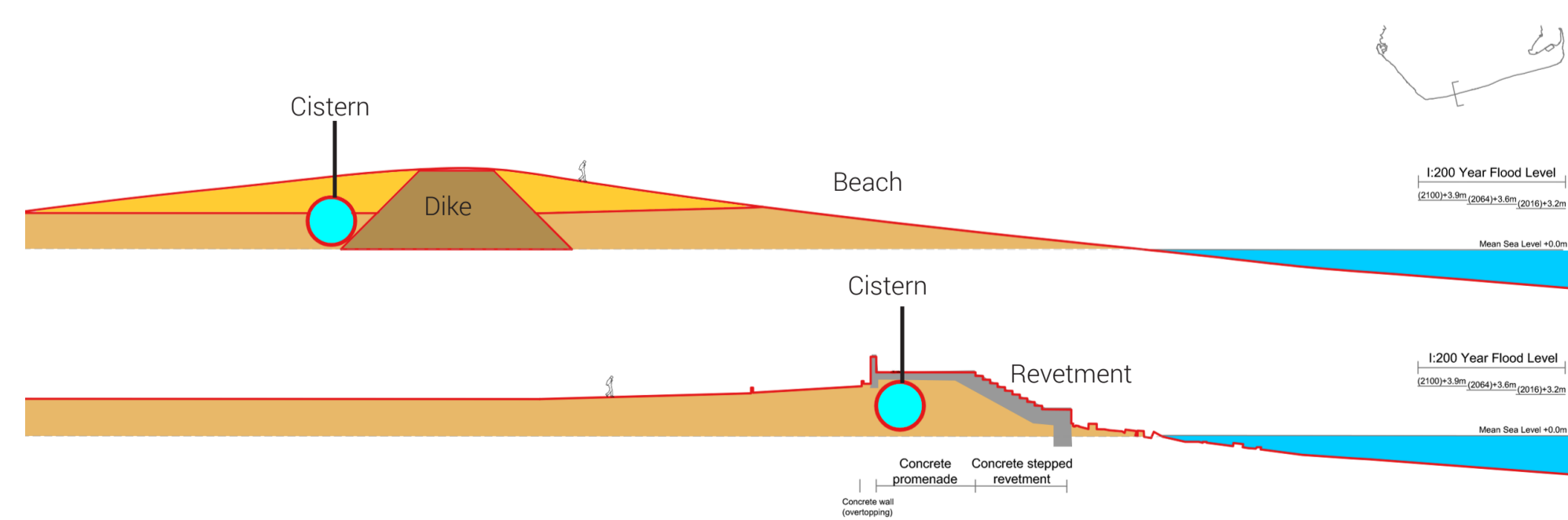
In this particular location it could reduce surface water flooding risks in the area of the Great Morass, storing sufficiently clean surface water for pumping directly

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.



Key plan. SUDS drainage + cistern



Sea Defence Sections with options for incorporating water storage cisterns in the sea defences.

Opportunities are opened up by the new underground garaging, because it relieves existing parking pressure. This allows relocation of the swimming pool (The Pyramids) on the site of the D Day Museum car park site, discretely within the battlement walls. A proposed new cultural facility on the existing volley ball site opposite is also identified.

Well planned high quality buildings in these locations might create a much needed recreational, cultural and leisure quarter in proximity to the Castle and Museums, further enhancing the city's identity.

Tennis, volley ball, children's paddling,

golf and park servicing compound are shown dispersed within the new landscape to improve public permeability across the common, their individual site locations and access to the beach or parking, The dikes, Ravelin and existing Battlements also contribute to improving shelter from the sea winds.

Dispersal of activities also better allows for more flexible use of the landscape areas, for example for holding transient activities such as the Victorious Festival, the Americas Cup and Southsea show which can now be more easily accommodated in the newly designed landscape

RECOMMENDATIONS:

- The current policy to 'hold the line' should be reviewed to allow for the development of the most appropriate, high quality and best value coastal defences for Portsmouth with the public should be offered a genuine choice from all available coastal design strategy scenarios, through consultation.
- Economic and environmental impact assessments of any proposed sea defences should fully evaluate all approaches relating to flood cell 1, including these alternatives, and do so in a city wide context.
- From the requirement for new sea defences a better sea front design should be developed that is appropriate to the city's context and aims to enhance its assets and ecology.
- With roughly £86.28m being invested on flood cell 1, the design of new sea defences needs to be more thoroughly considered with the investment better deployed to maximise benefits.
- Further leveraging of investment should be explored and alternative scenarios studied for addressing the long term risks, opportunities and rewards.

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PortIslandUK@gmail.com

FOR FURTHER INFORMATION SCAN THE QR CODE:
OR GO TO THE FULL REPORT AT:

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