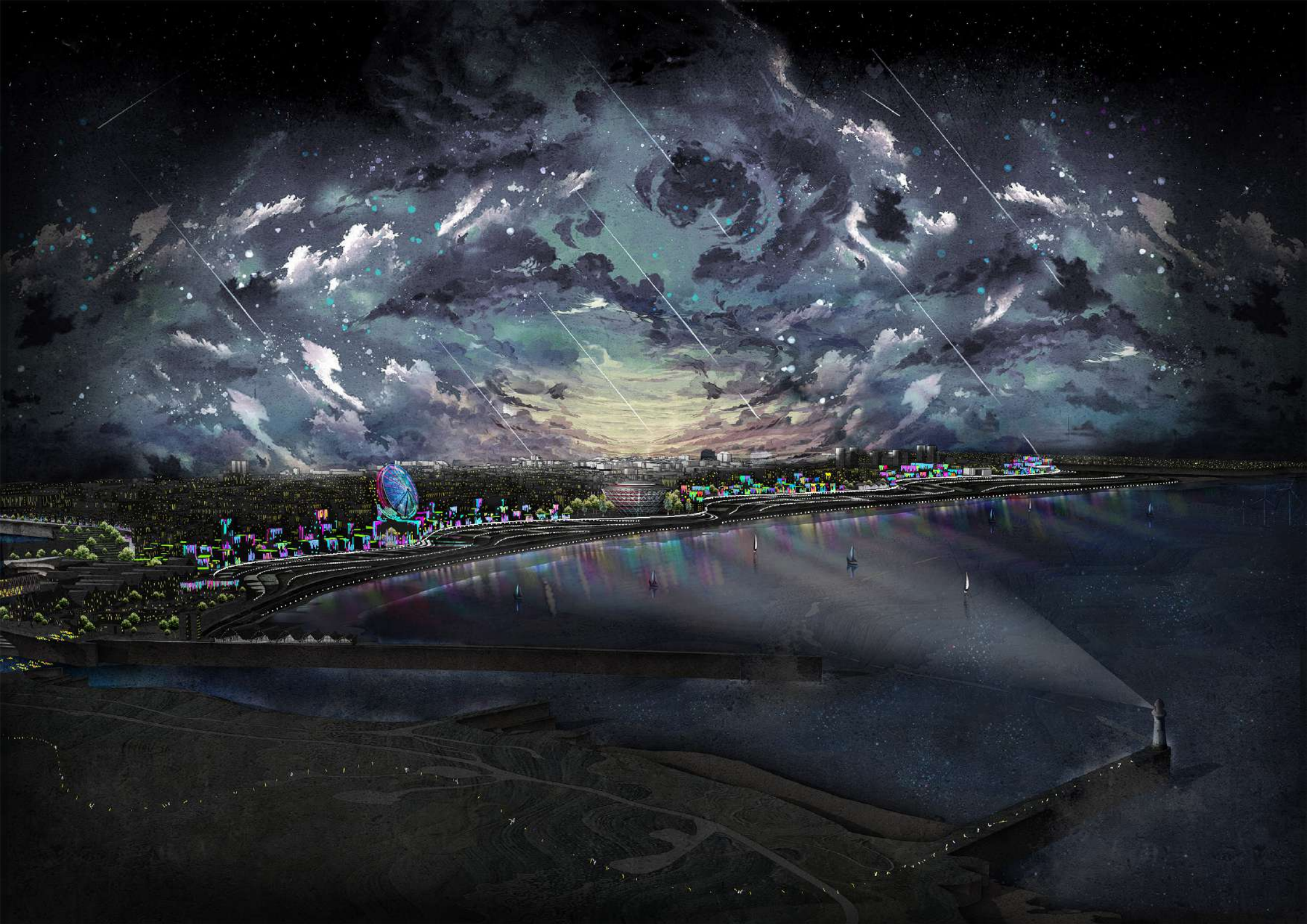


unit|one
aberdeen waterfront

Living Edge





AN OPPORTUNITY FOR ABERDEEN

Aberdeen's waterfront has large potential for development, but it is also a landmark and asset to the City of Aberdeen. This vast landscape hosts one of the oldest golf courses in the region but also one of the busiest roads at rush hour. It is home to the Ice Rink, the Beach Leisure Centre, the Ballroom and Aberdeen's historical fairground. A place where many Aberdonian's have built cherished memories. What does the future hold for this area? How can our children build memories in the same place the same as we have?

As a collective, Unit One underwent a three-month period of substantial research to develop a greater understanding of Aberdeen as a whole: its history, its opportunities, its strengths, its weaknesses and its threats. The outcome of this research: a vision – labelled the Living Edge. An architectural response to define the boundaries between the urban and the natural environment in Aberdeen, as a method of connectivity between the two but with the wider benefit of protecting our coastline and our city for the future.

The £2 Billion transformation of Aberdeen Waterfront, spanning 220 hectares from Donmouth to the harbour, will follow a thirty-year delivery plan to implement a new sea defence system to protect the city for the future, bring new tourism to the city and create a place for the people to feel they belong.

A series of design strategies have been proposed across the site as a means of connecting the city and sea, with enhanced permeability through green routes that promote healthy living for the betterment of our city and our people. Design strategies will be further explored in the manifesto.

THE LIVING EDGE VISION



Aberdeen is currently a city in transition. It is moving to adapt with the challenges it faces alongside the rest of the country. The Living Edge can provide an opportunity to help the city adapt and grow for the future with its residents at its heart.

Through the delivery of this vision, the Living Edge can:

- Deliver a sea defence system which will create a new blue habitat and protect the city from changes in sea level.
- Create a place for people to live, grow and work to live their best life.
- Provide greater opportunities for innovation and research developments alongside becoming a greater attraction to keep the university demographic in the city.
- Connect Aberdeen - connect the city through transport, through digital means and through the people's pride for their city.



MANIFESTO

Adaptability

- Preserve & Protect Our Environment
- Embrace the Digital Revolution
- Sustainable Transport Network

Healthy City

- Social Housing for Health & Well-Being
- Sport & Leisure Facilities

The Edge

- Improved Connectivity
- An Identity for City Pride

Opportunities

- Employment Opportunities
- Enhanced Cultural Experiences
- Research & Education Facilities

During our research period, the collective found that Aberdeen has a driven economy which has been built through the Oil and Gas sector, Tourism and the Food and Drink sector. In addition to this, the collective also found areas where the city needs improvement - better social housing that promotes a healthy lifestyle, a lack of connection between the waterfront and the city centre and a lack of defences to protect the waterfront as sea levels rise.

As a response to the key areas that need improved, the collective developed ten points that highlight what Aberdeen currently needs. These points come together to support four overarching themes: Healthy City, Adaptability, The Edge and Opportunities. This section will explore each of the overarching themes and explain how the collective has applied each point within the Living Edge masterplan.

HEALTHY CITY

Design Strategy

The collective has implemented the following design strategies to make the city healthy;

The routes across the site that led from King Street have been analysed. Selected streets will be altered to become green routes, featuring trees, grass areas and plants. These streets will have specific areas for walking and cycling. Car use will be minimised on these streets.

The large landscape proposed on the beach side of the Living Edge, will provide residents with a greater connection to the outdoors and a sense of country living in the city. This area will encourage people to go out and exercise or play in a safe place. The trees within the landscape will help create better air quality across the site alongside the reduced use of cars.

Across the site are a number of new social spaces which will encourage people to interact. These places will provide more opportunities for the community to hold activities to engage the residents to get to know each other. Increased social interaction between people will help promote better mental health.

● Social Housing for Health and Well-Being

During our research, we found that the housing on the site did not promote health and well-being, social interaction or the spirit of a community. There is a limited spaces for kids to go out and play. The worst area for this was found to be the tower blocks on Regent Walk. This was also identified as one of the most deprived areas on the site.

The unit concluded that the tower blocks need to be removed from the equation and replaced with inclusive communities of social housing. These areas of housing are to promote health and well-being through:

- Technical design - achieving a sustainability criteria such as Passivhaus or BREEAM.
- Community Engagement & Activities
- Provision of Support, Advice and Opportunities for those in Need
- Mixed Use Developments with amenities such as shops and cafés

● Sport & Leisure Facilities

During our research, we found that Aberdeen has a vast number of sport and leisure opportunities including pools, sports centres, snow sports, golf courses and the ice rink. They concluded that there are limited opportunities for extreme sports, which is becoming a rising trend with young people and this should be developed on the site.

It is important that people get access to sport and leisure facilities as this can have a good impact on resident's health and well-being. Across the Living Edge site, the collective is looking to install a number of opportunities for residents to have free access to outdoor sports facilities, e.g. Tennis Courts, Basketball Courts, Football Pitches, Table Tennis Tables and more. Alongside this, there will be a number of walking and cycling routes across the site. This will allow everyone to have the opportunities to exercise and will promote healthy living across the site.



Aberdeen needs better Social Housing that cares for resident's health and well-being.

A healthy lifestyle through new social housing developments can contribute to promoting positive health and well-being across the city.



Aberdeen needs to bring more sport and leisure opportunities to the city.

Aberdeen has a wide variety of sport and leisure facilities across the city. Current facilities should be developed to enhance better sport and leisure experiences and learning for the people.

ADAPTABILITY

Design Strategy

The collective has implemented the following design strategies to ensure the vision is adaptable;

As the sea level rises, the waterfront needs to be ready. A three-tier system has been developed to combat the rise of the water. The existing two-tier sea wall will be retained. It will be renovated to become a living sea wall which allows sea life and planting to grow across it. The height of the two-tier defence system will protect the city against the sea level rise that occurs across the 21st century and part of the 22nd. The final defence tier will be the living edge itself. The landscape will allow the sea to gradually ebb and flow to encompass the space, transforming the landscape into a wetland. This will protect the city for another 300-500 years.

As an additional method of defence, we have introduced a new offshore Living Breakwater. The artificial reef takes the full impact of the waves, meaning that the effect of coastal erosion will be lessened. This has allowed us to reduce the existing sea wall into a more gradual and natural slope, further enforcing the accessibility between land & sea.

A newly designed Complete Street runs parallel to our routes of permeability across the full length of the site, where we have proposed the introduction of a new Auto-Tram transport network that runs on green energy.

● Preserve & Protect Our Environment

During our research, we found that there is a great amount of nature, planting and animals that need to be protected and preserved. The site also includes the Donmouth Nature Reserve. The collective also identified that the city is at risk of serious damage due to the sea level rise caused by the Climate Emergency. Research showed that Aberdeen will see a mean sea level rise in across the 21st century within the range of 1.5m and 2.5m. Sea level will continue to rise as the years progress.

They concluded that the environment around the site is an important aspect which needs to be considered in the development of the waterfront, not only to protect and preserve what is already there but to also preserve and protect the city itself. The development has to be ready for any change that nature throws at it - and it must be ready to adapt accordingly

● Sustainable Transport Network

The city is starting to move towards sustainable travel through the deployment of hydrogen powered buses. There is a large bus network across the city, which also provides links out into Aberdeenshire. The collective concluded that further methods of sustainable travel needs to be implemented both at a city level and at a regional level.

There can be the introduction of further sustainable public transport networks. In parallel to this, the use of cars can be reduced by introducing low emission zones or more pedestrianised areas which encourage people to walk or cycle more often. This will also have a positive impact on the health and well-being of the site's residents as their transport time will also become exercise time.

● Embrace the Digital Revolution

Not only Aberdeen but the United Kingdom, is discovering that they are not ready for the digital revolution. As the country moves into uncertain times, people and companies are moving to remote working. During their research, we found that the waterfront requires development to increase its capacity to host any digital media.

As a response to this, the collective concluded that as technology grows and develops, the site needs to be ready to grow for the future of the waterfront and the city. There is a great sense of the unknown with what lies within this new industrial revolution. The key areas that can be explored now for the future is the installation of a fibre optic network across the site and bring 5G. This revolution is going to have the most impact on Generation Z. As it grows it would be good to get their input through consultation for digital ideas to bring to the site.



Aberdeen needs to preserve and protect its environment.

Aberdeen needs to develop defences to protect the city as sea levels start to rise but also change the current ways of the city to respond to the climate emergency.



Aberdeen needs to build a transport strategy across the site that people will invest in.

Aberdeen should have a sustainable method of transport to connect the city regionally, nationally and internationally.



Aberdeen needs to allow the digital revolution to develop and grow in the city.

With the 4th Industrial Revolution on the horizon, the city needs to utilise the emerging technologies and the opportunities it will bring.

THE EDGE

Design Strategy

The collective has implemented the following design strategy to implement this manifesto point;

The natural line which forms the Living Edge is the main strategy influenced here. The free-flowing edge will create an iconic transition between the cityscape and the landscape, becoming a selling point for the city itself. As the site is large, the edge will have greater impact. The landscape will also bring a part of the countryside into the city at the waterfront - a concept which is starting to grow in the urban development sector.

● Improved Connectivity

This aim has a direct connection to the implementation of sustainable transport. Currently there are limited transport links between the waterfront, the city centre and areas out with the city. Through this aim, the unit have concluded that the waterfront requires more transport links to make it easier for people to access the waterfront. Currently, it feels very separate from the city centre. Both should exist together in unison and feel connected both by transport links and visual connections.

The collective has proposed a new Auto-Tram route which will create a better link with the waterfront and the city centre. This method of transport runs on electric line and has an additional feature of an electric engine to run the vehicle. A green method of connecting the two areas but also connecting the people.

● An Identity For City Pride

Currently, the city does not have anything that puts it on the map - but it has so many different identities that have potential to be its selling point. Alongside an iconic building and place that will bring people to the city, it also needs something for its residents to feel proud of. This can be the Living Edge. A vision which can provide so much for the city, for the people and for the future. A solution that is innovative and will protect the city for years to come.



Aberdeen needs to increase the connectivity between the waterfront and the city centre

Aberdeen beach is a key asset that the city has to offer. A connection must be made between the city centre and the waterfront.



Aberdeen needs to increase the connectivity between the waterfront and the city centre

Aberdeen beach is a key asset that the city has to offer. A connection must be made between the city centre and the waterfront.



Aberdeen needs to develop an Identity for City Pride.

Aberdeen needs a new identity for the people to be proud of.



Aberdeen needs to develop an Identity for City Pride.

Aberdeen needs a new identity for the people to be proud of.

OPPORTUNITIES

Design Strategy

The collective has implemented the following design strategy to implement this manifesto point;

Parts of the built area of the Living Edge have been allocated for different uses. As mentioned previously, the area at the end of the Beach Boulevard has been allocated for creating new cultural experiences. Towards the south of the Boulevard, this area has been allocated for industries and business with additional housing for workers. This area currently has industrial sites which relate to the offshore sector and the harbour. To the North of the site, this area has been allocated for housing - creating new homes for those who live in the tower blocks. The centre of the site has been allocated for research facilities and sports facilities - with a link to Aberdeen Sports Village and Aberdeen University.

Enhanced Cultural Experiences

There is a great amount of tourist attractions in Aberdeen and across the North East of Scotland. Aberdeen beach once was a holiday destination, where people would travel far and wide to spend their summer break there. This aspect of the waterfront has been lost over time and the unit has concluded that it is time for it to return.

A specific area of the new development has been allocated to the creation of a new Culture Hub, which will aim to attract people to the city. This area will also include the Beach Ballroom - a piece of the city's history which was once one of the most popular dance halls in the past. This building will see a regeneration to allow it to relive its past but also keep it fresh with the times and ready for what the future will bring. Alongside this icon, a new showcase building will accompany it - an E-Sports Arena.

Research , Education & Employment Opportunities

We identified that within the demographic of the city, there is a large number of people in the age category 18-24 years who move to the city for its education facilities. These people are not staying in the city following their studies due to the lack of opportunities the city can give them. This aim looks to provide further opportunities to this age group to encourage them to stay in the city. Although this will have an impact on the population and housing, it will help the city develop for the future. The more people it retains, the more we will be able to grow new industries in the city.

Through this aim, we concluded that further research and education facilities are required. Areas which the unit has identified are the exploration of space and its conditions, further exploration of nature and environment specifically geared towards looking at the sea and marine life and also the exploration of renewable energies.

During our research, we found that employment was low across the site. In addition to this, those who are employed are having to travel out with the site to the city centre or further afield to their place of work. Low employment was found to be caused by lack of skills, lack of experience, lack of childcare and the ability to travel. The collective concluded that there needs to be more employment opportunities on the site that are accessible for all.

With the site bringing greater opportunities for industries to relocate, this could also be an opportunity for community outreach to be explored by businesses but also by the education services who can help people develop the skills they need to get employed.



Aberdeen needs to establish new cultural experiences to attract people to the city.

Aberdeen is home to many popular cultural experiences; we believe that it should have more attractive cultural experiences available.



Aberdeen needs more research, educational and employment opportunities.

More research and educational facilities will allow the people opportunities to develop their education and skills in new areas.
This should aid employment across the site.


TECHNICAL INFORMATION

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GREN ROUTE
integrated vegetation into
tram line
*all green areas orientate
around the green route and
the masterplan living edge*

PRIVATE GREEN AREAS
project specific
landscaping and vegetation
dark green areas

PUBLIC GREEN AREAS
gardens
landscaping and vegetation
public squares
playgrounds
bike/skateparks
external fitness
light green areas

INTEGRATED GARDENS
roof gardens connecting a
line of new development
along the living edge

URBAN GREEN AREAS

TRAM ROUTE
integrated vegetation into
tram line

CITY STREETS
roads
paths
parking

HIGHLINE ROUTE
stage 5 2020 masterplan

VEHICLE ROUTE
car circulation following
tram route connecting to
existing city roads

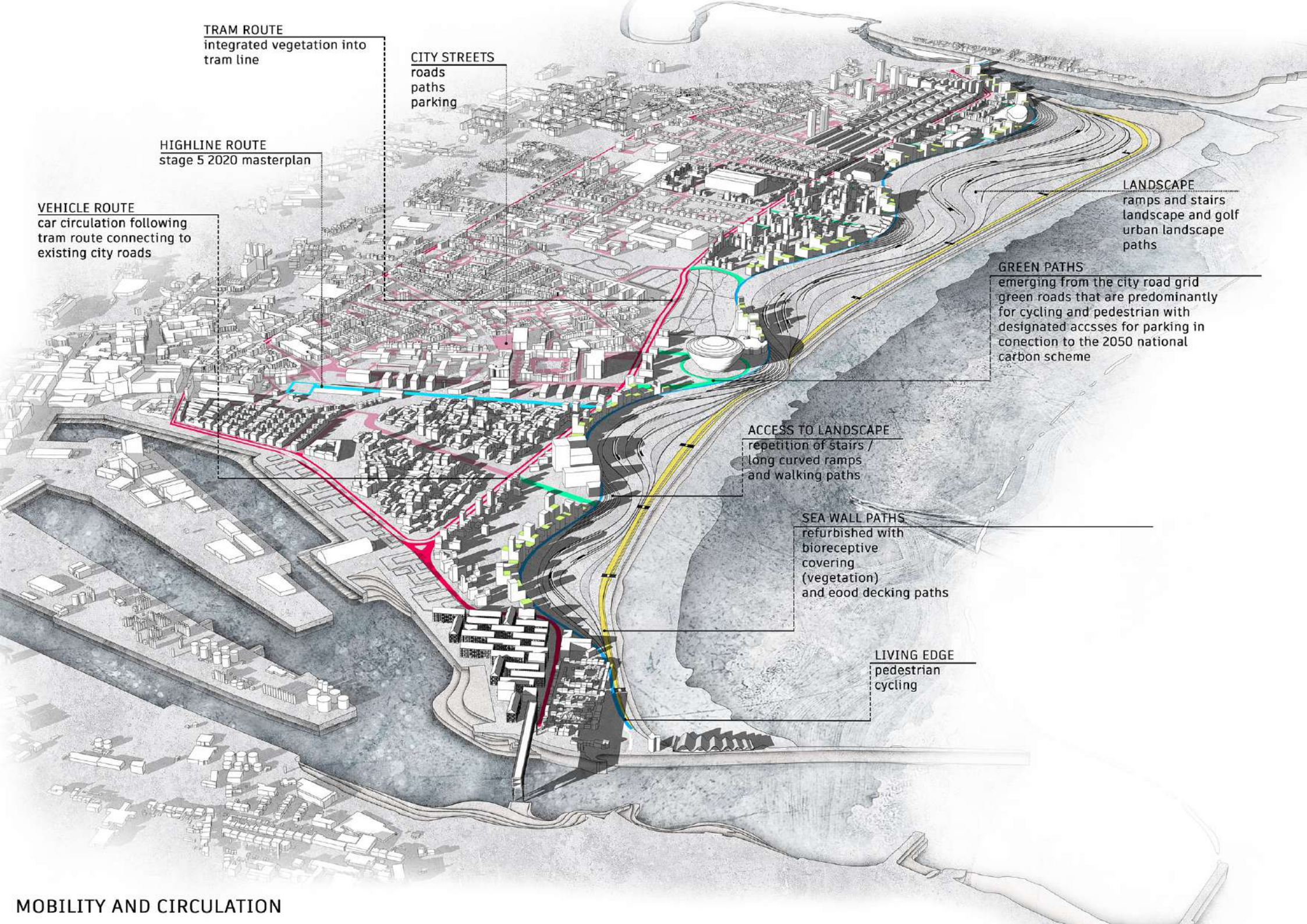
LANDSCAPE
ramps and stairs
landscape and golf
urban landscape
paths

GREEN PATHS
emerging from the city road grid
green roads that are predominantly
for cycling and pedestrian with
designated accsses for parking in
conection to the 2050 national
carbon scheme

ACCESS TO LANDSCAPE
repetition of stairs /
long curved ramps
and walking paths

SEA WALL PATHS
refurbished with
bioreceptive
covering
(vegetation)
and eood decking paths

LIVING EDGE
pedestrian
cycling



LANDSCAPE

SLOPE 2

5m increase defence height
underground parking /
future water containers

WIDE RAMPED STAIRS

access leading to water line



rban landscape



chill areas



level change precedent



shelter precedent

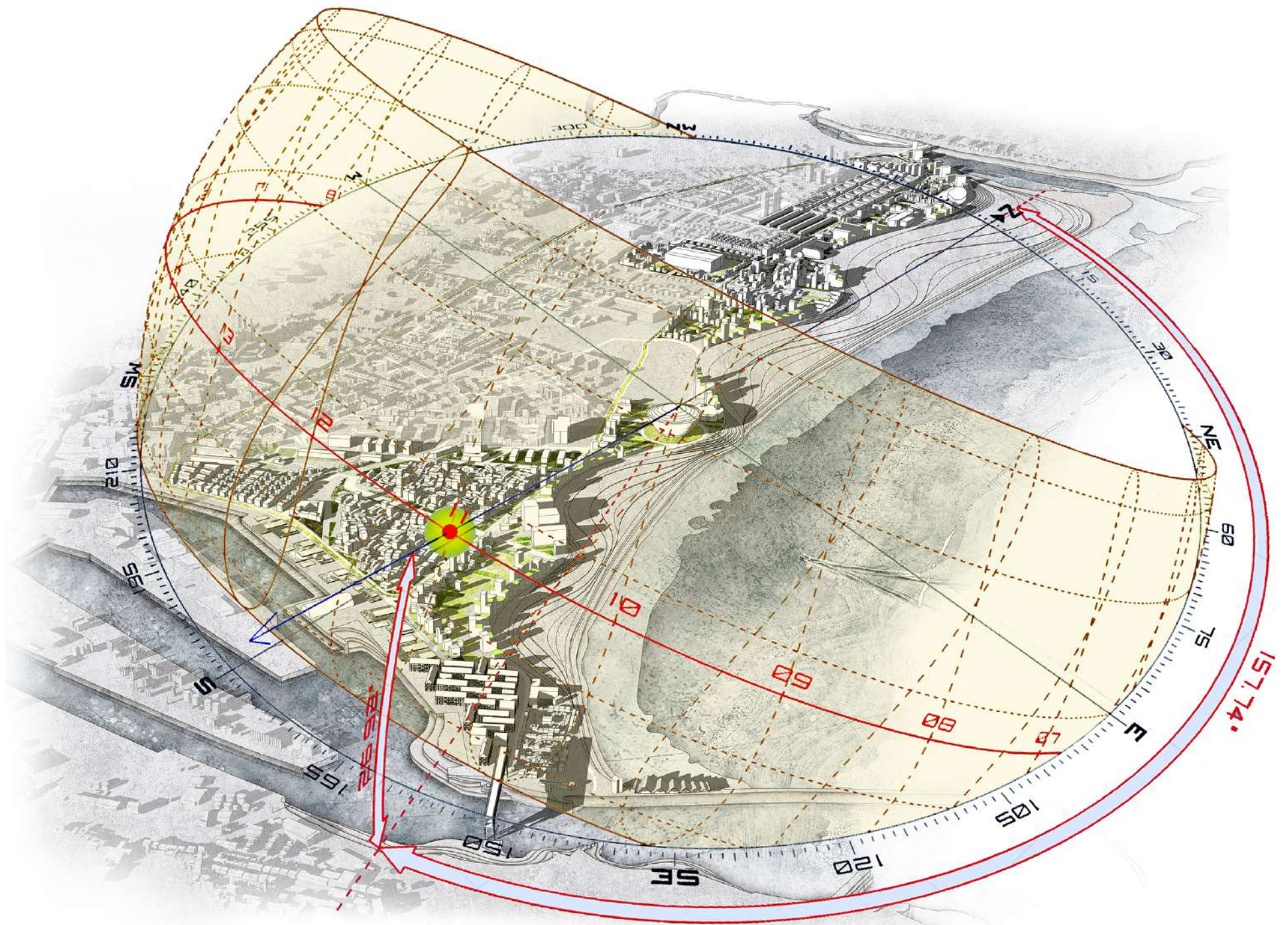


ramped stairs



sea wall bioreceptive covering







LIVING EDGE

ROAD STACK 10

BEACH BOULEVARD ROAD

LIVING FABRIC : HIGHLINE ROAD

ROAD STACK 9

LIVING EDGE

CASTLE GATE & UNION STREET

HEIGHT LEGEND:

- 0: WAVE BREAK : under sea level
- 1: BEACH : sea level 0m
- 2: SEA WALL : up 5m/path/5m (+10m)
- 3: FLAT LANDSCAPE : at 10m
- 4: SLOPE 1 : up 2m (+12m)
- 5: CURVE 1 FLAT : at 12m
- 6: CURVE 2 SEMI : STEPPED : up 2m (+14m)
- 7: CURVE 3 SEMI : STEPPED : up 1m (+15m)
- 8: CURVE 4 FLAT : at 15m
- 9: CURVE 1-4 GOLF : same as curve 1-4 golf field
- 10: SLOPE 2 : up 5m (+20m)

LIVING EDGE : at 20m

- 11: ACCESS : bottom - top 10m
- 12: ACCESS : bottom - top 5m height

*refer to landscape diagram

SLOPE 2

5m increase defence height
underground parking /
future water containers

CURVE 3 FALT

ramped landscape/ integrated rain shelters/ temporary
play grounds

CURVE 4 SEMI-STEPPED

ramped landscape

CURVE 2 SEMI - STEPPED

ramped landscape
integrated rain shelters

SLOPE 1

increase defence
height

PATH

railed and wood
decking

SEA WALL

refurbished with landscaping
with surface vegetation:
5m slope/path/5m slope/path

BEACH

sea level 0m

WIDE RAMPED STAIRS

access leading to water line

FLAT LANDSCAPE

seating intersected with sea wall
and top path

CURVE 1 FLAT

ramped landscape

Aberdeen City

Living Edge

3-10. Landscape

1-2. Beach & Sea Wall

0. First defence

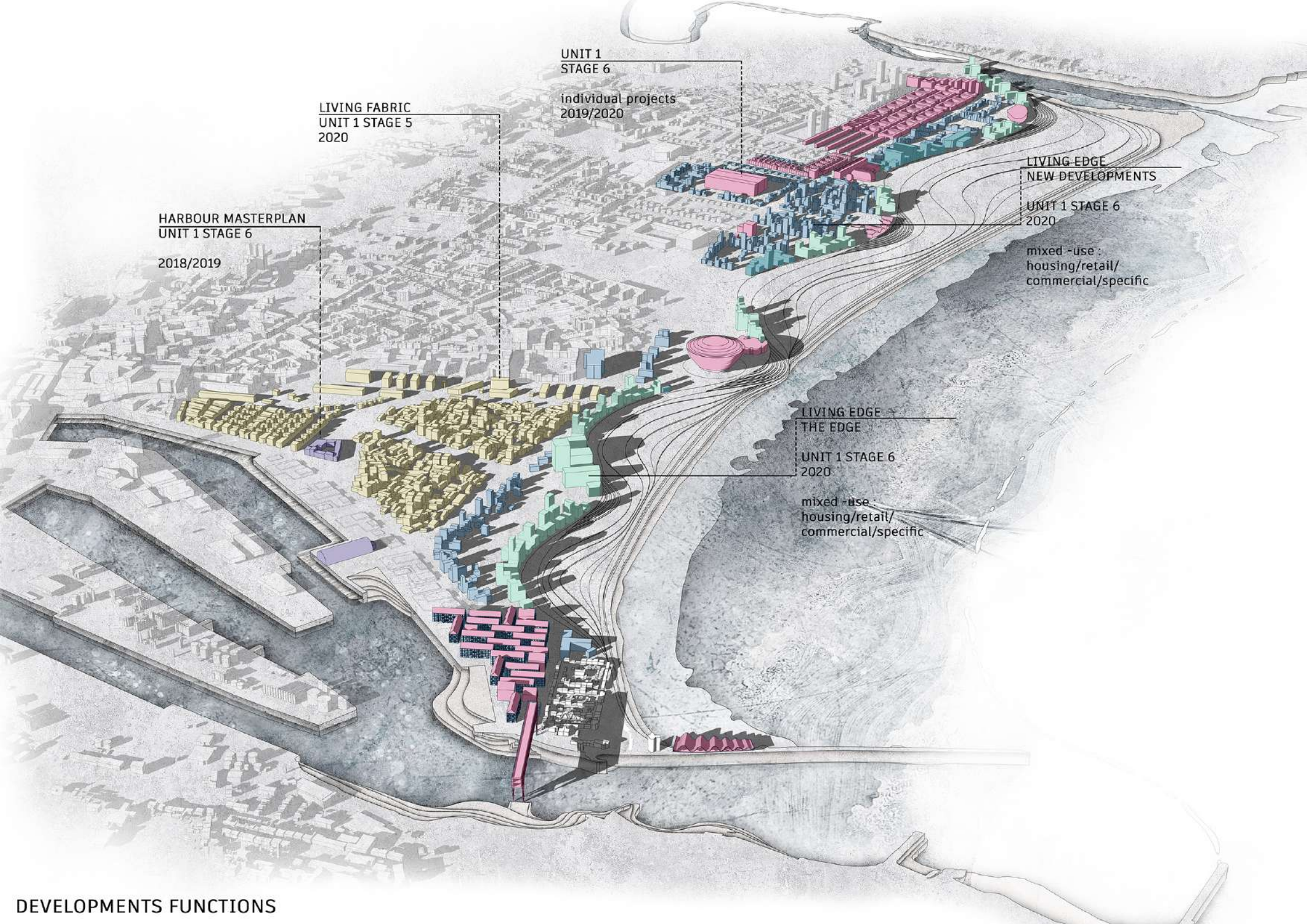
11-12. Ramped Stairs

DELIVERY PLAN

As the Living Edge vision is a large development, there is a requirement for it to be constructed in stages to reduce the impact on the city itself, but also on the people living in the area and the businesses who will be required to relocate.

This section of this report will outline a proposal for the delivery of the Living Edge using three key delivery plans. All three delivery plans will run in parallel with each to allow for a smooth construction of the vision. The three plans are as follows;

- The Living Edge Phased Development Plan
- Key Building Delivery Plan
- Sea Defence Implementation Plan



HARBOUR MASTERPLAN
UNIT 1 STAGE 6
2018/2019

LIVING FABRIC
UNIT 1 STAGE 5
2020

UNIT 1
STAGE 6
individual projects
2019/2020

LIVING EDGE
NEW DEVELOPMENTS
UNIT 1 STAGE 6
2020

mixed -use :
housing/retail/
commercial/specific

LIVING EDGE
THE EDGE
UNIT 1 STAGE 6
2020
mixed -use :
housing/retail/
commercial/specific

LIVING EDGE PHASED DEVELOPMENT

Key:

Phase One

Phase Two

Phase Three

Phase Four

Phase Five

Phase Six

Housing

Roads & Transport

The Edge (North)

The Edge (South)

Landscaping & Golf

Living Fabric & Harbour

Red

Green

Yellow

Blue

Cyan

Magenta

The delivery of the Living Edge will be completed in six phases. Each phase sets out a key outcome for where the development should be at the phase completion and progression point. It is important that each phase is carried out with little or no impact on the existing buildings and infrastructure of the city. There is no set time frame for each phase. Each phase has been developed to be a singular project which can be completed and used without being impacted by any other phases.

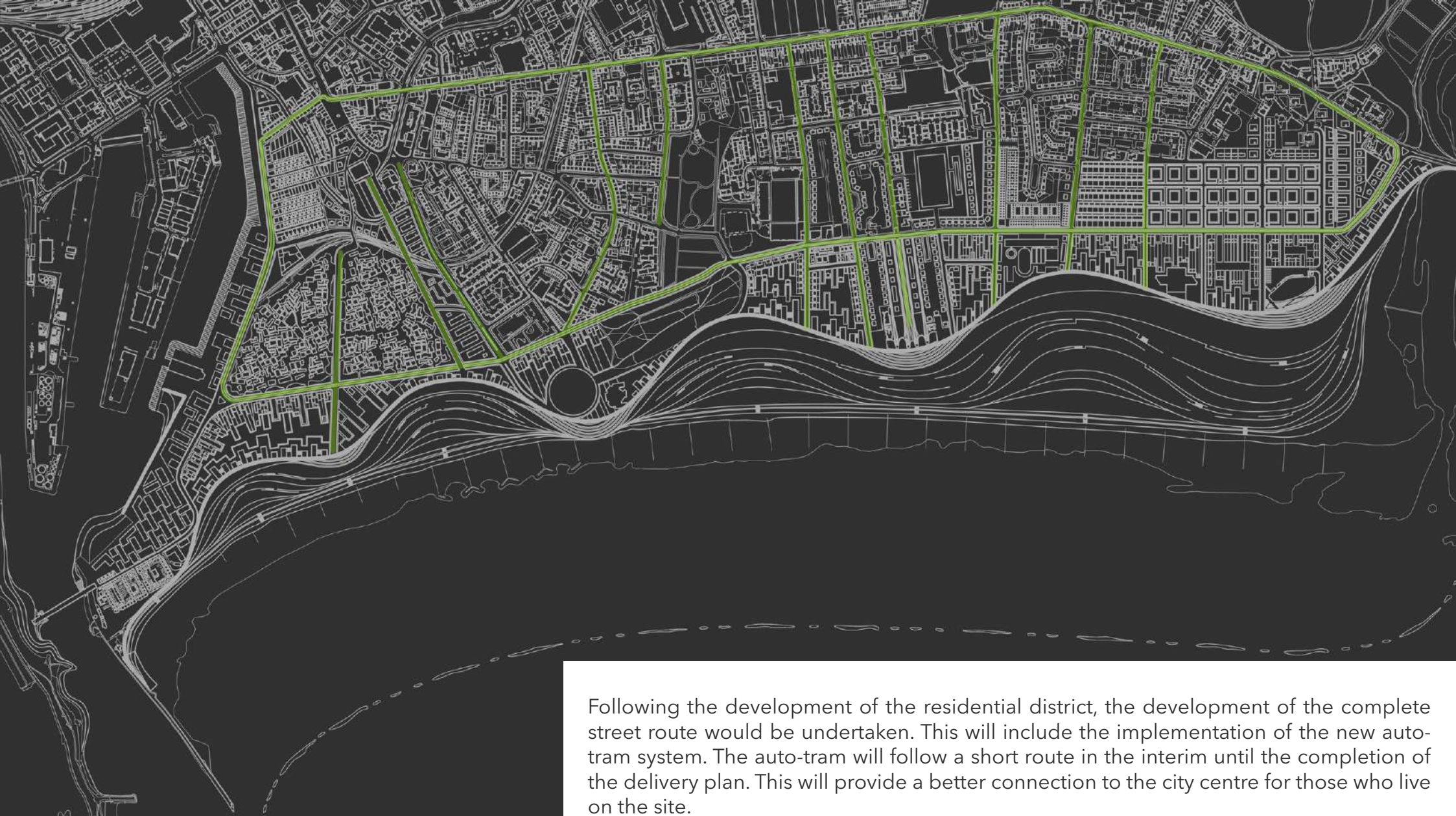


PHASE ONE HOUSING

The first phase of the development focuses on bringing people to the site but also enhancing the quality of living for the people who already live on the site.

The housing situation in Seaton is the first area that will be developed. There is a number of housing developments being proposed to the North of the site. These developments will be built from North to South of the area. As each development is completed, the residents currently living in the southern area of the residential district will relocate to their new home in the North of the quarter. The rehoming of residents will allow previous housing sites to be redeveloped for the new housing developments in the residential district.

As there are new mixed-use communities being developed as part of this phase, this will provide the first opportunities for businesses to relocate, either from within the site or from elsewhere in the city. Once units are becoming leased and houses are being sold, revenue will be generated which will help fund the future phases of the development.



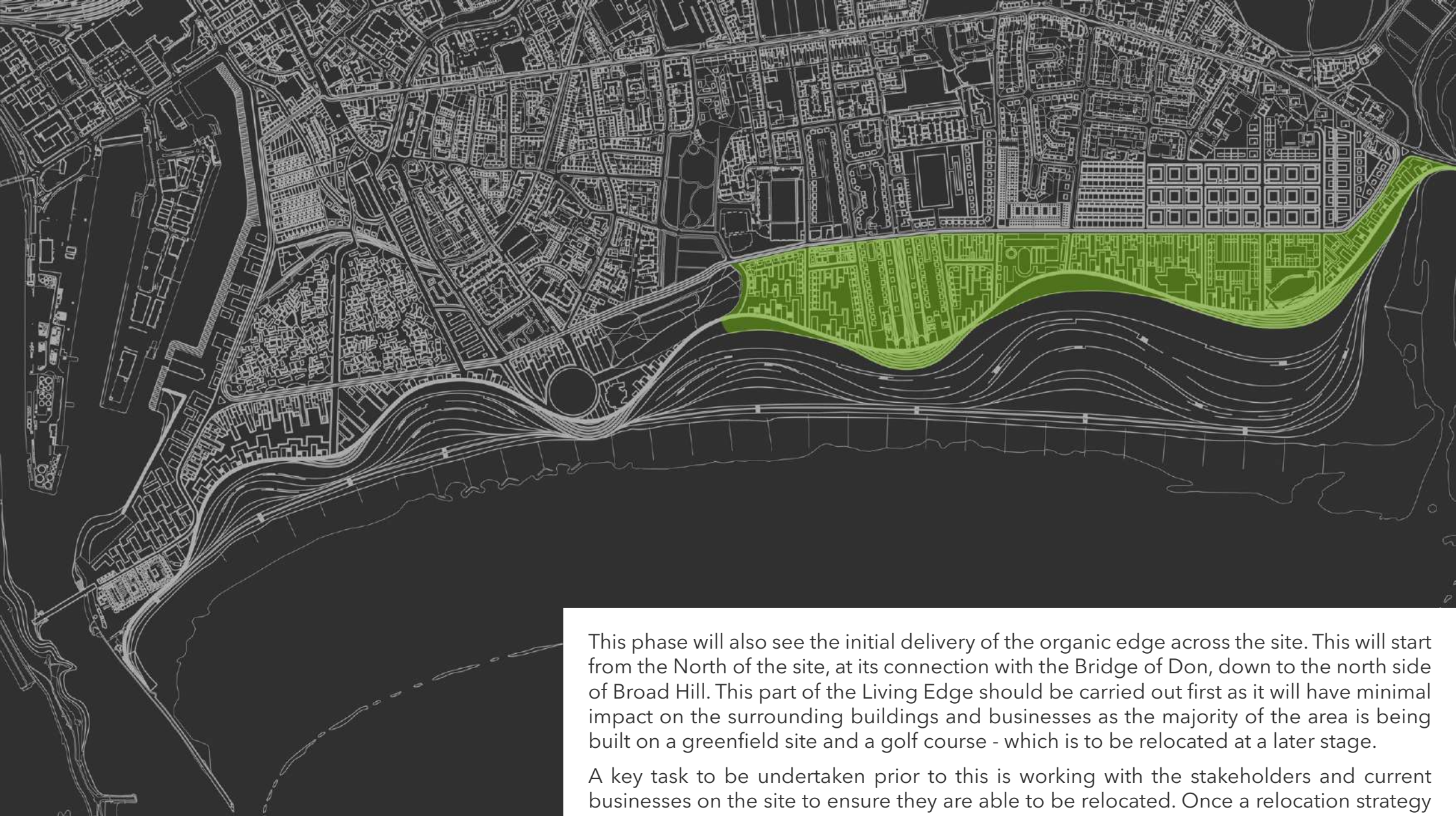
PHASE TWO

TRANSPORT & ROADS

Following the development of the residential district, the development of the complete street route would be undertaken. This will include the implementation of the new auto-tram system. The auto-tram will follow a short route in the interim until the completion of the delivery plan. This will provide a better connection to the city centre for those who live on the site.

Initial adaptations to Broad Hill will be included within these works create a space for the complete street to run alongside it.

In addition to the creation of the new transport route, the road infrastructures would also be developed at this stage to create the new permeable green routes through the existing buildings. These routes will improve the quality of the roads around the existing buildings and introduce more landscaping to the streets.



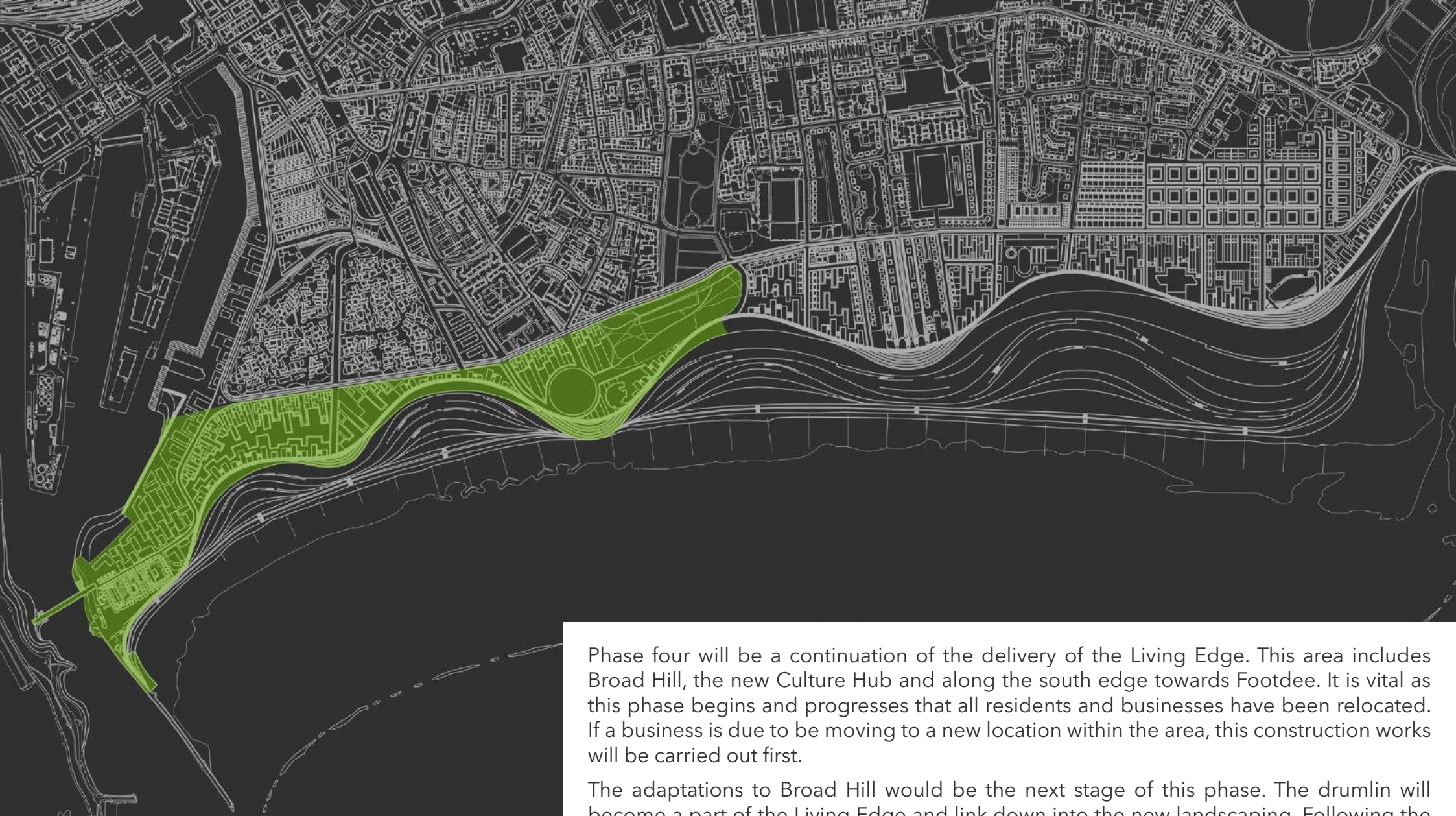
PHASE THREE **THE EDGE (NORTH)**

This phase will also see the initial delivery of the organic edge across the site. This will start from the North of the site, at its connection with the Bridge of Don, down to the north side of Broad Hill. This part of the Living Edge should be carried out first as it will have minimal impact on the surrounding buildings and businesses as the majority of the area is being built on a greenfield site and a golf course - which is to be relocated at a later stage.

A key task to be undertaken prior to this is working with the stakeholders and current businesses on the site to ensure they are able to be relocated. Once a relocation strategy has been developed and published, only then will the edge be able to begin.

As this area becomes complete, the relocation strategy can be implemented and start to move businesses from the south into the north. This will start to clear the south area for the next phase of the delivery plan. Similar to Phase One, as the units and homes start to become occupied, this will generate more funding for the continuation of the project.

This phase will also include the gradual level change down into the new landscaped area to allow access for future phases to be carried out.



PHASE FOUR

THE LIVING EDGE (SOUTH)

Phase four will be a continuation of the delivery of the Living Edge. This area includes Broad Hill, the new Culture Hub and along the south edge towards Footdee. It is vital as this phase begins and progresses that all residents and businesses have been relocated. If a business is due to be moving to a new location within the area, this construction works will be carried out first.

The adaptations to Broad Hill would be the next stage of this phase. The drumlin will become a part of the Living Edge and link down into the new landscaping. Following the adaptations that will have been completed in order to run the new auto-tram route alongside it in Phase Two.

Careful consideration should be taken during this stage to ensure the preservation of the Beach Ballroom and Footdee. The area of Footdee is a conservation area, which houses a number of Category B and C Listed Buildings. The Beach Ballroom is also a Category B Listed Building. There will be additional regulations in place around these areas.



PHASE FIVE

LANDSCAPE & GOLF COURSE

This phase will connect both this delivery plan and the Sea Defences Implementation Plan and bring both to their conclusion. This space is the final layer in the sea defence system.

The majority of the money raised through selling and letting properties across the site will fund this phase. This phase will take the longest to complete.

The first area of landscape to be completed is the golf course. This will be developed and planned in coalition with the stakeholders, which will involve a number of consultations. The course itself will span from the Donmouth Nature Reserve to the Culture Hub.

Across the vast space will feature an organic formed landscape with a number of walking and cycling routes. These will be put in place prior to the landscaping commencing.

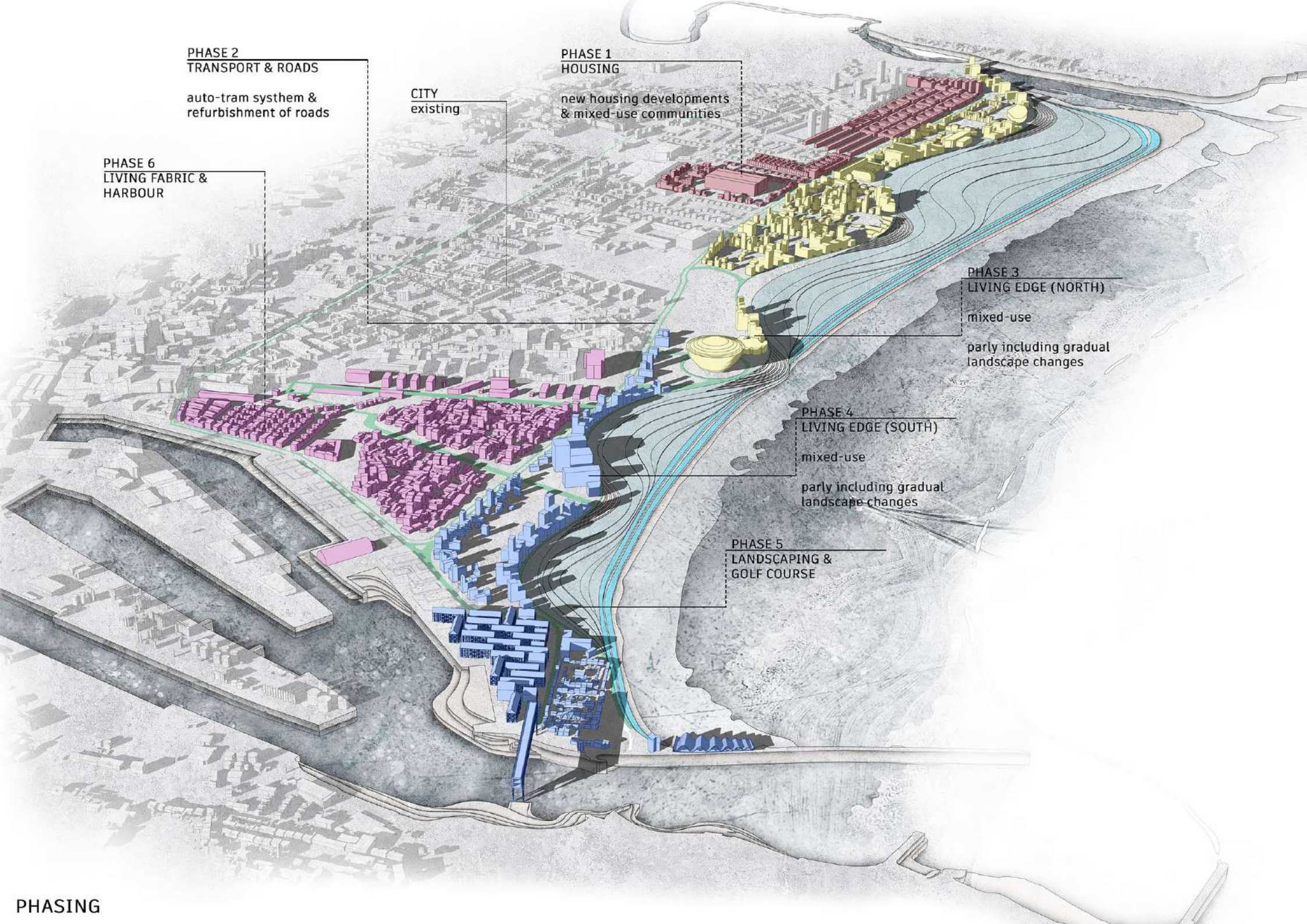


PHASE SIX

LIVING FABRIC & HARBOUR

Phase six will see the bridge between the Living Edge development and the Living Fabric development. The Living Fabric is a masterplan proposal which looks at redeveloping the area between the Beach Boulevard and the Harbour front as an extension of the Living Edge.

This masterplan has been developed by the Unit One 2019 Collective. As this development grows from a concept into a proposal, it will develop its own strategies and delivery plan.



PHASE 2
TRANSPORT & ROADS

auto-tram system &
refurbishment of roads

PHASE 1
HOUSING

new housing developments
& mixed-use communities

CITY
existing

PHASE 6
**LIVING FABRIC &
HARBOUR**

PHASE 3
LIVING EDGE (NORTH)

mixed-use

partly including gradual
landscape changes

PHASE 4
LIVING EDGE (SOUTH)

mixed-use

partly including gradual
landscape changes

PHASE 5
**LANDSCAPING &
GOLF COURSE**

Short Term

Time Frame: First 5 Years

The following projects are to be delivered in line with Phase One and Two of the Living Edge Development Plan:

- Housing Development A - Housing & Mixed Use
- Housing Development B - Healthy Housing
- Housing Development C - Garden City
- Housing Development D - Helpful Housing

Mid-Term

Time Frame: 5 to 15 Years

The following projects are to be delivered in line with Phase Three of the Living Edge Development Plan:

- Urban Sports Centre
- Media Studio & Offices
- Market Hall
- Space Research Centre
- NANOftech Institute
- Nature Visitor & Research Centre

Long Term

Time Frame: 15 to 30 Years

The following projects are to be delivered in line with Phase Four of the Living Edge Development Plan:

- eSports Arena
- Beach Ballroom Regeneration
- Urban Crematorium
- Housing Development E - High Density Urban Housing
- Water Sports Centre
- Harbour Bridge

Future Development

Time Frame: 30+ Years

The following projects are to be delivered in line with Phase Five and Six of the Living Edge Development Plan:

- The Living Fabric Masterplan

KEY BUILDING DELIVERY PLAN

The delivery of key buildings will be scheduled within three terms against time frames. These key buildings will require investment from stakeholders in order for them to be built. Each term relates to the phases in the Living Edge Phased Development Plan.



Key:

Short Term	Up to 5 Years	Green
Mid-Term	5-15 Years	Pink
Long Term	15-30 Years	Purple
Future Development	30+ Years	Orange

Short Term

Time Frame: First 5 Years

The following projects are to be delivered in line with Phase One and Two of the Living Edge Development Plan:

- The Living Breakwater
- Oyster Nurseries

Mid-Term

Time Frame: 5 to 15 Years

The following projects are to be delivered in line with Phase Three of the Living Edge Development Plan:

- Sea Wall
- Horizontal Levee

Long Term

Time Frame: 15 to 25 Years

The following projects are to be delivered in line with Phase Four of the Living Edge Development Plan:

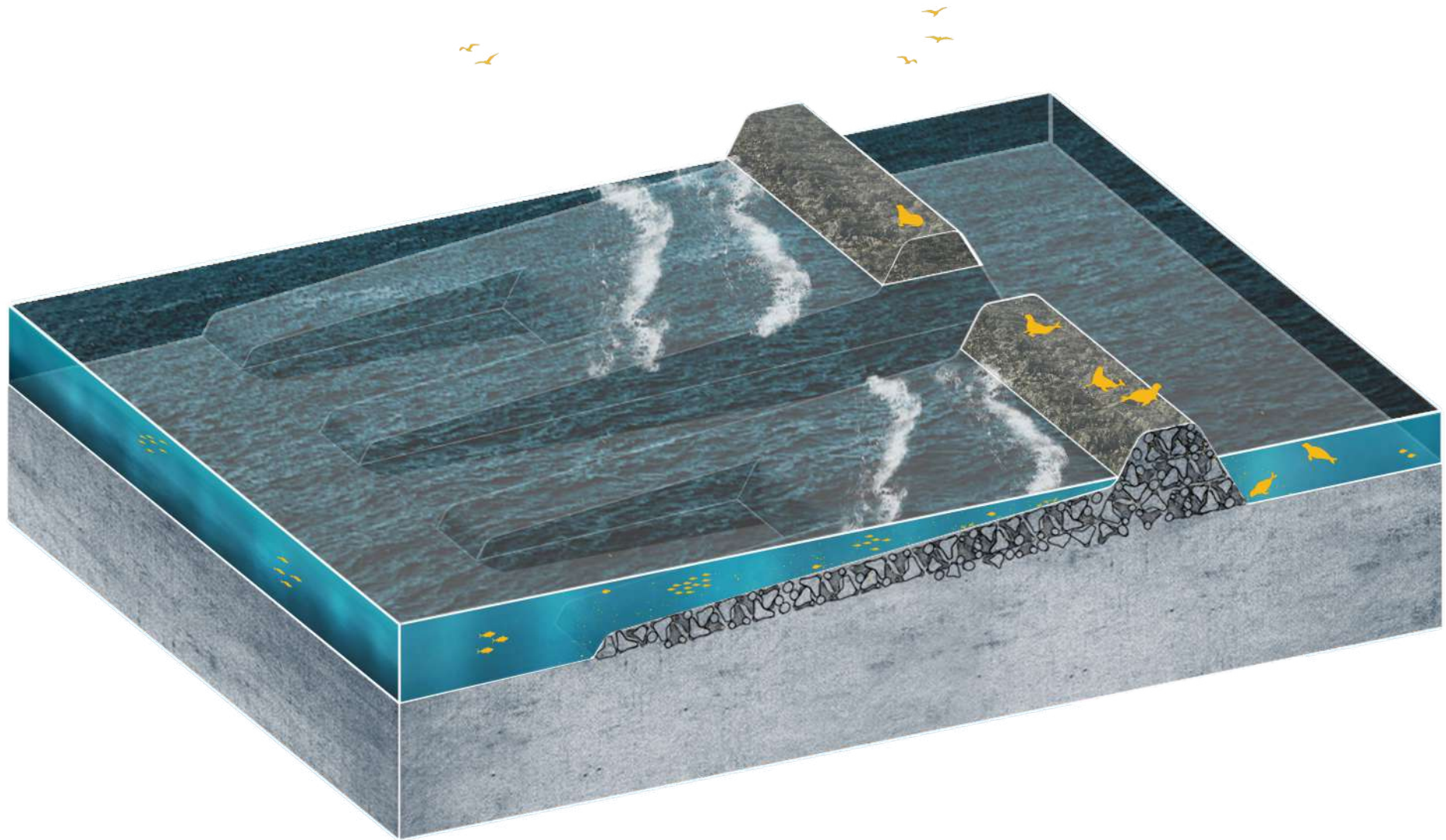
- Waterfront Parks

SEA DEFENCE IMPLEMENTATION PLAN

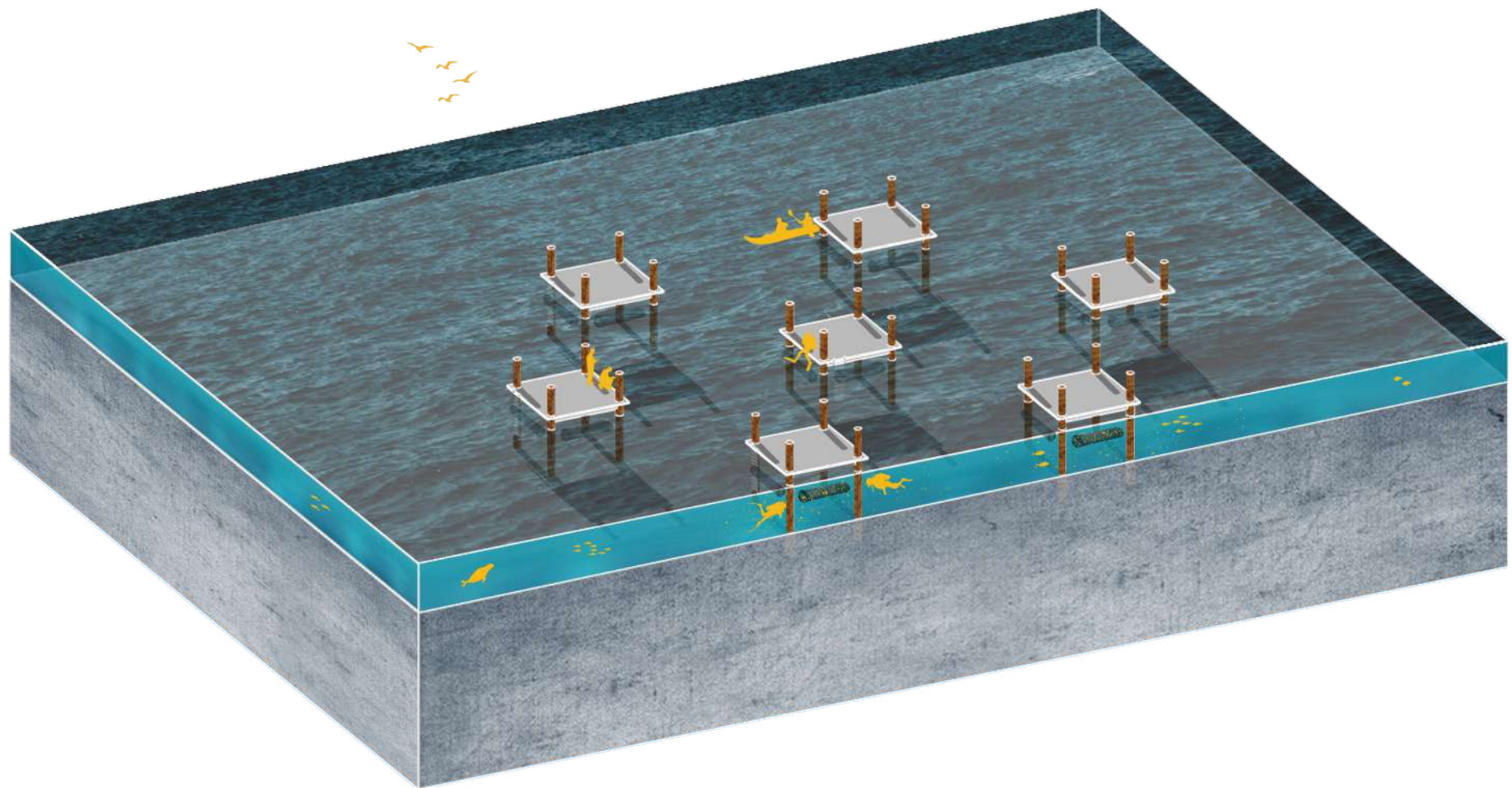
This delivery plan has been prepared by Elliot Gillard as part of his thesis study - Flood-Resilient Communities: Adapting Aberdeen Against Sea Level Rise.

The delivery of the sea defences will be scheduled within three terms against time frames, similar to the Key Building Delivery Plan above. Each term relates to the phases in the Living Edge Phased Development Plan. Investment will be required from the Aberdeen City Council throughout all three phases to deliver the sea defences within the time scale set in this plan. Each term relates to the phases in the Living Edge Phased Development Plan.

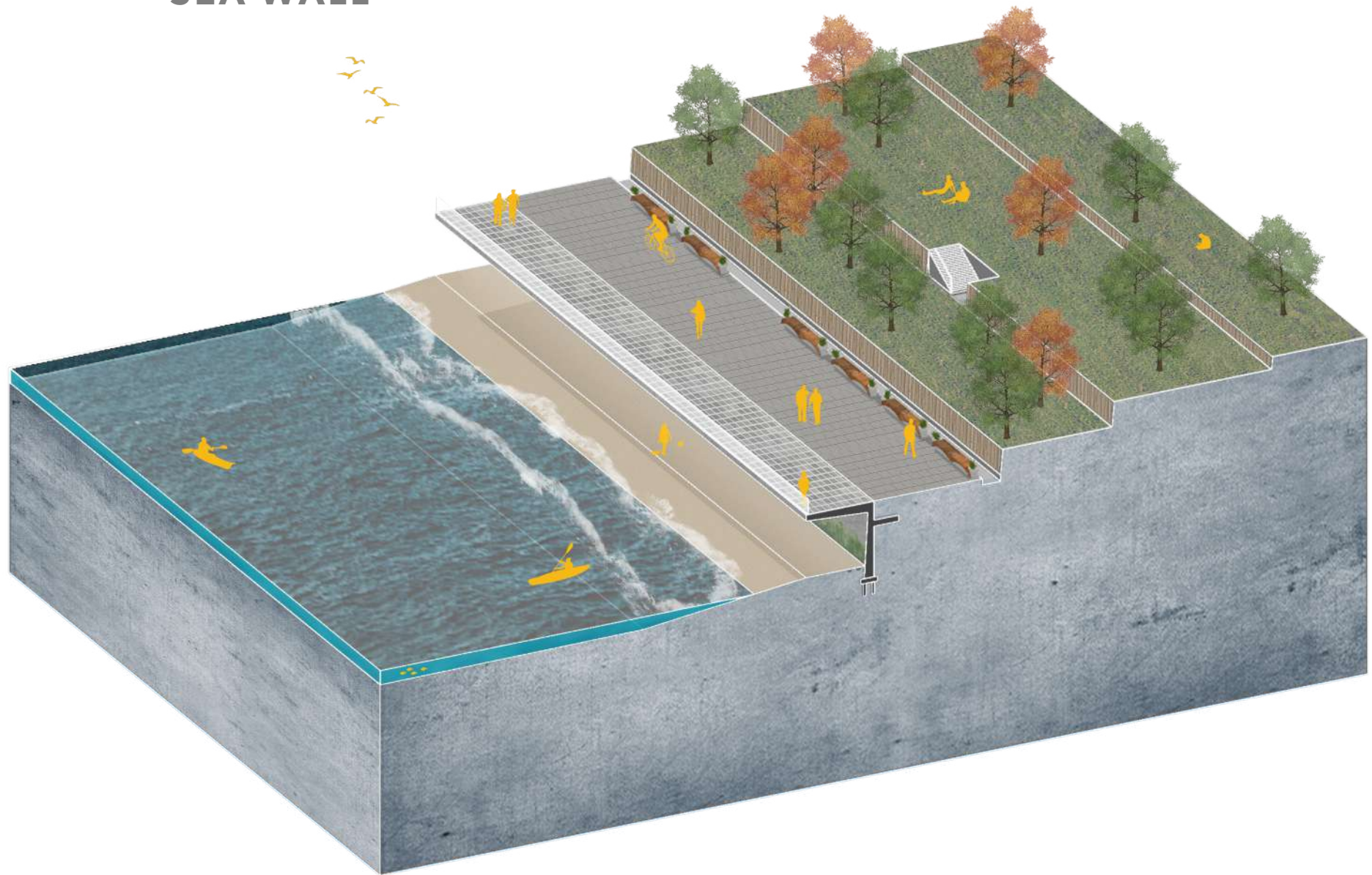
**SHORT TERM
UP TO 5 YEARS
THE LIVING BREAKWATER**



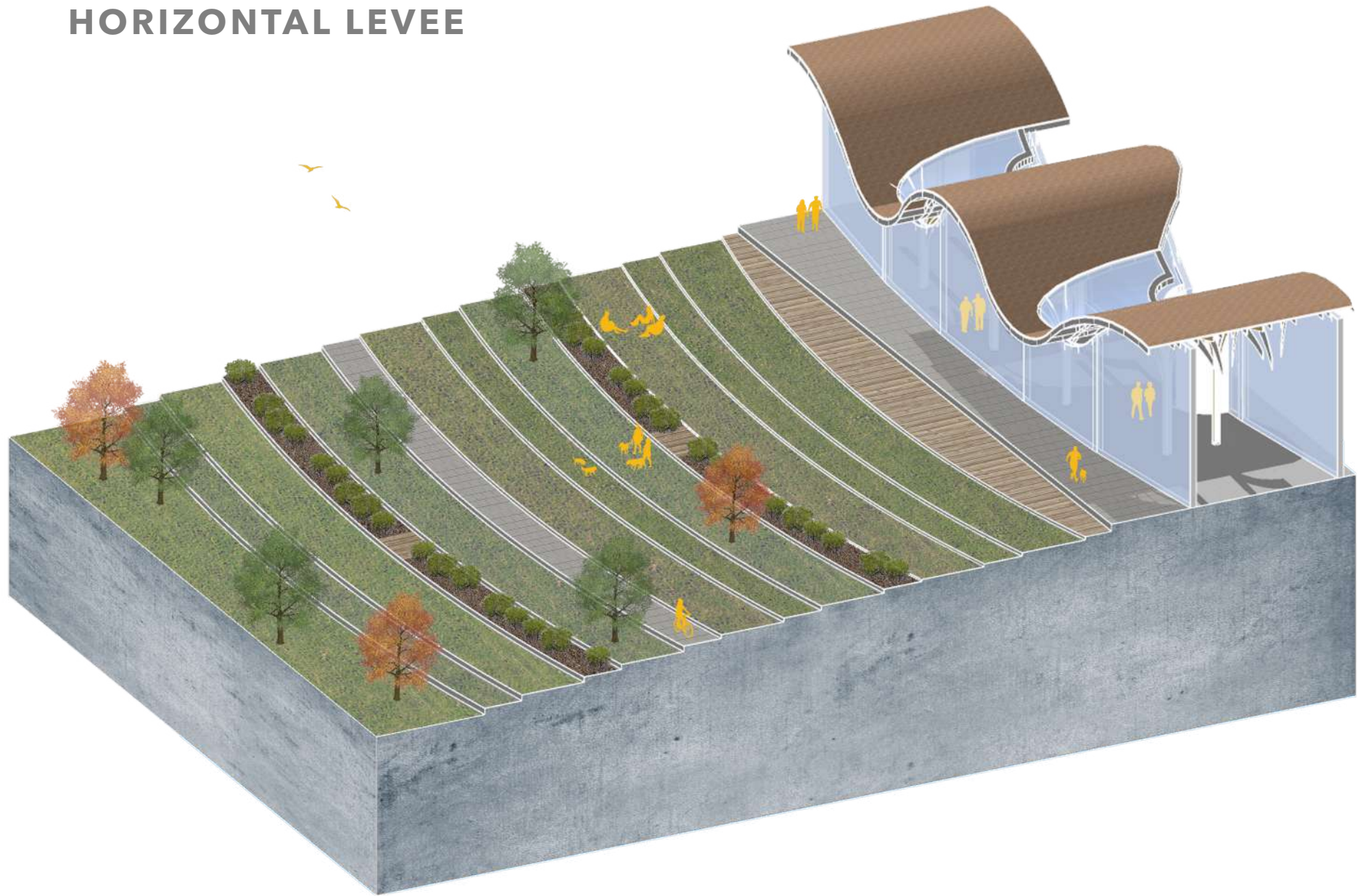
**SHORT TERM
UP TO 5 YEARS
OYSTER NURSERIES**



MID-TERM 5 TO 15 YEARS SEA WALL



MID-TERM 5 TO 15 YEARS HORIZONTAL LEVEE





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