

Lydney Newtown

looking skyward.



A proposal for an Eco town in Lydney, Forest of Dean, Gloucestershire.

Isabelle van Lennep

Panoramics and visual impact

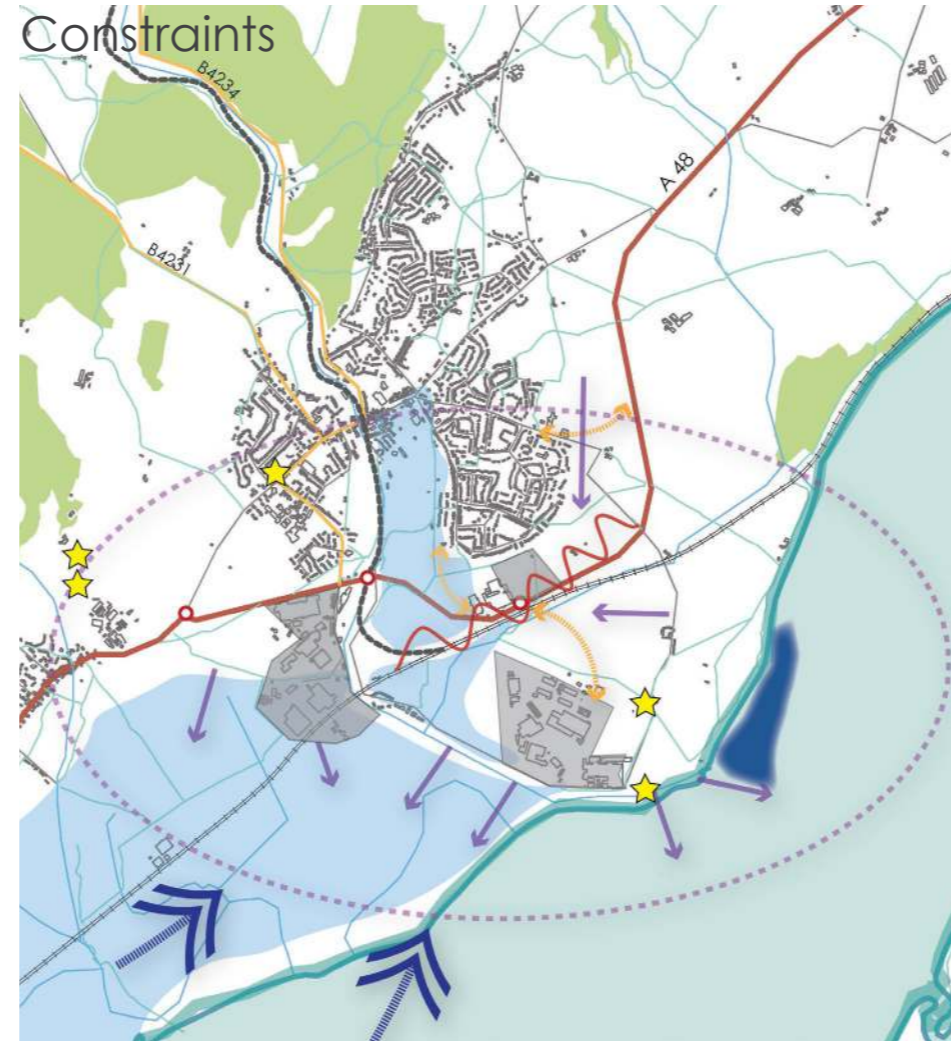


View south towards the Harbour with St Mary's Church spire.











Views across the Severn Estuary to Sharpness

Constraints

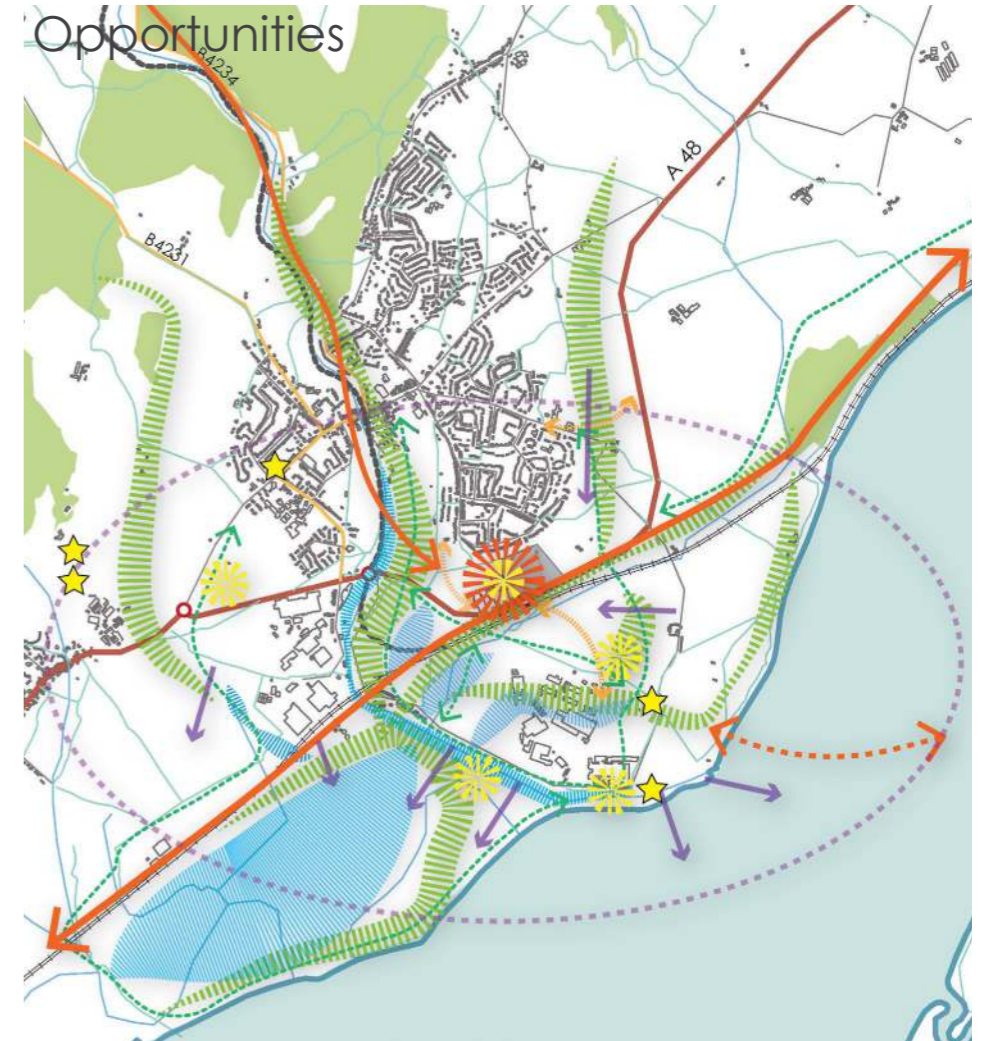


Key:









 Flood zone 3 extent	 Key views
 SSSI designation	 Poor access
 Ramsar designation	 Poor access links
 A 48	 Heritage feature
 Wind direction	

- High flood risk to central and southern areas
- Ramsar, SSSI, PHI & SNA designations
- Scheduled Ancient Monument designations
- Disconnected transport links
- Severance between Lydney and the Harbour by the A48 and rail line.
- High westerly winds funnelled by Severn Estuary

Opportunities



Key:

 Potential transport hub	 Sustainable transport links
 Potential focal point	 Potential cycle/ped links
 Green corridors	 Heritage feature
 Blue corridors	 Key views

- Coordinate the transport into a sustainable transport strategy
- To bridge existing and new settlements with shared facilities
- Protect existing and create additional habitats
- Retain and improve view lines
- To build on 3 identified, individual character areas within Lydney..... Harbour, Hillside around Naas Court and the lowlands of New Grounds.

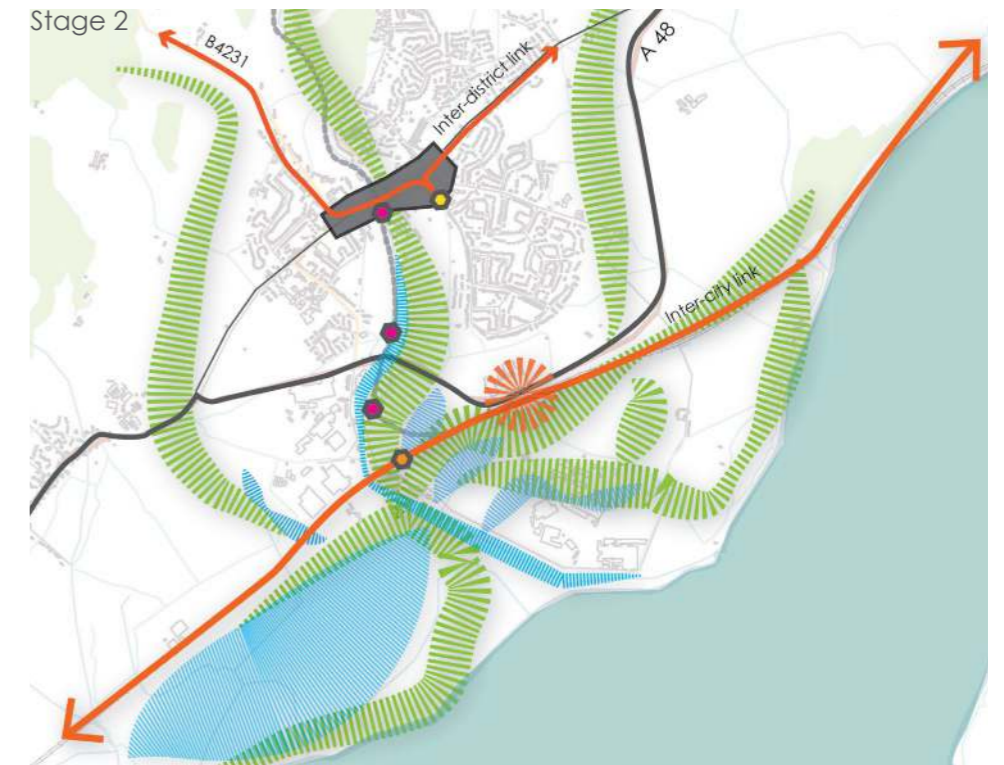
Design development process

The following diagrams illustrate the progression of design development which has been undertaken, following close consideration of the constraints and opportunities which the study area offers with the intention of developing a walkable, urban extension, led by landscape considerations.

- Stage 1: Identifying and assessing existing sustainable transport links.
- Stage 2: Identify key existing GI and potential links for both green and blue infrastructure.
- Stage 3: Identify pedestrian accessibility and evaluate other walkable nodes.
- Stage 4: Identify potential land use and density arrangement.
- Stage 5: Outline network of distributor roads.



Poor links between Lydney intercity line, Dean forest railway and Bus terminal. Suggested move of Lydney station East, to create a more connected centralised transport transit point.



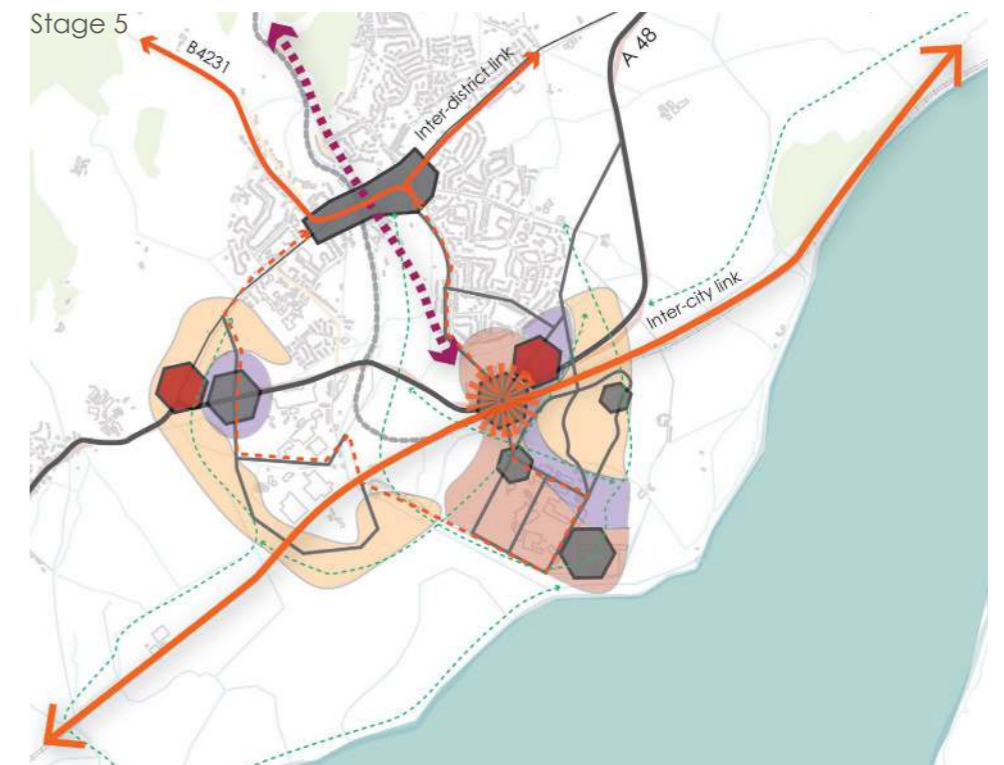
Strong central green and blue existing infrastructure. Additional buffer zones, GI corridors running East/West. Blue infrastructure to tie into existing networks whilst creating new blue networks for SUDs and habitat creation.



5 potential mixed use nodes of varying scales identified with indicated connective transport links.

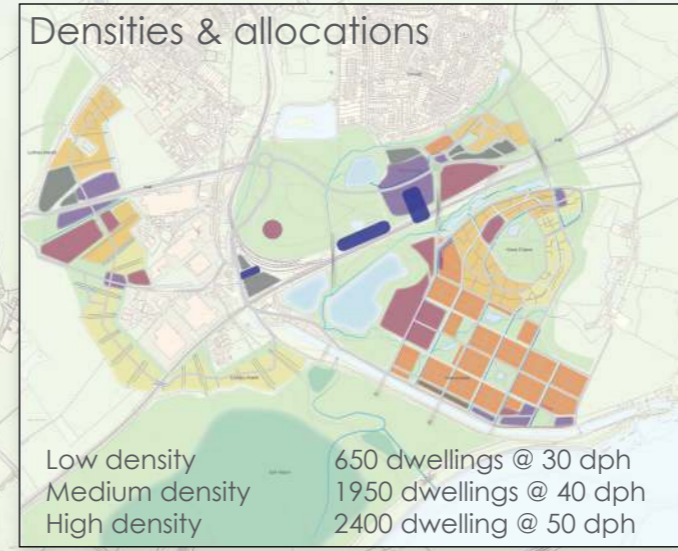
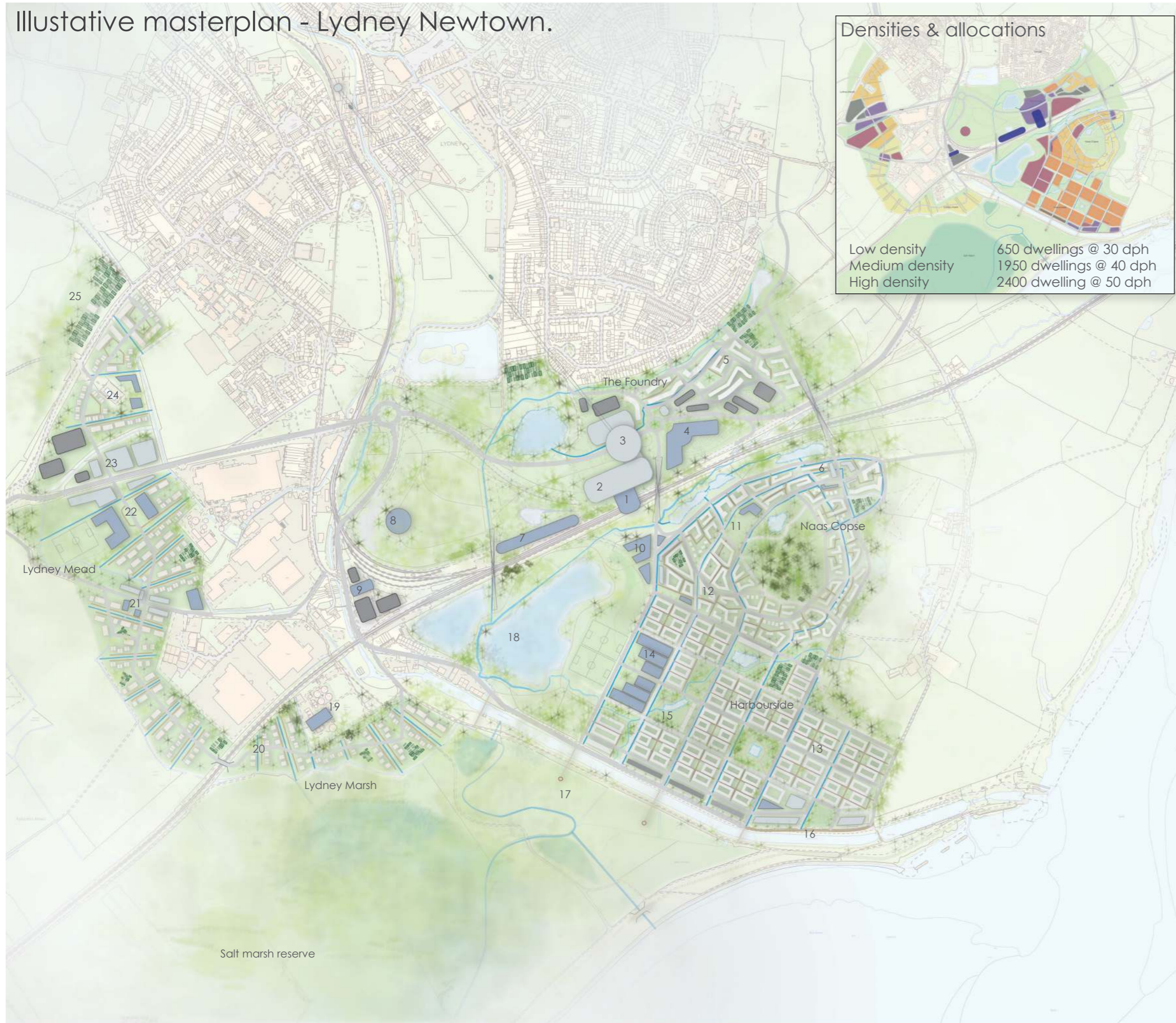


Highest density indicated around Harbour side with lower densities as topography rises. Low and medium densities selected for Lydney Mead on western flanks. Medium scale Industrial areas on main road access routes.



High density Harbourside based on grid road network. Other roads follow contour lines and topography or field pattern directions. New bus route indicated to service new proposed development areas.

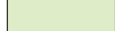








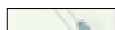


Illustrative masterplan - Lydney Newtown.



Masterplan elements:

1. Lydney intercity train station and bus depot
2. Commercial and business centre
3. Cable car terminus
4. Lydney New Town Hospital
5. Crump: High and medium density residential housing and apartments.
6. Naas copse village centre
7. New Steam Museum and Dean Forest railway terminus
8. Eco-dome: Digital library/technology and ecology centre
9. Car parking
10. Higher Education centre
11. Naas Primary School
12. Naas Copse: Mixed density residential housing and apartments
13. Harbourside: Mixed High and medium density terraced housing and apartments with
14. Harbourside Secondary School
15. Naas Stream park
16. Harbourside Square: Mixed small retail and business centre
17. Harbourside wind sculpture walk and salt marsh viewing piers
18. Plummers Lake recreational park and pedestrian bridge
19. Biomass energy plant
20. Lydney Marsh and Mead: Mixed mostly low density flood resilient housing.
21. Lydney Marsh small retail units and community facilities
22. Lydney Mead Primary School and community centre
23. Retail and industrial units
24. Bathurst pool [existing] and leisure centre
25. Small holdings and farm shop.

Key:

-  Extent of development
-  Social infrastructure buildings
-  Industrial buildings
-  Commercial buildings
-  Roads
-  Home-zone access roads
-  Green infrastructure
-  Blue infrastructure
-  Allotments and food production
-  Cable car
-  Housing
-  Viewing platform

Typologies and Character

The Foundry:

The Foundry, named in homage to Lydney's past industrial heritage and the Iron works previously on this site, will give the Forest of Dean District the large commercial nucleus it needs.

Centred around the cable car, bus and train station, The Foundry will offer a mix of retail, residential, office, leisure, industrial units and a new Hospital, creating a busy interchange for Lydney's inhabitants and visitors.

The Norchard Steam centre will be relocated to a new building to combine the museum with a new station, bringing together past and new transport technologies to the new transport hub.

Other attributes will include a new information centre with digital library technology and ecology centre, set within the Town Marsh Nature Reserve. This will be a public educational and touristic resource, which will be the focal centre for The Forest of Deans aspirations for more coordinated tourism and to raise awareness of the districts rich ecological assets and ambitions.



1 & 2 - Design for new cable car and shopping area in Perth, Australia by Mike Edwards Design. Example of contemporary cable car depot as a destination.

3. The design for the library in Birmingham by Francine Houben. Example of iconic public commission.

4. The Ark, designed by Architect Alexander Remizov is a bio-climatic structure designed to withstand forces of nature including floods. It is a self sustaining in terms of energy and even produces its own oxygen from plants inside the structure. Example of ground breaking sustainable design and flood resilient building for a potential eco-dome.

5. Ecorium National Ecology Centre by Grimshaw and Samoo in South Korea. Example of iconic eco design.

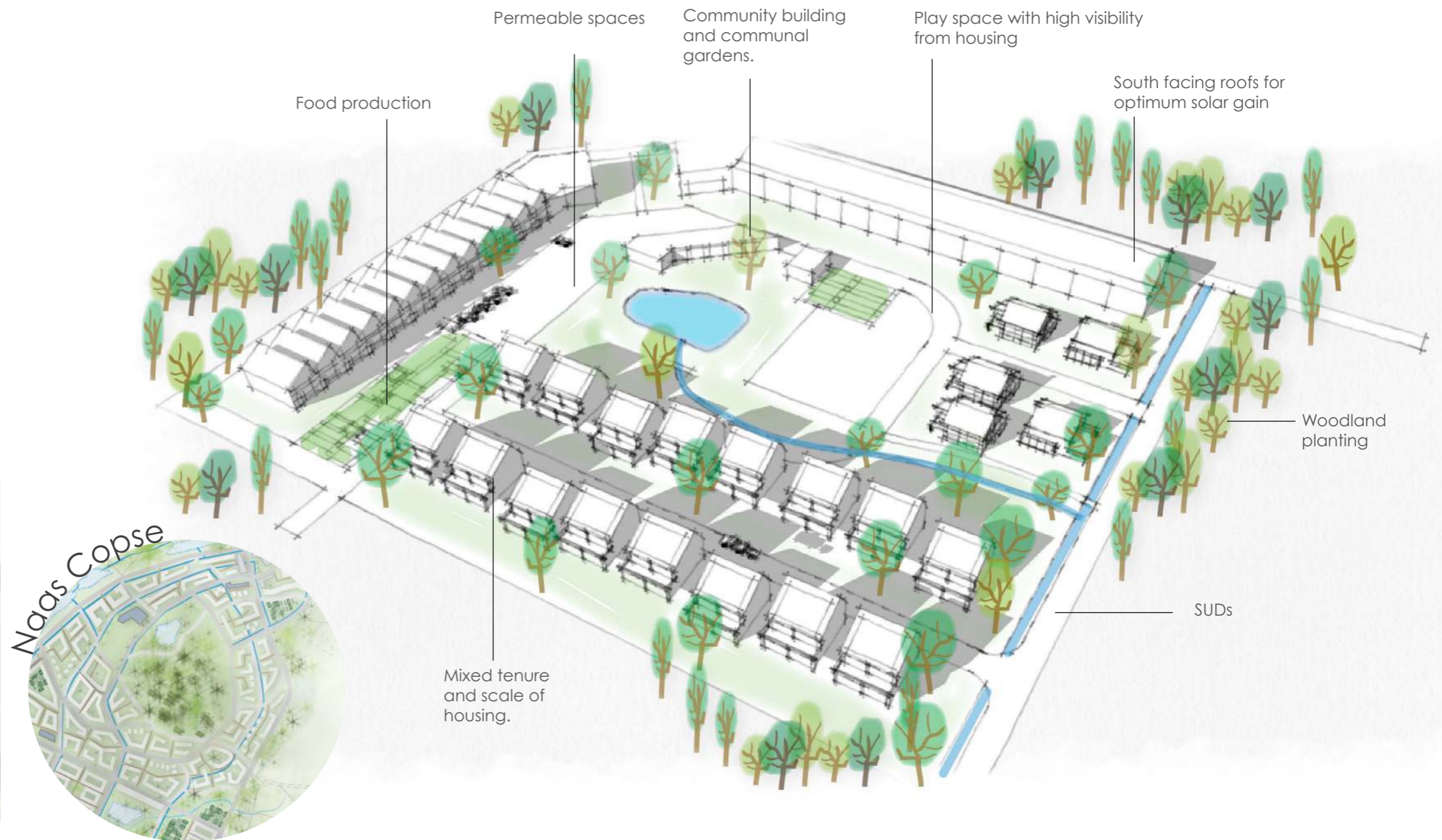




Co-housing development with detention basin. Canada.



Co-housing development set in woodland. USA



Not for profit, carbon Neutral, housing development using timber and solar gain.



Housing strategy developed for affordable housing in Argentina by A. Aravena where essential infrastructure is built into half of a house with second half for self build.

- Rural character centred around existing copse.
- Pockets of mixed woodland planting with mixed hedgerows and naturalistic verges.
- Internal communal GI spaces for communal interaction, play, recreation and food production
- Mixed tenure and scale of housing with some Co-housing initiatives and self build opportunities
- Small local mixed use centres and a primary school.



Contemporary terraced housing. Edgware Green, London.



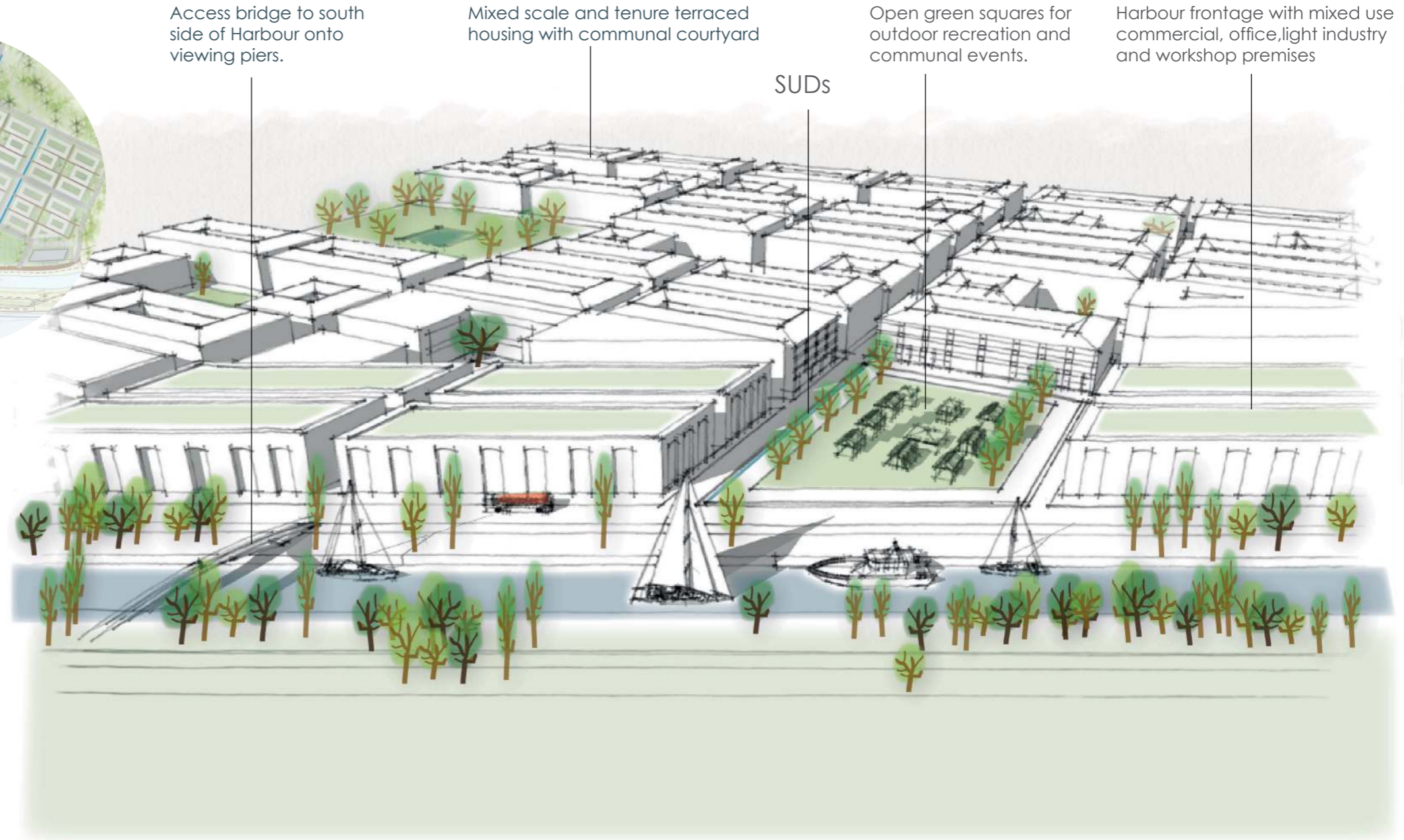
Anne Mews. Best affordable housing winner 2013. Barking.



Wharf vernacular for commercial centre. Burrells Wharf.



Small urban park with communal dining facilities. Toronto.



- Grid layout with perpendicular streets leading to Harbour front,
- Mix of 2 - 3 storey terraced housing with courtyard communal parks
- Larger Green squares and pocket parks throughout.
- Daylighted Naas Stream to cut through grid work to create a naturalistic green link to Plummers lake and Naas Court.
- Harbour front vernacular to have commercial, light industrial offices and social infrastructure elements as well as open green spaces for recreational and community use.
- Pedestrian draw bridges leading to viewing platforms over marshes to the South.
- Secondary school and higher education college



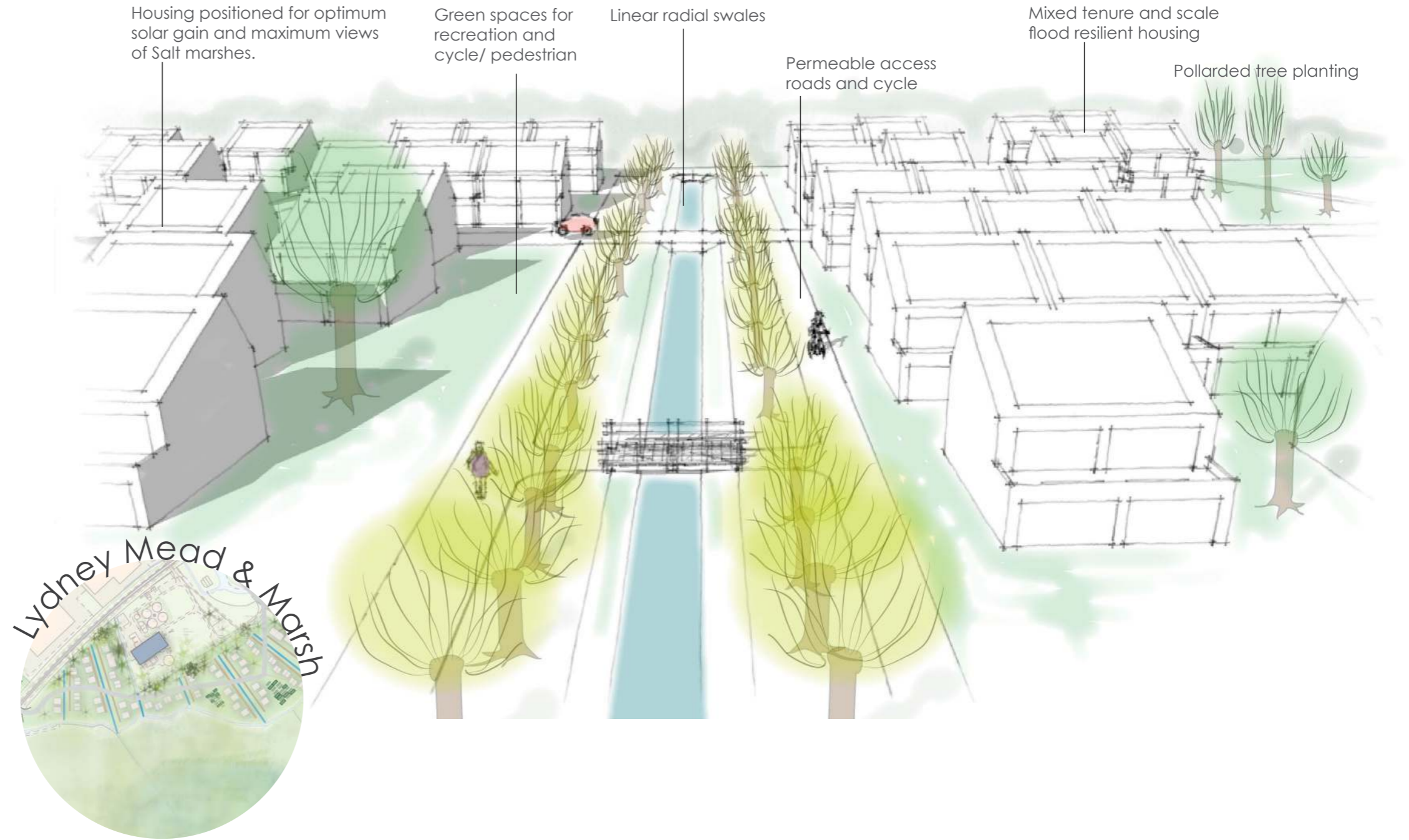
Amibious housing designed for flood zone in Buckinghamshire.



Stilted flood housing with permeable access roads Assael Architects.



Contemporary house design for open landscape. Ontario



Linear radial layout of swales, permeable homezone roads and cycle paths.

Flood resilient housing positioned to capitalise on views of marshes.

Permeable open spaces for recreation

Small mixed use centres and a primary school

The northern sections [outside flood zone] will offer the opportunity for larger industrial units, a leisure centre next to the existing Bathurst pool and community food production and farm shop to capitalise on the class 2 ALC in this area.



Linear access and pollarded Willows.

Green Infrastructure elements

Approximately 60% of the land take will cover GI elements of the proposal, varying from Nature reserves, public parks, food growing, playspaces and woodlands.

In addition to the three character areas already covered, GI elements are as follows:

- The focal green element, will be the Saltmarsh on New Grounds. The intention is to return the lands from grazing to a naturalistic marsh land as part of a managed retreat to alleviate flood risk as suggested by Halcrow [SFRA 2008] This will also have beneficial effects for migratory birds and estuarine species which in time will, reintroduce a habitat rich grassland to support existing estuarine eco-systems.
- Shelterbelt planting to reduce wind impact, improve visual impact of the development, create green habitat links to the surrounding countryside, improve noise impact from roads and create a settlement boundary.
- Land allocation for food production, [Allotments and community orchards]
- Land allocation for hazel and willow coppice for Biomass production



Public gardens and squares



Viewing platform or bird hide to view the marshes








Re-claimed salt marsh



New woodland and shelter belt planting






Key:

- | | |
|---|--|
|  Extent of GI |  Potential Biomass coppice |
|  Green links |  Allotments and food production |
|  Shelter belt planting | |



Key:

-  SUDs direction of flow
-  Flood embankments
-  Managed retreat Marsh land

Key blue infrastructure elements

- Additional reed bed attenuation and infiltration ponds
- Building additional flood defences or banks to protect infrastructure.
- Introduce green roofs to larger roof spans to improve capacity and run off.
- Ensuring additional outlets are introduced to manage excess water.
- Breaching the existing dyke around New Grounds to implement a managed retreat of the Severn coast line



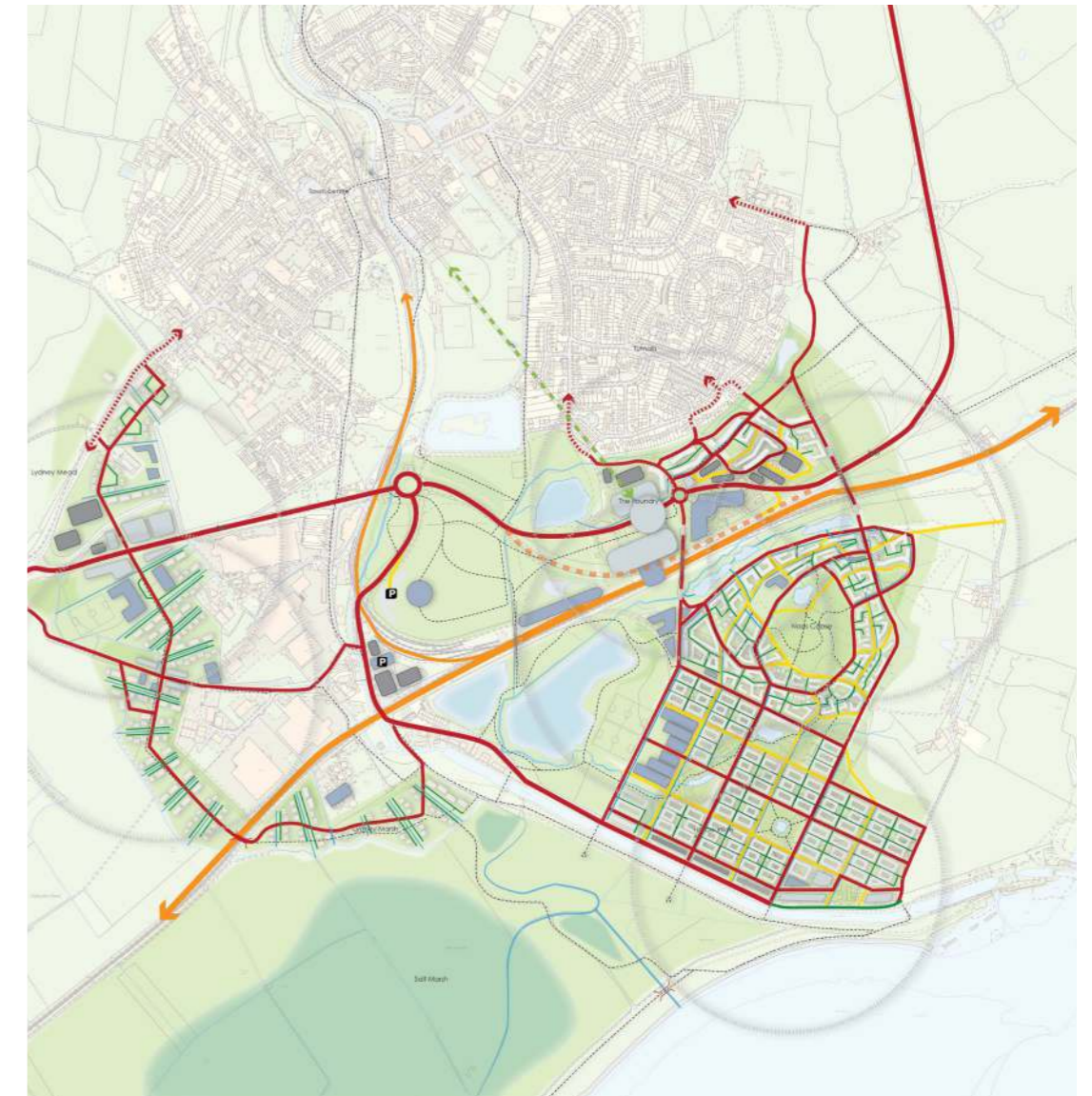
15 -20 person gondola cable car




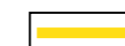




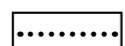


Attenuation ponds



Swales



Key:

-  Arterial roads
-  Access roads
-  Homezone roads
-  Cable car
-  Intercity rail link
-  Dean Forest Railway
-  Cycle and pedestrian paths routes
-  Existing route of A48
-  Re-routed bus service

Key transport elements:

- Transport hub with train station, cable car, bus, cycle and pedestrian facilities and networks.
- Re-routed bus route to serve new settlement areas.
- Comprehensive network of Cycle and pedestrian paths with cycle and pedestrian bridge to connect Town Marsh and Plummers lakes.
- High level of Homezone roads with traffic calming measures to encourage recreational activities