integrated habitats - matripolis

Matripole is a as profotypical building block for cities in our post-carbon future that will transform today's traffic-dominated metropolis to a condition where life, not traffic, dominates. A biodiverse, carbon negative development designed for compact living which is autonomous, dealing with its own food production and waste.

aerial view of building nestled in landscape

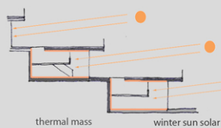
compact living-density

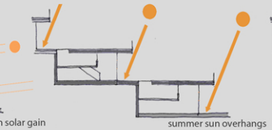
place-making

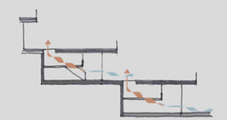
biodiversity

food production

community engagement

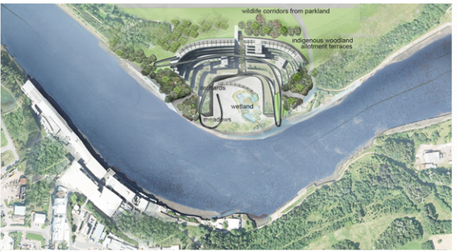

thermal mass


winter sun solar gain


summer sun overhangs

ventilation

sketch looking from allotments towards housing



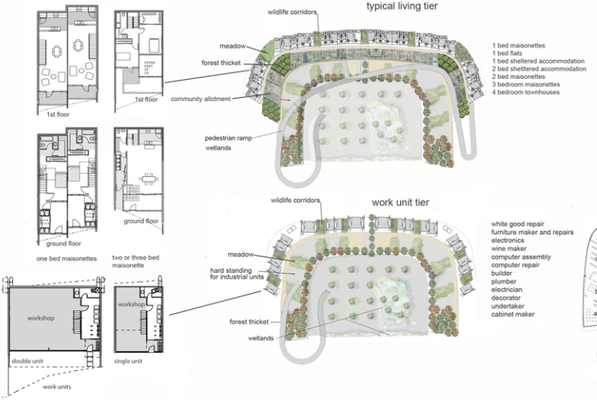
derelict brown field empty site

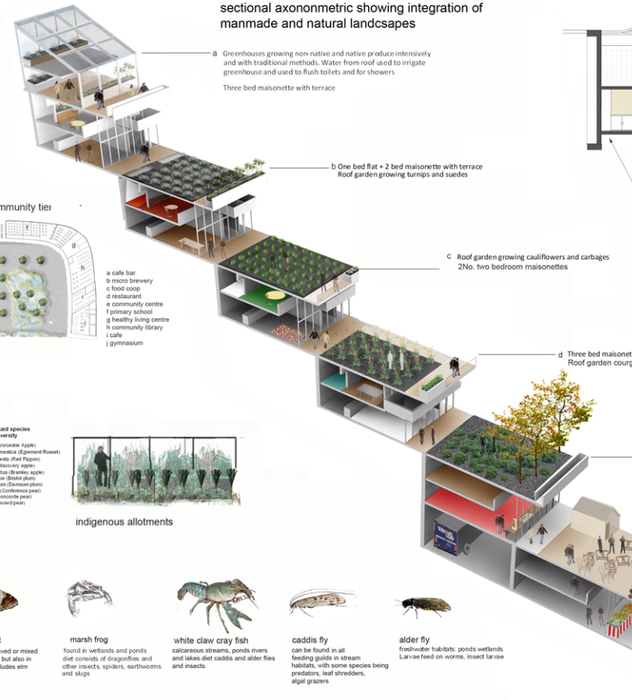
The scheme is designed to house 500 people in a compact sustainable development on a terraced slope, such that every one can step directly from their front door into a rich realm of biodiversity. The scheme is intended to respect all species; living together in an integrated landscape, which encourages nature to thrive, and hopefully encourage species to return the Northeast which are now largely extinct in the area or in diminishing numbers.

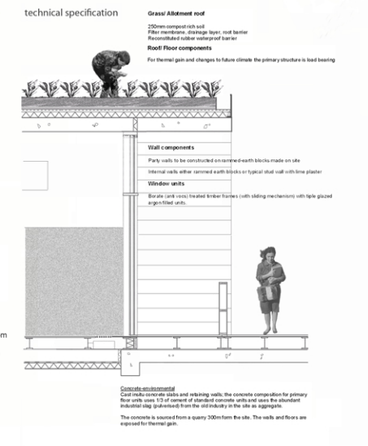
The proposal is on the banks of the Tyne on the old Swan Hunter site. The site was once a bustling community built around the ship yards. The facility now integrates living and working, and in doing so promotes compact living (without excessive travel distances to work), as well as a strong sense of community which increasingly is absent in western cities.

In our proposal we have reconsidered the terraced housing typology that was ubiquitous in the northeast in the last century; our terraces are stepped up the hill from a public square where community facilities that contribute to a sense of place are located (see plans and site plan). The next tier is the work units for light industry, craft and the support of the community as a whole.

The facility is carbon-negative and uses environmentally friendly materials. Energy is generated from hydro-turbines located in the River Tyne. The scheme has been designed to avoid the need for heating or cooling due to solar gain and insulation. Food for the residents is grown in the allotment gardens as well as the greenhouses on the upper tier. Access through the community is via landscape staircases and wildlife corridors as well as a lightweight transparent pedestrian/bike ramp connecting all residents to common spaces and services at grade level.







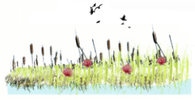
creation of new habitats

indigenous woodland thicket

Indigenous trees and shrubs to promote biodiversity
Sambucus nigra (Elder)
Fagus sylvatica (Beech)
Betula pendula (Silver birch)
Ulmaceae (English elm)
Crataegus monogyna (Hawthorn)
Corylus avellana (Hazel)
Aesculus hippocastanum (Horse chestnut)
Ilex aquifolium (Holly)
Quercus robur (Oak)
Taxus baccata (Yew)

indigenous meadows

Indigenous meadow species to promote biodiversity
Anthoxanthum odoratum (Sweet Vernal-grass)
Dactylis glomerata (Cocksfoot)
Crested Dogstail (Cynosurus cristatus)
Rhinanthus minor (Yellow rattle)
Trifolium pratense (Red Clover)
cardamine pratensis (Lady's-smock)
Ajuga reptans (Bugle)


indigenous welands

Indigenous Wetland Species to promote biodiversity
Stratiotes Aloides (Water Soldier)
Hydrocharis Morsus Ranae – (Frogbit)
Ceratophyllum Demersum (Hornwort)
Myriophyllum Spicatum (Water Milfoil)
Potamogeton Crispus (Curled Pondweed)
Acorus Calamus (Sweet Flag)
Alisma Plantago (Water Plantain)
Carex Acutiformis (Lesser Pond Sedge)

indigenous orchards

Indigenous Orchard species to promote biodiversity
Malus domestica (Worcester Apple)
Malus egremont domestica (Egremont Russet)
Malus domestica Fiesta (Red Pippin)
Malus domestica (Discovery apple)
Malus domestica echus (Brantley apple)
Damascenum bullace (Bilsthil plum)
Prunum domescenum (Damson plum)
Comisonis Cultivar (Conference pear)
Pyrus communis (Concorde pear)
Pyrus communis (onward pear)

indigenous allotments

habitats supporting biodiversity particularly endangered species

little egret
Feeds by the edges of lakes, reservoirs, rivers, brackish lagoons. Breeds in waterside trees and bushes. Thrives where there is a diversity of wetland species. Eat fresh water fish

aquatic wabbler
Insects, caterpillars and grubs, and spiders. Found in wetlands mainly in the south but have been seen increasingly in the north

sandpiper
near any freshwater areas, rivers and wetlands and on some estuaries. Eats insects and larvae

crane
near fresh water fehns and wetlands increasingly seen in the north of the country eats seeds, crops, insects, snails and worms.

red squirrel
The red squirrel is found in both coniferous forest and temperate broadleaf woodlands diet nuts (especially hazelnuts but also beech and chestnuts), berries. young shoots

dormouse
Dormice are omnivorous, typically feeding on fruits, berries, flowers, nuts and insects. They prefer to live in shrub, woodland edges and overgrown gardens

water vowl
Water voles also feed on vegetation they live on edges of water courses river and wetlands

daubenton's bat
found close to calm water in open wooded areas diet mainly consists of aquatic diptera

smooth newt
suitable habitat include peatlands and wetland diet freshwater plankton, and later insect larvae, molluscs

white letter hairstreak butterfly
lives in the tree canopy, especially elms, including Wych Elm, English Elm, and Small-leaved Elm

blomer rivulet
mainly in broad-leaved or mixed woodland habitats, but also in hedgerows diet includes elm

marsh frog
found in wetlands and ponds diet consists of dragonflies and other insects, spiders, earthworms and slugs

white claw cray fish
calcareous streams, ponds rivers and lakes.diet caddis and alder flies and insects

caddis fly
can be found in all feeding guilds in stream habitats, with some species being predators, leaf shredders, algal grazers

alder fly
freshwater habitats: ponds wetlands Larvae feed on worms, insect larvae

view showing allotment gardens and housing units

view from greenhouse looking over the development

view looking upto the pedestrian walkway and community building

view of wetlands and public square with community facilities