Back down to earth

>> This is the street where we work, an unremarkable street, full of tarmac and cars. It is exactly this type of street where the environmental revolution can take root - responding to the post Covid-19 opportunities and importantly, the climate emergency, to radically re-think our streets, for the sake of humanity. Our proposal peels away the existing grey carpet, 'back down to earth', to create healthier and greener spaces.

An ecosystem led planning approach where people and biodiversity have equal importance and nature can be introduced in a meaningful manner to create a balanced, thriving and resilient streetscape. The re-engineered street harnesses pioneering new technologies to reduce the carbon footprint of the urban fabric, provides a valuable green resource that reconnects the cities inhabitants with nature and galvanises a sense of community for the people who live and work on the street. This street is not intended to be a destination- it is about engendering environmental awareness and local identity, which replicated on other like minded streets incrementally starts to enrich the social and environmental fabric of the city.

11
SKY'S THE LIMIT
Intensify the city through maximising the roof space

10
CLIMATIC SKIN
Lightweight inflatable shelter

9
LANDSCAPE BATTERY
Public realm used extensively for energy generation

8
COMMUNITY PARKLETS
Flexible modular amenity pods

7
URBAN FORESTRY
A wooded street

6
PLANTING FOR NATURE
Extensive biodiverse and species rich planting,

5
DIGITALLY ENHANCED
Shared surface space managed digitally, in real time

4
REWIRE THE CITY
Accessible service corridors

3
WATER MANAGEMENT
Holistic management of rain water, waste water and water supply

2
TREADING LIGHTLY
Modular, recycled plastic, lightweight raft road system

1
SOIL LIFE SUPPORT SYSTEM
Stripping away the man-made surface and allowing the soil to be a thriving ecosystem

CURRENT STREET

Back down to earth

>> Key Themes

>> Design Interventions

01 SOIL LIFE SUPPORT SYSTEM

Stripping away the tarmac and concrete surface, exposing the ground and allowing the earth to breath. The soil can once again function as a living ecosystem and support life. Soil also has huge potential for carbon capture via 'carbonation, especially when engineered with recycled materials such as dolerite. [Dr Mark Goodard, Newcastle University]

02 WATER MANAGEMENT

Holistic management of rain water, waste water and water supply. Conventional drainage gulley and pipework removed and replaced by surface attenuation features, capturing and storing rainwater to reducing flooding. (02a) Potential decentralised waste treatment plant below street surface, reduces demand on stressed sewer infrastructure, and providing opportunities for grey water recycling and supply of a nutrient rich resource for roof top urban agriculture. (02b)

03 TREADING LIGHTLY

Prefabricated modular road system that can be installed quickly and efficiently, saving up to 70% on construction time and transportation costs.(03a) Lightweight structure can be supported on a raft foundation system (03b) allowing the underlying soil to become a single interconnected ecosystem and perforated plastic foot-ways allow plant growth underneath. (03c) Entirely constructed from recycled waste plastic, this system would absorbs vast amounts of waste that would otherwise go to landfill. The road itself can be recycled and reused promoting a more adaptable approach to our urban road network. [Plasticroad.com.eu]

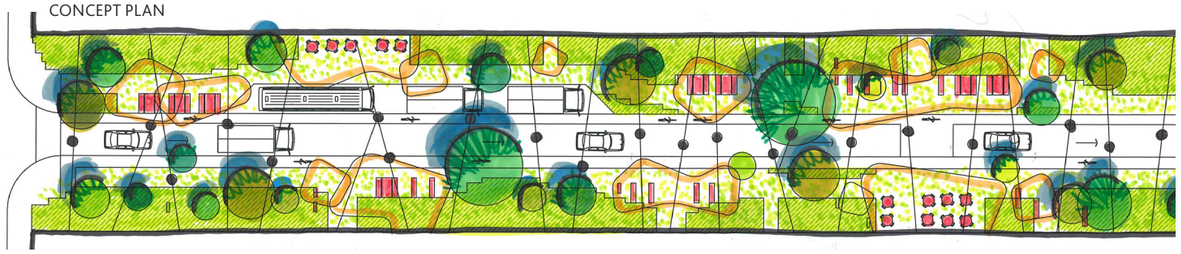
04 REWIRING THE CITY

Hollow modular road cross section creates accessible and maintainable compartments for routing utilities, and allowing for the development of rapid district heating systems and ultra fast fibre networks across the city, or voids for storm water attenuation. (04a) Existing services could be relocated to reduce future maintenance issues, or simply left insitu. (04b)

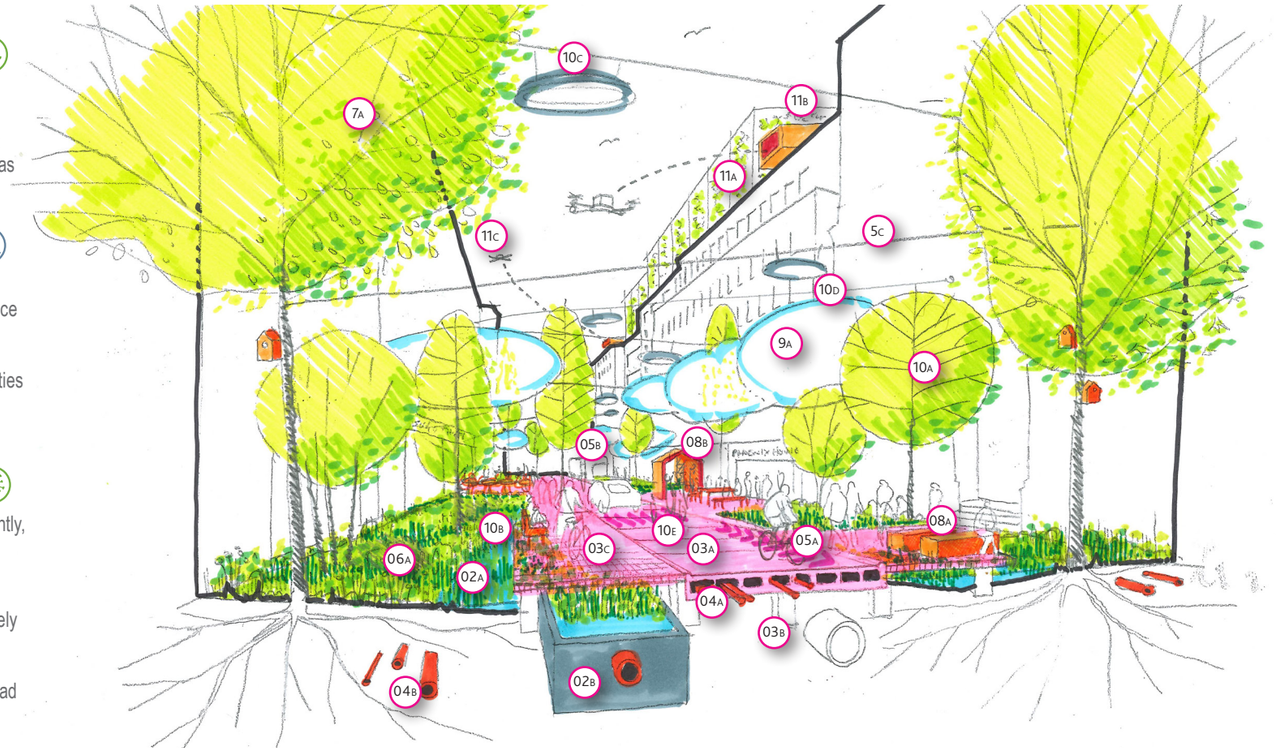
05 DIGITALLY ENHANCED

Street surface embedded with LED arrays controlled by a central monitoring system that provides information to users in real time. [Umbrellium : Starling UK] (05a) - This allows the shared surface space to be completely adaptable and flexible with digital demarcations marking out cycle lanes and pedestrian crossings where, and when they are required, to promote pedestrian priority and safety. Marking also used to guide autonomous vehicles. A centralised servicing lay-by is regulated digitally, allocating time slots to create more efficient usage and reducing the amount of space required. Linked to a wider city network, service vehicles journeys managed to actively reduce travel time and distances. (05b) Conventional signage is embedded with road surfacing digitally or suspended from catenary wires to reduce street clutter. (05c)

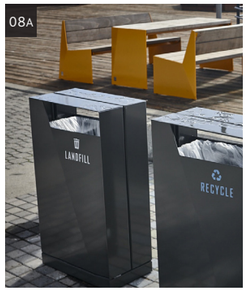
CONCEPT PLAN



CONCEPT SKETCH



PRECEDENT IMAGES



06 PLANTING FOR NATURE

Extensive swathes of biodiverse and species rich planting, greening up the street and reconnecting people with nature (06a)

07 URBAN FORESTRY

Trees planted where ever practically possible as part of the city wide urban forestry initiative, filtering the air, absorbing carbon, reduce heat stress and improving micro climate. Range of tree species planting to promote biodiversity (07a)

08 COMMUNITY PARKLETS

Flexible modular furniture system creates adaptable public realm for seating, meetings, socialising, dining out. Extensive seating provision to encourage dwell time and interaction using VESTRE BLOC FURNITURE RANGE.(08a) Opportunities for pop up Kiosks for local businesses, meeting pods, advertisement, and outdoor screens and digital connectivity. (08b)

09 CLIMATIC SKIN

Inflatable canopies provides flexible, lightweight, low carbon shelters blurring the boundaries between indoor and outdoor area, to create' an all weather' environment, for communal activity- maximising the public realm potential and allowing adjacent businesses to effectively increase their usable gross floor area. Constructed of recycled plastic or textile fibres these 'translucent clouds' provide shelter without creating shade and can be suspended from catenary wires. Combined with lighting and digital projection they glow at night to create ambient light and atmosphere. (09a) [Inflatable architecture]

10 LANDSCAPE BATTERY

Public realm used extensively for energy generation to power the street, offset maintenance costs and revenue lost from on street parking by routing energy back to the grid. There are many pioneering technologies emerging for the creation of green energy with landscapes - Genetically modified trees generate electricity when the wind blows the leaves [Istituto Italiano di Tecnologia - IIT], (10a) harvest electricity from marginal planting (10b), [Plant-E] catenary street lighting- SELUX DISCERA LUMINARE powered by integrated PV's, (10c) and lightweight and flexible thin film solar panels on top of inflatable canopies (10d). Piezolectric' ceramics embedded in the road surface convert vehicle vibration into electrical energy (10e).- [SAFERUP- Lancaster University]

11 SKY'S THE LIMIT

Maximise roof top space for urban agriculture to intensify the cities productivity, from informal amenity allotments to full scale commercial farming using lightweight hydroponic systems. Growing locally and supporting local businesses, food banks and cooperatives with fruit and vegetables, chickens, fish and mushrooms, reducing transport miles and providing a readily available food source. (11a) Rooftop utilised to create drone docking stations/smart mail boxes to accommodate increased demand for online deliveries, reducing volume and carbon footprint of conventional service vehicular traffic; (11b) [Vertiports] and utilised for renewable energy sources such as PV's and air source heat pumps. (11c)