

WHISTLE-STOP HOUSING

A new and sustainable, linear community

Despite decades of sustained house building, in 2050 there are still lots of isolated, awkward pieces of land adjacent to railways that are sitting idle. Although close to important infrastructure, these 'landlocked' sites are difficult to develop. Access for construction is almost impossible and their narrow, irregular shapes has meant that developers have passed them by.

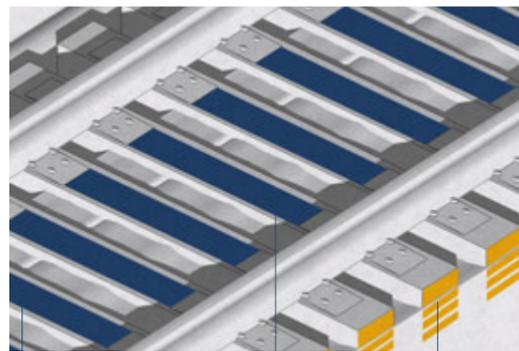
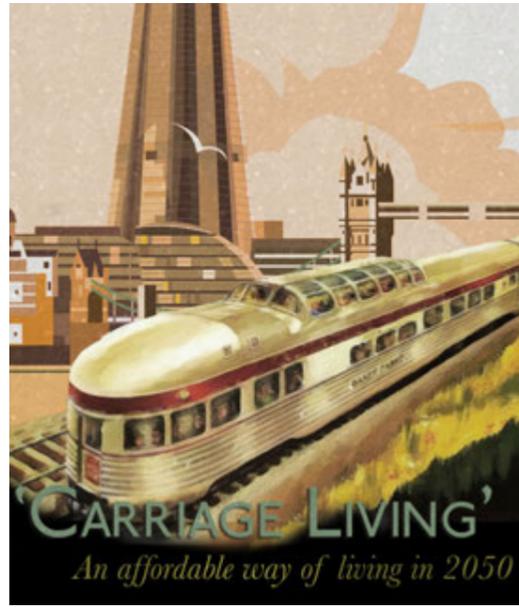
We have re-imagined the railway lines as innovative, linear communities like those that inhabit our canals.

We propose the reuse of old carriage stock as a new housing typology in these interstitial spaces with redundant trains converted to one or two bedroom homes. A subscription style land-rental for the re-purposed carriages would be managed by the rail operator who would also arrange overnight delivery of the homes by train. The carriages plug into a 'facilities' carriage which provides power, data and water. 'Whistle-Stop' communities can then begin to grow along the lines.

Each community makes use of adjacent spaces such as archways under the tracks for high quality but affordable, facilities for residents. These spaces give the community a shared place to interact.

Rail infrastructure will often act as barriers between adjacent communities, creating a fractured urban realm with low physical permeability, so these focal points also act as gateways, allowing them to connect with their neighbours. Some of the spaces will be rented out to businesses at higher rates to help subsidise affordable rents for residents while also improving the long-term social sustainability of the proposal.

To minimise energy use, the community takes advantage of its adjacency to the railway. By harvesting water and electrical energy from the tracks, the modules require no extra electricity or gas and only limited water from the grid.



PV's embedded into high tech sleepers harvests the suns power during the day.

Water is harvested and filtered via drainage pipes from the surface of the rail line.

Using piezoelectric transducers the vibrations of passing trains are converted to electrical energy.



Recycle

The proposals recycle existing structures. Decommissioned trains are perfect for use as pre-fabricated dwellings as they are waterproof, easily movable and can be retro-fitted to suit different needs.



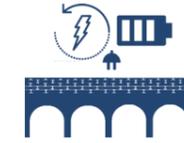
Reuse

Archway spaces are converted and used as shared social spaces, co-working spaces, workshops and studios. These generate rent and provide an identity and gateway for the new community.



Replenish

The large track surface area provides water and energy. Power is harvested from photo-voltaics embedded into high-tech railway sleepers. Rainwater is collected to provide grey water for non-potable uses.



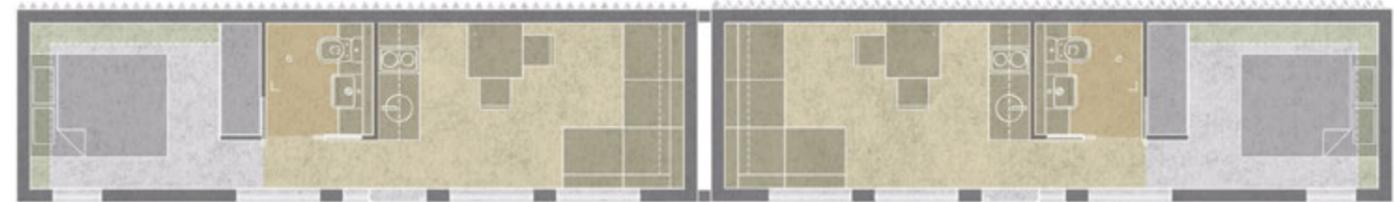
Recharge

Spare electricity from the electrified rails will be diverted to ultra-efficient batteries to top up power collected from the PV array. Spare power would be returned to the network or when needed during peak demand.

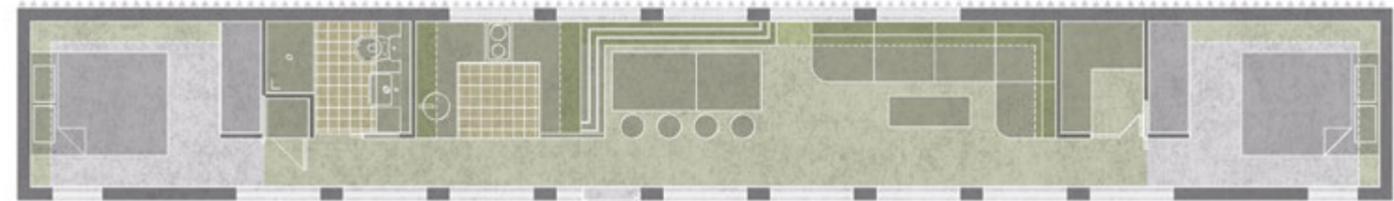


Reduce

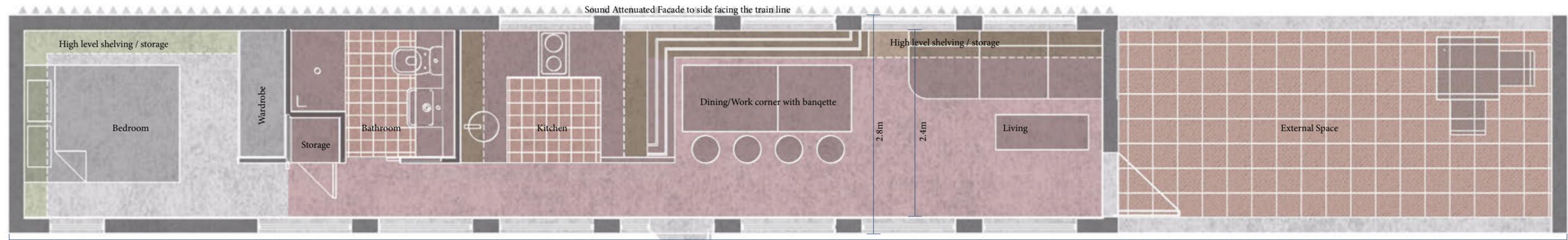
Electricity is also generated by absorbing vibration energy through piezoelectric transducers embedded in the track reducing vibrations in the homes. Carriages are also clad with acoustic attenuation panels.



Paired 1 Bed 1 Person 'Carriage Flat' - 2 x 22.8m² - 1:100



2 Bed 4 Person 'Carriage Flat' - 48m² - 1:100



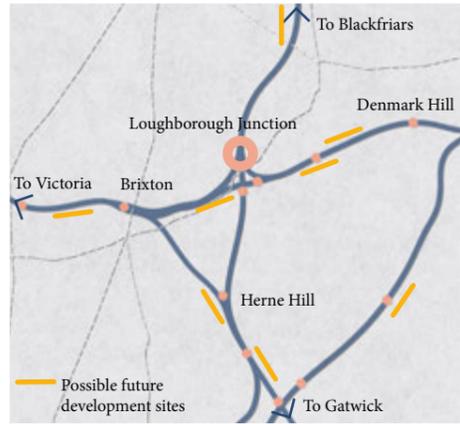
1 Bed 2 Person 'Carriage Flat' - 33m² - 1:50

Entrance

20m (standard carriage length)



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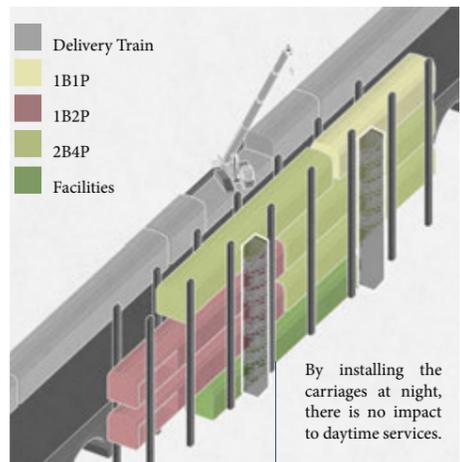
Site location and Future Replicable Sites



Site Plan @ Loughborough Junction Station



Proposed Ground Floor Plan



Delivery and Logistics

By installing the carriages at night, there is no impact to daytime services.



Train mounted cranes can access undeveloped areas which cannot be reached by roads. The pre-fabricated support framework and stairs is delivered by train first, followed by the carriages.

For minimal cost and work, areas beneath the arches can become vibrant community spaces.

With a new community next door, these arches can become viable businesses generating revenue for the rail operator, jobs, and long-term sustainability for the residents.

Spare arches can become cinemas, storage areas, plant space, workshops or artists' studios.

To make the spaces greener and less industrial, the primary structure holding the carriages will become a haven for climbing plants.

The bottom carriages provide the base infrastructure for the carriages above and can be used as a social space in areas with no usable arches.