

Growing Letchworth

Embedding resilience within the Garden City



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Introduction

'...Letchworth...has today a wide range of prosperous industries, it is a town of homes and gardens with ample open spaces and a spirited community life, virtually all its people find their work locally, ...and the principles of single ownership, limited profit and the earmarking of any surplus revenue for the benefit of the town have been fully maintained' from preface by F. J. Osborn in Garden Cities of Tomorrow, Ebenezer Howard

Drawing on Ebenezer Howard's original vision for Letchworth, our proposal is for a vibrant, economically and environmentally sustainable development which supports and involves a growing community. Our landscape-led masterplan embeds the principles of urban agriculture, landscape maintenance and land management training into the core of the place, celebrating connections to the rural landscape and providing new facilities for the whole town.

Viability, delivery and stewardship

We propose that the Letchworth Heritage Foundation acts as master developer and retains ownership of the land in the long term, as in the original new town. This would ensure that value is captured from the land and will be put back into the long-term stewardship of the site and support of the community. It would also ensure that some key principles can be established at a site wide level from the outset and that the LHF can deliver a project as visionary as Howard's original plan. This would include:

- establishing a road network with pedestrian and cycle priority, paired with reliable public transport and neighbourhood parking hubs
- implementation of a community energy system using ground source heat-pump coils located beneath the green infrastructure
- establishing site wide ecological network and high quality public spaces
- coordinating sustainable urban drainage strategies with planting and growing networks
- supporting local employment and skills generation through an on-site factory that will construct high performance energy efficient homes in a range of housing typologies and mix which meet the needs identified in the Letchworth Housing Strategy and can be delivered using a range of tenure models.

Capturing land value for the benefit of the community

We believe that LHF acting as master developer of the site is the only way to ensure the value and longevity of the public spaces and landscape amenities is prioritised from the beginning of the development and safeguarded in perpetuity. This will allow the development to provide the important green infrastructure which will make the development an attractive place to live, yielding higher revenue and greater value for the houses from the outset. By avoiding the developer model, the profit usually made by developers is captured to be fed back in to the LHF.

The initial investments into the site by the LHF are intended to create a fund that can support the LHF stewardship services. A community scale energy generation scheme will be installed from the outset of the project which will remove the reliance on the grid and, over the longer term, once all of the houses and community hubs are producing their own energy there may be the opportunity to get a return on the investment by selling energy back to the grid. All commercial spaces provided in the scheme will provide an ongoing source of income for the LHF which will help to fund the landscape education/stewardship centre. The initial investment of the factory has a number of long term benefits. By promoting local employment, it keeps people living and working in the town which will boost the local economy and the desirability of the place. The factory building

itself will be left on site, along with its viewing tower, creating a recognisable focal point to the town. This will also provide income to the LHF since the barn-like structure of the factory building can be re-used as a market hall in which spaces are rented out, or as a recreational space such as a gym/ climbing centre/ play space etc. which can change over time in the flexible space with low cost following trends and demand. Wrexham Market is an example of how this has been achieved recently.

A landscape led development

Key to this masterplan is a strong relationship with the environment. The landscape infrastructure draws on the existing green routes through the site. It extends and connects to the greenway, offering different types of recreational space in Letchworth to attract people from the existing town and surrounding areas. This will create an active and recognizable place before the community is established. Resilience is deeply embedded in the green infrastructure, employing features that will mitigate the effects of climate change. Sustainable urban drainage system (SuDS) with indigenous planting and urban agricultural schemes will protect against adverse weather conditions, localise food supply and provide a biodiverse setting. Managed coppice will offer the potential for the production of biochar to build soils and sequester carbon, as well as timber for craft and sustainable biomass for energy. The local agriculture and food production on site could provide short-term revenue for the LHF to support their initial investments.

The site wide strategy is for a connected place which prioritises walking, cycling and other sustainable forms of transport. A key feature of this is the parking strategy which is based on a model implemented in Vauban, Freiburg in Germany. Neighbourhood parking clusters provide parking for vehicles accessible from the main streets. The remaining streets are pedestrian priority 'home zones' enabling social interactions, play and shared use of the streets. Access to front doors is possible for collection and drop off, a big shop or family trip but the cars are not parked outside the homes. As well as freeing up the streets, this model also encourages behaviour change especially around short journeys: why drive when it takes as long to cycle as it does to pick up the car? The neighbourhood parking hubs are located within green corridors that stretch out towards the landscape beyond. These long ecology corridors are part of the SuDS strategy and provide opportunities for local agriculture and neighbourhood play. They allow long views out towards the surrounding fields and settlements such as Fairfield park, and increase the visual permeability of the. A landscape buffer between the existing homes and new development creates a breathing space and aids circulation and connectivity. The street hierarchy of Avenue, neighbourhood street and local lanes are each characterised by tree and shrub planting suitable for each specific setting, contributing to the commitment of LHF to plant 2000 new trees.

Within the housing typologies and layout, corner spaces are utilised in some cases as focal points for orientation and otherwise as local neighbourhood pocket parks providing opportunities for play, exercise and growing. Espalier fruit trees mark gable ends and provide orientation points as well as becoming part of a yearly communal harvest. Shared courtyard gardens are a feature of the clustered homes which are suitable for a range of older peoples housing as well as housing co-operatives or co-housing, these spaces also include shared greenhouses and commercial space which could become a shop, workspace or community service. Individual homes are characterised by a range of opportunities to customise the spaces between the thermal envelope and the outer shell. These can be shared porches, sun spaces, winter gardens, roof terraces, balconies, workshops or extra storage space for the home.

The central area or 'farm yard' with its plant nursery is a productive landscape characterised by its informality. The school building has fingers of teaching space reaching out into the landscape and the nursery edge is characterised by greenhouses and polytunnels in the fields. This creates a soft edge and entry point into the development as it is viewed from the access road. The crest of the hills with the natural dip in the land with existing mature trees and established hedgerows create a natural meandering path up through the landscape towards the playing fields and sports pavilion. The rural nature of this space provides a different character of place at the heart of the development with the draw of community, leisure, work and training facilities.

Health of the country, comfort of the town

'Health of the country, comfort of the town' was a driving aspiration behind the original Garden City. We reinterpret this for 21st century as 'Health of the town, comfort of the home'. The development is intended to promote the health and wellbeing of its inhabitants at three different scales of inhabitation.

The home

Each house will be made with healthy materials (timber) and designed using passivhaus principles which ensure a level of natural ventilation, daylight and thermal comfort for every inhabitant.

Neighbourliness

Research by international Blue Zones has shown that mental and physical health is improved by access to social/ friendship groups. In our proposal, neighbourliness is fostered by creating spaces in the masterplan for social interaction and impromptu meeting where informal encounters can take place. The buildings and surrounding spaces are arranged to encourage relationships between people that live beside one another. Social places are focused around landscape, where overlooking of convivial shared spaces and safe public routes promote an environment that welcomes everyone. Habitable rooms such as kitchens will face onto play areas and playable streets to offer passive surveillance.

The Community

Direct access to landscape and recreational areas allows inhabitants to exercise as an integral part of their daily lives and helps improve mental health. Locally grown food offers a healthier alternative but also creates a positive attitude towards food and food production through shared projects and education. Local car parking hubs with car sharing and subsidised electric car charging points incentivises alternative modes of transport. This will reduce the development's impact on the environment and will improve air quality. Parking stations are co-located with meeting places, cafes and markets connected to each other along walkable and cycle-friendly routes and desire lines. They serve 25 homes each, which is an optimal size for residents to get to know each other.

Strategic delivery

Indicatively, we have shown the masterplan development being completed in four phases.

First stage: includes site wide infrastructure (energy, roads, SUDS and green spaces) and the construction of the facilities that enable the delivery of subsequent phases (the factory and the plant nursery). Initially, the nursery can occupy a large part of the central zone, including part of the school site.

Mid-term: as the development progresses and the plants are used in their intended locations, the nursery will shrink to become the landscape training centre. The provision of the new primary school will be triggered by the delivery of a certain number of homes.

The school is designed to allow it to be delivered in phases as the need grows, building the main shared spaces (hall, studio, library and staff areas) to meet their final capacity from the outset, and additional teaching wings are built as they are needed. The central area also includes commercial space for a shop. Access to local amenities like this will be essential for the pioneer residents and will help to embed behavioural change, reducing reliance on private cars. Adjacent to the factory are plots allocated for experimental and exemplar homes, much like the original 1905 and 1907 exhibition cottages of Letchworth. These self- or custom-build homes could provide models for the following stages of development.

The next phases of housing delivery are outlined in three stages, each phase consisting of about 300 homes.

Stage 1: east of the central yard and playing fields, this site creates an immediate connection between this area and the new homes. On-site construction using panellised systems reduces individual deliveries to site. Raw materials are sourced locally where possible. Site access is via Norton Road, forking to form a loop around the central area, later becoming a bus gate.

Stage 2: to the west of the site, this area includes a zone allocated for self- or custom-build homes. The model of construction proposed is a core comprising an energy efficient, factory-made envelope and a secondary, crafted skin. These open up the possibility for customisation and a mixture of high skilled, technical fabrication with simple craft based on DIY skills. There is a range of possibilities for their delivery, including self- and custom-build which are suited to co-housing, community land trust projects and housing cooperatives. Considering a range of delivery models across the site could speed up delivery in the long term as well as widening the offer of affordable and accessible homes.

Stage 3: located directly to the west of the central yard. We have suggested this in order to limit the site traffic passing through completed areas as well as preventing the need for construction traffic to pass through the Grange Estate. Phasing it this way would allow the construction activity to extend progressively northwards, with traffic exiting the site via the main access road. During this phase, the factory use will reduce its activities and proposals for its long term use will be implemented. We envisage this space becoming a community asset that could act as a market or food hall or as a revenue-generating facility for the whole city. Facilities could include a soft play centre, an art building or simple leisure centre (gym or climbing centre). The flexible nature of this barn-like structure could mean that the use changes over time to suit local demand. The landscape training centre and nursery could become a visitor attraction for the city as well as a resource for local schools and colleges.

Reinterpreting the stewardship role

The new income from the LHF - both the profit from the rent of the homes and the ongoing income from different assets on site - can go towards funding a stewardship/ landscape education centre to benefit both the existing and new communities. The education centre will create a magnet for the new rural/ sub-rural centre to the new part of the town creating a link between the two areas. This links to a tenet of the original garden city principles regarding pro-municipal work by the community. "Sweat equity" will offer an incentive for locals to work in the area and pay a discounted rate in return, while education will be used to promote management skills. This will encourage a sense of ownership amongst the community that will strengthen the relationships between the residents and place. The green spaces will reach full potential when the community that uses them also takes on a stewardship role. The upkeep and posterity of the landscape

will be carried out by a management team that is paid for by Letchworth Garden City Heritage Foundation through contributions from residents.

Commercial space and employment

As well as employment opportunities in the central 'farm' area (school, factory, shop, café and training hub) each cluster of development includes a proposition of unallocated commercial space. This could be used in a variety of ways, for example the base for a community organisation, a local shop, a shared workspace, and office or a small craft or workshop space. Some of these spaces may also be used as consultation spaces, for example by a visiting medical professional, or a teaching space for music teachers or language classes, supporting home workers and a variety of different employment models.

Community energy generation

The majority of homes have south facing orientation (<30deg either side) which reduces overheating risk and improves energy efficiency. The homes are supplied with electric power using heat pumps for heating and hot water. For less dense areas of the site air source heat pumps may be appropriate and consideration will be given to the location of condensers. For the majority of the site, communal ground source heat pumps are proposed. These are located within the green corridors. Community energy generation could be managed and implemented by the Trust for the long term benefit of residents and help to combat fuel poverty. 100sqm of land is allowed per home for the ground source heat pump loop. This would likely be in two 30m trenches about 1.5m apart per house, connected together into one large ground loop per neighbourhood. The communal loop would be installed during the infrastructure work. New homes connect to a communal header. Solar PV's are installed in larger sections on the parking hubs where it is most efficient, rather than every house having to have some, since the PV's charge a battery that is used to power electric vehicles. This model for local generation from natural sources coupled with the fabric energy efficiencies of the homes could lead to a situation where energy supply is surplus to demand and can be sold back to the grid, generating revenue for the trust or serving local neighbourhoods.

SUDS and water usage

The SuDS scheme is designed to act as a key characterising series of landscape features as well as truly multifunctional Green Infrastructure assets. A broad swale acts as a threshold to the site providing a large volume of attenuation whilst also providing a wild agroecological boundary to the north of the site that helps to relate the site to the wider rural landscape beyond. Importantly we are proposing that the main SuDS features be implemented in the first phase so that the native habitats and productive coppice will be establishing as the other phases roll out.

A simple series of conveyance and attenuation features make up the SuDS 'train' in this scheme. Surface based dished channels in the Local Lanes convey run off to linear swales in the Connecting Streets. These swales that feature check dams for attenuation run along the entire length of the streets (culverted where necessary) to the perimeter boundaries of the site to the east, west and north. The swales at the west and east boundaries convey run off to the main series of swales on the northern boundary. The final and largest swales are in the north of the central zone of the site and provide the perfect opportunity to illustrate this holistic approach rain catchment as a gateway experience to the site.

The social city

It has been proven that regular social interaction far outweighs any other health

intervention in improving physical and mental wellbeing, increasing life expectancy and combating loneliness. To facilitate this, the masterplan has been developed to increase chances of social interaction. At the level of the home, shared streets and pedestrian friendly spaces encourage outdoor play, chance encounters and good neighbourliness. Small pocket parks and shared workspaces can also increase the likelihood of meeting and making friends. Everyday encounters are encouraged by co-locating facilities that are part of daily routines. The neighbourhood parking hubs also provide cycle parking, local composting, recycling bins, food delivery collection and parcel lockers. As reliance on car ownership decreases, these shelters may also become informal places to gather, for a market, celebration, or local festival. Public toilets are located within these structures to allow full use of the outdoor space. Within the surrounding rural belt and meandering paths, a series of community hubs are located. These may be simple cafes, a local pub or arts space, a destination on a walking route or a place to meet, learn a new skill or make something. We propose that the existing playing fields pavilion is refurbished or relocated, improving the community and social infrastructure for all. Within the yard, we propose the school buildings are used to their full potential to offer community access, this could be in the form of a community library and use of the hall, studio and sports pitches.

Innovative and flexible housing

Howard's model for Letchworth was radical and ground-breaking at the time, accompanied by a variety of experimental housing models and innovative use of materials. Our proposals for a new flexible housing model are equally inventive, allowing for variety and flexibility with a high performance envelope and models which can be adapted appropriate to location and demand. The main features elements of our housing model are as follows:

- Timber, panelised construction, manufactured on site to Passivhaus principles
- High performance inner envelope with outer rainscreen offering variety and flexibility
- Use of local labour and generating local skills (both technical in factory and craft based)
- Range of options and house types, which can respond to housing needs survey
- Innovative use of local materials including clays, willow baffles, natural renders
- Opportunities for learning and skills partnerships (eg with North Herts College)
- Possibility to use local development orders (could streamline development by allowing certain adaptations to the homes within a permitted design code or framework)
- Variety of housing typologies from single homes to terraces, courtyards and clusters, avoiding zoning of areas for certain house types, co-locating homes to create a balanced and mixed community
- Speed of construction and quality benefits by use of controlled factory based process
- Reduced transport costs to site as raw materials processed locally
- Variety, character customisation and the opportunity to grow.

'By so laying out a Garden City that, as it grows, the free gifts of nature – fresh air, sunlight, breathing rooms and playing room – shall be still retained in all needed abundance, and by so employing the resources of modern science that art may supplement nature and life may become an abiding joy and delight'

p127, Garden Cities of Tomorrow, Ebenezer Howard