The Strawberry Field Building

Following many years of planning the Strawberry Field site was ready to break ground on a new chapter. The original building had been demolished and replaced by 2 homes in the 1970s. Following their closure in 2005, the site remained untouched until 2018 when Hoskins architect got the go-ahead on the building that stands on this iconic site today.

Many factors had to be considered before The Salvation Army was happy to commission the building.

Listed below are the features that are included in our building and grounds.

- The rectangular building plan minimises building envelope and heat loss.
- Design maximises natural daylight and views through the floor-to-ceiling windows.
- Design minimises the impact on the existing site (access, levels, mature landscape)
- Demolition material is retained on site for structural fill.
- Predominantly natural ventilation with opening window areas that feature rain detection sensors.
- Cross ventilation of the training space to utilise double-height central space.
- Low-temperature underfloor heating minimises energy use.
- South-facing, rooftop solar panels providing onsite energy.
- Airtight building envelope with additional insulation minimises heating requirements.
- Use of sustainable materials including larch cladding on the shell of the building.
- Steel frame designed for deconstruction and reuse.
- Mature landscape preserved.
- Enhanced planting to encourage biodiversity.
- Sustainable Urban Drainage (SUDs) minimising impact on the existing drainage system
- Detecting sensors for taps and lighting in WCs minimising water and energy use.
- Waste management strategy adopted to minimise construction waste.

For more information how these points were implemented please see the details below:

Sustainability information Summary

The building has a rectangular plan placed to maximise daylight and views in response to site access, levels, existing trees, and the building programme. This approach minimised the building envelope, impact on the mature landscape and area of hard surface. The use of existing topography also reduced groundworks and maximised access to the gardens from the visitor and training centre in the west. Service and supporting spaces are all located to the east side of the building, either directly accessible from the car park or partially below ground.

Predominantly naturally ventilated to avoid the need for cooling, dynamic simulation modelling was used (in accordance with CIBSE TM52) to ensure enough opening area was provided to avoid overheating during summer. Cross ventilation

of the lower-level education space utilises the central, top lit, double height circulation space. An oversailing roof provides shading, while underfloor heating is used so the LTHW can run at a low temperature and ensure the gas boiler runs in condensing mode as much as possible. Solar PVs are mounted on the roof which reduce the building's reliance on grid electricity.

Further Specifications

A flood risk assessment was carried out and attenuation was included below permeable paving to the parking. Airtightness and enhanced insulation were specified with a steel frame designed for deconstruction along with robust, sustainable materials (such as larch cladding) to minimise the building's environmental impact, maintenance and running costs.

The landscape proposal, designed in response to an ecological survey, has enhanced planting to encourage biodiversity and includes a training garden. The landscape strategy utilised existing site features such as existing stone from the original building and mature trees.

Net Zero Operational Energy and Carbon Emissions

A passive first approach was adopted using form, fabric and landscape to optimise ambient lighting, heating, cooling and ventilation.
The estimated operational energy consumption (regulated and unregulated) was 161 kWh/m2/year, in line with the RIBA 2020 target for non-domestic buildings (<170 kWh/m2/year).

Position of the Building On Site

Location, orientation and massing were used to minimise the building perimeter and enable natural daylight penetration, and natural ventilation. An oversailing roof provides shelter and shading. Utilising existing site levels allowed the lower level to be partially buried and this, along with concrete floor and brick lower level, assisted in providing thermal mass and achieving airtightness.

The fabric properties of the building exceeded the requirements of the building regulation and PVs on the roof generate electricity to offset the building's demand for grid electricity.

The building is designed to be predominately naturally ventilated so energy is not required for cooling and operation of fans. We carried out thermal modelling and TM52 over heating analysis to ensure adequate natural ventilation openings were provided to avoid overheating. Areas that do require mechanical ventilation like WCs use mechanical ventilation with heat recovery to reduce the heating demand of the space.

Zero Embodied Carbon Emissions

The building is suitable for re-use with light weight partitions on the upper floor, designed for adaptation, and a steel frame designed for deconstruction. The building can be easily extended to the south towards Kenilworth Way.

All waste masonry from groundworks and concrete frame was crushed on site and used as structural fill. Thirty tonnes of stone from the original building were re-used in the landscape and all bricks from the Victorian building were salvaged.

Sustainably sourced materials included natural larch cladding and curtain wall mullions. Robustly detailed and long-life materials were specified as appropriate including internal brick walls to the lower-level training areas.

Waste mitigation adopted on site included British Gypsum taking back all plasterboard pallets; Armstrong Ceiling Tiles collecting all off-cuts for reprocessing; Dulux collecting all paint tins for recycling; the dry lining contractor selecting optimum sheet sizes, minimising off-cuts; 100% of plasterboard, timber and metal waste segregation and recycling; packaging (plastic & card) segregation to achieve 100% recycling rates; all timber waste removed free of charge to recycle or sell for reuse via Recycling Lives and Community Wood Recycling.

Sustainable water cycle

All wash hand basin taps have hand-detecting sensors to control flow so taps cannot be left on unnecessarily.
WCs have dual flush cisterns with an effective flush capacity of 4.5 litres.

The layout was designed so that the extent of hard surface on the site was not increased from the existing and permeable surfaces were introduced. The project includes rainwater and surface water attenuation which has permeable surface car parking above.

Sustainable urban drainage was installed within the landscape ensuring the current system is not adversely affected by the development.

Water cycle metrics used to assess the building:
39.07 litres per person per day, calculated with BREEAM 2014 Wat 01 calculator

Sustainable land use and Ecology

The site was the former grounds of a Victorian manor house, demolished to make way for a 1970's children's home. The footprint of the original house was retained as an area of hard landscape, and the area of tarmacadam extended the length of the site with additional parking areas. The children's home closed in 2005, and the building was found to be of poor quality, inefficient, and inflexible for re-use.

The existing buildings and redundant hard surfaces were demolished, with all waste masonry from groundworks and the concrete frame crushed on site and used as structural fill. All bricks from the Victorian building were salvaged and stone reused.

The new building and landscape proposal have not increased the area of hard surface on the site, minimising surface water runoff. The footprint of the new building extends from the footprint of the original manor house, along the east side of the access road, minimising impact on existing trees and planting.

Landscape proposals were developed with cognisance of an ecological survey. Existing trees were retained and protected where possible with woodland management and appropriate tree planting to retain the character of the site. Areas of the existing woodland floor have been retained and reinforced through the planting of shade tolerant groundcover planting to form a healthy woodland floor. Bird and bat boxes were installed throughout the garden to encourage habitat creation.

A range of green spaces have been provided including dense woodland, woodland clearing and planted slopes. A training garden with raised planting beds creates a 'productive' landscape for urban food production.

Night-time light pollution was avoided with lighting designed to protect ecology and avoid light spill onto woodland trees and hedgerows.

Noise levels of proposed plant was considered, and no amplified music or loudspeakers located externally.

Good Health and Wellbeing

The building has been designed to maximise visual and physical connection to the grounds. The café achieves an average daylight factor of 6%. Openable windows/doors provide local responsive control throughout the building within 7m (excluding circulation, storage, service, and plant space).

Occupancy density was tested with layouts developed to provide flexible spaces in visitor, staff, and education areas. Toilet provision to visitor areas was designed for peak times with an additional Changing Places WC.

Large opening areas in the façade allow sufficient airflow in summer to avoid overheating as defined by CIBSE TM52. Natural ventilation utilises openable windows and cross ventilation of education spaces through the double-height circulation.

An overhanging roof provides external shelter and internal shading to the upper level. Daylight is provided around the perimeter, whilst a central roof light enables penetration to the centre of the plan.

Underfloor heating is provided to habitable areas. The radiant nature of underfloor heating means a uniform temperature throughout the space as opposed to temperature stratification which can occur with radiators.

Acoustic performance has been enhanced within the café and education space with ceiling and wall panels. An acoustic partition (43dB rating) in the training activity space allows for a variety of groups.

The design of the building locates spaces for training and staff to achieve privacy and meet security requirements and creates opportunities and places for social interaction within the completely accessible building and grounds.

Internal circulation widths allow wheelchair passing, and disabled WCs are provided on both levels to minimise travel distances.

Active circulation routes within the building receive daylight and views and extend into the grounds. Cycle parking provision is provided at building entrances.

A variety of external spaces are provided with planting visible from internal areas.

Materials have been specified to avoid off gassing.

Other sustainable outcomes

During construction opportunities for trainees including a six months' work placement and created long term work opportunities. 90% of the construction workforce lived within 15 miles, with shared bicycles encouraging sustainable travel. Responsible procurement sourced 29 of 36 contractors (80%) from the North West, with 7 from the Liverpool area.

This project transformed a disused 1970's care home site into an open and vibrant destination that addresses educational needs, provides visitor facilities, enhances the tourist offer, and stimulates the economy, employment and training opportunities. Nationally, only between 6% and 7% of working age adults with learning disabilities are in paid employment. Strawberry Field will help address these obstacles and enable individuals to reach their full potential.

A new layby for coaches adjacent the gates on Beaconsfield Road promotes group transport, reduces congestion, and improves the experience and safety of pedestrians. An on-site taxi drop-off, along with cycle provision for visitors, staff and trainees also reduce the impact of vehicles.

In line with the creation of sustainable communities Strawberry Field builds on the site's heritage and the identity of the place. The project enhances the safety of Beaconsfield Road and creates a secure, safe place for visitors.

Fully accessible and inclusive, the building and grounds are free of charge (fee to enter exhibition) and provide a place of community where all are welcome and social interaction encourages. Visitors can explore the gardens finding solace and contemplation, take inspiration from the grounds' history and find a creative way to express their own story.

Verification and Benchmarking

Whilst a BREEAM or other assessment was not required by the client brief, a BREEAM rating of at least "very good" was targeted by the client and a pre-assessment was carried out at RIBA stage D in 2014. This indicated that the design at that time met the required 'very good' rating and most of the criteria achieved an 'excellent' rating.

The building was designed and specified to a high level before being tendered to set targets and material choices in advance of procurement. Passive principles were adopted, and complex systems avoided to simplify operation, control and maintenance.