Full Planning Application: Station
Sustainability Strategy
February 2018
Waterbeach Railway Station Relocation

Sustainability Strategy

February 2018
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Executive summary

The purpose of this report is to demonstrate the approach that the proposed Waterbeach Railway Station relocation, located in Cambridgeshire, has considered to minimise the impact of the development on the environment whilst improving society and economic growth, and is to be submitted as part of the Full Planning Application to South Cambridgeshire District Council.

Relevant Policies

The report provides details of the national, regional, and local policies relating to sustainability, which must be considered as part of the planning application. The development must consider targets and standards set by the following key documents:

- Proposed Submission South Cambridgeshire Local Plan (July 2013)
- Local Development Framework, Development Control Policies (July 2007)

Sustainable Strategies

A series of approaches have been devised to ensure the development meets the requirements of the policies and standards noted above, while maximising its sustainability performance.

Below is a summary of the key issues and proposals described in this document:

- Energy
  - Minimise energy use through notional U-values, efficient HVAC systems and avoid cooling where possible.
  - Possible renewable energy contributions through the installation of photovoltaic panels, and the creation of a new CHP plant.
- Transport
  - Provision of infrastructure better located railway station which will provide a comprehensive network and connectivity to the wider community.
  - Inclusion of bicycle share scheme and facilities for station users.
  - Incorporate bus stops in close proximity to the station.
  - Overall goal of reducing car usage, thereby improving air quality.
- Green and Blue Infrastructure, and Biodiversity
  - Full programme ecological surveys and incorporation of ecologist recommendations.
  - Integration of blue and green natural infrastructure.
- Sustainable Design and Construction
  - Materials will be sourced locally, in line with the BRE’s Green Guide rating and from responsible sources where viable.
  - Consideration will be given to health and wellbeing design and construction measures, including daylighting, views out and low-emitting materials.
  - The project team will consider adaptive measures and approaches which can be incorporated into the design, to increase a building’s resilience to climate change and reduce the heat island effect of the development. These include:
    - Structural and fabric resilience
- Passive design measures, and utilisation of high solar reflective index (SRI) hardscaping and roofing materials.
- Large areas of soft landscaping, and ensure for future flood proofing.

- Health and Wellbeing
  - Ensure no negative noise impact on the surrounding area of the development.
  - Creation of comfortable internal environments for building occupants.

- Waste
  - Development of a waste management plan with local waste management contractors.
  - Waste could be potentially used to provide power.
1 Introduction

Mott MacDonald Ltd has prepared this Sustainability Strategy on behalf of RLW Estates, in support of the Full Planning Application for the Waterbeach Railway Station relocation. The purpose of this document is to demonstrate the approach that has been considered to minimise the impact of the development on the environment, whilst improving society and ensuring economic growth.

1.1 Site Location and Description

The Site is located approximately 6km north-east of the urban edge of Cambridge (A14), immediately north and adjacent to the existing settlement of Waterbeach. The approximate OS grid reference for the centre of the development site is NGR OS X (Eastings) 550280, OS Y (Northings) 266692 and nearest post code CB25 9LY.

The site is bounded by existing residential houses to the south and south-west; by the existing ‘Fen Line’ railway that links Cambridge and King’s Lynn to the east; by Cross Drove and existing Bannold Box Cottages and New Farm to the north-east; by agricultural land to the north; and an existing (disused) airfield and associated mixture of buildings and structures to the west.

The site offers particular opportunities to deliver public transport improvements, including the relocation of Waterbeach railway station to a location where it will also be convenient for people living in Waterbeach village making rail travel considerably attractive. This should enable a high modal share of travel by means other than the car. Segregated provision for buses both within the town and to link the new town to the public transport network in Cambridge will be required and similarly for cycle use. This will provide for quicker journeys, encourage maximum use by residents of the new town and improve safety.

1.2 Approach

The objectives of the Sustainability Strategy are as follows:

- Review the applicable requirements and targets as set by the, Local Development Framework, Development Control Policies, and Proposed Submission South Cambridgeshire Local Plan.
- Set sustainability objectives for the railway station which align with the relevant local policy.
- Propose strategies to meet the development’s sustainability targets.
- Assess the impact of climate change resilience and propose strategies to minimise the impact.

1.3 Proposed Development

Full planning permission is sought on behalf of RLW Estates for development comprising the following elements:

- A two-platform station with partial shelter on either side of the existing railway line;
- Two pedestrian bridges spanning between the new platforms (one with accessible lift, one step only);
- Surface level car park;
- Cycle parking provision;
● Bus stops;
● Taxi rank;
● Passenger drop-off area;
● Emergency pedestrian escape route from the platforms via overbridges;
● Staff welfare facilities within portacabin;
● Access road from the eastern side of Cody Road to the station car park, providing access for buses, taxis and private vehicular traffic associated with the railway station;
● Hard and soft landscaping including Sustainable Drainage System, bund and boundary fencing; and
● Platform lighting, station information and surveillance systems.
Figure 1: Station Red-Line Boundary
2 Sustainability Planning Policy

Sustainability forms an important part of planning policy at both the national and local level. The following section of the report details the planning requirements, policies, and guidelines that the development must adhere to.

2.1 National Planning Policy Framework 2012

The National Planning Policy Framework (NPPF) was published in March 2012. It sets out the Government’s planning policies for England and how these are expected to be applied. The policy aims to strengthen local decision making and reinforce the importance of up-to-date plans.

The NPPF 2012 and new local plans have superseded previous Government Planning Policy Statements; however, they are still present in local policies. Those which have influenced policies relevant to this development include:

- Planning Policy Statement 1: Building a strong, competitive economy
- Planning Policy Statement 3: Supporting a prosperous rural economy
- Planning Policy Statement 7: Requiring good design
- Planning Policy Statement 8: Promoting healthy communities
- Planning Policy Statement 10: Meeting the challenge of climate change, flooding and coastal change
- Planning Policy Statement 11: Conserving and enhancing the natural environment
- Planning Policy Statement 13: Facilitating the sustainable use of materials

The National Planning Policy Framework requires local planning authorities to seek opportunities to meet the development needs of their area in a positive way.

2.2 Local Development Framework (July 2007)

A fundamental aim of the Core Strategy is to ensure that development within the community is as sustainable as possible. It considers national policies, and identifies important aspects for this specific region. It provides policies for planning applications and infrastructure.

2.3 Proposed Submission South Cambridgeshire Local Plan (July 2013)

This sets a framework for new developments to meet the needs for the area from an economic, social, and environmental point of view. Key facts include spatial strategy, climate change, delivery of high quality places and homes, sustainable transport and infrastructure, enhance natural and historic environment, among other aspects.

2.4 Health Impact Assessment

Some of the issues discussed in this report, such as flood risk and drainage, transport, and sustainable design and construction, may impact directly and contribute towards the Health Impact Assessment (HIA).
3 Sustainable Strategies

It is noted that the local authority does have broad visions for the sustainability expectations of any new development. Detailed below are the proposed strategies to satisfy these requirements, which the project team will consider as the development progresses.

3.1 Energy

Relevant Policies
- Local Development Framework, Development Control Policies (July 2007); Policy DP/1, NE/1, NE/2, and NE/3.
- Proposed Submission South Cambridgeshire Local Plan (July 2013); Policy CC/2, and CC/3.

Development Approach
The feasibility of the incorporation of a range of low and zero carbon (LZC) technologies should be considered as part of the development, with the installation of a photovoltaic (PV) array being deemed to be the most feasible technology to provide renewable energy for the new building. The utilisation of a site-wide CHP plant for heat and energy generation will also be considered.

To further contribute to the reduction of CO$_2$ emissions, a target could be set that at least 10% of the predicted energy used could be generated from renewable sources.

The overall energy strategy for the development has been designed using the following steps:
- **Use less energy;** Notional U-values and efficient HVAC ventilation systems.
- **Supply energy efficiently;** Efficient systems;
- **Possible use of renewable energy;** PV panels, and CHP plant.

3.2 Flood risk and drainage

The EA flood map shows that the proposed development site is in Flood Zone 2, with a small proportion of the site (south-east) corner within Flood Zone 3 (i.e. greater than 1% annual probability of occurring). The proposed station platform development has been classified as less vulnerable by the EA.

It is proposed that sustainable drainage systems (SUDs) will be incorporated into the overall development, including filter drains, swales, permeable paving.

A site-wide flood risk assessment will be conducted; the drainage design will incorporate an allowance for climate change, ensuring future proofing.

The Flood Risk Assessment and Surface Water & Foul Water Drainage Strategy has been submitted as part of this planning application. Please refer to this document for further details of the site-wide strategy for the development.

3.3 Transport

Relevant Policies
- Local Development Framework, Development Control Policies (July 2007); Policy DP/3.
- Proposed Submission South Cambridgeshire Local Plan (July 2013); Policy TI/2
Development Approach

The Transport Assessment, which is included as part of the planning application, provides detailed information relating to the proposed transport strategies for the development. In line with the recommendations of the local policies, a number of sustainable transport solutions could be proposed, which include:

- Provision of pedestrian and cycle infrastructure leading to the station.
- A shuttle bus linking the existing village to the station, discouraging car use
- Improved cycle facilities at the station
- Opportunity for the provision of a bicycle share scheme

The new railway station is expected to open in 2021, at which point the existing station will close. The relocation will not increase the number of services or the number of destinations served by Waterbeach rail station. Therefore, the prediction of passengers and trips generated by the new station in 2021, are the same as that for the existing station in 2021.

The station is served by Great Northern Trains calling at Kings Lynn, Ely, Cambridge and London Kings Cross, with an addition of morning and evening peak train services to and from London Liverpool Street.

Vehicular access to the relocated station will be via a new link road connecting with Cody Road. Access for walking and cycling is primarily via Bannold Drove, which runs largely parallel to an about 450m east of Cody Road, although the pedestrian and cycle ways on Cody Road itself, will be improved.

Bus services will be extended from the old to the new station and will be increased during peak times. There will also be shuttle bus services available from the old to the new station.

A 202-space surface car park (200 public, 2 staff) will be provided, and it can be accessed from the new link road and is located south of the proposed station.

3.4 Sustainable Design and Construction

Relevant Policies

- Local Development Framework, Development Control Policies (July 2007); Policy DP/1, DP/6, TI/2, NE/6.
- Proposed Submission South Cambridgeshire Local Plan (July 2013); Policy NH/4, NH/6, SC/7.

Development Approach

There are a number of strategies which fall within the topic of sustainable design and construction, each of which have been considered on an individual basis in the following subsections of the report.

3.4.1 Materials

The development will promote and encourage a number of practices throughout the construction phase to ensure that sustainable design and construction measures are implemented.

An off-site construction and pre-fabrication of particular elements throughout the development are being considered, as well as on-site crushing of aggregate, or alternatively requesting local
waste contractor to supply recycled aggregate where possible, i.e. for sub-base, access roads etc.

The selection of materials is a key aspect of sustainable design and construction practice, so careful consideration will be given to a variety of aspects of material usage throughout the development.

Materials with a BRE Green Guide rating will be specified for use unless an exception is required. For all external hardscaping and boundary protection, a target of at least 80% A or A+ rated materials are to be set for the development. This will demonstrate that sustainable construction is embedded throughout the development. Also, materials with a high recycled content are aimed to be a total of 10% (cost) of the total materials used on the development.

Preference will be given to the selection of responsibly sourced timber in the form of Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) certified wood. As well as including this within the specifications, the Principal Contractor will be made aware of the requirements to ensure that this is managed throughout construction and implemented effectively. In addition to the responsible sourcing scheme notes for timber, there are other schemes which are not specific to wood, which the project team will consider, these include;

- BES 6001 Framework Standard for Responsible Sourcing
- CARES Sustainable Constructional Steel Scheme
- Certified Environmental Management Systems (EMS)

Locally sourced materials will provide several benefits for the development, and the aim is for a total 10% (by cost) across the development. The financial and environmental cost of transportation will be greatly minimised, whilst adding value to the local community through economic and employment growth. It is acknowledged that it will not be viable to source all required materials locally, but consideration will be given to this where feasible.

The internal environmental quality of the buildings on each plot is important to consider. Although the development team will have limited influence over the fit-out aspect of each building, the team should ensure that internal finishes are chosen to minimise their VOC (Volatile Organic Compound) content, leading to an improved air quality for construction workers and end users.

3.4.2 Waste

3.4.2.1 Construction waste management

An auditable construction waste management plan will be produced, by the Principal Contractor, ahead of any construction works starting onsite. This plan will be developed based upon their specific activities and site conditions, and will then remain a live document during the project works, to record all measures adopted to implement the waste hierarchy. Please refer to the Waste Management report submitted as part of the Full Planning Application for further details.
It is proposed that excavated materials will be re-used onsite where possible, thereby minimising transport and cost through reduction of materials moved off-site and new materials delivered to site. As there is no demolition being carried out, the only material that could potentially be re-used is excavation materials. Where required, this should be stockpiled onsite and reused as and when required, typically for landscaping needs.

Although BREEAM certification will not be sought for the development, generation of construction waste could still be minimised in line with these requirements to encourage a high level of resource efficiency. A 90% diversion of waste from landfill should be targeted for the construction of the entire development (Wst 01, Construction waste management, BREEAM 2014). Consideration should be given to local waste management contractors and facilities, and dialogue could be held with potential companies ahead of works starting to ensure targeted waste management objectives can be met.

On-site segregation should be implemented wherever possible to enable the recycling of waste streams to be maximised. This will ensure that these particular waste streams, like timber, metal, plasterboard, packaging can be recycled without being contaminated with other waste in mixed skips.

Potentially AMEY Cespa's potential Energy from Waste development should be noted as an energy strategy. Waste from the site being utilised to provide power to the properties could be a sustainability achievement for the development.

Targets stated by the Cambridgeshire and Peterborough Minerals and Waste Core Strategy (2011) should be aimed to be exceeded, and exact targets are to be finalised and recorded ahead of works starting on site.

3.4.3 Health and Wellbeing

In line with BREEAM guidance, as well as owner / tenant aspirations and needs, specific health and wellbeing considerations should be given to the design and construction of the individual plots. Internal environmental quality strategies should be implemented wherever feasible, and will be based upon the usage of the individual plots. Strategies could include:

- **Daylight:** Providing building occupants with a sufficient level of daylight is important to the health and wellbeing of building users, but in addition to that it also reduces the need for
electric lighting of certain areas of the building. Increased daylight will be achieved where large areas of glazing and apertures are included within the design of the building, but then evaluation and balance of other factors such as heat gain and loss as well as glare control must be undertaken as part of the design process.

- **Views Out;** Providing access to views of the outdoors enables building occupants to maintain a visual connection to the surrounding environment and allow for the adjustment of their eyes – this is of particular importance in the office buildings where a lot of computer based work will be carried out. As per above, a balance and other environmental factors is important and will be considered as the design progresses.

- **Air Quality;** improve air quality through sustainable transportation methods, in order to minimise car use.

- **Acoustics;** ensure noise impact of the development has no significant negative impact on the surrounding area.

### 3.4.4 Climate change resilience and adaption

There are a number of approaches which will be undertaken by the design team to ensure the development is resilient to the effects of climate change.

#### 3.4.4.1 Structural and Fabric Resilience

Climate change resilience is the adaptation and management of the impacts of climate change. The ability of a structure to withstand these changes, such as an increased burden of weather and hazards associated with the future changing climate is important, particularly for the structure and fabric of a building. Examples of how this increased pressure may be felt includes temperature variations, increased rainfall events and extreme weather conditions. The project team will consider the potential risks associated with future climate change, and ensure that the building are designed to account for future climate fluctuations and minimise the risk to the structure and fabric, thereby prolonging the life cycle of the development.

#### 3.4.4.2 Passive Design Measures

To minimise heat gains during the summer and heat losses in winter, adaptive design measures outlined below increase a building’s ability to maintain a comfortable internal environment against fluctuating external conditions.

- **Passive Design**
  - Maximising the use of natural resources: to minimise resource use and maximise the comfort of users over the lifetime of the development.
  - Using high thermal mass materials: enabling the buildings to absorb and release heat in step with diurnal changes in heating and cooling, therefore reducing fluctuations in internal heat gains and losses.
  - Solar control glazing and shading devices on south facing windows.
  - Utilisation of high solar reflective index (SRI) roofing materials.

These measures will be given strong consideration for incorporation into the development.

#### 3.4.4.3 Landscaping

Densely built-up areas often result in urban heat island effects where urban areas become significantly warmer than their surrounding rural environments. This occurs because buildings and infrastructure materials (concrete and asphalt for example) absorb short wave radiation...
during the day and slowly emit it during the night prolonging cooling and maintaining higher ambient temperatures.

Consideration can be given to the strategies below to minimise the heat island effect of the development.

**Open Design**

- High Solar Reflective Index (SRI) landscaping:
  - Materials with a high solar reflective index hold the ability to reject solar heat, thereby leading to only a small rise in temperature.
  - As such, the utilisation of highly reflective hard landscaping will be encouraged where applicable.

- Maximising soft landscaping
  - Consideration should be given to the incorporation of green space in the vicinity of the station which will help to avoid these urban heat island effects as well.

Furthermore, an ecologist has been involved in the project prior to commencement of construction. This should increase the ecological value of the site. Please refer to the Ecological Assessment for further details.

A landscape and habitat management plan is to be implemented upon completion. Part of the green infrastructure is the potential incorporation of a green roof, as they contribute to the overall sustainability of the development through rainwater attenuation.

The project aims to enhance the ecological value, in terms of plants species and biodiversity through soft landscaping where possible.
4 Conclusion

This document provides a strategic review to the overall sustainability performance of the proposed Waterbeach Railway Station relocation. By understanding the broad options available at this early stage, the strategy remains adaptable, and promotes sustainable development both as the design progresses and during the construction process.

Through the implementation of these strategies, all aspects of sustainable practices can be embedded throughout the design and construction phases. This will be utilised to demonstrate that the sustainable objectives of the national, regional and local planning policies and guidance can be implemented and adhered to as part of the delivery of this masterplan.