

## GRAVITY SMART CAMPUS



### Sector



### Highlights

Biodiversity

Innovative technology

Supporting livelihoods

Capacity building

Green-blue infrastructure

### Project owner

Gravity

### Project start/completion

Aug 2019 - Oct 2021

### Location

Bridgwater, Somerset, England, UK

### Community impacted

Urban, Rural, Coastal

### Vulnerable groups impacted

Economically deprived communities

### Climate hazards mitigated

Water stress, Flooding

### Case study provided by


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**Facilitating clean growth is key to building resilience to climate change, both through directly reducing carbon and building a strong local economy where people can afford to choose lower carbon goods and services and which can fund climate adaption.**

### ABOUT THE PROJECT

Gravity is a smart campus led by a clean and inclusive growth strategy, proposed to house 1.1 million m<sup>2</sup> of advanced manufacturing and associated uses and 750 residential dwellings. Gravity is positioned to attract international investment to facilitate a gigafactory to accelerate progress on transport decarbonisation in the UK through the advanced manufacturing of battery technology for electric vehicles. To facilitate access up to the development, which is on a former Royal Ordnance Factory (now fully remediated), a new link road has been constructed and recently completed connecting the site directly to the main highway infrastructure so that development traffic avoids travelling through the local villages. This has been delivered with a surface water and biodiversity strategy to deliver climate resilience and provide net gain. The UNSDGs have been considered throughout the lifecycle of the link road and the project as a whole. Innovations include the implementation of a prefabricated green bridge, a solar powered site compound, solar powered lighting for permanent road signage and solar powered bollards. The reuse of site-won material significantly reduced the carbon impact of the project and the green/blue infrastructure has delivered water sustainability and biodiversity.

The link road included integrated ducting for the provision of dark fibre for communications to provide gigabit telecoms, and for Western Power Distribution to run twin 33KV electricity cables. The project worked with the Hinkley Point C new nuclear build connection project to purchase the material released

from the haul road they built to install the new power lines past the Gravity site. This was reused in the road construction, minimising the transport of new materials to the site.

### ACHIEVED OUTCOMES

The project has been designed to deliver transformational economic growth in the South West of England, benefiting local communities and areas of deprivation through a Business and Skills Charters, creating new opportunities to transition from the Hinkley Point C nuclear new build project to sustain economic activity, whilst ensuring resilience against climate change.

Key outcomes included:

- A design for the supporting drainage system that significantly exceeds the current minimum requirements for water attenuation, allowing for critical storm events and climate change
- A design that reduces flooding due to surface water run-off on local roads in critical storm events, benefiting local communities
- A design that can better return water to the soil locally through attenuation, addressing rapid loss of water to rivers following heavy rain or after a very dry spell, which will become more frequent with climate change
- A net enhancement of biodiversity, developing resilience of local wildlife populations to climate change, through providing better habitat than was provided on site or in the agricultural fields.

The transport link will enable the site to come forward with jobs for around 7,500 people. Training the local population for new advanced manufacturing jobs will have a direct benefit on the local economy with jobs that will be of direct benefit to the more deprived areas in this area of the South West of England. Delivering high-quality, high-value jobs in Somerset will also reduce out-commuting, reducing car use and carbon impacts. There will also be benefits to the local populations of the villages adjacent to the site, Puriton

and Woolavington (c.4500), who will benefit from new walking and cycling infrastructure between the villages and the removal of traffic from the villages.

### Carbon mitigation

Various link road options were appraised to consider the impact on the environment and maximise carbon reduction. The least carbon intensive option was carried forward. Material was re-used from both the nearby M5 J25 works and the Gravity main site, significantly reducing GHG and carbon emissions. No material was exported from site. Recycled plastic crates were used to construct an attenuation tank.

### Enhancing resilience of natural systems

The road has been designed using Sustainable Urban Drainage System principles. Four large catchment attenuation features have been constructed, three of which have high biodiversity quality with a permanent cold-water store with planting for biodiversity. The surface water run off attenuation is the top 200mm of each pond. By attenuating water, high rainfall can be diverted into dry soil following drought conditions when it would normally quickly run off.

The proposed development landscaping will deliver over 5,000 trees, 2,600m of hedgerows and 5.68KA of meadow grassland providing both biodiversity and carbon sequestration. The species used in the planning will be a mix of native species to support biodiversity. By increasing biodiversity with carefully chosen species, we will be increasing our resilience to climate change.

In addition, the scheme includes a green bridge designed to reduce the severance impacts of the new road and allow safe crossing, away from traffic and environmental impacts, for humans and biodiversity.