

Green Infrastructure

Low Carbon Across the South East (LoCASE)

Low Carbon Kent, through the Low Carbon Across the South East (LoCASE) programme supported the design, development and build of a range of construction projects over the past three years. Now the last of the £6m grants available has been claimed, it offers an opportunity to look back at some of the more innovative projects, companies and products assisted with this funding.

LoCASE has also helped embed sustainability (such as sedum roofing) and renewable infrastructure into design plans alongside standard lighting, heating and insulation retrofit works to scores of commercial buildings. LoCASE supported artist Nick Veasey's new studio and the Process Gallery in Lenham. Working with local architect Guy Hollaway this enabled the concrete construction required for the artist's renowned X-ray process artwork to be combined with a green roof, minimising impact on the surrounding landscape. The building was developed using a reclaimed pig shed and showcased modern construction methods.



PHOTO: GUY HOLLOWAY ARCHITECTS / NICK VEASEY

Nick Veasey's new studio and the Process Gallery in Lenham.

Following a novel retrofit project undertaken by Accommodation Yes Ltd in a dilapidated Victorian house in Maidstone the property was converted into eight flats for vulnerable adults. This required the insulation of internal solid brick walls to allow a solar-assisted heat pump system to supply efficient and cost-effective heating for the residents.

Other Kent projects supported included incorporating a solar array and heat pump technology in the re-built Boughton-under-Blean Bowls Club. A number of firms in the Low Carbon and Environmental Goods and Services sector have been helped to develop and launch their products:

Green Gate Access Systems Ltd of Maidstone's solar-powered mobile site security barrier (SOSEC) has enjoyed continued success on a number of building, tourism and leisure sites. RS French Ltd of Faversham have taken this concept further to develop a site welfare unit harnessing daylight rather than a diesel generator for power. These have already been in use on Siemens construction sites around the region.

The design and construction sectors have been well catered for via support to integrate Building Information Management and design software to streamline projects including:

- Improvements to the fabrication process of the Kent-based modular construction firm Enevate Building Systems Ltd.
- Developing a solar canopy system for Love Outdoors Ltd a company who specialise in transforming outside space based in Wilmington.
- Collaborations between architects and Margate based urban plant designers Ro-Co Ltd to enable living walls to be incorporated into Kent builds.

Kent is a thriving county with a strong base of sustainability professionals eager to put plans into action.

For more information about support and advice available, or to join the network:
www.lowcarbonkent.com



Sustainable Urban Drainage Systems (SuDS)

Opportunities in delivery of multi-functional drainage

Recent changes to the National Planning Policy Framework includes reference to 'multi-functionality', a term that enshrines the four key pillars of sustainable drainage:

- to manage water quantity
- better managing water quality
- improving biodiversity
- creating better amenities for the local community.

Where land performs a range of functions it affords a far greater range of social, environmental and economic benefits than might otherwise be delivered (Landscape Institute Position Statement, Green Infrastructure). Open spaces are often multifunctional, fulfilling several different valuable roles; for example, in the main they may be for recreational use, but they may also provide valuable wildlife habitat, an attractive landscape, paths for walking and cycling and space for community events.

Well-designed, open, sustainable drainage measures may also provide this degree of opportunity, optimising all of these functions in a way which fits with the surrounding landscape. For example, park areas which can be used as temporary flood storage during heavy rainfall events, and wetlands being used to deliver amenity value and habitat as well as water treatment. The aim should be to create networks of high-quality open space which adapt for attenuation of surface water, sports and play and enhancement of biodiversity.

Delivering high-quality open spaces within residential development can also deliver returns in attractiveness to potential residents and mitigating concerns about the loss of the undeveloped parcels.



PHOTO: MILLWOOD DESIGNER HOMES

Swale system alongside access road at Millwood development, Maidstone.

Case study
Brambledown, Cripple Street, Maidstone
by Millwood Designer Homes

The development site north of Cripple Street came forward for development consideration in 2014. There were objections in relation to traffic pressures as well as impacts to the wider countryside and its location outside of the urban boundary. The proposed development was approved following appeal but has also sought to deliver a high value drainage scheme which delivers water quality, amenity and biodiversity benefits. As a case study it demonstrates an approach to surface water drainage that presents good practice for other residential development.

Brambledown sits on a five-acre site with landscaping providing a foil for the scheme with ponds, swales and open

spaces providing a tranquil vista at every turn. With just 36 homes (30% of which are affordable), this small 'large development' delivers family rural living. The development scheme has been designed specifically to develop a sense of place. A large open space sits in the centre of the scheme – as a focal point to the scheme which also aligns with Bocking Farmhouse, the Grade II listed house adjacent to the site and improves its visual aesthetic to and from the house. Homes nearest this boundary are set lower so they remain subservient in scale to the listed building.

Sustainable drainage system

As the site is underlain by permeable geology, the primary objective was to infiltrate to the ground. The scheme utilises swales to carry surface water runoff from the highway and roof drainage to an attenuation pond and crated soakaway system.

House soakaways are utilised for individual homes on the road frontage not easily connected to the estate drainage network. The soakaways are designed to store the critical 1 in 100 year plus climate change event so that overall there will be a reduction in the green field run-off rate from the existing situation. This will reduce the flood risk to the adjacent properties.

The private roads, driveways and car parking areas are constructed using a permeable surface to replicate the existing ground as far as is practical. The porous sub-base is designed to cater for the 1 in 100 year plus climate change event which in this case will mean the porous sub-base is of the order of only 210 mm deep.

The swale, parallel to the main access road, provides a strong green spine and is sown with wildflower and grass mix to provide additional habitat. Consideration of landscape value of the sustainable drainage measures softens views of the development and integrates the new development into the landscape.

Project team

- Builder – Millwood Designer Homes Ltd.*
- Flood Risk Assessment – Monson Consulting Engineers*
- Drainage Designer – GTA Civils & Transport*
- Landscape – Lloyd Bore Ltd.*



PHOTO: MILLWOOD DESIGNER HOMES

Sustainable urban drainage, Millwood development, Maidstone.