



## Graylingwell: Net Zero-Carbon Development, UK

### Project Summary:

The former hospital site of Graylingwell in Chichester is to be developed as a flagship, zero-carbon community, designed to surpass the Government target for all new homes to be zero-carbon by 2016. We are using our extensive experience in sustainable masterplanning to map out the 'net zero carbon' strategy.

### The Client's Challenge:

In a joint venture; English Partnerships, the national regeneration agency, Linden Homes and Downland Housing Association have committed to developing the 36 hectare site with up to 800 new homes, of which 40% will be affordable housing. Their vision is to complete the scheme with a 'net-zero carbon' footprint, providing future residents and commercial properties with high quality, sustainable housing and the potential for cheaper utility bills.

### Our Work:

The challenge was to devise a strategy to reduce the development's carbon emissions from base requirements by up to 44%. Our team of experts suggested a number of solutions, such as incorporating a high level of insulation, combined with increased air tightness levels and passive heat recovery ventilation. We also looked at water consumption, which could be reduced by up to 50% by collecting and re-using grey water and rain water; installing efficient fittings and using low flow taps.

In addition, our specialists recommended the buildings be orientated to be south facing. This would optimise sun exposure to roof-mounted solar panels and maximise power generation as a result. The installation of solar panels is a challenge in itself as this installation will amount to approximately 15,000m<sup>2</sup> of photovoltaic [PV] panels. The largest ever domestic installation in the UK.

We also suggested all energy to be produced on site, partially through a Combined Heating and Power [CHP] system. The system provides space heating and hot water, and enables any 'waste' electricity generated from energy production to be

sold to the local hospital or university, or sold back to the National Grid. This installation accounts for the balancing of 30% of the carbon reduction which, combined with the 70% created by the solar panels, reduces the site's carbon emissions to zero.

### The Outcome:

The development is set to provide a blueprint for future community buildings and will lead the UK in striving to achieve the Government 2016 zero-carbon challenge. Residents and local communities will reap the benefits of the flagship development both financially and holistically, as it promises to re-generate the area and provide high-quality housing, schools, shops and commercial facilities.

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