



Active  
Building  
Centre

# ABC Case Study: Springfield Meadows



# Springfield Meadow

**Location:** Southmoore, Oxford

**Developer/client:** Greencore Construction

**Project type:** New build

## Background

Springfield Meadows is a development of 25 homes in Oxfordshire, built by Greencore Construction in partnership with Ssassy Property. The houses are built to better than Passivhaus energy standards and are a great example of low carbon buildings.

The development has been awarded 'One Planet Living Global Leader' status by a leading environmental charity, [Bioregional](#), as well as partnering with the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) to make the scheme as wildlife-rich as possible. The Bioregional award is meaningful, in that it considers all aspects of sustainability – not just things like waste, water and energy, but supporting the local community and economy too. So, as well as being highly energy efficient, the homes were built using local labour, with 35% affordable housing.



I believe that this is the future of housing; one that every single one of us, and the planet, deserves.

*Nicole Lazarus, Head of One Planet Living, Bioregional*

## Project information

- Delivery of 25 net zero carbon homes (including both embodied and operational emissions).
- Use of high quality Kebony timber cladding to enhance the properties of sustainable softwood.
- Insulated raft sub-structure using low-carbon concrete.
- Use of a timber-frame construction system insulated with lime-hemp and natural fibre to achieve equivalent of Passivhaus air-tightness below 1 air change per hour.
- For pitched-roof homes, clay tiles with roof-integrated PV panels.
- For flat-roof homes, EDPM single-ply membrane with upstanding PV panels.
- Generously sized windows and glazed doors for good natural light.
- High performance triple-glazed, timber windows.
- Solid, thermally efficient, front doors.
- Mechanical Ventilation and Heat Recovery (MVHR) system with integrated heat pump to provide fresh, warm air in winter and fresh, cool air in summer.
- Additional electric underfloor heating to kitchen and bathrooms.
- Photovoltaic (PV) panels to generate electricity from sunlight.
- Home energy battery to store energy from the PV panels and cheaper off-peak electricity as appropriate.
- Sophisticated smart home system to maximise efficiency.
- LED downlighters to all rooms.
- A dedicated circuit to allow for future installation of a car-charging pod.
- 100% of the waste created during the construction process was recycled and recovered with total diversion from landfill.

## ABC activity

ABC was asked by the forward-thinking developer to come in and 'peer' review their work to assess the embodied carbon for the homes and their approach to sustainability. The aim of this study was to provide Greencore Construction with an impartial opinion on their sustainability approach. To meet this aim, the objectives were to:

1. critically assess the scientific approach towards sustainability
2. evaluate existing homes for whole-life carbon emissions
3. to prove Greencore's carbon credentials and allow access to wider commercial funding.

ABC gave Greencore the seal of approval.

## Benefits

- This development has achieved net zero (whole life) carbon and outperformed the BAU benchmark by 59% (without including sequestration). An improvement of 116% is achieved if sequestration is taken in account. The operational energy demand for these homes has been monitored and an improvement of 83% has been recorded over the BAU benchmark.
- Along with delivering against the carbon ambitions, Springfield Meadows has been nationally recognised for its approach to sustainability.

## Lessons learned

- To deliver a net zero (whole life) carbon project and support the decarbonisation of the construction industry it is important to adapt the performance targets from the initial project stages along with following a holistic design approach.
- The adoption of passive design strategies will support in reducing the operational energy demand without having detrimental impact on the environment or the cost.
- The use of biobased material is encouraged as they have low embodied carbon and can provide the required thermal efficiency. However, they need to be reported separately in the WLC assessment, as they bear inherent uncertainty around the end-of-life treatment.
- Using Building Information Modelling (BIM) tools allows for a consistent and cohesive database of all the materials used in the project. It is critical to maintain all the bill of quantities for the building materials used throughout the construction process. This will ensure minimum assumptions and enhanced accuracy in the results of WLC assessment.



For further information on the work of ABC, download the  
**ABC Blueprint - Our approach to net zero**

