

To find out more, visit our website to see more of our recent projects, and download additional copies of this brochure if required:

[www.fordingbridge.co.uk](http://www.fordingbridge.co.uk)

**FORDINGBRIDGE**  
inspiring • sustainable • design • build

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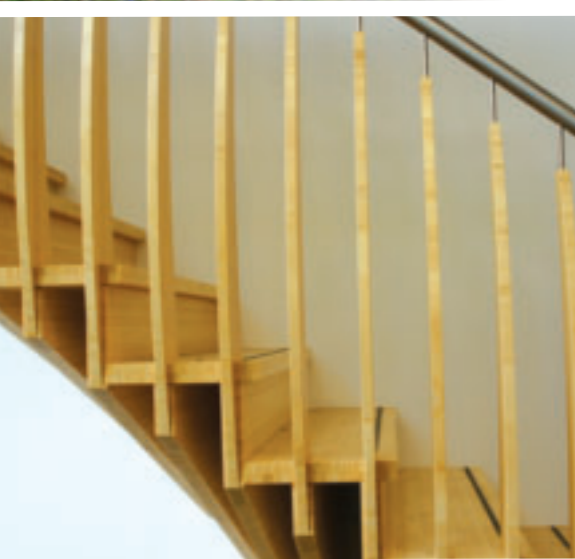
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Sustainable Buildings  
2010 - 2011



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## Foreword from our Chairman

Dear reader,

Last time I looked there were nearly 13 million pages on Google dedicated to the subject of sustainable buildings – an awful lot more than there would have been just a few short years ago. At Fordingbridge we are clearly not alone in believing sustainability is an important and exciting concept for everyone involved in the design and construction of buildings.

For us, the move towards designing and building more sustainable structures is simply part of our ongoing commitment to improving the quality and design of our buildings, a commitment which has seen us through more than forty years of successful design and manufacturing. Combining the twin goals of creating buildings which are inspiring and sustainable is central to our aim of delivering bespoke solutions which meet our clients' individual needs and exceed their expectations. See our case studies on pages 8 to 13 and decide for yourself how well we succeed.

The Greenpower Centre, featured on pages 2 and 3, is both a home for Greenpower (more on page 15) and a test bed building at our site near Arundel, where we can try out and then measure the success of our ideas. Come and see for yourself. We would love to have your input. See the back page for details of this and our RIBA accredited CPD materials.

Yours,

**Edward Way**

Chairman

Fordingbridge plc



Butterfly World



Sustainable classroom interior



Coolings Green & Pleasant

We conceived the idea of the Greenpower Centre in 2009, deciding that we needed a test bed building to try out our sustainability ideas and also to provide a prototype to show clients right here on our site near Arundel. Also, importantly, the building is the head office of Greenpower, an organisation which exists to encourage children and young people to consider sustainable engineering and design as a career.

This building features:

- 320sqm floor space including mezzanine
- FSC sourced timber frame
- High insulation levels in floor, walls, roof and glazing
- High thermal mass floor
- Designed to maximise useful solar gain in winter
- Canopy to provide shade for glazing in summer
- Underfloor heating
- Rainwater harvesting
- Green roof
- Excellent air tightness to prevent heat loss
- Air sourced heat pump
- Intelligent lighting system
- Passive ventilation

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More energy efficient



Less energy efficient



A wild flower meadow growing on the roof



A canopy provides solar shading in summer



The whole building is an education centre for sustainable design



The sculptural bamboo staircase makes a striking feature



Galvanised dishes catch rainwater from the canopy



A view from the mezzanine

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The Greenpower Centre - our sustainable building test bed

### Timber frame



Timber makes a great natural structural material, with an excellent strength to weight ratio. The trees used to make this building absorbed Carbon Dioxide during their life making the material entirely carbon neutral. Fast growing spruce wood was laminated and then CNC machined to create our fantastic arches. Each arch, at 22m long, came in two pieces and was glued together on site in a pioneering method by Hess Wohnwerk.

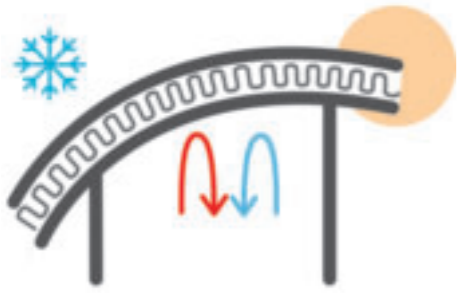
### Solar gain



Using the principle of a big greenhouse, the extensive south facing glazing allows the sun to heat the building to optimum temperature during the day. External blinds prevent glare while still capturing the heat of the sun.

### Super insulation

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The excellent insulation properties of the floor, walls, roof and glazing materials help to keep the heat in during the winter, and keep the heat out during the summer, reducing our energy requirements all year round and keeping us at a comfortable working temperature. The top quality 120mm thick Kingspan panels on the walls and roof have an insulation value an incredible 40% better than building regulations require.

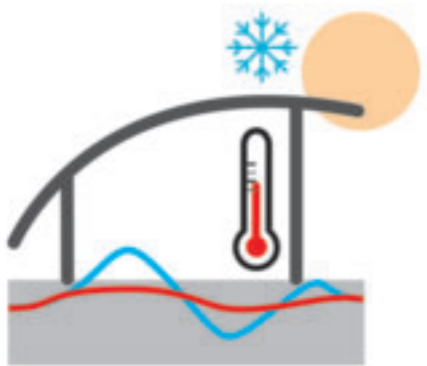
### Underfloor heating

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Invented by the Romans and more recently refined, a maze of pipes embedded in the floor screed carry hot water from the air sourced heat pump around the building. This provides a delightful radiant heat, creating a very even temperature throughout the building.

### Thermal mass



Thick exposed concrete in the floor and mezzanine acts as a big heat store. Just like the principle of early stone built churches, this captures the heat of the sun in winter, storing it for when it is required, and in summer it stops temperature spikes by absorbing heat.

### Rainwater harvesting



Water is the source of life and a valuable commodity. Reducing water consumption in buildings reduces demand on chlorination, water treatment and energy usage. Rainwater not used immediately by the green roof filters into our underground tank, and is reused for irrigation and flushing the toilets.

## Green roof



The wild flower meadow on our roof, grown in topsoil from the building foundations, slows rain water runoff, reduces road noise and provides some super additional insulation. It's one area of the building that can't be explored, but we assure you it looks great.

## Air tightness



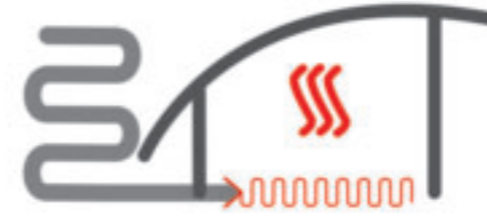
We want to keep heat in, not lose it to draughts and cold air infiltration, so the highly skilled construction crews paid exceptional attention to detail during the build, keeping gaps to a minimum and sealing any potential problem areas.

## Shading



Outside blinds and external foils stop the sun's heat getting into the building during summer which would undoubtedly make it and us overheat. This is an idea taken from hot countries and refined by Fordingbridge.

## Heat pump



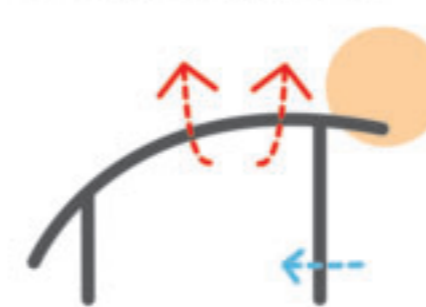
Located on the North wall, an air sourced heat pump absorbs energy from the air outside the building and transfers it to the underfloor heating pipes. In simple terms it can be described as a fridge working in reverse. It is highly efficient, using electricity from renewable sources, and so eliminating the need for fossil fuels.

## Intelligent lighting system



Keen-eyed visitors will notice that there are no light switches here. Our clever lighting systems come on as you enter each area and then top up the natural light entering the building to the correct level.

## Passive ventilation



Ventilation specialists Passivent were heavily involved in the design of the building, assisting in creating a perfect working environment. The large chimney stacks on the roof suck warm air out from the top of the building due to natural convection, while the low level front vents let in cool air and provide natural ventilation.

We were delighted when this innovative and eco-conscious garden centre owner invited us to help him realise his dream to create the UK's greenest garden centre.

### This building features:

- Grey water recycling
- Straw bale walls
- Locally reclaimed flooring
- Waste wood boiler
- Fully insulated meeting part L2 building regulations and with 60% carbon footprint reduction
- Structure: mainly timber with composite roof system
- Flexible lighting and use of glazing, balancing heat retention with maximum use of natural daylight
- Sustainable and ethically sourced laminated timber framework
- No maintenance galvanised steel finish or Polyester Powder Coating, with full range of RAL or British Standard colours and 10 year first maintenance guarantee
- Glazing designed to balance optimal heat retention, solar gain and natural ventilation
- Micro rib composite side walls
- Full building regulation calculations

More energy efficient



Less energy efficient



Reclaimed floors and lots of glazing make this restaurant area inviting



The terrace at Coolings has a deep canopy to provide solar shading for the building

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More energy efficient



Less energy efficient



Coolings Green and Pleasant, in Knockholt, Kent, is an inspiring and sustainable retail environment

The headteacher at this primary school was accepting no compromises. He wanted a bright, inspiring building for this new preschool class designed to fit onto this small, largely Victorian school site. And that is what we gave him.

This building features:

- 170sqm internal space
- Highly insulated and composite clad with curved roof and integral canopy providing an all-weather shaded play area and solar protection
- High efficiency air sourced heat pump
- High thermal mass incorporated into heated floor matrix and building insulation
- Natural ventilation
- FSC accredited timber-frame
- Composite and EPDM roof
- Fully fitted all-in cost with fittings including child-safe doors and low-level toilets



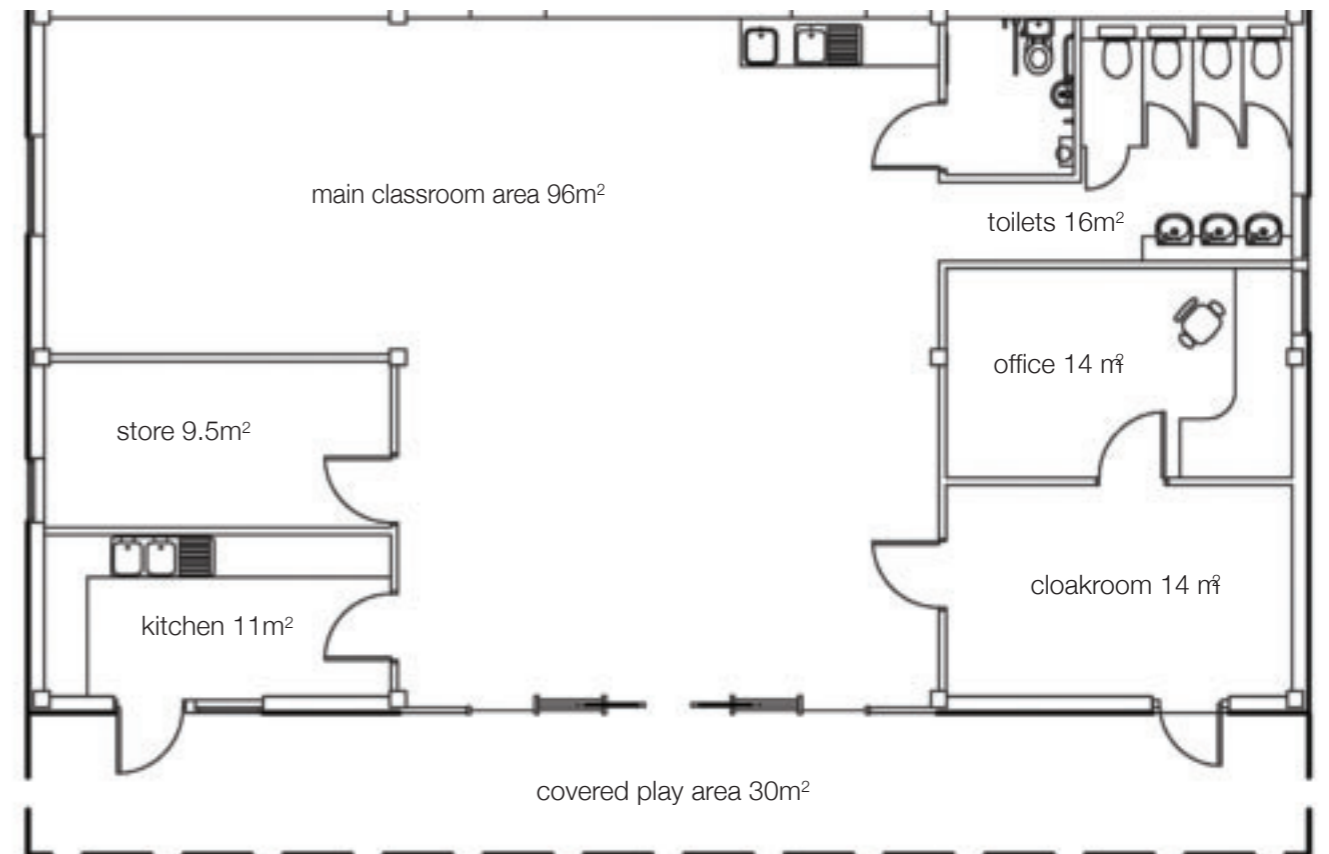
This colourful learning space makes the most of natural light with large areas of glazing

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Our sustainable education buildings are compliant with:

- **Building regulations** 60% carbon footprint reduction
- **DCSF m2 build costs** represents good value for money
- **BB 98** compliant for National Space Standards and Building for Surestart Client Guide

Floor plan (example)



More energy efficient



Less energy efficient

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More energy efficient



Less energy efficient



This bright inspiring preschool building has become a local landmark

This building was designed and constructed by us to provide a bright, airy space for a Children's Centre providing pre school and nursery care for 0 - 5 year olds as well as after school child care for the primary school where it is situated. The building has been created with the sole intention of providing a comfortable and inspiring learning environment now and well into the future with one of the advantages of our constructions being the relative ease in which internal space can be reconfigured to adapt to new functions.

### This building features:

- 120sqm internal space
- Highly insulated and timber clad with dual pitch curved roof and integral canopy providing an all-weather shaded play area and solar protection
- High efficiency air sourced heat pump
- High thermal mass incorporated into heated floor matrix and building insulation
- Natural ventilation
- FSC accredited timber-frame
- Composite and EDPM roof
- EPDM roofing system over composite roof deck, ideal for the addition of a green roof if required
- Underfloor heating provides comfortable even heat with exceptionally low energy demand

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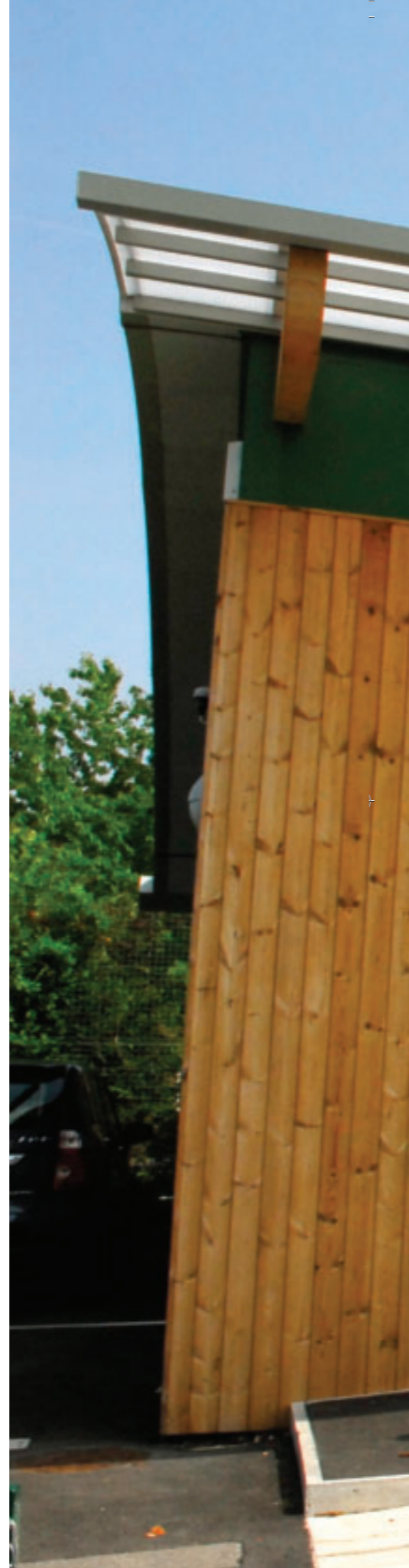
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More energy efficient

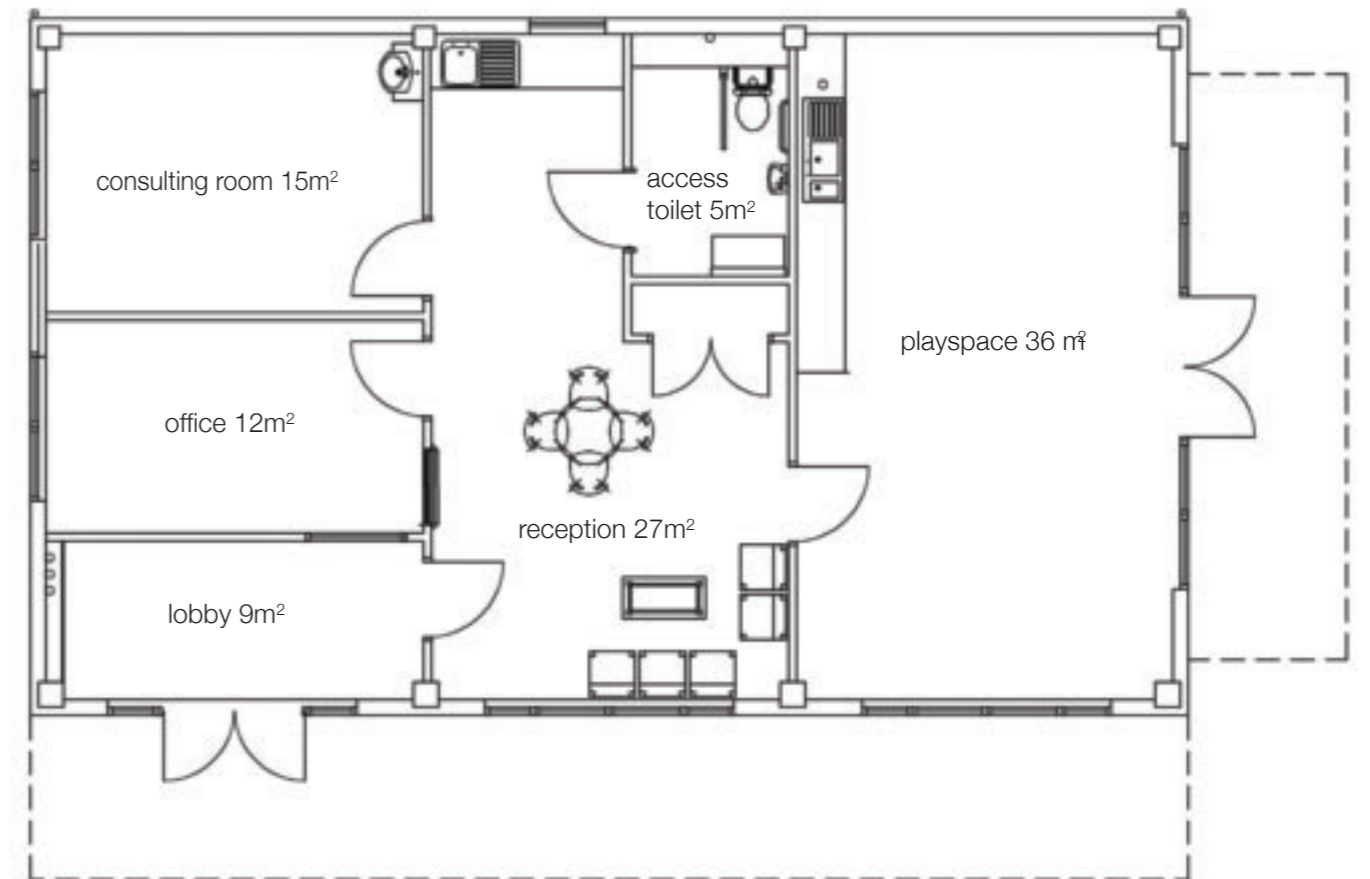


Less energy efficient



A bright flexible internal layout that can be easily changed if necessary

### Floor plan (example)



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This versatile children's centre building also has excellent sustainability credentials

## Why and how our buildings are sustainable

Much of the debate around sustainable buildings has been the lack, so far, of any widespread agreement on what a 'sustainable building' is. For what it is worth, we too have given the issue a lot of thought. We have also asked lots of very clever people for their input and we intend to keep doing that.

For the record, this is what sustainable building means to us now:

“ We aim to design and construct inspiring, ergonomic buildings that have exceptionally low running costs in a resource efficient manner. ”

## What do we mean by that?

- **Design and build service** - offering a joined up inclusive service from drawings to finished product.
- **Aiming to inspire** - by doing things differently, consistently encouraging architects to improve their designs, always aiming to exceed expectations.
- **Creating buildings for people** - our buildings work *with* people, providing good air quality, comfortable temperatures, sufficient space and high levels of natural light.
- **Low running costs** - maintaining the internal environment using the minimum amount of energy. We do the simple things first; excellent insulation, good air tightness, natural ventilation; then we add the technology to reduce energy demand further, for example smart lighting, heat pumps, and underfloor heating.
- **Resource efficient construction** - building with minimum waste and eliminating redundant material in the building as well as reducing the direct impact our company has on the environment in its day to day running.

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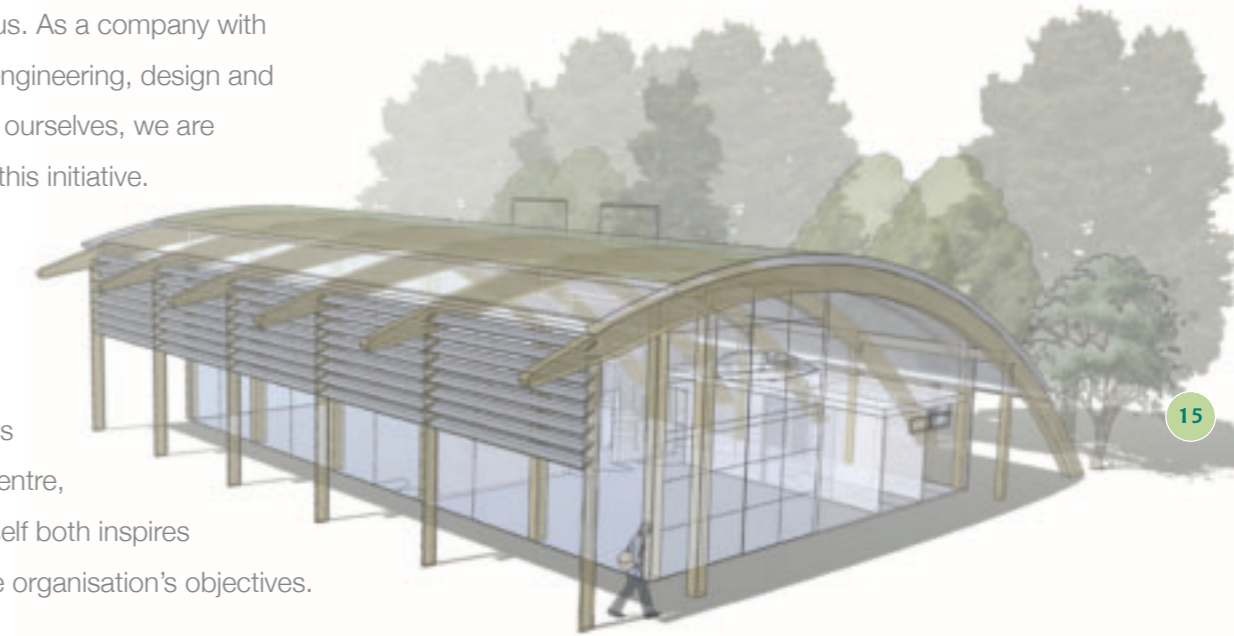
## Our relationship with Greenpower

At Fordingbridge we are serious about engineering and design, serious about the environment and serious about the future. That's why we have a long history of involvement with Greenpower.

Greenpower promotes engineering as a rewarding career to anyone aged 9-25, while also focusing on sustainability, teamwork and the community. The annual Corporate Challenge provides an opportunity for companies to get involved and compete against school teams. Following design and build of an electric racing car, at all levels the project culminates in events at well known venues such as Goodwood, whether it is a driving skills test for primary schools or the unique four-hour endurance race for older students and corporate teams.

The synergy is obvious. As a company with a serious interest in engineering, design and environmental issues ourselves, we are delighted to support this initiative.

Most recently we have provided Greenpower with a permanent and inspiring headquarters in the Greenpower Centre, where the building itself both inspires and encapsulates the organisation's objectives.



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To find out more, visit the Greenpower website on: [www.greenpower.co.uk](http://www.greenpower.co.uk)

**Greenpower**  
INSPIRING ENGINEERS



## Customer comments

“The most important thing is not the building, but the children in it. Fordingbridge listened to what we needed. Then they did a superb job of creating a light, spacious and inspiring learning environment that the children respond incredibly well to being in.”

**Andrew Sparks, Headteacher, Cecil Road Primary School**

“As well as the high standard of construction and design, we have a very successful working relationship with Fordingbridge. We set a tight deadline but they rose to the challenge brilliantly.”

**John Farrer, Project Manager, Surrey County Council**

“This preschool...utilises Fordingbridge's new range of sustainable education building structures. It is compliant with every commissioning criterion you care to name, and most importantly, the children and community love it!”

**Laura Gooderson, NPS Group, Southern Business Development Manager**

“The enthusiasm and ‘can do’ attitude of the Fordingbridge team makes them all a real pleasure to work with.”

**Paul Cooling, Chairman, Coolings Green & Pleasant**

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Fordingbridge is accredited by the following:



## How to find out more

If you are inspired by what you have seen, do contact us. We are always happy to share ideas and look forward to discussing your next project. You can:

- Phone us on **01243 554455**
- Email us on **info@fordingbridge.co.uk**
- Or go to our website **www.fordingbridge.co.uk** where you can:
  - Access and download more than 200 architects' drawings of our structures
  - Search our portfolio of past commissions by structure type, client type or just to find out which projects we have completed near you
  - Download or request printed copies of all our current brochures
  - Check out our 'latest news' section
  - Download our accreditation details
  - Find out more about who we are and how we work

## Continual Professional Development (CPD)



Fordingbridge is an accredited RIBA CPD provider. Our presentations include information for architects on all aspects of how to commission a structure, ranging from tensile fabric canopy designs to innovative sustainable buildings.

To invite us to attend your practice to deliver a CPD seminar, or to be invited to one of our regular CPD events, please contact: **marketing@fordingbridge.co.uk** or call our marketing manager on **01243 554455**.

## Come and see us

We are always delighted to receive visitors at our site near Arundel where you can enjoy a tour of our design and factory facilities and also of the Greenpower Centre, our very own test bed sustainable building.

To arrange a visit and guided tour, give us a call on **01243 554455** or send an email to **info@fordingbridge.co.uk**