Unit 31, Nutham Lane
Southwater
West Sussex RH13 9GG

Tel: 01403 732186
e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited www.greenroofsubstrates.co.uk

CASE STUDIES

Green Roof Substrates Limited

Section 1

Sedum Blanket Installations

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

ADNAMS CELLAR & KITCHEN STORE, SUFFOLK

When this well-known Southwold based company built a spectacular building in the town centre, with shiny metal pitched roof and copper clad areas but included a flat roof area overlooked by nearby houses that had to look good so this called for a sedum roof! Although it was a relatively small job, there were several issues to be tackled, not least of which access was difficult the delivery requirements were exacting but nevertheless all went well and the outcome was superb.

This 169m^2 installation was carried out in July 2008 and we supplied 4.2m^2 of our Extensive Substrate on behalf of IKO PLC to provide the 25mm depth needed for their sedum blanket.

Access to the roof itself was also very difficult so the substrate was packed in 25kg sacks so that the contractors, T H Moss & Sons Ltd, could manually carry the substrate to the roof.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction
see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

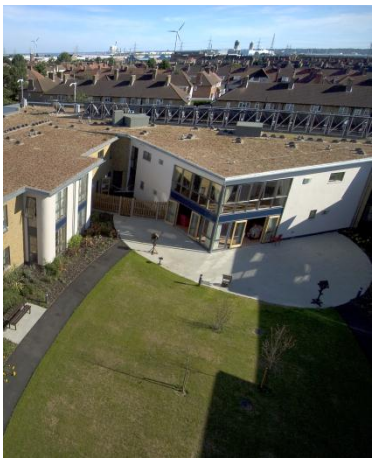
Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

DARCY GARDENS, DAGENHAM

This new care home for the elderly was built by contractor ISG Jackson and the main block consists of a built up system with our extended substrate and completed with a variety of plug plants, solar panels and wind turbines. The adjacent lower level accommodation blocks were covered with Langley recycled vegetation mat and pre-cultivated sedum.

3500 m^2 of extensive substrate were supplied to Langley Waterproofing Systems Ltd for this roof of residential care home which was completed with sedum matting in part and plug planted sedum for the remainder. The contractor was Ilfield & Barrett Roofing Ltd and the project was supplied in January 2007.



For more technical detail on the roof construction see also Langley Waterproofing Systems Ltd Case Studies www.langley.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

GOATS ON THE ROOF TEAROOMS, NORTHUMBERLAND

Every once in a while and unusual project comes along and this one certainly one of the more unusual, as it was for a sedum roof as habitat for a pair of Goats. We understand that sedum was chosen as a plant that the goats would not consume, and would be able to cope with being trampled by the goats at the rare breed centre at Fontburn in Northumberland. The goats have free access during the summer from they're paddock and spend a high proportion of the time enjoying the view!

At 300m^3 this is a reasonably large roof area with a relatively steep pitch for which we supplied IKO PLC with 13m^3 of Extensive Substrate which was installed by Redhead roofing in June 2010

Despite the best efforts of the goats the sedum blanket seems to be holding up very well and enjoyed by the numerous visitors to the team rooms.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

HEDGLEY MEWS, LONDON

This interesting development in Lewisham, London follows a long history of failed planning applications to replace old Victorian workshops/garages that had been built at the same time as adjoining houses. The problem was that some of the houses had extremely short gardens and replacing the old workshops with normal height properties was not an option as this would block natural light into the original houses. Planning approval of suitably sized dwellings had also been refused on the basis of the roof tops being in the line of sight of the residents and the potential for drainage problems from storm water run-off was also a consideration. Planning was finally approved on the basis that the new dwellings would have living' roofs which would soften the view of neighbours and would alleviate any water run-off issues. The proximity to neighbouring houses is evident from the photos.

Although this was a relatively small amount of 4m^3 delivered to the contractor, WAA Roofing Limited, on behalf of IKO PLC in September 2010 this is a good example of how the installation of a green roof can be key in securing planning permission.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

MONKWOOD PRIMARY SCHOOL, YORKSHIRE

In recent years many school developments include a green roof and of these a high proportion are completed with sedum blanket. In this case the recently amalgamated Rawmarsh Infant and Junior Schools has a new £2.4 million building designed to be nearly carbon neutral and an important element of achieving this was the green roof will also attract biodiversity including bees, insects and birds.

This was a flat roof of 1200m^3 for which we supplied IKO PLC with 27m^3 of Extensive Substrate which was installed by Hadfield Roofing & Cladding Limited for the main contractor, Henry boot Construction (UK) Limited.

The photos were taken during the construction and since that time we understand that the sedum has flourished,

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

THE CHASE COMMUNITY CENTRE, NOTTINGHAM

This Community centre arose out of a community consultation exercise that had taken place in 1992 and it included this stylish building with a rebuilt beautifully shaped sedum roof. It was going to be highly visible so care was taken to ensure that the appearance would be pleasing to the local community and on the evidence so has this has been fully achieved.

At 550m^3 this is a reasonably large roof area with a relatively steep pitch for which we supplied IKO PLC with 25m^3 of Extensive Substrate which was installed by WR Leviers in conjunction with IKO during August 2010

At its maximum this roof has a 25 degree pitch which shows off the sedum beautifully.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Section 2

Plug Plant Installations

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

WEBHEATH ESTATE, CAMDEN

This roof was completed in April 2009 as part of London Mayor, Boris Johnson's, Climate Change Adaptation Strategy. A number of Borough's have been required to build a new green roof and this beautifully designed green roof was an important part of Camden's 'Environmental Sustainability Delivery Plan' which commits to protect the environment and develop a more sustainable future for the borough who are committed to installing more during 2012.

In all this was a 700m^2 highly designed roof with different areas such as pebbles and sedum mat with a raised area of plugs for which we supplied Langley Waterproofing Systems Ltd with 1m^3 of Biodiversity Substrate.

The planting included grasses and bulb species for a stunning centrepiece.

The formula of Shire Biodiversity Substrate is adapted for all kinds of extensive greening including that specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also Langley Waterproofing Systems Ltd Case Studies www.langley.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

RAVENSBOURNE COLLEGE, GREENWICH

This roof forms part of the iconic structure of Ravensbourne college and sits in a stunning location next to the O2 with commanding views towards Canary wharf. This building is just one of many that have been supplied in central London by Shire Green Roof Substrates. Supplying to city centre commercial buildings presents all kinds of special challenges which we love to tackle. Not only does the substrate have to be the best available but it must be accompanied by a first rate delivery service.

This was a 700m^2 highly designed roof with different areas such as pebbles and sedum mat with a raised area of plugs for which we supplied IKO PLC with 70m^3 of Extensive Substrate.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening including that specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

Section 3

Turf Installations
(with and without wildflowers)

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

ELMGREEN SCHOOL, LONDON

This newly built school was part of the Lambeth Building Schools for the Future program and therefore included the most up to date specifications, including a stunning wildflower turf roof garden to help attract birds, bees and insects to the rooftop and was completed in December 2008.

The turf was specially developed for this 700m^2 roof and 50m^3 of our Intensive Substrate was supplied on behalf of IKO PLC to provide the 150mm depth needed for their Wildflower Turf Blanket.

The installation was carried out in December 2008, by Topek Ltd for the main contractor, Carillion.

The formula of Shire Intensive Substrate is adapted for all kinds of intensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

For more technical detail on the roof construction see also IKO PLC Case Studies www.ikoroofing.co.uk

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

PEACEHAVEN WATER TREATMENT WORKS, EAST SUSSEX

This water treatment works will be treating the effluent coming out of Brighton but the location is set amidst beautiful chalk downs near the Sussex coast and understandably there was great local concern and objections and eventually planning permission was granted on condition that the local views would be restored with the establishment of a green roof over much of the site to match the local downs. Work is now nearing completion and the substrate is in place with the specially grown turf coming soon.

This is one of the largest green roofs yet to be built in Europe and undertaken with Prater Ltd with the landscaping of the green roof was entrusted to Frosts Landscapes who conducted thorough trials with various substrates from different suppliers to establish the best choice for the job.

The chalk grassland turf was specially developed for this 16000m^2 roof and 3500m^3 of our Extensive Substrate was supplied to Frosts Landscapes to provide the 200mm depth needed.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

At the trial evaluations the Shire Extensive substrate had clearly provided very healthy roots and depth of grass.

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

Section 4

Biodiversity Installations

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

WAT TYLER COUNTRY PARK, ESSEX

A combination of Extensive and Biodiversity substrate was used to create this biodiverse habitat at the visitor's center at the Wat Tyler Country Park. In addition to bee hotels note the use of timber and half bricks to create habitat for invertebrates. This roof was completed by John Little of the Grass roof Company in collaboration with Buglife and monitored by the University of East London. South Essex host some important insect species but habitat is being lost to development so it is hoped that roofs such as this might help secure the future of these species.

Although this was a relatively small project it shows what can be achieved with relatively small roofs, such as this one with the combination of two substrates creating a contrasting effect even before the vegetation has developed.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

The Brown Banded Cader Bee is a local rarity that it is hoped will make use of the rooftop habitat!

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

UNIVERSITY OF BRIGHTON, CHECKLAND'S BUILDING

This University Building has been environmentally designed including green roofs to insulate the building from heat loss in winter and heat gain in summer. As the university is nestled within the chalk grassland of the South Downs, the creation of flower rich green roofs provided an important enhancement for chalk loving invertebrates and although the colour does not match chalk our extensive substrate does provides, just the right conditions for chalk loving species to flourish. Horseshoe vetch has already been recorded on the roof which is important as it is the favoured food plant of several scarce species of butterflies living in the area. These include; dingy skipper, chalkhill blue, small blue and Adonis blue and all are target species to make use of the roofs

The green roof was installed by Frosts Landscapes (Spring 2009), with incorporated water features and is used by gulls for bathing and drinking along with other wildlife. We were exited to find out recently that a black redstart made an appearance along with the more regular pied wagtails.

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening, including biodiversity roofs as specified by the FLL, GRO Guidelines and the NBS Q37.

The Small Blue is one of several chalk loving species of Butterfly expected on the Checkland's roof.

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

BALCONY, BLACKHEATH, LONDON

Green roofs do not have to be large as shown by this tiny example. It is actually Dusty Gedge's own balcony for which we supplied him clay pellets as drainage layer and also for him to use to his own biodiversity blend. The balcony consumed hardly more than a 25kg quantity of substrate blend but nevertheless constitutes a valuable extra area of habitat for bees and other insects and who knows maybe one day Dusty will look out and find a foraging black redstart – they can occur in back gardens, so despite they're scarcity there is no reason why one should not be seen – perhaps a singing male!

This balcony has featured in the Natural England booklet as an example of how to construct a small green roof and is available from the livingroofs website (www.livingroofs.org).

The formula of Shire Extensive Substrate is adapted for all kinds of extensive greening, including biodiversity roofs as specified by the FLL, GRO Guidelines and the NBS Q37.

Although they are very scarce Black Redstarts are happy to make use of green roofs of any size and can turn up on buildings anywhere is the SE of England

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

WHITTINGTON PARK, ISLINGTON, LONDON

The Whittington Park Changing Rooms also doubles up as a hub for local activities including sports, the Park Ranger's office, tea parties for senior citizens and a garden classroom for children. It is a low carbon building and incorporates a number of sustainability features including a green roof as part of Islington efforts to enhance the green credentials of the borough. This roof also contributes to deliver an exemplar biodiversity project at Whittington Park, to demonstrate best practice and raise its nature conservation designation by 2013.

This project is listed by the website (www.islington.gov.uk) of the Borough of Islington as one of its green buildings case studies.

For this project we supplied 32m^3 of our Biodiversity Substrate to M&J Flat Roofing Ltd on behalf of IKO PLC to provide the 200mm depth needed and seeded with a wild flower mix..

The formula of Shire Biodiversity Substrate is adapted for all kinds of extensive greening as specified by the FLL, GRO Guidelines and the NBS Q37.

The Pied Wagtail is a species that is often seen on playing fields and will benefit from the additional feeding opportunities provided by the biodiversity roof.

CASE STUDY

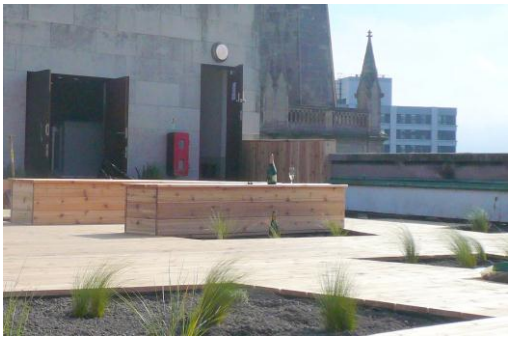
Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Section 5

Roof Gardens



Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

31-35 KIRBY STREET, FARRINGDON, LONDON

The way people work is changing and not everyone needs a permanent office all of the time and for many companies it pays to have a virtual office in a prime location for mail drops, calls and meeting room facilities. This is a competitive market for companies offering such services, so they need to make their offer as appealing as possible and a garden has been demonstrated to be a plus point for occupancy rates but not always easy to offer in a city centre location. In addition to this direct commercial incentive the building owner has all the usual benefits of a green roof in terms of better insulation more durable roof, water run off attenuation in addition to helping biodiversity. By incorporating formal elements such as decking and a shade giving pergola a relatively informal planting good for invertebrates can look very effective.

This roof was installed designed and built by sprout London & dmfk for The Office Group Ltd and was completed in summer 2009 and included trees and shrubs so a substantial depth of substrate was used and in accordance with the FLL guidelines intensive substrate was used.

The formula for Shire Intensive Substrate is adapted for all kinds of greening as specified by FLL, GRO Guidelines and the NBS Q37, especially those where trees and shrubs are included in the planting scheme.

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

ST. NICHOLAS HOUSE, BRISTOL

Ultralite substrate has a soil organic content that makes it suitable for extensive and intensive planting schemes but has the characteristic of being particularly lightweight so ideal for roofs where loading may be an issue. For more substantial plants greater depth of substrate can be needed and this increases the likelihood that the weight of the roof will approach the limits set by structural engineers. Green roofs are not only attractive for birds and invertebrates but they are also very good places to sit and have a break during the working day and it has been shown that an accessible green roof increases office occupancy. In this example decking has been used in combination with vegetated areas and various formal features can be added including planters.

This roof was installed designed and built by sprout London & dmfk for The Office Group Ltd and was completed in spring 2008. The design of this roof includes a number of clever architectural features with which the vegetation blends very well with the bright colours and shadows created to make a very attractive open air sitting space that would otherwise have been left unused.

The formula for Shire Ultralite Substrate is adapted for all kinds of greening where there are loading constraints and as specified by FLL, GRO Guidelines and the NBS Q37.

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk

Green Roof Substrates Limited

24 ROSEBERY AVENUE, LONDON

This example has been seen in many conferences, green roof publications and web sites. It is the offices and home of the well know pioneering architect Justin Bere of Bere Architects. The installation of the roof was televised in 2008 and the roof has since won awards. It is hard to believe that this is a roof garden. The building was originally a sausage factory surrounded by housing so with this difficult access the 20m^3 of substrate needed to be delivered in 25kg bags and taken through the building. The ambitious planting includes shrubs and trees, including hazelnut, and a wide range of flowers which have flourished. The garden also includes an area of wild flower meadow seen in the background of the above picture.

Although the design of the space and planting has the look of a garden ongoing monitoring of the roof has demonstrated that it has contributed well to biodiversity of this inner London area, including several species of bat recorded feeding above the garden.

Shire Intensive and Extensive substrates were used for this project indicated by FLL, GRO Guidelines and the NBS Q37.

CASE STUDY

Shire Green Roof Substrates Limited

Unit 31 Nutham Lane, Southwater, West Sussex RH13 9GG

Tel: 01403 732186 Website: www.greenroofsubstrates.co.uk e-mail: info@greenroofsubstrates.co.uk