



## CASE STUDIES

Pioneering British Greentech



## CASE STUDY

# BEACON BARRACKS STAFFORD

Natural Lighting

- **Project:** Beacon Barracks Stafford
- **Location:** Beacon Barracks, Stafford
- **Application:** Government
- **Sector:** Refurbishment
- **Contractor:** Jones & Woolman Ltd
  
- **Products Installed:**
  - 17 No. SUNPIPE 450 mm Natural Lighting Systems
  - 3 No. SUNPIPE 750 mm Natural Lighting Systems
  - 5 No. SUNPIPE 530 mm Natural Lighting Systems

A major redevelopment of MoD Stafford has recently been completed. The work included six new living accommodation blocks for single soldiers and unaccompanied personnel, a Mess, operations room for the maintenance of Falcon armoured vehicles, workshops, offices and garages, as well as new leisure and retail, including a coffee shop and grocery shop.

For Monodraught specifically, SUNPIPES were installed on a pitched roof with a Kingspan composite roof panel. Steve Smith from Jones and Woolman, a specialist installer of weathering systems for all types of openings in roof and wall cladding, who installed the SUNPIPES at Beacon Barracks stated:

“Monodraught Sunpipes are easy to mount onto all roof types”.

The SUNPIPE natural daylight system directs sunlight into a room from roof level. The SUNPIPE collects daylight using a patented Diamond Dome, using a silverised PVD coated mirror-finished aluminium tube to transfer light to a room, with a ceiling diffuser evenly distributing the light around the room.



## CASE STUDY

# SAINSBURY'S WHITCHURCH

Natural Lighting

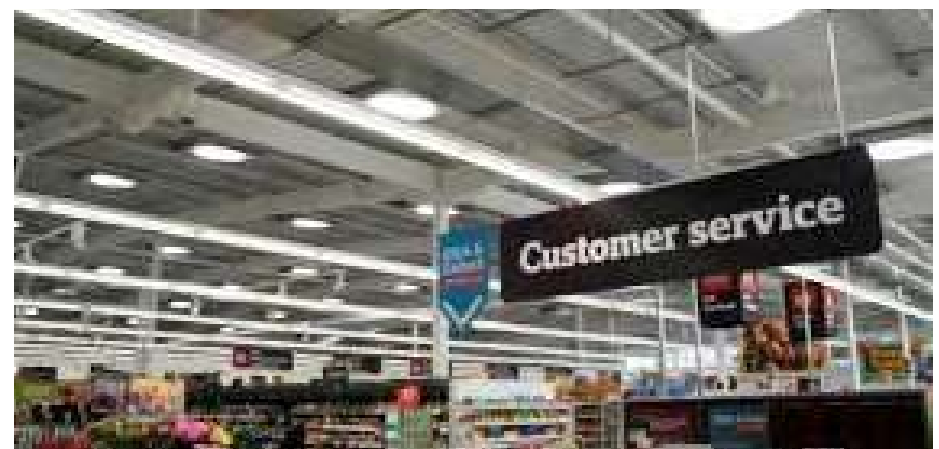
- **Project:** Sainsbury's Whitchurch
- **Location:** Whitchurch, Shropshire
- **Application:** Retail/Retail Outlet
- **Sector:** New Build
- **Architect:** Chetwood Architects
  
- **Products Installed:**
  - 90 N° SUNPIPE 1000 mm Natural Lighting Systems
  - 6 N° SUNPIPE 530 mm Natural Lighting Systems

Located on a designated greenfield site Sainsbury's opened their new 30,000 square foot store in Whitchurch, Shropshire in December 2012. In line with Sainsbury's strict environmental policies the project specified SUNPIPE natural daylight systems to provide daylight within the main shopping areas, customer café and staff facilities within the store.

For the main sales area, the specification called for 1200 Lux lighting level at one meter above the floor which was achieved by installing 90 x 1000 mm diameter SUNPIPE. A further 6 x 530 mm diameter SUNPIPE met the 500 Lux specification for the customer café. SUNPIPE were also installed within corridors and in the staff areas.

### Key benefits

- 1200 Lux level achieved
- Daylight sensors provide integration with electrical lighting to optimise energy use
- In-store metering confirms a 15% saving on the store's lighting load
- Lower CO<sub>2</sub> emissions
- Low U-Values & G-Values
- Low maintenance, long life
- Relatively small footprint compared to traditional roof-lights



## CASE STUDY

# CORA ALEXANDRIEI

Natural Lighting

- **Project:** Cora Alexandriei
- **Location:** Bucharest, Romania
- **Application:** Retail Outlet
- **Sector:** New Build
- **Architect:** Atelier Pierre Schall
- **Products Installed:**
  - 150 No. SUNPIPE 750 mm Natural Lighting Systems

The new 15,000 m<sup>2</sup> Cora Alexandriei hypermarket boasts some impressive statistics including an additional 7,700 m<sup>2</sup> shopping centre, 29,000 m<sup>2</sup> of underground parking and costing 29 million Euro. Although the initial design brief had not set out targets to achieve BREEAM ratings, continual improvements to reduce energy use and carbon footprint helped the building become the first shopping centre in Romania to undergo and obtain a BREEAM Certificate.

The use of natural daylight within the store was paramount. The systems were designed to provide 100% of the required light levels for the mezzanine office areas and the storage area. In addition the systems also had to deliver 50% of required light levels within the retail sales areas of the store.

Over 150 SUNPIPE were installed with the majority being 750 mm. Double glazed ceiling diffusers were specified within the sales areas for low heat gains. To control the daylight in the offices on the mezzanine floor, light shut off dampers were also included within the specification.

In addition to the use of natural daylight, carbon and energy costs were reduced through an improved building envelope, rainwater harvesting, solar hot water panels, a highly efficient heat recovery system and LED decorative lighting. Other environmental factors include an internal recycling policy and creation of a special compost area for local green spaces.



## CASE STUDY

# OLYMPIC HANDBALL ARENA

Natural Lighting

- **Project:** Copper Box, Olympic Handball Arena
- **Location:** London
- **Application:** Leisure/Sports Centre
- **Sector:** New Build
- **Architect:** Make Architects
- **Consultant Engineer:** ARUP
  
- **Products Installed:**
  - 88 N° SUNPIPE 1500 mm Natural Lighting Systems

Originally named the Handball Arena, the Copper Box was built to be the goal ball venue for London 2012 Olympics & Paralympics. As one of the legacy buildings of the Olympics, the Copper Box will be adapted to become a multi-sport arena for local community use, athlete training and other multi-use events.

Make Architects, responsible for the design set out a strict environmental criteria for the project of sustainable energy. Along with rainwater harvesting, the use of natural daylight would assist in reducing carbon and energy costs. Having used the SUNPIPE natural daylight systems on previous projects Make Architects entered in to discussions with Monodraught Ltd in May 2008 to investigate the possibilities of using this technology on the project. Make Architects specified a system that could deliver a 4% daylight factor.

Working with ARUP the Consulting Engineer, Monodraught presented a scheme that included 88 number 1500 mm diameter light pipes positioned strategically around the field of play. The systems also needed to be adaptable for when lower light levels were required so light shut off dampers were included along with special acoustic laminated glass.

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## CASE STUDY

# BRENTWOOD RESOURCE CENTRE

Natural Lighting

- **Project:** Brentwood Resource Centre
- **Location:** Brentwood, Essex
- **Application:** Healthcare Centre
- **Sector:** New Build
- **Architect:** Ingleton Wood
- **Contractor:** Hutton Construction

The new centre is a modern purpose built facility, which houses mental health outpatient, day care and therapy services for adult and older people in the Brentwood Locality. The completion of the resource centre has brought together a number of services which previously were operating in various buildings around the High Wood Hospital site.

Natural daylight was considered of primal importance on this new build development with the SUNPIPE natural daylight systems utilised on the central corridors and to several of the treatment centres to increase the level of natural daylight over the level provided purely by the windows. In addition to the SUNPIPE systems further daylight is provided by VELUX roof windows and lantern lights.



## CASE STUDY

# FRENCHAY HOSPITAL

Natural Lighting

- **Project:** Frenchay Hospital
- **Location:** East Ham
- **Application:** Healthcare/Consulting Unit
- **Sector:** New Build
- **Architect:** Arturus Architects
- **Contractor:** ER Hemmings Ltd

SUNPIPE natural daylight systems were chosen to provide natural daylight to the land locked internal spaces and deep plan on the new build consulting and therapy unit at Frenchay hospital.

A series of SUNPIPES to the rear of the areas ensure that an even level of daylight is provided and washes the internal rooms with a high quality of light.



## CASE STUDY

# WAITROSE ALTRINCHAM

Natural Lighting

- **Project:** Waitrose Altrincham
- **Location:** Altrincham
- **Application:** Retail Outlet
- **Sector:** New Build

Monodraught has worked in partnership with supermarket Waitrose to develop a new retail lighting unit featuring a Sunpipe integrated into an artificial light fitting. The new system, a Composite Sunpipe Assembly (CSA), is designed to maximise the use of natural daylight, while controlling and balancing it with artificial light.

In addition, Waitrose has now decided to extend the development of the SUNPIPE CSA to introduce similar solutions into the main selling environment.



## CASE STUDY

# SAINSBURY'S GLOUCESTER QUAYS

Natural Lighting

- **Project:** Sainsbury's Gloucester Quays
- **Location:** Gloucester
- **Application:** Retail/Retail Outlet
- **Sector:** New Build

Sainsbury's new 50,000 sq ft Gloucester Quays eco-store extends the lead taken by the supermarket chain's Dartmouth store by installing Monodraught SUNPIPE natural daylighting systems throughout the building.

As electricity reduction is a high priority at Gloucester Quays, Sainsbury has ensured maximum use of natural daylight by installing a total of 146, 750 SUNPIPES in the roof.



## CASE STUDY

# ASDA BOOTLE

Natural Lighting

- **Project:** Asda Bootle
- **Location:** Bootle
- **Application:** Retail Outlet/Dining Area
- **Sector:** New Build
- **Architect:** Ardas Architects
- **Contractor:** SIAS

Supermarket group ASDA has a comprehensive energy efficiency programme that includes identifying sustainable and renewable sources of energy for all its stores and depots.

Its flagship energy efficient store model, opened in Bootle, Merseyside features innovations such as a main structural frame built entirely from sustainably sourced timber, a recycled aluminium roof, and extensive use of natural lighting including Monodraught SUNPIPES and translucent walls.

The Monodraught SUNPIPE systems are used to introduce natural daylight into a wide area of the first floor mezzanine area that includes a customer restaurant overlooking the sales floor and staff facilities including their restaurant and cafeteria, a communal changing room, a meeting room and offices.

Monodraught worked closely with ASDA's M&E contractor SIAS on the specification and installation of our 750 mm SUNPIPE systems, which are designed to produce approximately 1000 lux at floor level, making them ideal for buildings of more than 7 m in height.



## CASE STUDY

# SAINSBURY'S DARTMOUTH

Natural Lighting

- **Project:** Sainsbury's Dartmouth
- **Location:** Dartmouth
- **Application:** Retail/Retail Outlet
- **Sector:** New Build
- **Products Installed:**
  - 64 N° SUNPIPE 750 mm Natural Lighting Systems

Sixty-four 750 mm diameter SUNPIPES provide natural daylight for the shop floor with a further sixteen 750 mm diameter units fitted in the offices, and five 300 mm diameter units in other areas of the store.

Sainsbury's aim was to be one of the first supermarkets to achieve a BREEAM 'Excellent' rating for its commitment to sustainable construction.



## CASE STUDY

# PRIMARK EAST HAM

Natural Lighting

- **Project:** Primark East Ham
- **Location:** East Ham
- **Application:** Retail Outlet/Offices
- **Sector:** Refurbishment
  
- **Products Installed:**
  - 42 No. SUNPIPE Natural Lighting Systems
  - 17 No. SUNCATCHER Natural Lighting and Ventilation Systems

Three WINDCATCHER systems were installed within the canteen and stockroom with a further 42 SUNPIPE system to back of house areas and 17 SUNCATCHER systems to internal office areas.



## CASE STUDY

# MARKS & SPENCER GALASHEILS

Natural Lighting

- **Project:** Marks & Spencer Galasheils
- **Location:** Galasheils
- **Application:** Retail/Retail Outlet
- **Sector:** New Build
  
- **Products Installed:**
  - 12 N° SUNPIPE Natural Lighting Systems
  - 3 N° SUNCATCHER Natural Lighting and Ventilation Systems

The 9,000 sq ft Galashiels store features 12 SUNPIPE systems and three GRP 800 Square SUNCATCHERS among 'eco-features' that significantly reduce its carbon footprint and improve its energy efficiency.

M&S claims the store uses up to 25% less energy and emits up to 95% less carbon dioxide than an average Simply Food store.

The Galashiels store has been a test bed for developing new initiatives that have since been rolled out in other Simply Food stores across the UK.



## CASE STUDY

# HOUSE RE-DEVELOPMENT

Natural Lighting

- **Project:** Beaconsfield House Re-development
- **Location:** Beaconsfield
- **Application:** Residential/Bathroom
- **Sector:** New Build
- **Consultant Engineer:** EAB Construction
- **Products Installed:**
  - 2 No. SUNPIPE Natural Lighting Systems

A multi-million pound property has recently been completed on the outskirts of Beaconsfield, Buckinghamshire by EAB Construction. Their client wanted to increase the amount of natural light available in two bathrooms and simultaneously reduce energy usage. They opted to install 2 Monodraught SUNPIPE systems in their pitched slate roof with vaulted ceiling.

The SUNPIPE natural daylight system directs sunlight into a room from roof level. The SUNPIPE collects daylight using a patented Diamond dome, using a silverised PVD coated mirror-finished aluminium tube to transfer light to a room, with a ceiling diffuser evenly distributing the light around the room.

Peter Warren from EAB Construction said “We were happy to work with local business Monodraught to supply the SUNPIPE systems. We were convinced that their high-quality product would provide a great deal of natural light into an otherwise dark space, with no ongoing maintenance required.”



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