

velta is the leading UK surface heating and cooling solutions company with an unrivalled specialism in Thermo-Active Building Systems (TABS)



solutions

projects and news

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EETC-In Situ Solution

IN SITU CONCRETE

In situ concrete construction for surface heating and cooling solutions can be at ground level and on suspended upper floors.

velta pipes embedded within the structural concrete can utilise the excellent thermal properties of structural concrete to provide heating and cooling to many buildings.

This type of construction has been used in applications for – retail units, distribution warehouses, schools, universities, health and office buildings. The benefits are an invisible and silent system, energy efficiency compatible with renewables, reduced carbon emissions, reduced installation and running costs, and high quality PE-Xa pipe, guaranteed to last a lifetime.

ENVIRONMENTAL ENERGY TECHNOLOGY CENTRE

The project

In 2008 at the Advanced Manufacturing Park (AMP) in Rotherham, construction started on a new addition, the Environmental Energy Technology Centre (EETC). A carbon-neutral building powered by a 225 kW wind turbine attached to the largest mini hydrogen grid system in Europe. The building will provide incubation and support for growing technology businesses.

The solution

The concrete core activation system, velta TABS was installed across 3000m² as a stand alone heating and cooling distribution system within the structural concrete. Pre-tested fabricated velta TABS modules were lifted to site and installed prior to the installation of the upper reinforcement mesh. This ensures fast installation on site and causes no delays to the building programme. Harsh site conditions during the construction are very demanding for the pipes, requiring top-quality material.

The 20,000m of velta PE-Xa pipe used on the project is made from high pressure cross linked polyethylene which according to the Engel process, has adequate rupture strength even under high mechanical stress to withstand these site demands.



PRECAST SOLUTIONS

velta provides innovative systems for precast concrete solutions. With many years experience in precast technology velta has successfully used the system in applications to provide heating and cooling for universities, schools, offices and prisons.

Off site production is a clear benefit of the velta system which assists the build programme and enhances the environmental credentials of the project.



PSV-velta precast system

HMP HIGHDOWN

Receives a BREEAM rating of Excellent

The project

The design of two new House Blocks and Education buildings in 2006 led Main Contractor Kier Southern to a precast solution. The external envelope of the building is constructed of a precast concrete sandwich panel - inner wall insulation and a face brickwork outer skin, providing fast on site erection.

The building is currently held by NOMS as an example for house block construction. The features and construction processes have earned a BREEAM 'excellent' rating – the first time this has been achieved on this type of custodial building.

The solution

velta designed and fabricated tested pipe mats which were cast into the precast floor units off site. On site engineers from velta then installed primary pipework and manifolds providing a fully tested and commissioned system.

velta engineers assisted in the design development for the building which is naturally ventilated and incorporates north-facing roof lights to reduce solar glare.



The benefits

- The velta system is linked to ground source heat pumps (GSHP) which provide heating in the winter and a cooling capability in the summer months.
- The requirement for any exposed heating element in the occupied space and the associated maintenance is eliminated.
- The velta system is designed to last the life of the building.

PUBLIC SERVICE VILLAGE

BubbleDeck® precast concrete with the velta PE-Xa pipes



The project

The West Suffolk House is the first phase of development on the Bury St Edmunds Public Service Village (PSV), an innovative partnership between Bury St Edmunds Borough Council and Suffolk County Council.

The building is designed by Pick Everard with the aim of achieving an excellent BREEAM rating. It uses sustainable methods of energy to provide long-term cost saving and environmental savings.

The solution

The innovative BubbleDeck® precast concrete solution was utilised with the velta PE-Xa pipes installed at the precast yard. They were delivered to site embedded within the precast concrete biscuit of the BubbleDeck® filigree element.

The BubbleDeck® solution incorporates recycled plastic bubbles as void formers, which reduces the dead weight of concrete and also permits longer spans between columns. The exposed soffit unit incorporating the velta pipework is delivered to site where it receives an in situ concrete deck to complete the floor construction.

The open plan offices are naturally ventilated and benefit from free cooling via the velta Thermo-Active Building System (TABS) embedded in the BubbleDeck® structure. The velta modules are attached with certified connections to the velta distribution PE-Xa which is installed in the raised access floor void and returned to designated service risers by the velta installation engineers.

CHATTERLEY VALLEY

Receives a BREEAM rating of Outstanding

The project

A scheme to build one of the world's greenest business and logistics parks in North Staffordshire.

The pioneering new project called Blue Planet Chatterley Valley was developed by Gazeley UK Ltd and hosts ultra-green sustainability credentials for the 385,000sq ft warehousing facility.

The solution

Built by Main Contractor McLaren Construction, the velta one system was incorporated directly into the ground bearing slab in conjunction with a laser screed machine. Working alongside Stuarts Industrial Flooring, the pipework was integrated into the slab without causing any time delays. Daily production of up to 2,000m² of completed floor incorporating the velta one system was achieved.



Chatterley Valley

The Benefits:

- The heat is in the occupied working zone and provides an even distribution of temperature. The system offers the flexibility to provide high rise racking without the obstruction of fans or ductwork.
- No requirement to clean or maintain the system, a marked contrast to visible heating systems which require a separate maintenance expense.
- The system is installed at the time of installing the concrete floor with a laser screed machine, providing super flat floors with great programme savings.
- High energy efficiency.

B&Q

Benefits from the velta classic heating and cooling system

The project

An award winning designed flagship B&Q store in New Malden, London which will benefit from having 10% of its energy needs catered for by renewable energy sources on site.

The concept for this store was to demonstrate a store design and construction of the future, utilising renewable energy sources though energy piles and solar panels.

The systems used within the building and the construction methods also had to adopt this philosophy and demonstrate environmental benefits.

The solution

A velta classic heating and cooling system was incorporated into the retail floor area extending to 9,000m². The system was installed in the composite structural floor consisting of precast concrete units and structural concrete topping. The installation was undertaken with the concrete flooring programme, causing no delays and the system set to allow a bolt drilling zone for floor fixings.

The benefits

The energy efficient velta system will last the life of the building and provide the following:

- Energy efficient heating and cooling
- Use of renewables
- Low maintenance
- Flexibility for future store layout
- Ideal comfort at occupied level
- Fast installation
- Single warranty for floor and system



B&Q



Chatterley Valley

We are delighted to announce the launch of our new website. Go to www.velta-uk.com to find out more.

Here, you can find our latest news including recently completed projects, information about the velta team and details on the wide range of innovative solutions for both heating and cooling applications in structural concrete. There are also details of standard applications in screeds, walls, ceilings and sports floors.

The new website reinforces our position as the UK market leader.



REDCAR AND CLEVELAND SCHOOLS

Benefit from the velta metal deck heating system

The project

Working closely with M&E Contractor, NG Bailey and the design team, velta developed the floor heating application for the construction of 3 primary and 2 high schools.

Thermal modelling was undertaken by velta to demonstrate the performance of the structural concrete application.



The solution

The velta system was installed directly into the ground bearing reinforced concrete floor slabs and the composite metal deck upper floors. All 5 schools were constructed together. velta coordinated the installation works to a tight schedule, allowing maximum flexibility for the main contractor with velta installation engineers undertaking all the works on this 27,000m² project.

The benefits

Many benefits were experienced by the main contractor and the M&E Contractor

- Fast and early installation of heating system
- Elimination of screed
- Reduced programme period
- Cost effective solution with reduced carbon footprint

OUR SOLUTIONS ❖❖

In situ concrete



Metal Deck



Precast



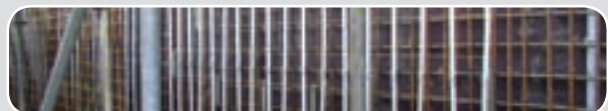
Screed



Sports Floor



Specials



Renewables



Heating & Cooling

