

DuPont™ Energain®

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DuPont™ Energain® brings phase change to Hammond High School

(High resolution images available from QuickStep PR: stephanie@qspr.com)



DuPont-Energain-
HammondHighSchool03



DuPont-Energain-
HammondHighSchool07



DuPont-Energain-
HammondHighSchool09



DuPont-Energain-
HammondHighSchool11



DuPont-Energain-
HammondHighSchool14



DuPont-Energain-
HammondHighSchool16



DuPont-Energain-
HammondHighSchool17



DuPont-Energain-
HammondHighSchool18



DuPont-Energain-
HammondHighSchool21

Photos: Jake Fitzjones for DuPont

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September 2008 - The thermal mass of a building is crucial to managing both energy consumption and interior comfort, especially during hot weather. Excessive internal temperature can have an adverse effect on both wellbeing and productivity – and for schoolchildren, it can prove a very unwelcome distraction! With these issues in mind, the services engineer for a refurbishment and extension project to a Norfolk high school was asked by the architect to come up with an innovative solution.

DuPont™ Energain® (www.energain.co.uk) is a lightweight, easy-to-install panel that uses ingenious phase change technology – and a sophisticated calculation model – to solve a number of dilemmas for low inertia buildings. Many modern structures are susceptible to rapidly varying temperatures due to solar and internal heat gains which cannot be absorbed by the structure. This can require expensive air-conditioning to correct and does nothing to help reduce the carbon footprint or to meet the relevant building regulations.

DuPont™ Energain®, which comes in panels of 1.0m x 1.2m x 5.26mm, is installed and sealed behind the plasterboard in walls or above ceiling panels. It works by absorbing ambient heat as room temperature rises (at around 22°), storing it until the temperature drops again (at around 18°), and then releasing it back into the room. In ventilated structures this can make a significant difference to comfort and also to the choice of construction methods and materials. In buildings with air-conditioning DuPont™ Energain® can reduce costs by an average of 35% and help to reduce heating bills in the winter by up to 15%.

At Hamond High school in Swaffham, Norfolk, 600 m² of DuPont™ Energain® has been installed into the ceilings of new classrooms that had to comply with BB87 when complete. This alternative passive solution replaced an original plan for exposed concrete soffits. Dr Jonathan Gray, Senior Mechanical Engineer at WYG Engineering, explains why he recommended this radical new material for the project:

“Achieving comfort conditions in naturally ventilated school buildings can be challenging and often leads to a high thermal mass design. The use of Energain® in the Hamond High School project allowed the proposed precast concrete roof to be substituted by a lightweight timber construction, while still achieving the necessary internal conditions. DuPont were particularly helpful throughout the consultation period, assisting with the thermal modelling of the phase change aspect of the product to demonstrate its performance versus an exposed concrete ceiling design. This resulted in significant programme savings for the project by eliminating the requirement for the heavy material handling and crainage involved in using precast concrete planks.”

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The Hamond High School project is one of the early adopters of this remarkable new system, which could help to revolutionise the way buildings are designed and constructed – whilst also making a key contribution in the drive towards energy-efficiency in the built environment.

DuPont is a science-based products and services company. Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture and food; building and construction; communications; and transportation.

An introduction to the offer of DuPont for architecture, interior design, building and construction markets is available at www.buildingonscience.dupont.com

For commercial or technical information on DuPont™ Energain®: www.energain.co.uk

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Notes to Editors:

DuPont™ Energain® was one of three Finalists in the Technological Innovations (Large Companies) category of the 2007 Carbon Trust / Daily Telegraph Innovation Awards;

DuPont™ Energain® has been awarded a LIFE Grant from the European Commission as part of its support package for Energy Efficient Buildings Systems project;

DuPont™ Energain® Thermal Mass System is a patented technology made only by DuPont

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