

# DuPont™ **Energain®**

DuPont™ Energain® brings phase change to Hamond High School



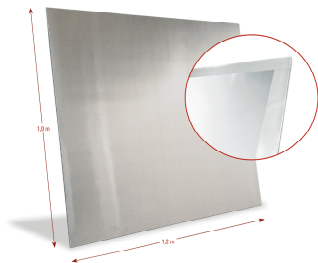
Photos: Jake Fitzjones for DuPont

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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.

At Hamond High school in Swaffham, Norfolk, 600 m<sup>2</sup> 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.”



DuPont™ Energain® allows passive comfort management in school buildings and so contributes to achieve school building performance standard requirements for the avoidance of overheating.

UK Building Bulletin 101  
Ventilation of School  
Buildings:

Performance standards  
for summertime overheating  
in compliance with  
approved document L2 for  
teaching and learning areas

→ There should be no more than 120 hours when the air temperature in the classroom rises above 28°C

→ The average internal to external temperature difference should not exceed 5°C (i.e. the internal air temperature should be no more than 5°C above the external air temperature on average)

→ The internal air temperature when the space is occupied should not exceed 32°C.

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