

DuPont™ **Energain®**

DuPont™ Energain® thermal mass system helps to transform a wasted attic space into comfortable offices for North West Housing Services



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North West Housing Services (www.nwhousing.org.uk) is committed to helping housing providers make the best use of their properties so, when it came to renovating its own offices in a converted period building in Liverpool, the company was determined to achieve the optimum outcome, both in functionality and sustainability.

Requiring extra space, NWHS brought in Dai Gwynne of architects Comtechsa Ltd (www.comtechsa.org) to convert an unused loft area into a comfortable new workspace for their growing team. Although generously proportioned, the attic of this Victorian property had been unsuitable for occupation as it suffered excessive thermal gains during warm weather, which would have required the installation of air-conditioning, adding to both energy use and costs.

However, DuPont Building Innovations offered an ingenious solution to adding lightweight thermal mass without compromising the design or increasing either weight loading or the energy consumption of the space. DuPont™ Energain® is an advanced phase change system which exploits a high-tech compound – and a helpful calculation model – to address these crucial issues.

DuPont™ Energain®

The system is supplied in easy-to-install panels of 1.0m x 1.2m x 5.26mm thickness which are sealed behind the plasterboard in walls or above ceiling panels, using standard tools and working practices.

DuPont™ Energain® works by absorbing ambient heat as room temperature rises (at around 22 °C), storing it until the temperature drops again (at around 18 °C), and then releasing it back into the room.



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In ventilated structures this can make a significant difference to comfort – and thereby to workplace productivity – 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%.)



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Comparing DuPont™ Energain® with traditional thermal mass solutions such as concrete, material analysis of equal volume has shown that concrete offers only approximately 17% of the energy capacity offered by DuPont™ Energain® in the temperature window of 18-24 °C for a 5 mm panel. While traditional mass contributes only to stabilising room climate, DuPont™ Energain® can help to also improve the energy efficiency of the building thanks to its heat storage and release capacity.

For NWHS, about 234 square metres of DuPont™ Energain® was installed in the walls and the ceilings of the pitched roof space prior to the installation of plasterboard and the interior finishing of 115 square metres of new office space. Lee Anderson, Head of Property Investment for NWHS says: “The conversion works incorporating the use of DuPont™ Energain® thermal mass panels in the roof space have transformed a formerly redundant space into a comfortable and pleasant work environment for our staff to work. In fact, over our first summer, these rooms have proved to be more comfortable than the room below!”

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