

The importance of collaborative research in delivering low carbon building solutions

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Corus Colors: Overview

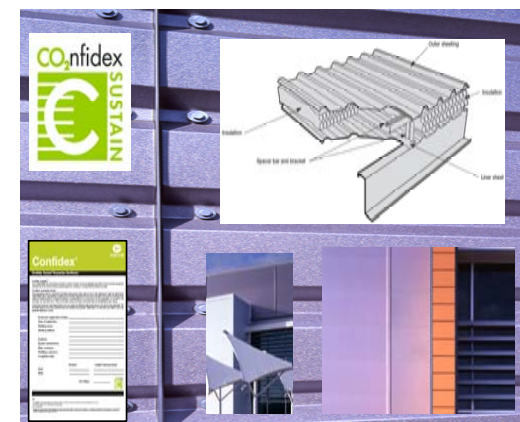


- Corus was formed in 1999 by merging Hoogovens and British Steel; in 2007 Corus was acquired by Tata to create the world's fifth largest steelmaker
- Corus is organised into 3 Divisions, each containing several business units
- Corus Colors
 - ~£1Bn turnover; highly international business with 6 sites in 4 countries (2 in Wales)
 - ~80% of sales are to the Building Envelope sector (roof and wall products)
 - The largest site and business HQ is in Shotton near Queensferry in North Wales
- Shotton is the European market leader in premium and sustainable construction products and the site is also home to a range of other construction activities:
 - Corus Panels and Profiles - centre for all UK profiling and composite panels
 - Corus Living Solutions - modular construction business
 - Colorcoat® Urban - steel standing seam roof business, established early 2009
 - New Photovoltaic Development Facility

Business Development Approach



- Designing and constantly updating products that have superior in use performance – industry leading warranties of 40 years are offered
- Significant collaboration with Welsh Universities – Swansea, Welsh School of Architecture, Bangor and Glyndwr
- Aligned approach along the supply chain
 - With end users, architects and developers to deliver better buildings
 - With direct customers to optimise supply logistics (30% of the Shotton order-book is now on a 10 day lead-time)
- Reducing energy demand in our own manufacturing processes and increased use of renewable energy (eg: energy from waste in Shotton)



Sustainability In Construction



- 3 years ago Sustainability was identified as a significant opportunity; 120 ideas were developed via a broad industry dialogue and then refined to 5 projects
- The result is a new generation of high-performance sustainable products
 - That reduce building erection times and minimise wastage (eg: Colorcoat[®] Urban)
 - That improve the thermal profile and energy requirements of buildings
 - That capture solar energy and use this to generate both heat and light
- Whilst the products can be used on a stand-alone basis, there will be significant potential for combined solutions (eg: heating and lighting)
- The maximum potential will be realised via close collaboration with academic partners (fundamental and applied research) and other industry partners



Photovoltaics



- The original Colors interest in photovoltaics came from Engineering Doctorate work conducted in Swansea; Swansea continue to support the work in this area
- After initial concept proving, a 3-year £10m project was set up to develop the world's first continuously manufactured PV product on steel for construction
- This incorporates dye sensitised technology which is bio-mimetic - working on a similar principle to photosynthesis in plants
- Corus is partnering with Dyesol, who are global leaders in this technology; the project is 50% sponsored by the Welsh Assembly Government
- The project facility is in Shotton, which would be the location of full-scale manufacturing once the product and process are industrially proven
- Advantages of the product are that it works well in all sunlight conditions and angles, and incorporates lower cost raw materials than silicon based solutions
- The aim is to create a global centre of excellence for PV in Wales



Solarwall®



- Perforated third skin to buildings – known as a transpired solar collectors
- Initial Colors interest followed work by a sponsored Engineering Doctorate in Cardiff; new thermally efficient coatings have been developed in conjunction with Swansea
- Heating supplement system, with proven reductions of more than 50% heating costs
- Works on new build and retrofit - payback typically 3 years new build, 7 years retrofit
- Improves air quality as it brings fresh air into the building (good for schools, hospitals)
- Systems suitable for all building types and can be fitted to any wall type; one of the few economic ways to retrofit / refurbish existing buildings to reduce carbon emissions
- Official UK launch at Jaguar Land Rover with CA Group on 15th October 2009
- Generation 2 technology with storage is being trialled on WAG building in Port Talbot



Closing Remarks



- Collaborative research and aligned supply chain development are key parts of the Corus Colors business development approach
- New sustainable products (either ready now or under development) offer a significant opportunities to:
 - Accelerate the delivery of the challenging CO₂ reduction targets for Wales, especially by addressing the existing building stock
 - Develop new business for Welsh supply chains in home and export markets
- Corus is pleased to support the LCRI and looks forward to collaborating closely together to develop solutions for a Low Carbon Wales