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Low temperature used recycled glass for use in non-structural product design applications with an aesthetic appeal such as furniture, wall and floor finishes.

This paper is exploring how a waste material, in this case recycled glass, can be up-cycled and used as an aesthetically pleasing architectural material. The project has been undertaken as a cross-disciplinary project between staff and students at University of Wales Trinity Saint David, Swansea. Sustainability is of a significant importance for the University with its multi-million pound development at Swansea Waterfront Innovation Quarter. The University is emphasising the use of locally sourced materials in the building to create a neighbourhood of academic activity at its core and to attract companies to co-locate with the University to exploit knowledge, develop skills, support existing companies and attract new investment into the region.

The aim of the project is the use and application of fused recycled glass as a material in a wider context in the construction industry and the application to interior design.

A reception desk for the new University campus at the SA1 Waterfront Innovation Quarter has been proposed as a test bed for the new low temperature fused recycled glass product. This is a research active field carried out by Dr Tyra Oseng-Rees at Swansea College of Art and who successfully developed and installed 100% recycled glass interior tiles in a new build in 2008 only a short distance from the new campus are being built (Oseng, et al., 2009) and (Oseng-Rees, et al., 2014).

The added benefit of this project is cross disciplinary with staff and students from art, design, engineering, construction, architecture and environmental conservation involved in a live case study. And lastly; exploration and application of a commercially viable product both with material integrity and aesthetic attributes. The circular economy is very much at the heart of this project underpinned by the Five Ways of Working from the 'The Well-being of Future Generation (Wales) Act (2015)'. Involvement and integration with industry has also vital. In this instance of the reception desk the 'buy-in' from the construction company KIER Group and the architect company Stride Treglown have been instrumental for this development.

Prevention and long-term thinking is at the heart of all decision making, enabling the consideration to both end-of-life of the product and demonstration how a waste material can be up-cycled and reintroduced into the circular economy for future design and purpose use of the material.

This project also showcase how the University's reputation on environmental and sustainability issues can go hand-in-hand with traditions from Art and Design, product technology and a makers artistic vision and mutually reinforce each other.

#### Reference:

Oseng-Rees, T. E., Donne K. E., Bender, R. and Brown, R. D. H., 2014, Developing design criteria for fused recycled glass tiles, *Craft Research, Intellect Journals*, Vol 5, No 1, pp. 55–79, ISSN 2040-4689

Dr. Oseng, T., Prof. Donne, K., & Bender, R., 2009, Physical and Aesthetic Properties of Fused Recycled Bottle Glass, *Making Futures: the crafts in the context of emerging global sustainability agendas*, Plymouth, UK, Vol 1, ISSN 2042-1664 257