GRANT AGREEMENT NO. :	314343
PROJECT ACRONYM:	UMBRELLA
PROJECT TITLE:	Business Model Innovation for High Performance Buildings Supported by Whole Life Optimisation
FUNDING SCHEME:	SME Targeted Collaborative Project
THEMATIC PRIORITY:	EeB.NMP.2012-3
PROJECT START DATE:	1st September 2013
DURATION:	36 Months

EXECUTIVE SUMMARY

Due to barriers that exist when considering the sustainability of the built environment, optimising energy efficiency in buildings is often a management issue and not one of design. In many cases, it is the organisation responsible for the building that makes the decision with respect to where best to invest their limited resources. For this reason, decision support tools, providing information with respect to a building's energy consumption and methods for implementation and incentivisation of the solutions, benefiting all stakeholders involved are required.

UMBRELLA addressed this issue through the development of an innovative, web-based decision support application, which provides common independent evaluation tools built around new and adaptable business models. The interface uses guided navigation to ascertain key information from users such as: key stakeholders; building location; building type; new or retrofit build; owner objectives and preferences e.g. energy efficiency, carbon and budget requirements etc. Business models, specific to the project and stakeholders are then provided through the online dynamic web portal, which will allow users to explore and optimise different business models and the relating implications and recommendations for interventions to their specified building. This can be applied to any building at any stage of design or use. Once the initial assessment has been carried out by the end user, they have the option to perform a more comprehensive analysis, which creates a full Dynamic Simulation Model of their building, calibrated against energy monitoring data (where appropriate) in order to facilitate decisions with respect to design options, retrofit options and in use system changes through an understanding of the impact of these decisions to the buildings, its occupants and comfort and the required investment and payback that would result.

The project has resulted in 2 software tools available as prototypes at the end of the 36 month R&D project, these are: a Free online web tool which allows end users understand the energy use of their building and the potential design/retrofit solutions which would be suitable to their building type and location; a Commercial tool which is a desktop solution offering the user a comprehensive analysis of their building from design, retrofit or in-use perspective allowing them to design to a better energy efficiency, understand the impact of a variety of retrofit options or optimise their existing building while in-use at minimum cost. Both the Free and Commercial tools advise the user with respect to the appropriate business model that would allow them to implement the solution depending on their situation and the stakeholders involved in their project.

Subsequently, the project has also identified the potential for a third Hybrid tool, which will maximise the tools developed for both the Free and Commercial tools, and offer the end user a simple tool, which provides a higher level of accuracy of the Free tool, yet does not require all of the information required for the Commercial tool. This is additional development which will take place during the commercialisation of the project, beyond the R&D 36 month phase.

The project has been demonstrated in 4 regional flagship projects located in the UK, Italy, Spain and Poland. The demonstration exercise has identified a number of changes required to bring the products from prototypes to products and an exploitation plan has been created to carry out these changes and identify the route to market for the products.