

## Project Snapshot

Company:	Long and Partners
Business:	Professional design management and consultancy Practice situated in the City of London
Project:	Develop a financial and engineering software tool which automatically calculates possible costs of achieving required carbon performance of buildings

Building Services

## Be Lean, Be Clean and Be Green

The conjuring up of the new renewable energy technology simulation tool, Green Wizard

"The building industry has become a key part of the planning process in considering what the energy consumption of a building is going to be in order to get permission to build," explains David Long, Chairman of Long and Partners. New Building Regulations and new requirements under the London Spatial Development Plan have made it mandatory to consider renewable energy/low cost carbon technologies in all new developments and major refurbishments. In London, planning permission will not be granted unless such provision is clearly identify and quantified. Long and Partners needed to develop the capability in low and zero carbon technologies to stay at the cutting edge of the industry. In order to achieve this, L&P, with the help of a KTP programme at LSBU, have developed a financial and engineering software tool, Green Wizard, which automatically calculates possible costs of achieving required carbon performance of buildings.

Low carbon buildings can have multiple energy solutions depending on building usage, location and layout. There is a wide range of technology permutations that can meet the carbon reduction targets, but with highly variable costs, both initial cost and on-going maintenance costs. To find the optimum solution for a particular building will be a one-off design that works exclusively for that site; however, such solutions are not obvious and require

intensive and expensive design work. Simplifying this design process will generate considerable competitive advantage. "Green Wizard has raised our standing in terms of what we can offer our clients and is helping us win bids worth £1.5 million. No-one else has a tool that is as client friendly whilst also using secure and robust information. We have a clear differential from the competition," says David.

KTP associate, Giovanni Privetera says "The Green Wizard has allowed us to show our clients at the very initial stage of a project how different low and zero carbon technologies impact on the carbon performance of a range of buildings, including schools, hospitals and restaurants. It also gives our clients a good estimation of the maximum CO2 building emissions permitted to comply with regulations. In fact, results are calculated with an accuracy of 10% of what the end calculations will be." Green Wizard can simulate very important data based on very basic information, which is perfect for securing new projects which at their preliminary stages have usually only a small amount of data to work with.

In order to create a tool that addresses both issues, efficiency of building energy system and the financial yield from client's investment, L&P needed a detailed knowledge of the various possible technologies which would provide energy use reduction and sustainability in buildings and the ability to evaluate them comparatively on a technical, economic and financial bases.&nbsp; LSBU academics, Professor Tony Day and Dr Gurjeet Dhesi, provided this expertise. "At LSBU we have years of

# Centre for Knowledge Transfer

experience designing building services and engineering systems, developing software tools for specialist analysis. We have detailed knowledge of the policy and regulatory frameworks that apply in this area and dictate how the software tool needed to be structured. This project has helped the industry estimate the value of renewable energy technologies," explains Tony.

The existing building services engineering organisations provides a relatively labour intense design service, with 2-3 days spent on working on a project which is time lost if you fail to win the bid. Green Wizard can do this same work in just an hour, a massive achievement for the company.

Finishing his project this year, Giovanni has gone on to work full time at Long and Partners and is now further developing Green Wizard and other tools.

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