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supporting businesses in Greater Glasgow/Metro West Region

## Back To The Future

**Accelerate Case Study: Mabbett & Associates**

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Companies have never been under more pressure to reduce carbon emissions - with both government and consumers providing strong incentives to reduce business' impact on the environment. But in the rush to do this, many companies are simply throwing money at new technologies and forgetting the most effective, proven method: reduce the energy your building needs in the first place.

The new headquarters building for Glasgow based environmental consultants and engineers, Mabbett & Associates Ltd (M&A) gives strong evidence that the greatest potential for energy reduction often comes in the improvement of aging buildings which have outdated building services. M&A chose a B-listed, 1850 Georgian townhouse in Glasgow City Centre. The building was in need of extensive modernisation and restoration, which gave the company's in-house energy engineers and chosen architect, Fiona Sinclair, the ideal opportunity to dramatically reduce the building's future energy costs. Despite being of older construction the building already had several desirable

features, including natural ventilation, good day lighting and breathable walls.

The structure - known to engineers as the building envelope - was further improved by the installation of rigid insulation between the rafters, which reduced the roof heat loss by 75%. Natural ventilation of the main office areas was retained using trickle vents and openable windows. Fans with humidistat controls, that only operate when humidity levels reach a certain level, were used in toilets.

The existing heating system featured oversized radiators which took up valuable wall space. M&A's replacement system, with new radiators positioned under windows, freed up wall space and reduced cold draughts from windows, noticeably increasing the comfort level and efficiency of staff. Several inefficient and poorly controlled boilers were replaced by a single high efficiency condensing boiler

The simple process of replacing the original single glazed sash and case windows with double glazed units reduced the total

heat loss of the building by a massive 35%.

Whilst there was great opportunity to reduce energy consumption through improvements to heating and insulation, M&A achieved further reductions by upgrading the existing lighting system. Doing more than simply replacing bulbs, M&A used computer modelling to reposition lighting, taking advantage of available day light, and installed new high frequency fluorescent lamps with improved controls. The overall reduction in lighting electrical load was over 50%.

For many SMEs the idea of improving energy efficiency is certainly looked on as desirable, but with the financial pressures of running a business it often goes to the bottom of the pile. M&A's approach qualified them for a five year interest-free loan from Loan Action Scotland to help pay for the energy improvements.

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