

IMPROVING PRODUCTIVITY IN THE WORKPLACE – LESSONS LEARNT AND INSIGHTS FROM THE WHOLE LIFE PERFORMANCE PLUS PROJECT

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We all instinctively know that poor indoor environmental conditions lead to dissatisfied, unproductive and unwell building occupants. However, until now the relationship between indoor environmental conditions and productivity has not been measured, or even defined, outside the laboratory.

The main objective of the Whole Life Performance Plus (WLP+) project is to gain an empirical, evidence-based understanding of how to optimise working conditions and improve the building user experience, performance and productivity in the real world.

The WLP+ project was carried out between February 2016 and October 2018, undertaking monitoring of the indoor environments and workplace performance baseline and intervention evaluations in case study buildings.

This report summarises the end of project findings, with an interpretation of what the findings mean for improving workplace productivity.

Further findings will be released in due course through consortium partners and academic publications.

Key project findings

The WLP+ project demonstrates and proves that optimising the indoor environment will allow workers to perform at increased cognitive capability, speed and accuracy of work and output.

Harnessed in the right way, businesses can convert this increased output into company-wide productivity, competitiveness, resource utilisation (both human and real-estate assets), return on investment and improved bottom lines.

This conclusion, combined with the fact that every building that was reviewed could be optimised, provides a strong investment case for organisations to review and improve the indoor environmental conditions in all existing buildings and for optimising the indoor environmental conditions in new, existing or refurbished workplaces.



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The main findings of the project were:

- Workplace performance is both positively and negatively impacted by the indoor environmental conditions, particularly temperature and carbon dioxide (CO₂) levels. Optimising the indoor environment leads to improvements in staff cognitive capability, speed and accuracy of work and output. The conclusion is that optimising the indoor environment in both existing and new buildings will enhance workplace performance and productivity.
- Existing building management systems (BMS) and heating, ventilation and air-conditioning (HVAC) solutions are typically not sufficiently flexible or granular to optimise workplace indoor environmental performance.
- A more granular examination of the indoor environment will identify flaws and issues within the workplace. Using this approach, hidden performance issues were uncovered within the HVAC, BMS and mechanical and electrical infrastructure of the case study buildings.
- When people feel comfortable, they perform better. Perceived overall comfort has a positive correlation with perceived change in productivity, and an occupant's willingness to tolerate certain indoor environmental conditions appears to be influenced by their workplace experience and expectation.

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- Occupants can also become more accepting of poor indoor environmental conditions, which are suboptimal for their performance, where people have grown used to suboptimal conditions over time. Analysing existing workplace indoor environments will help identify this untapped potential for performance improvement.
- Organisations struggle to define, measure and track productivity. However, those organisations that optimise their workplace indoor environments will create the potential to improve their staff performance and productivity.

Project participants

Building performance consultants LCMB co-led the project with academic lead partner Oxford Brookes University. The project team worked with a consortium of industry partners, including King's College London, EMCOR UK and Argent.

Oxford Brookes University led the research programme to empirically investigate the link between the indoor environment and productivity. Thanks to this empirical data it is now possible to calibrate and maintain building systems to deliver the most productive environments possible, which ultimately delivers greater return on investment for business owners and operators.

The project consortium members have developed an approach and methodology for optimising indoor environmental conditions and workplace performance. This methodology can now be used to support the business case for implementing improvements in existing and new buildings based on the learning from this project.

The project team hopes the project findings and the accompanying report will help organisations to improve new and existing workplace performance and productivity by drawing more attention to the impact that the design and optimisation of the indoor environment can have on performance and productivity. ■



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ABOUT THE BCO

The BCO is the UK's leading forum for the discussion and debate of issues affecting the office sector. Established in 1990, its membership base comprises organisations involved in creating, acquiring or occupying office space, including architects, lawyers, surveyors, financial institutions and public agencies. The BCO recognises that offices don't just house companies, they hold people and so what goes on inside them is paramount to workplace wellbeing.

ABOUT CONSTRUCTING EXCELLENCE

Constructing Excellence is a cross-sector, cross-supply-chain, member-led organisation operating for the good of industry and stakeholders, and it aims to produce a better built environment.

It is a long-term advocate of a 'whole life value' rather than 'lowest capex' or, worse, 'lowest tender price' approach to construction, notwithstanding that budget constraints may apply. We hope this project will add weight to that.

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