

HOW COLLABORATIVE PARTNERSHIPS ARE ENHANCING WORKPLACE PRODUCTIVITY

EMCOR UK has played a pivotal role in WLP+; a groundbreaking study to gather data, share knowledge and build insight to help improve productivity outcomes for UK organisations.

In this edition of Know How, we look at the importance and impact of collaborative business relationship management to the success of WLP+; a complex multi-stakeholder research project involving partners from government, academia, public and private sectors.



In this edition of EMCOR UK Know How, I've turned my attention to the important role collaboration played in delivering a complex multi-stakeholder project designed to further our knowledge of, and expertise in creating, smart buildings of the future; buildings as living ecosystems, fully integrated, intelligent and capable of enhancing the performance and productivity of the people who occupy them.

At EMCOR UK, we have developed high levels of expertise and capability in this area because we know that smart buildings are safer, significantly more secure, sustainable, and energy efficient. We also know that smart buildings enable workplaces to stimulate wellbeing - both physical and cognitive - as well as creativity and collaboration. In addition, the data made available to us provides visibility of how buildings perform, enabling the very functionality of the building to be optimised to maximise human performance and productivity.

From a workplace perspective, smart buildings enable people to have better experiences by allowing them to customise their experience and personalising comfort factors, such as temperature, humidity, lighting and workspace preferences.

Ultimately smart buildings give people control, leading to improvements in productivity, wellbeing and happiness, as well as connecting people to innovate, grow and succeed.



Jeremy Campbell,
Director of Business Development, EMCOR UK
Board Member, Institute of Collaborative Working

Expectations regarding modern working environments are changing and we are at the forefront of the workplace evolution currently gaining traction across a multitude of industries and sectors around the UK.

At the heart of this change is a fundamental question:

Q: How can building design, facilities, operations and employee working behaviours be best configured to promote and enhance productivity, wellbeing and happiness?

As forward-thinking facilities management experts with a long-term focus, we know that smart, fully integrated and connected buildings are the answer and at EMCOR UK we have already been actively implementing practical and workable solutions which optimise and enhance working environments and encourage positive working behaviours. We have developed bespoke, technology led solutions based on our data insights to convert the theory and the latest 'smart building' thinking into action for our customers and their staff.



Smart building and connected technologies has transformed the facilities management sector

New buildings, such as the Edge in Amsterdam, are leading the way, but this is only a small proportion of our workspace infrastructure and so organisations will need to retrofit smart ideas to get the best results.

Our approach is focused on evolving existing buildings, workspaces and operational FM support to achieve better workplaces. That means better performing buildings and people via interventions in fundamental areas such as air quality, temperature control, acoustics, lighting, nutrition and workspace configuration and adaptability.

The era when buildings that don't provide personalised experiences is rapidly coming to an end. Connected, fully networked environments that learn, are sensitive and can adapt, offer benefits such as productivity, creativity, collaboration, diversity and wellbeing are fast becoming the norm.

Quite rightly, our customers expect robust evidence to support the workplace models we put together for their buildings; we must demonstrate that the changes outlined can (and do) achieve the results we promise. Key to that is gathering data and performance knowledge to provide insights into what works and why. Based on our experience, we have seen some programmes capable of delivering benefits quickly, but in all cases the results that were achieved were significant.

“Collaborative business relationship management was critical in delivering WLP+; a highly successful research project, using smart technology, designed to measure and improve productivity in offices.”

Smart technology has had a dramatic and positive impact on the facilities management sector. One of the most efficient ways to accelerate knowledge and development in this area, is to collaborate with like-minded, expert partners who have the skills that you don't.

To illustrate this point, the case study featured in this EMCOR UK Know How, is an example of best collaborative practice in action between a consortium of partners using smart technology and data science.

Working together, the consortium embarked on a two and a half year study to measure the impact of CO₂ and temperature on the productivity of office workers. Using smart building technology, the study revealed ground breaking insights into the cognitive performance of office workers and the interventions needed to optimise indoor conditions to enable them to work at their most productive.

Technology is connecting people with data at a speed never seen before and is enabling people to collaborate more effectively



CASE STUDY:

The Whole Life Performance Plus (WLP+)* Research Project

It has long been suspected that indoor environmental conditions can have a detrimental impact on employee productivity.

Opening a Window to Productivity

Currently, UK productivity is 26.2% lower than Germany based on GDP per hour worked – and 22.8% less than France [1]. Solving the ‘productivity puzzle’ is a strategic goal of both public and private sector organisations - with different variables across education and industry under consideration for creating improvements. Despite 10 years of tactics to help close the gap, this is the first time environmental factors have been considered.

Fluctuating CO₂ causes lethargy and a feeling of stuffiness; air humidity is also a ‘discomfort’ factor for individuals; and poor air quality can impact sickness rates. Until now there has been very little conclusive evidence to determine the scale of the CO₂ effect in real world working conditions. The WLP+ research project was set up in 2016 to carry out the research and find answers.

A unique consortium of partners - including EMCOR UK, the government through Innovate UK, academics at Oxford Brookes University and LCMB Building Performance - worked collaboratively for two and a half years to conclude the first-ever practical study into UK indoor office environments.



8 consortium partners

Sensor
monitor
analyse
energy
consumption
wellbeing
study
expertise
productivity
collaboration
IoT
innovation
optimising



A unique consortium of eight leading experts from government, trade bodies, academia and the private sector formed to deliver the project.



HAPPIER



PRODUCTIVE



*WLP+ consortium partners:

The consortium consisted of EMCOR UK, LCMB, Innovate UK, the Low Carbon Building Group of Oxford Brookes University, Argent, Kings College London, British Council for Offices and Constructing Excellence.

Source: [1] <https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/bulletins/internationalcomparisonsofproductivityfinalestimates/2016>

The eight consortium partners involved in the WLP+ project came together with very different expertise, ways of thinking and working.

An isometric illustration on a dark blue background depicting collaborative business relationships. Two people, a man in a teal sweater and a woman in a yellow top, stand near a white table where another man in a light blue shirt is sitting and pointing at a glowing yellow lightbulb. The table has a laptop on it. Surrounding them are several floating white speech bubbles and rectangular panels, each containing different types of business charts: bar charts, line graphs, and pie charts. The overall scene suggests a meeting or brainstorming session.



ISO
44001
Collaborative
Business
Relationships

EMCOR UK
- 1st FM
company in
the world

Management. This facilitated productive discussion across the group and enabled us to resolve key questions such as what data we would and wouldn't share, who owned IP and how we would deal with any complications. Addressing these important issues up front set the tone and helped us to shape how we would work together for the duration of the project.

With clearly defined parameters of responsibility and accountability in place, we also reached a consensus on how we would communicate between the consortium, as well as with external stakeholder audiences. This was critical to maintaining control, secrecy, trust and project momentum whilst eliminating the prospect of friction and relationships breaking down.

Together we successfully applied collaborative working techniques to move everyone's thinking forward and enable all participants to freely share information to the benefit of others without concerns. All partners felt secure enough to share the knowledge they had created. This mindset is a vital requirement for any consortium based partnership to work and is one of the reasons why the WLP+ project proved such a success.

The project concluded in November 2018 and the evidence created is now being used to support the workplace evolution of businesses across the UK.

Jeremy Campbell,
Director of Business Development, EMCOR UK
Board Member, Institute of Collaborative Working



CASE STUDY RESULTS:

The Whole Life Performance Plus (WLP+) Research Project

Results from a unique collaboration

The results from this - the first ever practical study into UK indoor office environments - revealed that worker performance declines when CO₂ levels are high and temperatures are too warm or cold. As the government and business community continues to examine new ways of boosting the UK's productivity levels, it's hoped that a greater understanding of the detrimental impact of CO₂, as well as fluctuating temperatures, on employee outputs will lead to concerted action to improve air quality in offices.

Cognitive performance improvements

For the first period of the study, environmental conditions were kept the same and cognitive response and reaction tests were conducted twice a day. During the second period, interventions were made and temperatures and CO₂ levels were adjusted, whilst continuing to test at the same frequency.

Putting CO₂ to Work

Workplaces taking part in the study – including NATS and Kings College London – were tested over two and a half years, with internet of things (IoT) enabled sensors installed to monitor fluctuating CO₂ levels. During this time employees were sent numerical, proofreading and Stroop tests via email up to three times a day as part of the study. A methodology was then used to calculate the impact of CO₂ and temperature on perceived productivity in those workplaces [2].

 = **12%** improved test scores

In one of the buildings tested, **38%** faster  people worked

Results will improve workplace productivity

With lower CO₂ levels, employees' test scores improved by up to 12%. And in one of the buildings tested, people worked 38% faster with reduced CO₂ concentrations, completing tests in a mean time of 8.2 minutes, compared with 13.3 minutes with more CO₂ in the atmosphere.

Sources:

- [2] The WLP+ Project compiled task performance, self-assessment and business orientated metrics from the study locations and benchmarked them against interventions which adapted the environment to create a benchmark and improvement.
- [3] Environmental Health Perspectives: <https://ehp.niehs.nih.gov/>



CO₂ Stifles Performance

This lack of natural fresh air ventilation is impacted further by a general lack of effective CO₂ level monitoring, so it follows that the interventions necessary to reduce high CO₂, are not put into practice. This leads to a high level of occupant discomfort; a feeling of stuffiness in the office, lack of concentration and tiredness.

This feeling of working in 'a stuffy office' is subsequently misdiagnosed as being too warm, so air conditioning is turned up to cool the room. This increases energy use and an unnecessary creation of additional greenhouse gas emissions. So, whilst the room is feeling cooler, little has been done to lower CO₂ and the impact it's having on occupants.

Meeting rooms can be a real challenge because they are often small, sealed and occupied for a prolonged period of time and can reach up to 3000ppm CO₂ [3] - impacting concentration and productivity levels.

Put simply, our findings revealed that uncontrolled high CO₂ has a direct and negative impact on the cognitive performance of individuals in the workplace.

When you consider that the Wellbuilding Standard recommends 800ppm as the optimum level for CO₂, you start to realise the scale of the problem and the effect it is having on our cognitive function and wellbeing. This is compounded by the fact that CO₂ levels are not recorded with enough granularity by traditional building management systems to evaluate the effect on building occupants.

energy savings
of up to **50%**



were achieved
by optimising
air-conditioning
fan speeds

Conversely, the study also found that energy savings of up to 50% could be made by controlling air conditioning fan speeds in some buildings - without adversely affecting CO₂ levels in the workspace.

Unlocking the Value of Collaborative Business Relationships

"The WLP+ study was a unique collaboration of experts from the private and public sector, trade bodies, government and academia - working together for two and a half years to achieve an ambitious common goal.

It's success was down to the advanced levels of collaborative business relationship management put into action, with the principles of ISO 44001 setting the foundation for success as each partner played its role in delivering a highly complex study.

Such is the value of collaboration to EMCOR UK, it is one of our five core values and it's been woven into the DNA of the business for over ten years.

In practice, a well executed collaborative mindset and approach will always achieve better results. Whether it's applied between internal teams, whole departments, customer account teams or with supply chain partners and other external stakeholders, our very own commitment to collaboration has transformed the success of our business.

Today, not only are we delivering successful projects like WLP+ and cementing large scale, long-term profitable customer relationships, but an unrelenting commitment to collaborative business relationship management has enabled EMCOR UK to consistently outperform the UK facilities management market."

Jeremy Campbell,
Director of Business Development, EMCOR UK
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About EMCOR UK

As one of the UK's leading integrated facilities management (IFM) providers, EMCOR UK has an enviable track record in maintaining high-performing, productive and sustainable workplaces and real estate for customers.

Our core facilities management services include:

asset management and maintenance, information technology (IT) and data network solutions, smart building and energy solutions, mechanical and electrical engineering, capital projects and workplace design, reactive building maintenance, reception and concierge, catering, cleaning, fire and security, guarding, grounds maintenance and workplace consultancy.

For many of our customers, we've delivered facilities management contracts that continually achieve measurable results and have lasted more than ten years. These customers value EMCOR UK's collaborative approach and unwavering commitment to service excellence.

We have invested in technology and developed bespoke software applications to support and enhance our service delivery. The information and real-time data that our applications provide, enables us to expertly monitor and manage the facilities management services we deliver in the workplaces we manage and maintain for our customers.

Our reputation has been built on an award-winning, safety-first culture and a unique collaborative approach to facilities management. This, and an unrelenting commitment to customer-service excellence, delivers value to our customers and workplaces that are well maintained and productive.

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