

The Biophilic Office

Would nature-inspired offices make workers more productive? BRE explains more about this exciting project, which CIAT is delighted to be a partner of.



Biophilic Design in place



An example of how Biophilic Design can be

The BRE Biophilic Office is an upcoming research and demonstration project led by BRE (Building Research Establishment) and Oliver Heath Design, with the support of Interface, a modular flooring manufacturer and long-time champion of sustainable and biophilic design. 'The project will look to refurbish an entire floor of an existing office building' says Oliver Heath, designer and biophilic design ambassador for Interface. 'We'll use a variety of biophilic design methods to assess the value nature inspired design brings to the wellbeing and productivity of office workers.' The project will span two and a half years: in year one current working conditions will be analysed and the office will be refurbished. The second year will focus on analysing the impact the Biophilic Office has on the workers.

What is biophilic design?

The aim of biophilic design is to enhance the human connection to nature in the built environment; it uses our innate attraction to the natural world to create a calming and revitalising effect on health, wellbeing and happiness. 'By creating spaces that improve our physical and mental wellbeing, individuals are able to perform better' says Oliver. 'Rather than having rows of identical desks and white walls, a biophilic office is welcoming and engaging. It's likely to feature good natural

light, an abundance of plants, natural or synthetic materials that mimic natural surfaces and a variety of different zones.'

According to Oliver, biophilia — 'the urge to affiliate with other forms of life' — is the new frontier in sustainable design. He is fascinated by the emerging discipline and how we can develop further understanding of its impacts. 'There's a wide body of research on the benefits of biophilic design in laboratory conditions, but less in the actual working environment' he explains. 'We now have an opportunity to do this and for Interface, a company that's committed to creating positive spaces and exploring the genuine positive effect design can have on our lives, it's an opportunity to be part of a ground-breaking project.'

Biophilic benefits

Interface commissioned research into the global impact of biophilic design in the workplace when it developed a range of flooring collections inspired by the natural world. 'The research found that employees who work in environments with natural elements report a 15% higher level of wellbeing, are 6% more productive and 15% more creative overall', Oliver says. Improving staff wellbeing and productivity also makes good financial sense; the World Green Building Council suggests 90% of

typical business operating costs can be attributed to staff salaries and benefits.

While many are aware that biophilic design can have a big impact in the workplace, there's currently no comprehensive evidence that draws conclusions from a working study. 'We want to build compelling evidence that engages individuals to help them adopt learning and change their current practices', says Ed Suttie, Research Director at BRE. 'A key outcome of our project will be guidance that lets designers pick up the findings and apply them.'

BRE has been involved in sustainability measurement, delivery and research for decades. Historically its focus has been on construction energy efficiency, build efficiency and lowering carbon associated with the sector. Sustainability measures such as energy efficiency and carbon emissions are now firmly embedded in the built environment sector, but there's a gap when it comes to research looking at the impact a building interior can have on the people inside. 'Interface's research into biophilic design and its commitment to manufacturing products that help improve the wellbeing of occupants in a space made them perfect for this project', Ed explains. 'Health and wellbeing is an important element of sustainability and our research will show us how to



The supporters of the BRE project including CIAT represented by Diane Dale, Practice & Technical Director (third right) and Eddie Weir MCIAT, Vice-President Practice (second right)

implement sustainability practices within an office build.'

The office

At the beginning of the project, staff will be asked how they feel about their office — an unmodernised building from the 1980s — before it's overhauled. The project will monitor how workers are affected by the space before and after the refurbishment. 'We'll then undergo a design process creating a three-tier biophilic redesign of the existing office, and develop a detailed lab room to test materials and technologies in closer detail' explains Oliver.

The first tier will consist of low-cost elements that staff can incorporate into the office space themselves, such as putting plants on desks, while the second tier will involve fitting new nature-inspired Interface carpet tiles and timber panelling. 'The final top-tier section will include water features, green walls and colour-changing LEDs to mimic natural light' says Oliver. Following the refurbishment, the same office team's reaction to the upgraded space and materials will be monitored.

Analysing results

'We will monitor several factors throughout the two and a half year project, capturing both quantitative and qualitative data' Ed tells us. 'The first year we will get good baseline data to compare with the data after the refurbishment.' Environmental factors including air quality, thermal comfort, light and acoustic levels will be monitored to capture a suite of internal environment characteristics. The outdoor space will also be assessed to see how seasons affect the interior conditions. To gather data from the employees, 'human-factor teams' will interview occupants. There

will also be regular online tasks, cognitive tests and questionnaires that look at attentiveness and productivity. Some kind of wearable technology will also be used to help look into health factors, such as occupants' heart rates.

Engaging and restorative

'We believe the new design will reduce workplace-related stress and aid mental and physical recuperation' continues Oliver. 'It is hoped this will lead to staff feeling more valued, and that they will have an increased desire to work in the office space — which in turn means increased staff retention levels. After the initial honeymoon period, we believe the true value of biophilic design will be clearly demonstrated with an increase in levels of wellbeing.'

Ed believes the new workspace will be engaging and restorative and, like Oliver, hopes to see staff reporting higher levels of wellness. 'This should have a knock-on effect, reducing absenteeism and improving productivity', he says. 'As we spend a lot of time in the office surrounded by people, we also hope to see a rise in social health, too — with workers communicating more and having more fun. A blurring of life inside and outside work should be apparent as social structures improve.'

Simple switches

Not all designers are working on large-scale projects as office developments,

but many are designing routine projects such as office refurbishments.

The Biophilic Office research should help them discover that simple choices, such as maximising natural light or the addition of plants, can bring big benefits to the occupants. 'We hope that people will begin to adopt these principles as we find more solid evidence to guide them on how to incorporate biophilic design' Ed says. 'Some may already be trying to do this, but don't have the ability to communicate its efficacy to clients. This research will bring tangible evidence to help them achieve more sustainable design.'

Even if you're not one of the lucky ones having their office revamped by the A-team of biophilic design, there are simple steps you can take to incorporate the design principles into your work space. 'Educating staff to be aware of the benefits of being around nature is a great place to start' Oliver says. 'Many of us work all week to save money so we can spend our holidays in nature — at the beach, in the forests or mountains — it is known to relieve stress and makes us feel great. So finding simple, accessible ways to improve physical or mental wellbeing is key. If you take it a stage further and add plants to every desk, before you know it an office can look like a lush, flourishing savannah. Biometric materials can literally help inspire and connect us to nature.'

Be Involved: Biophilic Design/Design for Wellbeing Virtual Group

CIAT is proud to be part of this project by BRE in their initiative for Biophilic Design. We have set up a Virtual Group to assist in providing guidance and input when required. Do you have an interest in this topic? Do you want to be involved in assisting the Institute and provide guidance and advice? If you do, please contact the Practice Department for more information — graham@ciat.org.uk — on this Virtual Group and an Expression of Interest form will be sent to you.