

Workplace Health and Wellbeing, Orchestrated by SONATA

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At the beginning of February, a new consortium, comprising sixteen academic, industrial and stakeholder partners from ten European countries, gathered at KU Leuven, Belgium, to kick off the innovative Horizon Europe project, SONATA: *Situation-aware Orchestration of Adaptive Architecture*.

Their aim? To improve our workplace health and wellbeing through novel adaptive architectural solutions.



Health and Wellbeing Challenges in Our Changing Workplaces

Even before the digital and green “twin” transitions, the use of open-plan workspaces has been widely adopted by many organisations. Whilst such workplaces offer flexibility in accommodating a wide variety of simultaneous tasks, not least at a time when workforce presence can be unpredictable or intermittent, the majority of workers express dissatisfaction with such working environments. This dissatisfaction goes beyond mere discomfort, and workers report negative impacts on health, wellbeing, productivity, and social relations. The most common aspects of workspace design which occupants identify as harmful are acoustic discomfort, a perceived lack of control of environmental conditions, insufficient space, and privacy-related concerns, resulting in challenges to both physical and mental health. The knock-on effects of these health impacts can ultimately undermine the

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performance of an entire organisation through heightened sickness absence, disengagement and employee turnover.

In addition, the COVID-19 pandemic starkly highlighted how modern shared workspaces are unable to maintain preventive Occupational Safety and Health measures. The inability to regulate ventilation efficiently, rearrange spaces or set up temporary physical barriers that protected people from potentially dangerous working conditions were significant design weaknesses, with major impacts both during and after the outbreak. Indeed, post-COVID, 64% of Europe's workforce does not wish to return to the workplace. The relationship between the workplace and workforce is broken, with adverse consequences for employee interaction, creativity and engagement on the one hand, and mental and physical wellbeing on the other.

Encouraging people to return to the workplace therefore requires the design of spaces that reawaken a sense of engagement and a collaborative working culture. By empowering workers with greater control over their environment, providing adequate personal space for focused work and minimising negative health factors, workers can begin to feel comfortable, healthy, and supported within their workplace.

The question remains, how?

Orchestrated Adaptive Architecture as Workplace Design Intervention

Many workspaces have implemented the use of “adaptive” technologies to manage the negative health and wellbeing issues reported by their occupants. Most amount to the automation of individual architectural functions. SONATA's distinctive contribution lies in investigating the use of *multiple, orchestrated, design interventions* working in concert, and how they can be objectively measured, benchmarked, and optimised for a variety of hybrid workplace contexts. These adaptive elements will include acoustic ceiling panelling, electrochromic glass panels, Air HVAC and lighting systems, robotic wall partitions and adjustable furniture. Throughout this process, people will be at the front and centre. Workers in real-life situations lie at the heart of SONATA's methodology and results. A human-building interface will be developed, one that facilitates workers' environmental control and which takes SONATA beyond the simple automation characterising previous solutions.

Towards Implementation

Impact is key to SONATA. Over the next four years, the project will work towards publishing its findings as evidence-based recommendations and guidelines, considering key factors such as cost, benefits, sustainability, and implementation barriers across various, actively participatory, key target groups. By taking into consideration these practical aspects, SONATA will maximise the translatability and therefore the potential life-enhancing impact of its findings.

A Truly Multi-Disciplinary Approach

To successfully tackle the challenges inherent in the project, the SONATA consortium brings together expertise from multiple disciplines and sectors, including health and wellbeing (Uniklinik RWTH Aachen, Germany; Università Degli Studi Di Perugia, Italy); social sciences and humanities (IRI UL Institute for Innovation and Development of University of Ljubljana, Slovenia; MUNI Masarykova Univerzita, Czech Republic); technological experts (bGRID, The Netherlands; Technion - Israel Institute Of Technology; KU Leuven, Belgium); architects (UNStudio, The Netherlands); industrial adaptive technology experts (ROCKWOOL, Denmark; Vetrotech Saint-Gobain International, Switzerland; Delta

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Light, Belgium) as well as key target group representatives (Conseil Des Architectes D'Europe, Belgium; Green Building Council Italia, Italy; Workplace Innovation Europe, Ireland) and a professional dissemination partner (EValTech R&D, Italy). Together, they will orchestrate exploitable, innovative, human-centric design solutions that will make our workspaces better.

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This project has received funding from the European Union's Horizon Europe Research and Innovation Actions programme under Grant Agreement no. 101137507. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Health and Digital Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

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