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Indoor air up to 50 times more polluted

A warning that indoor air can be up to 50 times more polluted than outdoor air was among the insights provided at workshop on 'General and Local Exhaust Ventilation' in Galway last month.

The workshop focused on improving indoor air quality and the appropriate use of general and local exhaust ventilation within the workplace. It was organized by the Occupational Hygiene Society of Ireland (OHSI), in collaboration with Exposure Science at the University of Galway, was delivered in person in Galway on the 8th of November.

Aptly, it took place on 'World Ventil8 Day', a day which aims to raise awareness of the importance of ventilation as a crucial part of enabling health and wellbeing of people. Dr Marie Coggins, the University of Galway, welcomed participants to the University and the workshop, and Alan Lambe (head of compliance, University of Galway) and Shara Smith, president of the Occupational Hygiene Society of Ireland (OHSI) and inspector with the Health and Safety Authority (HSA), officially opened the workshop.

Air flow measurement expert Niek-Jan Bink, director and co-owner of ACIN Instrumenten, from the Netherlands, along with Justin Conway, operations director of Aereco Ltd, highlighted the importance of evaluating and ensuring good air quality and appropriate ventilation, as we spend 90% of our time indoors, where air can be up to 50 times more polluted than outdoor air. They described the importance of achieving minimum air flow rates within homes and demonstrated equipment that can be used to test for flow rates and air tightness.

Darren Arkins, senior inspector, HSA Occupational Health Division, introduced the recently-published HSA Code of Practice for Indoor Air Quality (IAQ). The first guidance document of its kind worldwide, it gives an overview of important aspects of IAQ in a straightforward and practical manner, to ensure its uptake in workplaces.

He also announced that the BeSMART risk assessment tool has a new feature for the assessment of indoor air quality and is available for over 300 business types. The Code of Practice is freely available at: <https://bit.ly/3QShMF0>.

Simon Jones, founder of Air Quality Matters, a ventilation and air quality consultancy, with nearly 20 years of experience in the housing, construction, and building services sector, outlined the practical implications of indoor air quality on workplaces.

He described how air quality issues are not a new or emerging hazard and are the single largest environmental risk to human health. He also highlighted that good air quality can also improve worker productivity and job satisfaction, having direct positive impacts on workplaces.

Adam Collison, PhD candidate within the University of Galway's School of Natural Sciences, gave an overview of the BENEFIT project on assessing indoor environment quality in Irish classrooms and offices. The study involves evaluating indoor air quality pre and post retrofitting for energy efficiency, to determine the potential impact on air quality. He will be collecting air quality data (i.e., PM/CO2/thermal comfort) in schools and offices across the country. Further information on the study and participating in it can be found at: <https://www.universityofgalway.ie/benefit/>.

Mike Slater of the University of Manchester, a chartered occupational hygienist and former President of the British Occupational Hygiene Society (BOHS), gave an occupational hygienist's perspective on evaluating local exhaust ventilation (LEV).

His presentation described the holistic nature of evaluating work exposures and how these assessments require reviewing all aspects of ventilation, including the awareness of workers on work hazard exposures and protecting against them. The importance of specifications and design of LEV, and that they are implemented and used appropriately once installed and maintained, was also outlined.

The second half of the workshop involved discussions and practical demonstrations of the types of ventilation systems required for differing workplaces and practices. Throughout this session, each of the speakers gave visual graphics of good and poorly installed or used ventilation systems and flagged that this is an area of importance that can often be overlooked.

Paul Lacey, of P&M LEV Specialists Ltd, has over 26 years of experience designing, installing, testing and maintaining LEV systems nationwide. He described the importance of LEV systems, the different elements that have to be considered, and the importance of elements such as the capture zone, capture and dust velocities, and training for employees to ensure the most efficient use of LEV and to protect against workplace hazards. Paul gave a visual smoke test to highlight the capture zone.



Thomas Molsen, CEO of Geovent A/S, furthered this conversation by highlighting that not only is this an issue due to people dying every year due to exposure to harmful and toxic particles, but it is also an obligation under the United Nation Sustainability Goals, to ensure good health and well-being, for decent work and responsible consumption and production. He showed how this is an evolving field, with new workplaces requiring these services including the need for larger systems and for niche workplaces (e.g., beauty salons/museums).


David Flanagan and Fearghus O'Rourke of Medtronic Galway wrapped up the day with an excellent overview of the range of ventilation technologies used within the Medtronic Manufacturing sites in Galway. The presentation focused on the various work activities that require mechanical ventilation, and an overview of their programmes of inspection, testing and maintenance.


The workshop was very well-attended, with over 90 delegates from Ireland and abroad, it was both engaging and interactive with lots of interesting discussion and practical experience shared between delegates and speakers. This important area, which is ever growing and evolving, was thoroughly evaluated and perspectives from regulatory, occupational hygiene and ventilation experts were embedded within the workshop. *Further information and workshop materials can be found at the OHSI website: <https://www.ohireland.org/>.*

During the seminar, the OHSI presented honorary OHSI membership to Geraldine Lenehan. This was to acknowledge Geraldine's significant contribution to occupational hygiene in Ireland over her career. Geraldine was a member of the OHSI council when the society was established in 1986.

(HSR thanks the committee of the Occupational Hygiene Society of Ireland for contributing this conference report).

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