

What needs to be done to achieve a healthier built environment?

Opening remarks

Thank you. I am very pleased to have the opportunity to speak here today on behalf of Professor Tim Sharpe and my Colleagues at the Mackintosh Environmental Architecture Research Unit at the Glasgow School of Art. We welcome the production of the draft Green Paper and support the aim of encouraging holistic and innovative solutions to delivering buildings that are healthy, comfortable and energy efficient.

Research and Knowledge Gaps

The draft paper has put forward many recommendations; however in this opening statement I have chosen to focus on a few key issues, which are of particular concern to MEARU.

The first of these is in relation to the gaps in research and knowledge. Whilst considerable research has been undertaken in this area, the science linking cause and effect such that regulation can be meaningful is limited. For example, in the UK, there are currently very little data available on indoor pollutant exposures in homes and associated factors, in comparison to the availability of data on ambient conditions. This needs to be addressed, to establish baseline data on indoor exposures in the home environment to determine risk factors for occupant health, particularly for more susceptible groups.

The need for evidence to make strong associations between the indoor built environment and health will require large scale multidisciplinary collaborations, particularly between the built environment and health communities (which is currently lacking despite clear mutual interests), and significant investment at governmental level. This could be achieved through cross-council initiatives to support funding for multidisciplinary studies that currently fall between the remits of the individual research councils.

Disconnect between Research, Policy and Practice

Also, although there is contact between academia and government or local-government departments, uptake on the recommendations arising from such academic research tends to be limited. In part, this is due to the limited funding for such studies which limits their scope and statistical power; and sometimes due to perceived pressures from industry rather than lack of confidence in research results or lack of funding to take appropriate action. Also, knowledge acquired through academic research projects is rarely translated into practical design solutions for built environment professionals.

Hence issues caused by unhealthy buildings are *knowns*, but routes to appropriate action are likely to be confounded.

Building Performance and Regulation

Another critical issue is the need to improve, at the very least, compliance with relevant standards in use. Research carried out by MEARU and others has revealed a significant gap between design expectations and as built performance, including concerns regarding the design, installation, commissioning, operation and maintenance of ventilation systems in housing and the impact of poor compliance on indoor air quality.

A related issue is the need for greater consideration of source control options at the design stage for new and retrofitted buildings for reducing indoor air pollution. Whilst the UK Building Regulations stipulate minimum ventilation rates in homes, the control of emissions from building materials and products is not addressed. Also, there is a need for subsidy and support of healthy building materials as these are currently more expensive and the development of a UK supply chain to help reduce costs and improve supply.

Conclusion

Overall, the enormity of the task implies the need for a considerable shift in economic and political prioritisation at central government level with adequate allocation and distribution of resources, in order to;

- i) Develop a substantial evidence base through investment and support of cross-disciplinary collaborative research
- ii) Improve the impact of academic research by encouraging knowledge translation and sustained communication between academics, policy makers and practitioners
- iii) Improve the value, effectiveness, compliance and enforcement of UK building regulations, particularly with regards to ventilation and source control in housing