

Institute of Acoustics response to House of Lords Call for Written Evidence for the Select Committee on National Policy for the Built Environment

Summary

- 0.0 The Institute of Acoustics (IoA) is the UK's professional body for the acoustics industry, with around 3000 members. The IoA wishes to draw the Committee's attention to the important role of the acoustic environment in facilitating positive health and quality of life outcomes, within the broader context of the built and natural environment. The economic value of the protection and enhancement of our aural environment is woefully underestimated. The Government has estimated that the annual social cost of road traffic noise alone is around £7 – 10 billion (<https://www.gov.uk/guidance/noise-pollution-economic-analysis>). The World Health Organisation in March 2011¹ found that in Western Europe alone one million healthy years are lost per year, due to traffic noise, making it the second biggest environmental health risk. Estimates are not yet available for the annual social cost of aircraft or railway noise, nor for the cost of poor acoustic design of new and existing housing. The emerging evidence of the social, environmental and economic costs of environmental noise, poor acoustics in buildings, and a failure to use sound positively, highlights the need to prioritise the proper consideration of the acoustic environment as a key component of the National Planning Policy Framework (NPPF) and of the future built and natural environment.
- 0.1 The summarised responses below relate to each question number in turn. The full responses then follow:

Policy making, integration and co-ordination

1. The IoA is concerned at the shift to decentralise policymaking (for all but the most sensitive and high-profile built environment schemes). To ensure a sustainable built environment in a more decentralised policy world, robust policies capable of delivering the outcomes needed, and competent authorities to scrutinise applications and enforce those outcomes, are required. There is a need to for practitioners in Planning, Environmental Protection and Building Control Departments within local authorities to retain and develop the skills needed to enable them to form good judgements on technical matters. Acoustics is an important part of ensuring that developments are fit for the intended use now and in the future, providing users with improved conditions to maintain or achieve well-being. The IoA would be pleased to partner with national policy makers to get this right, and help to build and maintain a robust local authority capability in planning, licensing and environmental protection, in conjunction with other bodies.
2. The IoA is concerned that there is a significant disconnect between Government departments that implement policy covering the built environment. This will impair the UK's ability to meet Government aims for sustainable development. We ask for better integration of policy between departments to encourage integrated design. Attention must be given to unifying and developing a consistent approach to inter-disciplinary influences on the planning, design, permitting and construction process for all built environment schemes. Acoustics should be at its core to ensure that comfort, health and well-being are achieved.

National policy for planning and the built environment

3. The IoA considers that the NPPF does not provide sufficient guidance for practitioners seeking to manage and protect the acoustic aspects of the built and natural environment. Whilst new noise policy objectives have been introduced in the Noise Policy Statement for England (NPSE) and the guidance

¹ <https://www.gov.uk/guidance/noise-pollution-economic-analysis>

to the NPPF (NPPG), supporting technical advice and guidance is largely missing. This omission means that the opportunity to build-in quality in an area often poorly understood by many participants is missed. Uncertainty resulting from lack of guidance may slow the operation of the planning system at a time when the rapid provision of new housing is high on the political agenda. Speed of applications through the planning system and quality are both important. With policies backed up by clear guidance, good design and rapid delivery can both be achieved.

The IoA is currently responding to a strong demand from practitioners for additional technical guidance on the management of noise within the planning system. The IoA is collaborating with the Association of Noise Consultants (ANC) and Chartered Institute of Environmental Health (CIEH) to produce guidance for developers and professional advisers (ProPG: Planning and Noise) centred on the land-use planning process to encourage good acoustic design. Initially, this is focussed on new noise-sensitive development, in particular housing.

4. The use of a **spatial** policy seems positive. The IoA suggests that **acoustic** policy is developed, going well beyond noise zoning and noise control, but including challenge to improve the overall aural environment with more extensive use of positive soundscapes. There is opportunity for the quality of our aural environment to improve immeasurably.
5. The IoA agrees with Government policy on noise (in the NPSE) which states that “*The Government recognises that the effective management of noise requires a co-ordinated and long term approach that encompasses many aspects of modern society.*” For buildings, we would encourage short and medium term plans. In the short term, for new and refurbished building stock, implement a rescue plan (over four years) which would embed design to withstand standardised extremes, to maintain sufficient comfort for occupants. A medium term plan (to 20 years) is suggested to advance the quality and delivery of holistic design for all new buildings. Acoustics plays a key role in creating good design of built and natural environments. Policy should expect positive use of sound, as well as providing protection from noise pollution.

Buildings and places : New and old

6. The IoA encourages the Government to consider forming a policy to encourage re-use of existing buildings, making this the starting point for sustainable development. Removing the worst of the stock, and upgrading and revitalising the remaining, including decarbonizing their operation, can be an effective way to help tackle the existing housing shortfall. It is the IoA's opinion that the recent reforms will do little. We need a more radical focus on stimulation to encourage refurbishment programmes that achieve high eco standards. Emphasis can be placed on creating higher density dwellings in urban centres, creating communities in which people can thrive, which have both vibrancy and access to peace and quiet, including use of our positive connection with natural sounds.
7. It is recommended that the Government undertakes detailed consultations with leading UK institutions to enhance the form and content of new planning legislation for the sustainable built environment. Planning for an uncertain future, and engineering resilience into our solutions is essential. Clear parameters to be met by adaptive designs must be agreed and put into legislation – the Government's role. A cross-party task force could be formed to create an integrated approach to define how adaption should be included. The IoA would be pleased to be a part of such a group. There is widespread experience within the Institute of upgrading existing buildings to meet current enhanced schemes.
8. The IoA considers that we do not make optimum use of our historic environments to regenerate and place-make. We know that acoustic design is crucial in many uses of these assets e.g. in broadcasting, performing arts, historical pageantry etc. We can make more of this. The balance needs to be struck between overly onerous planning and conservation restrictions, which may hamper and discourage the regeneration and integration of heritage buildings into our communities. More could be made of these assets as built environments which anchor people and communities to the past, giving them identity

and integrating them in such a way as they are preserved, but brought to life as part of the community. They can be of assistance in regenerating society's connection to our historic environments and preserving them for future generations rather than seeing them lost. Suggestions are made as part of the full answer on how more could be made of our national assets like Stonehenge, which is an example of our heritage built environment.

Skills and Design

9. There are currently poor standards of knowledge and experience across many disciplines central to the built environment in relation to the impact of design on behavioural outcomes. There is a high level of acoustic design skill available from IoA members, many of whom have powerful environmental and economic experience. The Institute is encouraging a more holistic approach to the built environment and the realisation of the central role of acoustics in establishing social sustainability. There is therefore a training task to do internally within the IoA, which is under way. Opportunities to bring together professional institutions to encourage cross-discipline cooperation to seek holistic solutions to achieving sustainable design could be encouraged. Effort is needed to reduce the leak of skills from local authorities which is currently occurring. In schools STEM initiatives are encouraged, which the IoA contributes to and supports.
10. An improved sustainability assessment method is required, which takes all three pillars of sustainability (eco, people, fiscal) equally into account. The IoA would suggest that acoustics can play a significant part in evidencing the benefits of good acoustic design in all three pillars, and would be pleased to contribute to developing this. The requirement for BIM (Building Information Modelling) within design also requires further thought so that it readily enables an improved sustainability assessment method to be realised. Affordable access to BIM to enable the inclusion of design advice from acousticians, many of whom will not currently have access to licensed software due to cost, would be helpful. A centrally accessible tool/ on-line portal for designers is suggested to accelerate take up by all disciplines.

Community involvement and community impact

11. The IoA considers the answer to the first question to likely be that "they try to". However, there is a shortfall of experience of social science relevant to this field. There may be doubt currently as to the correct planning or design approaches or tools to adopt, in any given built environment scenario, to achieve the balanced outcome on benefits that are required to deliver sustainable development. The correct tools to assess this across all disciplines are therefore needed – tools that leave no room for ambiguity or doubt as to the appropriateness of the design and planning methodology being adopted. It is encouraging to see schemes such as BSRIA's "Soft Landings" initiative, which aims to provide a detailed Post-Occupancy Evaluation (POE) methodology for a wide range of built environment assets. However, such schemes do not properly consider acoustics at this time. This is despite the evidence which indicates that poor acoustics is an obstacle to everything from optimal function at work, learning and performance at school, quality of life at home, and our speed of recovery in hospital. The IoA recommends that the Government may consider it useful to form and structure a national design and policy task force, which focuses on achieving overarching policy across disciplines. Public Health England could have a greater role to play in this area contributing to society, the environment and the economic success of the UK, within a global context. We will then be able to use this knowledge to assist others to do the same, and strengthen our offering through professional services and build on our global reputation.

There was no response to questions 12 and 13.

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Full responses to questions are set out below.

Preamble

- 1.0 The importance of the acoustic environment to health and quality of life has been recognised by Government – the long term vision of the Government’s policy on noise (i.e. unwanted sound) is to “promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development” (Noise Policy Statement for England, March 2010).
- 1.1 The National Policy for the Built Environment Committee clearly recognises the important role of the built environment in delivering good health and good quality of life, with substantial associated economic advantage. The IoA wishes in particular to highlight the importance of the proper consideration of both sound (and its positive effects) and noise as an inherent part of the good design of buildings, places and spaces.
- 1.2 Defra has estimated that the annual social cost of urban road noise in England is £7 to 10 billion. This places it at a similar magnitude to road accidents (£9 billion) and significantly greater than the impact of climate change (£1 to 4 billion). Road traffic noise is only one of many sources of noise in the built environment. A report published by the World Health Organisation (WHO) in March 2011 identified environmental noise, from traffic, as the second largest environmental health risk in Western Europe, costing one million healthy days per year.
- 1.3 The IoA considers that beneficial impacts of sound, as well as the adverse impacts of noise must be fully considered as an integrated part of the decision making and policy approach on the built environment and its interaction with the natural environment.
- 1.4 Each of the questions raised in the call for written evidence are dealt with in turn. If further information is required on any aspect please do place a request for further information, and the IoA Parliamentary Liaison Group will be pleased to prepare a briefing note on that issue.

Responses to questions

Policymaking, integration and coordination

- I. Are the decisions that shape England’s built environment taken at the right administrative level? What role should national policymakers play in shaping our built environment, and how does this relate to the work and role of local authorities and their partners?

Answer 1

- 1.5 The IoA is concerned by the gradual shift to decentralise policymaking (for all but the most sensitive and high-profile built environment schemes). Policymakers should be vigilant that all planning and construction policies, which have a material impact on the delivery of new built environment schemes for the next 20 years, are being implemented with clear delivery of sustainable development. Currently local authorities drive the enforcement of such policies, but their dwindling resources affect practitioners and their ability to form good judgements in areas such as local authority Planning, Environmental Protection and Building Control Departments. The IoA considers that the policy decisions may need to be taken at a more national and strategic level to maintain a coherent strategic direction.

1.6 It is the IoA's view that acoustics is an important part of ensuring the resulting built environment is not just fit for its intended use, but also provides users with improved conditions to maintain or achieve well-being. Unless this is achieved built environments cannot be truly sustainable. The pursuit of this goal by policy makers, with support being offered to the professionals at a local level, in partnership with the Chartered Institute of Environmental Health (CIEH), would maintain a credible service into the future with a clear strategic direction.

2. How well is policy coordinated across those Government departments that have a role to play in matters such as housing, design, transport, infrastructure, sustainability and heritage? How could integration and coordination be improved?

Answer 2

2.0 The IoA is concerned that there currently appears to be a significant disconnect between Government departments which implement policy affecting all built environment disciplines (from housing through to heritage). This is in danger of hampering the optimal progression of future built environment schemes across the UK that meet government aims for sustainable development. Through better integration of policy between departments it is considered that encouragement of good integrated design will assist that end goal. The IoA suggests that particular attention could be given to unifying and developing a consistent approach to all design matters which influence the planning, design and construction process for all built environment schemes. This approach should include acoustics at its core to ensure that comfort, health and well-being are achieved. This is so that each type of environment is designed to achieve its full potential both for its current intended use and with regard for possible future uses (such as the conversion of a factory unit to a school, as has just occurred in [Corby, Northants²](#) with Education Funding Agency involvement). Intelligent reuse of our existing buildings is important as a policy driver to be sustainable.

2.1 The IoA suggests that built environments should now strive to include the use of materials with top eco credentials as standard, with a disincentive to use less eco-friendly materials. Acousticians can assist to accommodate this in their specifications, with design advice to remove obstacles to sustainable design. Re-using and re-purposing of old buildings through refurbishment is considered a sensible way to maximize what we achieve with as little impact as possible, and strengthening Policy to encourage refurbishments without dropping standards is considered necessary to achieve truly sustainable developments for either new or refurbished built environments. Broadly this must, in turn, not just work for those using the resulting buildings, but also enhance their ability to achieve good health, wellbeing throughout the buildings life, which requires a lifetime strategic plan for the building, in which the acoustics is a core consideration. For this approach to be possible better co-ordination is essential to provide encouragement, stimulation and joining up of the thinking from each Government department, but good design must be kept at its heart.

National policy for planning and the built environment

3. Does the National Planning Policy Framework (NPPF) provide sufficient policy guidance for those involved in planning, developing and protecting the built and natural environment? Are some factors within the NPPF more important than others? If so, what should be prioritised and why?

² <http://woodnewton.schools.uk.com/SchoolWebsite.aspx?ID=4404>

Answer 3

- 3.0 The IoA considers that the NPPF does not provide sufficient guidance for practitioners seeking to manage and protect the acoustic aspects of the built and natural environment. Whilst new noise policy objectives have been introduced in both the Noise Policy Statement for England (NPSE) and the guidance to the NPPF (NPPG), supporting technical advice and guidance is largely missing. Government has advised that it does not intend to provide such technical guidance – an omission that misses the opportunity to build-in quality to an area often poorly understood by many participants. This is leading to uncertainty for developers, regulators and their advisers alike regarding the approach to take. In the absence of clear guidance there is an increased risk that development may be mistakenly refused, constrained or approved thus adding to the number of disputes and appeals that can slow down the operation of the planning system at a time when the provision of new housing is high on the political agenda. Recent case law linked to the licensed premises ([Ministry of Sound, London³](#)) emphasises the need for careful consideration before allowing residential development to encroach on established business, as this may result in their forced closure or displacement and cause economic harm. This demonstrates the need for balance between noise-sensitive and noise-making businesses at a time when the global trend (see [KPMG Mega Trends report 2014⁴](#)) is for people to be moving into cities, which themselves are often vibrant in character and therefore noisy. Acoustic solutions can provide technical ways to achieve this balance, and avoid damage to the economy and enable social cohesion to thrive, but clear technical guidance is needed to steer and drive input from acoustics professionals.
- 3.1 The IoA is currently responding to a strong demand from practitioners for additional technical guidance on the management of noise within the planning system by jointly working with a number of other professional bodies to produce Professional Practice Guidance on Planning and Noise (ProPG: Planning & Noise). This initiative is being overseen by a steering group consisting of representatives of the Association of Noise Consultants (ANC), Institute of Acoustics (IoA) and Chartered Institute of Environmental Health (CIEH).
- 3.2 The aims of the ProPG: Planning & Noise are to give good practice advice to local planning authorities in England and to developers' professional advisers on the application of the land-use planning process to encourage good acoustic design. The working group has determined that the initial focus of the ProPG should be on new noise-sensitive development, but in particular focusing on housing because of the social need. However similar advice on noise-generating development may follow in due course in other areas of priority delivery for the UK.
- 3.3 The Government has estimated that the annual social cost of road traffic noise alone is around £7 – 10 billion (<https://www.gov.uk/guidance/noise-pollution-economic-analysis>). Estimates are not yet available for the annual social cost of aircraft or railway noise, nor for the cost of poor acoustic design of new and existing housing. However, the emerging evidence of the social cost of environmental noise is likely to increase the pressure to prioritise the proper consideration of the acoustic environment as a key component of the NPPF and of the future built environment.

³ <http://www.costar.co.uk/en/assets/news/2015/May/Sweet-music-at-last-as-Boris-supports-Ministry-of-Sound-move/>

⁴ <http://www.kpmg.com/UK/en/IssuesAndInsights/ArticlesPublications/Documents/PDF/Market%20Sector/Engineering%20and%20Industrial%20Products/megatrends.pdf>

4. Is national planning policy in England lacking a spatial perspective? What would be the effects of introducing a spatial element to national policy?

Answer 4

- 4.0 The use of a spatial policy seems positive. This prompts the suggestion that a broad policy centered on our aural environment (beyond noise zoning and mapping), to include evaluation of the opportunities to use sound positively, can raise standards from the current poor position.

5. Is there an optimum timescale for planning our future built environment needs and requirements? How far ahead should those involved in the development of planning and built environment policy be looking?

Answer 5

- 5.0 The IoA agrees with Government policy on noise (in the NPSE) which states that “*The Government recognises that the effective management of noise requires a co-ordinated and long term approach that encompasses many aspects of modern society.*”
- 5.1 The IoA also recognises that climate change places urgency on a short (four years) to medium (up to 20 years) term plan for action, as buildings that are being commissioned now will be locking in carbon that will make it difficult for the UK to achieve the internationally agreed targets. The optimum timescale to be able to focus on a short term rescue plan is not more than a parliamentary term, with the focus on delivery of low to zero carbon new buildings with input from all disciplines (including acoustics) to maintain sufficient comfort for occupants. This means a soundscape that people feel acoustically secure and safe in. In this first phase it is suggested that improvements to the existing built stock needs addressing urgently, and a start could be made to upgrade in that timeframe. Not to do this urgently could result in the need for more drastic adaption action later, with a greater risk of public dissatisfaction, as the IoA has recently noted around issues such as airport expansion and resistance to wind farm applications.
- 5.2 The medium term plan spanning parliamentary terms, but with longer (20 years) delivery to targets in mind, could then focus on how we can advance and refine the quality of our delivery so that good integrated design is fully embraced for all new buildings. This should support the goals of sustainable development and deliver on good quality of life, health and well-being in low to zero, or even negative carbon buildings that work to enhance the environment. Acoustics can be of assistance in creating built and natural environments that use technology and scientific knowledge to improve our quality of lives, using positive sound to create solutions that enhance health and well-being for all by improving soundscape quality.

Buildings and places: New and old

6. What role should the Government play in seeking to address current issues of housing supply? Are further interventions, properly coordinated at central Government level, required? What will be the likely effect upon housing supply of recent reforms proposed for the planning system?

Answer 6

- 6.0 The clearest indicator for addressing the issue of housing supply is to streamline the planning process and to address the issue of existing energy inefficient housing stock. The Government has already facilitated the way in which Compulsory Purchase Orders and the automatic granting of planning permission for brownfield sites is conducted by local authorities. More can be done to fast track development which achieves exemplar standards (such as Code 6 homes). This assumes that it can be demonstrated that the impacts (including noise) on other people and residents, business and nature are very low and there are wider benefits to people, the environment and financial wealth, as set out in a strengthened national strategic plan for sustainable development.
- 6.1 The IoA encourages the Government to recognise the role that acoustics plays in that, and how the IoA ProPG could achieve clear and consistent engagement of members and local authority practitioners to conduct noise impact assessments. This enables local authorities to manage more consistently the introduction of refurbished and new build housing supply whilst protecting against harm to amenity, quality of life, and health.
- 6.2 The IoA encourages the Government to re-use existing buildings as a starting point by removing the worst of the stock, and upgrading and revitalising the remaining existing stock with the aim of decarbonizing their operation through good refurbishment design. It is the IoA's opinion that the recent reforms will do little. We need a more radical stimulation to encourage refurbishment programmes to tackle existing stock. Emphasis can be placed on creating higher density dwellings in urban centres, and creating communities with vibrant hearts that are supported with good design. In this way we can achieve the balance that people want between vibrancy, peace and quiet including use of our positive connection with natural sounds.
- 6.3 It is anticipated that the effect of introducing these incentives and drivers for swift change at the planning level, should allow developers the opportunity to change positively the built environment in both the private and social housing sectors.
- 6.4. There is widespread experience within the IoA of upgrading existing buildings to meet current improved standards.

7. How do we develop built environments which are sustainable and resilient, and what role should the Government play in any such undertaking? Will existing buildings and places be able to adapt to changing needs and circumstances in the years to come? How can the best use of existing housing stock and built environment assets be made?

Answer 7

- 7.0 It is recommended that the Government undertakes detailed consultations with leading UK institutions with experience of assisting policymakers to enhance the form and content of new planning legislation for the built environment. It is the IoA's view that the Government's focus should be on delivering the maximal tangible benefits to society, economically and environmentally, whilst protecting and creating environments in which people and our eco-systems can thrive. The added element is including resilience and planning for an uncertain future and engineering resilience into our design solutions. Adaption design would benefit from clear parameters from experts which can be embedded into legislation that will provide the required drive. Building Regulations would be the natural place to start integrating this. It is crucial that the Government gleans sufficient knowledge from institutions, such as the IoA, to assist with understanding the

planning and design implications, inherent with a multi-disciplinary approach to the delivery of built environment schemes that will withstand the environmental threats that we face over their design life. One suggestion for this would be to form a cross party task force to formulate an integrated response to define how adaption should be accounted for. The IoA would be pleased to be a part of such a group, which could also be cross-professional discipline.

- 7.1 If this can be successfully achieved within a short timeframe then it should be possible to allow both adapted existing, new and future built environment assets to meet the needs of people in a changing world, with clear tangible social, economic and environmental benefits.

8. To what extent do we make optimum use of the historic environment in terms of future planning, regeneration and place-making? How can more be made of these national assets?

Answer 8

- 8.0 It is the IoA's view that the UK does not make enough use of our historic built and natural environments. We know that acoustic design is crucial in many uses of these assets e.g. in broadcasting, performing arts, historical pageantry etc. We can make more of this.

A branch of acoustics has emerged called [Archaeoacoustics](https://en.wikipedia.org/wiki/Archaeoacoustics)⁵, which already has revealed in one example the particular opportunities for regeneration and place-making. Visitors to Stonehenge currently experience road traffic noise from the A303 that passes close to the site. This is detrimental to the quality of the soundscape and experience of visitors. The recently revealed acoustic features of the site, which may have been a potentially important part of the monument's purpose, cannot be enjoyed without protection from the noise pollution ([see article on acoustics of Stonehenge, Wiltshire](http://www.salford.ac.uk/computing-science-engineering/research/acoustics/architectural-and-building-acoustics/acoustics-of-stonehenge)⁶). Action to put the road in a tunnel or divert it would be worth considering as part of a restoration project, given the site's World Heritage status and value to our economy and identity as the UK.

Stonehenge is a single example. More broadly, there is merit in planning for the sensitive integration and connection of society with historical assets. This can assist to bring character and help build a focal point and strong local cultural identity. This is a vital part of place-making. Acoustic soundscapes have historically been one way in which local identity is defined. Soundmarks like Big Ben and the churches of London help to define a community's local identity. Soundscapes can be more optimally used to assist in place-making with connection to heritage relevant to the area.

- 8.1 However, a balance needs to be struck between overly onerous planning and conservation restrictions, which may hamper and discourage the sustainable regeneration and integration of heritage buildings, and insufficiently robust policies which put our heritage at risk. More could be made of these assets as built environments which anchor people and communities to the past, giving them identity and integrating them in such a way as they are preserved, but brought to life as part of the community. The IoA would encourage using our emerging knowledge in this area to use sound to bring these assets to life, using hygienic soundmarks (like clocks and bells) to create a focal point for the surrounding communities. High quality public spaces could be created that have such assets within them to provide an escape from the bustle of life, where they are owned by the nation.

⁵ <https://en.wikipedia.org/wiki/Archaeoacoustics>

⁶ <http://www.salford.ac.uk/computing-science-engineering/research/acoustics/architectural-and-building-acoustics/acoustics-of-stonehenge>

- 8.2 A not uncommon acoustic example is for local authority Planning Directorates to place onerous facade and other architectural and mechanical limitations on heritage building developments (i.e. no double-glazing, for instance). This can result in acoustic, thermal and ventilation performances becoming very complex to achieve for the comfort of future occupants of such buildings, thereby rendering such development unattractive to would-be developers and potentially stifling the economic and societal benefits that could be achieved. It could, therefore, be a helpful compromise to relax these conservation restrictions in favour of utilising the asset, where a sensitive design solution can be proposed.

Skills and design

9. Do the professions involved in this area (e.g. planners, surveyors, architects, engineers etc.) have the skills adequately to consider the built environment in a holistic manner? How could we begin to address any skills issues? Do local authorities have access to the skills and resources required to plan, shape and manage the built environment in their areas?

Answer 9

- 9.0 Knowledge and experience of the impact of design on behavioural outcomes of is poor across many disciplines central to the built environment. Insufficient social science is in place to strengthen the social sustainability of most designs. Where regulation is sparse, there is little to encourage the expansion in that field, and hence little impetus to provide education for it. There are high levels of acoustic design skills available from IoA members, many of whom are architects and engineers with powerful environmental and economic experience. The Institute is encouraging a more holistic approach to the built environment and the realisation of the central role of acoustics in establishing social sustainability. IoA members can assist by being part of a holistic approach to the built environment. However, wider knowledge of how good acoustic design can create wider benefits at economic, environmental and societal levels need to be disseminated further through our own and other disciplines to make sure that acoustic design is a consideration at the earliest stage of design. Often it is not seen as a key driving factor in development of designs, opportunities are lost, with the result that conflicts and reactive interventions can then create obstacles to sustainable design solutions.
- 9.1 The IoA has commenced an internal programme of education on sustainable design with its members, to widen their awareness of how acoustics can add value to sustainable design where acoustic input is provided at an early design stage. BREEAM has been of assistance in achieving this in more recent years, but that does not cover all buildings, and seems to be waning.
- 9.2 The IoA is concerned that local authorities are in serious danger of losing their technical skill base, which will result in them being unable to adequately or competently scrutinise applications for development of built environment schemes that contain noise or vibration impact assessments. This is due to an ongoing reduction of resourcing and funding at the local level. Outsourcing to other IoA members may be a temporary solution, but the risk is that there will not be proper consideration of noise impact and good design of schemes, which will in turn result in undermining the quality of delivery against the needs of society. The IoA is concerned that this squeeze on local government funding will mean that investment in better training for planners and practitioners will not happen despite an evident need. An emphasis on how the improved integration of acoustics creates benefits, should not be overlooked in any aspect of the built environment. This could be also introduced into the training of planners, architects, environmental health officers etc. as part of their basic training and, as a campaign drive by the IoA, in conjunction with Government to share and accelerate the skills development necessary to protect the good governance of the built environment at this critical point in history.

- 9.3 The IOA ProPG: Planning and Noise group is considering ways to promote the better sharing of good practice case studies to give examples for training and reference to all parties involved. The IoA would be happy to discuss involvement in providing other guidance which may be needed by other professions to assist in maintaining skills to avoid a skills void occurring.
- 9.4 The IoA agrees with the widely accepted view that there is a national skills shortage with regard to professionals engaged in the Built Environment sector. There are various possible reasons for the skills shortage, one of which is the underlying stereotype of it being a male-dominated industry in the engineering field ([see Scientific America article on Engineering is a Man's field, 2013⁷](#)). However, the potential to encourage a greater proportion of women professionals into a career in this sector is an area with promise, which the IoA is exploring with restart support for mothers returning to the profession. The message from the IoA to Government is to facilitate and support schemes such as the Science, Technology, Engineering and Mathematics (STEM) by making these subjects more accessible to all gender, social and educational backgrounds at the earliest opportunity. Work by the IoA in this area is ongoing, from involvement at schools level to the Parliamentary Scientific Committee, of which we are a member.
- 9.5 It is therefore suggested by the IoA that a longer term training plan is put into place for local authorities, in particular, which has cross-party support from Parliament. The IoA can assist with providing accredited training in collaboration with the Chartered Institute of Environmental Health (CIEH), with the purpose of developing understanding of the often conflicting issues that acoustics brings to planning, licensing, design and construction of built environment projects. This could support the implementation of existing national policy and legislation such as NPPF, NPSE, The Licensing Act and The Building Regulations.

10. Are we using the right tools and techniques to promote high quality design and 'place-making' at the national level? How could national leadership on these matters be enhanced?

Answer 10

- 10.0 The Government requirement mandating BIM Level 2 to be used on all state-funded projects by 2016 should act as a catalyst to improve co-ordination within the sector. It is the IoA's suggestion that the Government should also follow this up with a national skills programme, specifically aimed at assisting professionals in the sector to gain the necessary knowledge and skills to implement these requirements across disciplines. This would include educating designers on how best to interface with the software without having to maintain it (there is currently limited choice in software, and it is costly). If this is not done then it is likely that our members who work within small or medium sized firms will not be able to justify funding the software, and will provide design advice through other disciplines rather than as an acoustic layer (for instance). This will not achieve the integrated design approach needed and a rethink is necessary to enable accessibility of all members of the design team. Perhaps an on-line version held centrally as a resource might be a way to accelerate engagement with BIM.
- 10.1 Clearer guidance is also needed on what is objectively meant by "place-making", and how best to quantify the societal, economic and environmental benefits. An assessment method which takes all three equally into account (rather than just one predominantly, as in BREEAM) would be a way forward. The IoA would suggest that acoustics can play a significant part in evidencing the benefits in all three sectors.

⁷ <http://blogs.scientificamerican.com/guest-blog/engineering-is-a-mane28099s-field-changing-a-stereotype-with-a-lesson-from-india/>

Community involvement and community impact

11. Do those involved in delivering and managing our built environment, including decision-makers and developers, take sufficient account of the way in which the built environment affects those who live and work within it? How could we improve consideration of the impacts of the built environment upon the mental and physical health of users, and upon behaviours within communities?

Answer 11

- 11.0 The IoA considers the answer to the first question to likely be that they try to, but are often insufficiently trained or experienced to understand behavioural outcomes. There is also concern that this may be a luxury that local government can no longer afford to support. Intrinsicly there is doubt and lack of consistency as to the correct planning or design approaches or tools to adopt, in any given built environment scenario, to achieve the balanced outcome or benefits that are required to deliver sustainable development. The correct tools to assess this across all disciplines are therefore needed, that leave little room for ambiguity or doubt as to the appropriateness of the design and planning methodology being adopted. Whilst it is encouraging to see schemes such as BSRIA's "Soft Landings" initiative, which aims to provide a detailed Post-Occupancy Evaluation (POE) methodology for a wide range of built environment assets, these do not properly consider acoustics at this time. This is despite the evidence showing that poor acoustics is an obstacle to everything from optimal function at work, learning at school, quality of life at home, and our speed of recovery in hospital. The IoA recommends that the Government may consider it useful to form and structure a national design and policy task force, which focuses on achieving overarching policy across disciplines, delivering a measurable effect on the desired outcomes for the built environment sector against the three pillars of sustainability. The IoA would be keen to support this.
- 11.1 In answer to the second part of the question the IoA points out that it is widely accepted and known that auditory stimulation from music can change our mood and how we feel. There is also growing evidence that people's state of mind and behaviour can be influenced by sound, and quantifiable changes in behaviour can be caused. Marketing techniques now use such knowledge for making products more desirable (e.g. automotive industry). This has potential, if further research can be funded, to develop a robust body of evidence on which to adopt strategies for designing for safety and health. The IoA has recently issued its members with guidance on this area to raise their awareness. These are called Sustainable Practice Notes for acousticians (SPN2 relates to Personal Security). The Noise Abatement Society has been doing work in this area in Brighton, with soundscapes that caused a quantifiable drop in crime in one example. As humans we are hard wired to constantly assess our state of safety through our aural sense. Our acoustic safety is fundamental to our well-being. The IoA suggests that a robust evidence base should be developed around the positive effects that sound can have, as the industry has developed mainly around the management of noise. The potential to design the built environment with the acoustic environment in mind (both inside and outside) for positive benefits on behaviour, health and well-being, may play an important part in making our built environment fit for our future needs and also on cultural cohesion and safety, redefining what is good design for new or restored, safer and cohesive communities.
- 11.2 Public Health England could have a greater role to play in this area, including gathering a strong body of research, raising greater awareness of the negative impacts of poor acoustic environments (e.g. schools, offices, hospitals, restaurants and homes). It could also have a leading role in creating greater recognition of the positive benefits of good acoustic environments that can be brought to society, the environment and the economic success of the UK, within a global context. We will then be able to use this knowledge to assist others to do the same, and strengthen our offering through professional services and build on our global reputation.

12. How effectively are communities able to engage with the process of decision making that shapes the built environment in which they live and work? Are there any barriers to effective public engagement and, if so, how might they be addressed?

Answer 12

12.0 No response.

Answer 13

13.0 No response.