

# ACE Manifesto 2019

Infrastructure for everyone

November 2019 [@ACE\\_Updates](#) [#ACEManifesto2019](#)







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## Foreword

Since 2015, we have seen a greater appreciation for the importance of social and economic infrastructure to the UK, with a corresponding increase in government spending. Politicians have understood the role it can play in growing economies and improving lives, while meeting increasing – and often competing – longer term demands on the environment, for housing, or for greater connectivity.

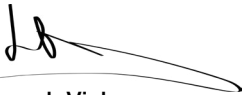
This means that infrastructure is increasingly significant for the voting public at large and with the upcoming general election, we all stand at a significant crossroads. Either we choose to invest in our future, or the underinvestment in social and economic infrastructure continues, impacting both our international competitiveness and quality of life.

As the voice of the consultancy and engineering industry working in the built environment, we have been central to this shift in attitudes. At the heart of this has been our work as part of the Infrastructure Alliance, championing the need for longer term stable investment in infrastructure and echoing the work of the National Infrastructure Commission (NIC).

Although we have achieved a lot there is still more to do. We need to develop greater cross-party consensus on the development and implementation of large-scale infrastructure projects. More needs to be done to link societal needs with government delivery within national and regional frameworks. We also need to unlock the huge potential of our cities to grow their regional economies, meet their residents' needs, and create social value. We have our own role to play in this, notably around the clear articulation of the key role our industry has to play in providing solutions for the environmental crisis, climate change and a net-zero society.

This manifesto, *Infrastructure for everyone*, highlights the current issues facing the UK and proposes solutions that can help a future government achieve continued economic growth, while improving the day-to-day for its people. Building on work that ACE has delivered over the last few years, and the extensive experience of our members, it outlines a suite of policies that can be adopted from day one of any new government in housing, transport, utilities, and water. It also explores issues such as skills, innovation, infrastructure finance and sustainability.

With the right political will our recommendations are practical, pragmatic and achievable. We call on the next UK government, the devolved administrations, and local authorities of all political persuasions to work with us to help lay the foundations for future long-term growth and a better society.



**Hannah Vickers,**

Chief Executive of the Association for Consultancy and Engineering (ACE)





# Introduction

The Association for Consultancy and Engineering (ACE) has produced this manifesto as an important contribution to the infrastructure debate at the next general election.

A quick overview of the existing infrastructure network shows that the country is experiencing an increasing disconnect between the needs of society and the ability of our infrastructure to deliver. Gaps in the supply of housing, airport capacity, energy production, and transportation will only get worse as each year goes by, unless addressed by the future government.

Overall, ACE recommends that the government increases its spending target for infrastructure investment to within 2% of GDP for the next three years. In the medium to longer-term, ACE recommends routine programmes are funded adequately, but alongside this an increase to 15% of investment should be committed to business case development and design work. This would build confidence that the right options have been considered and that the emphasis is on delivering value for society, rather than a rush to construction and cost control. From an industry perspective this would also avoid the previous boom/bust cycles of work, and the subsequent uncertainty they bring.

The most acute and high-profile gap occurs in the housing market where we face a shortfall of around 900,000 homes by 2021<sup>1</sup>. The UK will have to build several new cities to house our expanding population at a cost of £185bn. Furthermore, the emergence of the gap in energy production – due to the closure of older power stations – will increase pressure on the National Grid. It is estimated that it will take £117bn<sup>2</sup> to ensure that energy production keeps pace with demand and to avoid the burden falling directly on the shoulders of consumers and businesses.

Avoiding these significant gaps, and making the right investments, will require deeper collaboration between industry, government, clients and the end-users of infrastructure. In understanding and aligning expectations, we will ensure that our consultancies can build the skills, tools and capabilities needed to meet the ambitions of our clients and society more broadly.

Our *Future of Consultancy* campaign will help achieve this and with a number of events and report launches over the course of 2020, there will be plenty of opportunities for the future government to engage with, and shape, campaign outputs<sup>3</sup>.

The UK government has started to recognise this with the creation and development of the National Infrastructure Delivery Plan, the National Infrastructure Commission (NIC), and the Infrastructure and Projects Authority (IPA), which all aim to highlight, prioritise, and secure investment in long-term infrastructure needs. ACE also envisages that the way in which the government drives forward and delivers its priorities will change and become more sophisticated. This could now mean the need for a specific position at cabinet level with responsibility for the delivery of infrastructure.

Alongside more coordination at a national level, ACE welcomes and encourages further involvement from the devolved nations and London. With the creation of their own development plans, devolved governments are making a significant contribution to the assessment of the UK's needs, but more can be done in terms of delivery where they lack the economic freedom to assume full responsibility in this area. Likewise, ACE believes that there are significant advantages to city regional devolution within the nations, but powers must be matched with economic resources if the potential benefits are to be realised.





# TRANSPORT

The effects of years of under investment are evident across the UK's transport network. Heathrow Airport is running at 99% of capacity, while Gatwick is similarly constrained for much of the year. This means the UK could already be losing out to the tune £14bn per year in global trade because of insufficient capacity at airports in the south-east.<sup>4</sup>

ACE also estimates that inefficiencies across England's road network currently total as much as £12.2bn per year, cumulatively reaching almost £100bn by 2020.<sup>5</sup>

In addition, estimates suggest that the West Coast Main Line is approaching the limits of its capacity, while Transport for London's previous Commissioner Sir Peter Hendy says the extra 10% capacity Crossrail will bring to the London Underground "will be immediately full". Such inefficiency demonstrates the need for structured asset management plans, spanning multiple parliamentary periods and alternative governing parties.

The UK's transport network is facing ever-increasing challenges as the population grows and the need to move goods and people around increases. Both this and the previous government realised this, and positive measures are being put in place, but more can, and must, be done.<sup>6</sup>

## THE CHALLENGE

**£43 billion**

Stable long-term transport funding required for regional cities according to NIC<sup>7</sup>.

**£3,274**

Investment per household.



## To deliver an interconnected economy, government should:

**Confirmed commitment around HS2:** Delivery dates alongside the provision of reassurance that all parties subscribe to the continuation of the scheme. Approximately 20,000 jobs are at risk if HS2 is delayed or postponed.

**Solid commitment to the Northern Powerhouse:** The business case for Northern Powerhouse Rail remains under development. It is important that Transport for the North sets its priorities for the region and a clear budget will allow that to happen. Where possible, the next government should provide resource to ensure as much preparatory work around the proposed routes and stations can be carried out as possible ahead of the commencement of Northern Powerhouse Rail.

**Give the regions more say over infrastructure investment:** The UK's core city-regions must be empowered through increased control of locally raised taxation to invest in the transport infrastructure they feel they need to thrive. This will ensure gains from nationally significant projects like HS3 are maximised and communities are linked into the economic opportunities they provide.

**Continue its roads reforms:** Now Highways England has been established as a 'GoCo', the next government must continue the reform process by committing to providing a fixed revenue stream in the form of Vehicle Excise Duties. This will provide the kind of security of funding Network Rail enjoys through the track access charge regime. The government should also accelerate the Highways England package awards under the Regional Delivery Programme.

**Support the smooth passage of the Heathrow expansion programme:** This should be through the forthcoming judicial review. Taking swift policy action to confirm next steps if the review challenges the NPS. Reducing any uncertainty during this process will help the market confidence in developing capability.

### Net-zero considerations:

- Establish market standards for EV charging.
- Approvals for Heathrow should take account of CCC advice on aviation emissions.
- The phase out of petrol and diesel cars and vans should be brought forward to 2035.

## Aiming towards a better UK in 2025

This general election represents a fundamental opportunity to ensure the UK has the transport connectivity it needs to compete in the emerging global economy. Businesses need to know they can move people and goods around quickly, efficiently, and affordably, while strong commitments from government will ensure confidence and certainty for the construction sector.

The last decade has seen transport firmly recognised as a key economic driver. We must make sure we build on this foundation and ensure the UK's transport networks continue to be fit for a twenty-first century purpose. The UK has to deliver a true vision as to what its transport system should look like in 25 years.

# UTILITIES

Investing in these assets is no longer a choice as ageing infrastructure continues to impact on businesses and consumers. In the next decade approximately 10%-12% of current power generating capacity will be lost, unless £112bn of investment is made, while the water industry is expected to invest £43bn over the next five years.<sup>8</sup>

The UK is facing an unprecedented challenge when it comes to upgrading its utility infrastructure. Not only does it need to invest in capacity to keep up with demand, but a significant number of assets are reaching the end of their lifespan and need replacing with sustainable and renewable alternatives.

Utilities, however, extend beyond water and energy, with telecoms and broadband increasingly vital for businesses and consumers. In its 2016 report, *Connected Futures*, the NIC criticised the government and highlighted that the UK is behind Peru, Albania, and Panama in terms of network access.<sup>9</sup>

## THE CHALLENGE

**£86.6bn**

Energy UK states the energy sector created over in economic activity in 2018<sup>10</sup>.

**£1,850**

Consumers spend on utilities per year according to NIC<sup>11</sup>.



# To deliver utilities for a growing economy, the government should:

**Create new generation investment vehicles that target low carbon energy:** Base load power at affordable prices is critical if the UK is to deliver an affordable energy market. The government should create a number of Generation Investment Vehicles (GIVs) to complement the Electricity Market Reforms, bringing forward much needed investment in capacity.

**Reaffirm the UK policy for nuclear generation:** This is a part of a balanced energy mix for base load supply. The government also needs a firm commitment to the SMR modular nuclear programme and its potential for international export based on a proven UK home market application.

**Recognise that connecting the country is about more than 'traditional' utilities:** Broadband capacity is vital to businesses. The UK should aim to have 50% of all connections at 100mbs by 2020, rising to 90% by 2025. Further to this, the government should accelerate the deployment of 5G technology to keep up with mobile data usage and demands.

**Smooth and co-ordinated investment:** With an increased emphasis being put on Regulated Asset Base (RAB) models of investment, it is vital government continue its efforts to smooth the investment cycle. There is also a need for a transborder or national programme of investment to ensure an integrated system that balances supply and demand to avoid future droughts and mitigate flood risks.

**Empower consumers to manage demand:** Demand management is important not only to lower bills but also to reduce wasted resource. Government should speed up the roll-out of smart meters and ensure interoperability between gas, electricity, and water providers. Without meaningful information, useful data and comparisons, consumers will not change their behaviour.

## Net-zero considerations:

- Continue deployment of renewables and nuclear power along with carbon capture and storage and hydrogen, while avoiding emissions by improving energy efficiency.
- Emphasise the need for education and behavioural changes towards carbon and energy demand issues.

## Aiming towards a better UK in 2025

The UK has one opportunity to transform its utility sector for the future. The decisions we make today will determine the sustainability, connectivity and operability of future generations. Government needs a balance of new technologies and reliable, well-understood infrastructure to ensure it delivers a cost-effective solution for the future.

For this reason, it is important that government secure the core economic infrastructure of the UK, delivering networks that are suitable for the demand and requirements of 2025.

# HOUSING

A 2018 report by ACE suggests previous figures will no longer be sufficient to meet future demand and the backlog from previous years of undersupply. To meet that demand and have a moderating effect on house prices, at least 300,000 homes a year need to be built for the foreseeable future if we are to see stability return to the housing market.<sup>12</sup> However, ACE recommends alternative approaches to house building should be considered.

ACE's 2013 housing report estimated that anyone wishing to secure a mortgage with a 25% deposit would need to save for over 35 years, while a couple would need to be in a 22-year relationship. These factors mean that for most, the prospect of owning their own home is becoming increasingly unrealistic.<sup>13</sup>

Recent measures like *Help to Buy* aimed at improving the situation are only proving partially successful and recent estimates suggest the 'housing gap' could be widening. Only a plan to radically increase the number of homes built will ensure enough supply for future generations.

## THE CHALLENGE

**300,000**

Houses built a year if current demand projections are to be met according to the Housing, Communities and Local Government Committee<sup>14</sup>.

**£185bn**

The value of the shortfall as shown in ACE's Housing Gap report<sup>15</sup>.



# To enable everyone to own their own home, the government should:

**Implement ACE's LOVE model:** The 'Land Optimisation Value Extraction' model will ensure all parties involved in developing land for housing are able to share in the uplift, thus incentivising development. It will also enable more forward planning of vital infrastructure as local authorities can release more capital to fund economic and social infrastructure schemes<sup>16</sup>.

**Provide guarantees in the event of a fall in land values:** A key aspect of the 'LOVE' model is that central government should step in and provide certainty in the form of a guarantee in the event of land value price falls. As this only occurs 13% of the time (compared with 16% in the FTSE 100), this should not exert significant pressure on government finances.

**Prioritise denser brownfield development:** This enables placemaking that encourages modal shift to walking/cycling and reduced transport use. Also, the current trend is towards more greenfield development with the top 10 housebuilders now reporting less than 50% of their homes being built on brownfield sites. Whilst building on greenfield sites helps to achieve higher numbers of dwellings, we are concerned that the typically more complex brownfield sites are increasingly being overlooked.

**Empower local government:** Local authorities should be required to produce strategic plans for the provision of the housing that will be required in their areas in the medium and long-term. This will ensure certainty for developers and investors, and proper consideration of the needs of local communities, while also allowing the local authority to plan the necessary infrastructure with confidence.

**Make it easier for small developers:** As part of the above plans, local authorities should be encouraged to use the expertise of larger developers to clear and prepare small scale sites. These can then be utilised by smaller housebuilders who will have confidence that site preparation risks have been accounted for.

**Create stability in social housing policy:** It is vital that reasonable levels of social housing are met, with local authorities able to enhance this offering if areas are under particular strain. ACE's revolutionising housing models suggests a flat 15% provision of social housing within a development, with an option to purchase up to 15% extra.

## Net-zero considerations:

- Develop a strategy for decarbonising heat as called for by the Committee on Climate Change
- Ensure the Future Homes Standard is ambitious and enforced

## Aiming towards a better UK in 2025

Successive UK governments have been notoriously poor at delivering on the housebuilding targets they have set during their times in office. Rather than making announcements that they will build a certain number of homes; government should focus on providing an environment conducive to new development coming forward.

Ensuring a greater degree of local engagement and accountability in the form of local strategic plans will make local communities feel consulted on plans for their neighbourhoods, while guaranteeing a share of the uplift will encourage landowners come forward early in the process. This will also allow local authorities to plan and deliver vital infrastructure ahead of completion, a major factor in much of the opposition this type of development encounters.



# PLACEMAKING

One of a number of factors that can contribute to a more 'social' place, placemaking should be considered alongside the provision of strategic infrastructure, facilities and services as vital to meeting the needs of local communities.

Social infrastructure should be easily accessible on foot, bike or by public transport in accordance with the Healthy Streets Approach. It is also important to consider the way that social infrastructure integrates with other facilities and the way people who live or work in the area might want to access it.

Shared use and co-location of facilities should be encouraged, in order to align service provision, use land more efficiently and facilitate opportunities for different groups of people to come together, encouraging further inclusion and community participation.

ACE is proud to provide the secretariat to the All-Party Parliamentary Group (APPG) on Building Communities which exists to promote the importance that infrastructure plays in connecting communities together and in facilitating social interactions in public spaces.

## THE CHALLENGE

**£70-100bn**

Estimated yearly wider costs of mental health problems to the UK economy according to the Mental Health Foundation<sup>17</sup>.

**£8.5bn p.a.**

Cost to business of poor employee health and absenteeism, according to Atkins<sup>18</sup>.



## To ensure communities get the most from infrastructure and planning, the government should:

**Incorporate placemaking at the heart of the National Planning Policy Framework:** The aim and priorities of the public realm can have a significant impact on local economies and should be reflected on local planning policies. Only 50% of people in the UK live within 300 meters of open public space. Planning policy should deliver more public space as a means of reducing long-term costs of ill health. Greater weight should be placed in planning policy on the feel and character of the zone, than the appearance of its finishes, form or style.

**Develop a measurement of placemaking and its link to productivity:** The ONS will need to conduct further research in how a measurement formula can best represent the impact of placemaking on productivity. In particular that the ingredients of economic success cannot be quantified in conventional economic terms, but instead include “connectivity, opportunity and pleasant environments, underpinned by bold but flexible visions for the future”

**Fix financial and policy structures to boost productivity and ensure a long-term view:** Productivity is seen as an economic measure of efficiency, usually measured by GDP. The application of an economic metaphor into the built environment could be challenging, as planning offers an intrinsically holistic interpretation of value and policy objectives, embracing the social and environmental dimensions, as well as the economic.

**Reduce the cost of land for the creation of affordable homes:** The UK government should call for much more land to be brought forward to reduce competition for land in high-demand areas. This would impact land values but allow developers to build in volume, at prices the mass market can afford, thus enabling larger sites to be built out quickly. However, this would also limit the capacity for sales proceeds to fund infrastructure and affordable housing via section 106 and CIL contributions, so would require additional policy flexibility.

**Ensure developers are incentivised to share best practice around community engagement:** It is recommended that the local authorities and councils take an approach that allows investors to increase community involvement. Examples such as The Local industrial strategies of Leeds City Council applied new approaches when opening its South Bank neighbourhood. Their specific design was aimed to ensure that public finances can realise a return on investment in high quality public realm, infrastructure and community facilities – something that can be a struggle within current accounting frameworks. The challenge is to create financial vehicles which support the viability of public realm investment by capturing the value it brings to nearby sites.

### Aiming towards a better UK in 2025

For several years UK governments have endeavoured to make placemaking and social infrastructure one of its key priorities. The list of benefits these bring to the community and environment are numerous. Moreover, community wants, and needs should be taken into consideration, however it has been a challenge for developers to create places that will satisfy everyone.

Development of the built environment can support economic and social opportunities. Building on several decades of good practice, delegates who responded suggested that this needs coordination beyond the scale of development sites in order to maximise impact.

# WATER

The UK faces a range of water management challenges. With our climate and geography, we are prone to flooding which climate change will make worse, yet there are parts of the country that often have water shortages. At the same time, we must make sure our rivers and beaches have the highest possible water quality.

Water companies provide a public service to customers that is essential for health, for maintaining a modern standard of living and for supporting local economies. However, there needs to be a strategic review of the sector to ensure consumers are getting the best value for money.

Recent years have seen serious flooding in many parts of the UK both inland and on the coast. The latest climate projections indicate rising sea levels and increasingly severe and frequent rainstorms. This will increase the risk of floods if more is not done to manage it.

## THE CHALLENGE

**3 million**

Number of properties at risk from surface water flooding in England according to the Environment Agency<sup>19</sup>.

**143 litres**

Daily water usage per person in the UK as stated by Water UK<sup>20</sup>.



# To sustain the water sector for a safe and healthy society, the government must:

**Invest in a new technology-based solution:** Enhance flood warning and communication to the public which works by aggregating real time data on the impacts of flooding with Environment Agency and Met Office forecasts, delivered to the public through an online platform and through phone app.

**Increase the national standard of protection for flood risk management:** from an annual likelihood to a likelihood of 0.5% with appropriate funding for the Environment Agency and local authorities to deliver this.

**Ensure a long-term catchment management approach is taken to flood and planning policy and investment:** Building in wider natural capital principles through updating all catchment and flood risk management plans to reflect the new higher standard of protection and take a long term view on assessing and valuing the impacts and benefits.

**Provide additional ring-fenced financial support to Lead Local Flood Authorities:** Assess surface water flood risk and develop appropriate mitigation and emergency response plans.

**Strengthen policy on the use of Sustainable Drainage Systems (SuDS):** In new developments requiring more robust design and plans for the maintenance and operation of the assets.

**Implement a holistic view on critical water infrastructure with the five capitals model:** Government should approach the management of water with ACE's five capital model as there cannot be only one outcome. This would complement place, economy and environment, while delivering good value to the public.

**Planning authorities should ensure that from 2019 all new development is resilient to flooding:** This means it should have an annual likelihood of 0.5% across its lifetime, and that it does not increase risk elsewhere as recommended by the national infrastructure assessment and the Ministry of Housing, Communities and Local Government. (MHCLG)

**Ensure water quality standards are maintained in line with EU regulations and frameworks**

**Ensure the Future Homes standard has effective water efficiency standards**

**Ensure a policy framework is in place to deliver additional supply and demand reduction:** This should mean at least 4,000Ml/day, as recommended by the National Infrastructure Commission (NIC).

## Aiming towards a better UK in 2025

The water sector must transform and innovate if it's to meet the needs of future generations. Demand for and management of water resources within catchment areas is increasingly complex with multiple agencies playing a role in its management. However, with increasing impacts of climate change of flash floods, lack of investment in management of existing infrastructure – as well as the threat of droughts in the future – the sector will be forced to be more adaptable to issues of the day.

The management of our water resources is now a major critical resource which needs forward thinking and appropriate planning and resources to ensure we have innovative infrastructure fit for purpose. The Government needs a holistic view of new technologies and reliable, well-understood policies to ensure it delivers a cost-effective solution for the future.

# FINANCE

Whilst finance conditions have improved recently, the UK should not, however, take the situation for granted. The 2018 WEF Global Competitiveness Report illustrates some concerning statistics with the UK rated 37th out of 138 for access to loans and 59th for the soundness of its banks.<sup>21</sup>

The recent financial crisis highlighted the important role private finance plays in UK infrastructure. Not only from large economic infrastructure projects such as power stations, but also for social infrastructure such as schools, houses and hospitals.

Government must recognise that if it wishes to access significant sums of private finance the stability of the regulatory and funding conditions which it creates becomes more important than ever. In addition, it should commit to building the investment capacity of alternative sources of finance such as pension funds.

## THE CHALLENGE

**\$44.1trn**

The value of the current pensions market according to OECD<sup>22</sup>.

**£297bn**

NIDP pipeline investment requirements<sup>23</sup>.



# To unlock private finance, the government should:

**Create funding certainty:** For projects to gain private finance, investors need to be able to forecast future revenues and assess if the rate of return justifies the investment. Where these revenues are reliant on government policies further certainty should be provided. As such, the government should expand the six year funding profiles for government departments to 10 years.

**Improve policy certainty:** The changes made to the solar feed-in tariff regime in the last parliament highlight the damage swift policy changes can make to levels of private investment. Government should, where possible create policies that operate over longer periods, with clearly defined review periods and automatic stabilisers to ensure budgetary control.

**Improve regulatory consistency:** Currently the aims and approaches of regulators across sectors vary significantly. This mix of priorities adds to uncertainty for private investors, especially when the approach to items such as affordability varies and can create significant reputational risks.

**Recognise that alternative finance is a long game:** Pension funds may help to invest in infrastructure in the future but the need for structural and cultural change is significant. It is therefore unlikely that pension funds will increase investment significantly in the short term but in the medium to long term as a source of finance they could prove to be valuable.

**Devolving investment opportunities:** Devolution provides government with the opportunity to allow communities to leverage private finance. Models such as Tax Increment Financing (TIFs) and PF2 allow such solutions and could be effective tools to leverage the investment the UK requires.

## Aiming towards a better UK in 2025

Over the next decade, the UK should continue to emphasise the importance of investment as a driver for economic growth. To optimise this growth, however, the UK needs to ensure that private companies and investors are able to make decisions efficiently.

For this reason, regulatory and policy developments need to build in greater certainty, consistency, and stability. Whilst the government may not hold the cheque book in many private projects, its actions can make or break an investment case.

Beyond this in 2025, projects should engage with future asset owners earlier within project development and embed the concept of whole life costing into projects. It is, after all, these costs that asset owners and alternative finance providers consider key to maximising their long-term revenue generation.

# VALUE

Total UK annual public procurement spend amounts to £230bn and is managed through thousands of public bodies – also known as, contracting authorities – which includes government departments, agencies, NDPBs, public corporations, local authorities, the NHS and universities. If just 5% of this is spent inefficiently, it equates to £11.5bn of poor investment.

UK annual constructions spend totals approximately £100bn with 40% of output being procured by the public sector. Consequently, government construction policy is rightly focused on the reform of public sector client procurement practices in order to secure improved value for money.

However, as we approach a period of increased infrastructure investment in the UK, together with the devolution of power and responsibility for delivery at regional level, the role of the client will need to evolve in order to manage the delivery of a wider range of outputs and outcomes through the construction investment process. This will require a shift in focus from in out specifications towards outcomes and linking productivity with the procurement process.

The five capitals approach proposed by ACE provides a holistic view on measuring ‘value’. Natural, social, human, Manufactured and financial capitals can be directed towards supporting efforts to fight the climate and biodiversity emergencies.

## THE CHALLENGE

**£260bn**

Annual spend on public procurement according to the Institute for government<sup>24</sup>.

**£100bn**

Value of UK construction according to the ONS<sup>25</sup>.



## To ensure strategic investment through procurement, the government should:

**View procurement as an investment mechanism:** Encourage all public sector construction client organisations to view procurement as an important element of investment in supporting regeneration, growth at national, regional, and local level.

**Endorse the critical role of the construction/infrastructure client:** These clients form a key corporate function in public organisations responsible for delivering large construction investment programmes, whilst ensuring value for money outcomes.

**Encourage wider public sector to adopt initiatives:** Current government construction/infrastructure policy initiatives which are focused on enhancing client capacity and capability to secure whole life value for money and supply chain efficiency and innovation need to be applied more widely.

**Utilise progress to date in the future:** To promote and build upon the current construction and procurement policies initiatives developed by the Cabinet Office, BEIS, the Local Government Association, the National Audit Office, and the Institute for Government.

**Implement the five capitals model to measure value:** As a sector we have proven that we can deliver sustainable projects, however a challenge for major civil engineering schemes is measuring the outcome-based metrics over time to define success beyond project completion.

### Aiming towards a better UK in 2025

If the country is to achieve better outcomes in the future, the challenge will be in recognising that construction/infrastructure procurement is not simply a purchasing process, but a vital component of investment management at national, regional, and local levels.

Therefore, there will need to be efforts to raise the capacity and capability of infrastructure and construction clients across the wider public sector to a consistent level of excellence in order to secure whole life value for money.

In the future the construction client function should be located at a strategic level in corporate management structures to reinforce the importance of procurement as a management function. This will allow the UK to undertake projects and programmes with significant levels of complexity and diversity.

# NET-ZERO AND SUSTAINABILITY

As a country we have committed to achieving net-zero emissions and to restoring our natural capital. To achieve these goals while meeting society's need for housing, employment, mobility and energy we need to rethink how we design, build and operate our infrastructure.

Infrastructure related emissions are about 53% of total UK emissions. We need to use lower carbon materials, be less wasteful during construction, and be smarter in how we design and connect infrastructure systems, so they enable the use of zero emission energy and exist in harmony with the ecosystems which we all rely on.

## THE CHALLENGE

**2050**

The year the UK will reduce its emissions to net-zero<sup>26</sup>.

**448.5m**

Tonnes of CO<sub>2</sub>e emitted by UK in 2018<sup>27</sup>.



# To deliver a sustainable and net-zero society, the next government should:

**Fully implement the recommendations from the Infrastructure Carbon Review:** The leadership, monitoring, and promotion of cost-effective low carbon technologies should be encouraged. A low carbon approach to infrastructure does not have to increase the cost of project delivery and can actually help reduce total costs.

**Prioritise the infrastructure needed to enable zero emission power sources across the economy:** Building, for example, EV charging networks, investing in nuclear generation, and developing the 'hydrogen economy'.

**Deliver and enforce an ambitious Future Homes Standard:** Ensure new housing is fit for a zero-carbon generation.

**Reduce construction site emissions:** In our cities, construction site emissions can account for up to 15% of air pollution. The best infrastructure projects already insist on low emission construction machinery and practices, but we need tougher regulations to make this the minimum standard.

**Prioritise brownfield development:** New housing and non-domestic development should be on brownfield sites where possible. Previous research by ACE proposes that the cost of preparing such land for development could be met by capturing the land value uplift that occurs as development takes place.

## Aiming towards a better UK in 2025

The next few years are make or break in determining whether we can meet our net-zero and wider sustainability goals in the timescales needed. Early action will not only put us on the right path, it will drive innovation in our industry and economy.

The next government will have an opportunity to demonstrate that jobs, growth, and efficiency can go hand in hand with decarbonisation and high environmental standards. A green growth policy will also support the UK's environmental sector, which already turns over more than £100bn a year and has strong export potential.

# SKILLS

To realise our vision for consultancy we will require a different profile of skills and capabilities for businesses to succeed. In addition, the career expectations of future built environment professionals will challenge our traditional professions and training providers currently supporting our businesses to develop. To analyse the change required we have broken the skills profile down into three component parts:

- **Demand:** Our research points to a skills shortage not by number, but by capability, we require more highly trained/re-skilled engineers and consultants equipped for longer careers. Graduates still require the first principles design knowledge alongside greater exposure to their digital tools before they enter workforce
- **Blend:** Applying our expertise to deliver strategic outcomes requires an increased capability for systems thinking through the academic and continued professional development alongside a greater focus and understanding across the different professions and where each adds value to develop deeper insights
- **Team:** Truly integrated teams will be essential in unlocking skills capabilities whether they are or across organisational boundaries and traditional professions, the new additional capability will be that of digital expertise, so basic digital skills to support this interface will become increasingly important. We also expect to be forming new business to business relationships with digital businesses to bring the range and depth of specialist digital capability required.

All of this is in the context of a society with nearly one million unemployed 16-24 year olds, who need to be equipped with skills, including in digital and technology which can offer them rewarding and satisfying long-term careers.

## THE CHALLENGE

**494,000**

16-24-year olds unemployed according to the ONS<sup>28</sup>.

**100,000**

Highly skilled staff employed by our industry. Recruitment and retention continue to be a huge challenge<sup>29</sup>.



# To ensure the UK has the engineering skills it needs, the government must:

**Hackitt Review:** Last year, the government announced that it will “take forward all of the recommendations” of the Hackitt review into building fire safety. In the short term the Government should commit to implementing the legislation recommended without delay. We are looking to continue this research on a higher level of competence and lifelong robust continued professional development in collaboration with academic and professional institution partners before publishing joint recommendations in the new year. The government should commit to supporting our recommendations.

**Support the development of industry specific qualifications:** The evolution of our service offering, and our business model, will in turn alter the skills profile of the workforce we employ. New qualifications will need to be developed for our industry, from Level 3 apprenticeships to Doctoral Degrees. Government should commit to funding these qualifications to support the future of the industry.

**Ensure viability of HE programmes:** The government should commit to a review of funding arrangements for engineering degree courses to ensure that it is financially viable for HE institutions to deliver high quality engineering programmes.

**Provide more support for apprentices and their development:** Working with employers, the government must ensure funding support for engineering apprenticeships recognises the significant cost of delivering high quality programmes that meet the requirements. The Apprenticeship Levy is a tool to help achieve this but government must work more closely with employers to ensure it achieves the desired results.

**Reach out to a wider audience:** To ensure we have the right capabilities for the future, there needs to be a greater emphasis on developing systems thinking and an appreciation of the impact on societal outcomes alongside the current technical capabilities promoted within the professions. Government can and must do more to promote the positive impact our industry has on society and the environment through the procurement process.

## Aiming towards a better UK in 2025

Resolving the issues around skills in the professional consultancy and engineering sector is a vital part of ensuring the UK has the future infrastructure to enable it to grow and thrive. Providing young people with a good grounding in vital STEM subjects, inspiring them to take up careers in engineering, and giving them an understanding of the variety of routes to a career as a professional engineer will provide the pipeline of talent we need.

In addition, the diversity of the engineering community will have improved so making better use of the whole talent pool.

Ensuring education and training programmes are well-funded, rigorous, valued, and up to date will provide the confidence employers need that they are delivering the knowledge and skills required. Companies will then have the staff they need to deliver projects to quality, time and budget requirements.

# INNOVATION

There are fantastic examples of consultancy businesses of all sizes investing in R&D to develop technology enabled solutions, but there is significant scope to expand this. Often client led, such as the BIM level two mandate from government, we need to adjust the dynamic to being able to bring solutions to clients.

The development of ACE's *Future of Consultancy* strategy and identification of the three disciplines will help to prioritise the efforts of academia and business to have the most impact for society and relevance for businesses in future.

Innovation is one of the overarching themes across the entire *Future of Consultancy* campaign. ACE has analysed what is driving the wider digital transformation of our clients and how quickly they are evolving. In addition, opportunities that innovation opens up to us in developing new products and services, as well as the barriers which require intervention, have been identified.

ACE's aim is to set out a vision, whereby our quality and productivity is enhanced through investment in developing our staff and higher quantities of R&D and innovation, whilst partnering with specialist digital firms to support professional services.

## THE CHALLENGE

**50%**

UK businesses engaged in innovation in 2014-16<sup>30</sup>.

**14%**

Number of UK companies which cite 'availability of finance' as the major issue for innovation<sup>31</sup>.



# To remove barriers to innovation and become a global leader with modern solutions, the government must:

**Ensure availability of capital for investment:** The shift to value-based business models rewarding outputs and outcomes will develop a sustainable return on investment in the long term for consultancy business which will allow for investment in research and development. However, the initial shift from a people-based services business operating on relatively low margins does not provide sufficient available capital to kick-start this process. Therefore, government intervention will be required to fix this market failure. Government should commit to working in partnership with the consultancy industry through the Industrial Strategy.

**Work towards commercial drivers of collaboration:** With the dynamics changing around our business models and the way we interact with clients there is understandably some commercial wariness around collaborating between businesses – we don't yet fully understand the rules of the game in terms of where we will derive competitive advantage in future. This will become clearer through programmes like the Construction Innovation Hub and the creation of their information management framework. This will unlock our ability to be able to organise more structured and effective collaborative research and development partnerships between businesses.

**Government clients to put forward demonstrator projects:** Building on the above another key input to collaborative research and development partnerships will require clients to put forward demonstrator projects or even pre-project simulations to allow businesses a safe space to experiment and test their innovations without undue risk exposure of trying it for the first time on a live project.

**Review innovation “infrastructure”:** The infrastructure around supporting businesses who wish to innovate is relatively immature in the consultancy industry compared with others who have had a longer period to develop it. This results in it being challenging for all businesses, but especially SMEs, to find their way to the right academic institutions to develop meaningful academic/business partnerships, in everything from tailoring degree standards to business needs to collaborative R&D programmes which deliver solutions we can commercialise. Government should commit to working with the consultancy industry through the Industrial Strategy to develop Innovate UK funding competitions aimed specially at the sector.

## Aiming towards a better UK in 2025

ACE calls on the government to explore ways to unblock new innovation coming to the market by creating innovation hubs across the country. These could work in partnership with academia, businesses and other stakeholders to develop and unlock innovation. Our *Future of Consultancy* programme has consistently highlighted the opportunities of investing in innovations for future growth and productivity. With these opportunities, we can unlock a huge creation of wealth and skills while supporting the innovations of the future.

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## About ACE

As the leading business association in the sector, ACE promotes the interests of UK consultancy and engineering companies both large and small, who deliver services in the natural and built environment. Many of our members companies have gained international recognition and acclaim, and together they employ over 250,000 staff worldwide.

The professional services that ACE member companies deliver cover a wide range of sectors including transport, water, property and energy.

The ACE membership acts as the bridge between consultants, engineers and the wider construction sector who make an estimated contribution of £15bn to the nation's economy with the wider construction market contributing a further £90bn.

ACE's powerful representation and lobbying to governments, major clients, the media and other key stakeholders, enables it to promote the critical contribution that engineers and consultants make to the nation's developing infrastructure.

Through our publications, market intelligence, events and networking, business guidance and personal contact, we provide a cohesive approach and direction for our members and the wider industry. In recognising the dynamics of our industry, we support and encourage our members in all aspects of their business, helping them to optimise performance and embrace opportunity.

Our fundamental purposes are to promote the worth of our industry and to give voice to our members. We do so with passion and vision, support and commitment, integrity and professionalism.

### For further details on this report, please contact:

**Gareth Lonie**

Policy Executive

020 7222 6557

glonie@acenet.co.uk

www.acenet.co.uk

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# ACE economic and policy papers

This paper forms part of a growing portfolio of research by ACE into the key issues involving financing and upgrading the UK's infrastructure and the effects on the wider economy, as Reports and Policy Briefings on a wide range of key issues.

## **The effect of EU migration on the UK consulting and engineering sector following Brexit**

This paper provides clarity on the contribution made to the consulting engineering sector by EU nationals and highlights difficulties the sector may face in recruitment and retention of EU staff in a post-Brexit world.

## **How can we accelerate the delivery of a sustainable built environment?**

A discussion paper that attempts to create conversations and options around sustainable built environment with examples and case studies.

## **Scrapping the Levy**

A report which provides an analysis of council infrastructure spending with recommendations.

## **Unlocking housing**

A report arguing for community design and invigorating local communities through placemaking.

## **Funding roads for the future**

A paper recommending a more productive and sustainable road network in England.

## **Cities and Infrastructure**

A joint paper with WSP that explores the infrastructure needs of our cities, how investment can improve growth and the importance in of political and fiscal devolution.

## **Review on EU Environmental Regulations**

An in-depth review of all EU environmental regulations affecting the UK and how they will be affected by Brexit.

## **Triggering Article 50**

This paper explores the complexities and realities facing the UK and the industry from Brexit.

## **The Housing Gap**

This paper is the first in ACE's housing paper series and explores in detail the conditions within the UK housing market

## **Performance of PFI**

This paper is the third in ACE's infrastructure series and examines how to improve procurement in Public Private Finance Models (PPFM).

## **Public Private Finance Models**

This is the second in ACE's infrastructure series and explores in more detail the rationale, performance and conditions that surround Public Private Finance Models (PPFM).

## **State Investment Bank**

This paper is the final paper in ACE's infrastructure investment series and explores in more detail the rationale and practicalities of establishing a State Investment Bank.

## **Revolutionising Housing**

This paper is the second in ACE's housing paper series and explores in detail a new model to rebalance the incentives for development.

## **Brexit and Employment Law**

This paper looks at EU employment law and how our industry will be affected by Brexit.

## **Electricity Market Reform: Generating Results**

This paper explores the role of the current energy companies in the retail and generation sectors and suggests reforms to EMR.

## **Funding Roads**

This paper explores inefficiency within the road network and possible funding and financing solutions for the future.





**Association for Consultancy and Engineering**

Alliance House, 12 Caxton Street  
London SW1H 0QL

**T: 020 7222 6557**

[consult@acenet.co.uk](mailto:consult@acenet.co.uk)

[www.acenet.co.uk](http://www.acenet.co.uk)



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