

ACE Response: Building our Industrial Strategy

ACE response to the:

Building our Industrial Strategy Document

April 2017

About ACE

As the leading business association in the sector, ACE represents the interests of professional consultancy and engineering companies large and small in the UK. Many of our member companies have gained international recognition and acclaim and employ over 250,000 staff worldwide.

ACE members are at the heart of delivering, maintaining and upgrading our buildings, structures and infrastructure. They provide specialist services to a diverse range of sectors including water, transportation, housing and energy.

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 government, 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.

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Introduction

1. Association for Consultancy & Engineering (ACE) and its members are grateful for this chance to respond to the *Building our Industrial Strategy Green Paper* and this document sets out our members' views to the questions posed in the paper. We have taken the approach of answering the questions in a thematic approach rather than an individual approach and will confine our responses to areas where our members have expertise to answer with authority.
2. Our members represent some of the most innovative and forward-thinking minds in the business world. They work on cutting edge buildings which incorporate the newest thinking on sustainability, and on solving some of the most intractable problems we face in renewing our transport and utilities networks while many are still in operation.
3. The skills shortage in our sector cannot be underplayed, nor can the importance of infrastructure in boosting economic growth and productivity. We see the Industrial Strategy as an encouraging and sensible approach to tackle these issues through a comprehensive approach.
4. Public sector infrastructure investment not only boosts growth and productivity, it also helps the 5th H: housing. There are significant opportunities from HS2, Heathrow and Highways to stimulate the level of house building the country needs in areas that would benefit the most from further development. However, the private property sector is currently suffering from a lack of confidence, rather than liquidity. The biggest confidence boost UK plc could receive is the certainty that these projects are going ahead, now. If government gets started on infrastructure, housing will surely follow.
5. ACE conducted a recent survey of senior infrastructure professionals with WSP | Parsons Brinckerhoff. Of particular interest for the Industrial Strategy, our survey found that: 80% agree that the public do not understand the role of infrastructure in enabling growth; 74% agree the quality of our cities and the public realm will be of increasing importance in increasing our national competitiveness when we leave the EU; 73% agree cities should have greater fiscal / revenue control and decision taking powers on investment priorities.

Does this document identify the right areas of focus: extending our strengths; closing the gaps; and making the UK one of the most competitive places to start or grow a business?

Are the ten pillars suggested the right ones to tackle low productivity and unbalanced growth? If not, which areas are missing?

Are the right central government and local institutions in place to deliver an effective Industrial Strategy? If not, how should they be reformed? Are the types of measures to strengthen local institutions set out here and below the right ones?

Are there important lessons we can learn from the industrial policies of other countries which are not reflected in these ten pillars?

6. ACE's members believe that the proposed strategy focuses on the right areas and is a good place to start. They believe, however, that the devil will be in the detail and much is dependent on how this strategy is finalised and implemented. The ten pillar structure provides a focal point but it will require a great degree of collaboration across government to deliver.
7. We feel that more can and should be done to develop local governmental institutions within the UK in furtherance of the devolution agenda. In the nations more needs to be done to transfer power from national parliaments and assemblies to urban areas and within England more can be done to promote metro devolution. It is not enough to focus on the devolution of power but we must also see a fiscal devolution to match if local aspirations are to be met. Local authorities need to have new fiscal powers that will allow them to meet the challenges of their area and help achieve a balance of our economy.
8. This is a lesson that comes from our observations of other countries and their political structures. In the USA, Canada, France and Germany, for instance, local governments have much greater autonomy in decision making and have fiscal powers that enable them to undertake projects and planning independently of the national government. This autonomy requires the development of a robust skills base in local governmental bodies that increase market confidence in the projects proposed which in turn leads to investment and greater productivity. Local governments should be encouraged to develop local development and infrastructure plans that feed into national plans allow for greater ownership and commitment across the UK.

What should be the priority areas for science, research and innovation investment?

Which challenge areas should the Industrial Challenge Strategy Fund focus on to drive maximum economic impact?

What else can the UK do to create an environment that supports the commercialisation of ideas?

How can we best support the next generation of research leaders and entrepreneurs?

How can we best support research and innovation strengths in local areas?

9. As an industry that is dependent on the skills of our workforce we are keen to see investment in the sciences and innovation and this will enable member firms to meet the challenges of the global economy. The UK commitment to sciences has to start in primary school and children should be encouraged to see STEM subjects as important for life. The UK has a shortage of engineers and unless primary and secondary schools students are encouraged to take up these subjects we will not produce enough A-level and university students to meet the needs of the engineering industry.

10. Our members believe that civil engineering should be a key areas of focus for the Industrial Strategy Challenge Fund as the UK is a world leader in engineering consultancy services generating billions of pounds in revenue for UK plc. This is training and investment that is instantly able to be turned into commercialisation opportunities. The fund should also look to promote the integration of university research and business creating a self-sustaining relationship that allows the latest research and developments to be used by businesses immediately. The way in which universities and business integrate themselves in the USA is prime example of this and so we would support the development of programmes like DARPA in the UK.

11. Universities should be encouraged to expand their PhD research programmes and business should be encouraged to invest in their staff by funding further study. Added to this academic courses should include an element entrepreneurship that can be reinforced the development of business parks that bring together academic and corporate entities together to develop projects. Business and academia should be encouraged to work more closely together through grants and tax breaks that ensure a beneficial environment for both.

What more can we do to improve basic skills? How can we make a success of the new transition year? Should we change the way that those resitting basic qualifications study, to focus more on basic skills excellence?

Do you agree with the different elements of the vision for the new technical education system set out here? Are there further lessons from other countries' systems?

How can we make the application process for further education colleges and apprenticeships clearer and simpler, drawing lessons from the higher education sector?

What skills shortages do we have or expect to have, in particular sectors or local areas, and how can we link the skills needs of industry to skills provision by educational institutions in local areas?

How can we enable and encourage people to retrain and upskill throughout their working lives, particularly in places where industries are changing or declining? Are there particular sectors where this could be appropriate?

12. As discussed above, the UK faces a significant deficit in engineering skills that will impact on the UK's ability to deliver on the infrastructure pipeline. UK students have poor maths skills and STEM subjects are not as widely taken up as they should be. Technical and vocational training has not been seen to be a priority for the government that has instead focused on academic achievement over skills development. This has led to a collapse of vocational training and a move away from engineering skills.
13. The National Infrastructure Plan for Skills 2015, published by Infrastructure UK, sets out concerns in major sectors like roads, rail and energy. The report found that through growth in infrastructure investment, there would be a demand for over 250,000 construction and over 150,000 engineering workers by 2020, with a shortfall of nearly 100,000 additional workers by the end of the decade. Programmes like HS2 plus increased investment in roads will put further stress on the industry's capacity to deliver, the report found. It noted that demand is forecast to outstrip supply over the next five years in all English regions.
14. It is welcome that STEM subjects are central to the Industrial Strategy's second pillar along with digital skills and numeracy. The latter is particularly important if we combine with developing commercial skills. Whilst in UK we are great innovators, we need to get better are taking these to full scale commercialisation. This is a positive step, there needs to be more than vague aspirations and more concrete policy on how to encourage more young people into STEM subjects.
15. Shortages of skills are also becoming apparent in those areas that support asset owners and operators for operational assets. This is particularly acute across the mechanical, electrical and civil engineering skills at the 'experienced engineer' level, i.e. 5-10 years' experience. Many UK firms export these services, so the geographical spread within the UK is less critical. There are also skills shortages in areas such as digitalisation, artificial intelligence and big-data, robotics, automation and STEM subjects.

16. We need vocational courses to be run as well or better than academic courses. The sheer number of graduates now has meant that the quality has been diluted and people who do not benefit from degrees and who do not provide an economic benefit from them are doing degrees when they should be doing vocational courses.
17. Our industry welcomes the introduction of T Levels that we believe will go a long way to addressing this imbalance but more needs to be done. The government should take a neutral approach towards educational attainment and recognise that there are multiple routes to the same destination. Technical and vocational training should be seen as just as important as academic qualifications but to achieve this there will have to be modifications made to the current OFSTED system.
18. The proposed technical institutions are a welcome development and these should be open to people of all ages as this would assist with the needs for retraining throughout life that will be a fact of the job market going forward. ACE members would strongly argue that the government should work with professional institutions to develop the curriculums for these technical institutions as all qualifications need to tailors to the needs of the jobs market. There must be no difference between the rigour of technical education compared with academic education and students should expect to spend as much time on study in either institution.
19. It is worth adding this should not just rest on government. The industry must keep taking on more apprenticeships, paid interns, sandwich placement students as well as graduate trainees in order to give some practical training to the academic study that they receive at university/ college. The number of placements available is far below what is required, and although university places have increased over the years, industrial training placements have not kept up the pace. Putting a greater focus on this would help put knowledge into practice and also enhance the opportunity for greater social mobility and diversity in the workforce.
20. In the energy sector, the 'traditional' progression from manufacturing industry into consultancy has been broken due to global competition and changes in the overall manufacturing and technology base. This is particularly relevant for engineering consultants that rely on being able to provide value added services relating to having the knowledge and experience of power generation / utility operations and maintenance. The extent to which educational institutions are able to provide vocational experience in the various industry sectors appears to be limited. Whilst having individuals who have had exposure to the industrial environment through placements is a benefit, this does not replace the real hands on experience.
21. In the environmental sector, government supported degrees are limited. There is a risk that as a result of increasing fees, fewer students will choose environmental subjects –

which would expand, rather than close the skills gap. There is currently a chronic shortage of staff in the following areas: ecology, archaeology and air quality, where there is a very small pool of candidates to choose from.

22. The Strategy has the ability to establish the certainty that would help industry invest in skills and secure the pipeline of engineers and professionals for the future. The Department for Transport Skills strategy 2016 is welcomed. It is now crucial that the government works with industry very quickly to ensure the skills, capacity (e.g. timetabling of scheduled works to enable the necessary skilled professionals to be available) and capability to deliver these infrastructure projects are available.
23. Retraining grants and tax breaks are available but are often targeted to areas that are not directly relevant, particularly in the energy sector. Having access to a more flexible funding approach that links to an individual throughout their working life could provide a useful tool to support change over a longer time frame.
24. Industry, professional bodies, universities and local institutions need to have a joined up approach to lifelong learning, CPD and skills for future. Industry should take a bigger role in re-training its workforce for future technologies and work alongside professional bodies/ educational institutions to develop the training.

Are there further actions we could take to support private investment in infrastructure?

How can local infrastructure needs be incorporated within national UK infrastructure policy most effectively?

What further actions can we take to improve the performance of infrastructure towards international benchmarks? How can government work with industry to ensure we have the skills and supply chain needed to deliver strategic infrastructure in the UK?

25. The government has made some significant improvements in the delivery of infrastructure in the UK with the development of the NIC, IPA and the NIDP which has revolutionised the planning of infrastructure projects in the UK. This has improved the commercial environment that allows for private investment in the UK network but more needs to be done.
26. New build infrastructure suffers from a higher than needed risk profile that prevents certain classes of investors from engaging with projects at an early stage. The way in which the Treasury Green Book assesses value for money on projects and the timescales used for return are not conducive to large scale infrastructure projects and this is something that could be reviewed to improve market confidence.
27. Policies and grants should be considered over the long term to predict uptake, with full consultation of industry is essential. There is a need for integrated national transport strategy that sets a clear framework of requirements over a sustained period (20-30 years) for all elements of the UK transportation networks. As part of this, we need to

continue to move the UK beyond 5-year investment cycles that drive Network Rail and Highways England priorities towards a stable long term pipeline of infrastructure projects.

28. Stability and project certainty are the most crucial factors. The UK is not currently suffering from a cash or investment crisis but a confidence crisis, which is most evident in the housing market. Here, public sector investment can directly support and give confidence to the private sector. There are significant opportunities from HS2 and highways to stimulate the level of house building the country needs in areas that would benefit the most from further development. However, the private property sector is currently suffering from a lack of confidence, rather than liquidity. The biggest confidence boost UK plc could receive is the certainty that these projects are going ahead, now. If government gets started on infrastructure, housing will surely follow.
29. We need to continue to try and deliver infrastructure more quickly to enable faster returns for private investment, which is linked to greater certainty on successful outcomes. While the planning regime has moved forward it still takes a significant length of time to deliver a major project. There is also not enough certainty in the planning process for housing and jobs, such as through local plans where a number are still not in place. Proposals started in the housing white paper are positive step towards addressing these challenges of speed of delivery.
30. Further research is needed to provide evidence that demonstrates the economic impact of infrastructure, both through dependant development at a local level and for wider economics associated with larger national scale schemes. These will provide improved understanding of the economic performance of infrastructure to support the role of private investment.
31. There is a need for a permissive regulatory environment that allows for innovation in delivery and a greater contribution from private sector. For example, in rail, private investors have to engage in a heavily-regulated process that can be prohibitively slow. Government should find ways to either streamline the 'Governance for Railway Investment Projects' (GRIP) process, or implement a new system that puts more autonomy in the hands of the investor. While GRIP adds value to every project, it ties private investors to a set of priorities that are not their own, diminishing the control they have of overseeing their project from development to implementation.
32. As discussed above, more needs to be done on fiscal devolution to local authorities to improve the delivery of local infrastructure projects. New fiscal and borrowing powers and instruments needs to be developed that allow devolved bodies and metro regions to plan, develop and finance projects that are determined to be in the interest of the local area. This would place a requirement on local government to develop robust financial plans that support local development plans that would be available for national review. ACE members believe that these local plans should then filter up through the NIC and IPA to

form part of the overall NIDP and in this way ensure a linked between national and local planning.

33. There is a need for coordination to ensure effective integration between strategic infrastructure and local schemes as major schemes can be less effective or their case weakened if they don't properly account for local issues. There is a need for a clear, integrated vision for UK's infrastructure that encompasses social as well as economic infrastructure, which is based on connected development and focuses on creating wider value.
34. In particular, if the currently incremental approach that is taken to investment was wrapped into the national strategy, it would save time and reduce cost. If local infrastructure investment was absorbed into national strategy it would not only be easier to manage, but would bring the biggest benefits to rail passengers and road users. It would also help avoid poor maintenance decisions being made in isolation, which can lead to greater disruption.
35. Strategic infrastructure investment is important as a catalyst for local economic growth. Funding will be tight on local government spending for services so local transport will still be under revenue pressure. Support will be provided for projects that deliver both housing and productivity. Focus on large scale projects, national agencies, regional sub national transport bodies, and local transport where devolution has a key role to give powers to ensure delivery of housing.
36. With this in mind there needs to be a renewed focus on wider societal trends and the role infrastructure has to play. We need to better join up our services so that local transport and infrastructure support education, an ageing population and social care, and health.
37. Expertise is built through continual use and development and this is true for the UK infrastructure industry. British expertise in the delivery of large scale projects will increase as the government commissions new projects but it is vital that a long term pipeline is maintained that allows the industry to invest and plan for future development.
38. ACE members are dependent on highly trained and skilled staff and so the development of a pipeline of trained engineers emerging from the education system will be vital for the industry going forward. Campaigning for access to skilled European labour and ensuring any changes to trade do not negatively impact the price of materials will be the leitmotif for the construction industry over the next two years, and is worth repeating here.
39. We need to learn lessons from international infrastructure delivery but acknowledge that the UK has a set of unique characteristics in terms of geography, socio-economics and delivery mechanisms. The main actions relate to speed of delivery, investment decisions (financing methods), maintenance and operation.

40. A sequential approach to planning is all important in ensuring that our supply chain can deliver improvements to our infrastructure. To alleviate the pressures on our workforce, we must avoid running major upgrade schemes simultaneously where similar skillsets, like tunnelling, are required. The problem of delivering a lot of work at the same time puts unnecessary strain on our workforce and this can cause massive delays and significant extra costs as the industry runs to catch up.
41. Infrastructure asset performance can be improved through the application of principals of Asset Management. International Standard ISO55000 provides the basis for best practice asset management throughout its lifecycle. This approach is being used within a number of government bodies, however its wider application across the energy sector is limited. Companies are 'applying the principles'. However, requiring compliance through regulation may present an opportunity to align approaches and engender a 'best practice' culture within the range of infrastructure asset industries.
42. In short the industry needs to have a guaranteed supply of skilled labour and a guaranteed pipeline of work to ensure that the industry remains a world leading industry contributing billion to the UK economy.

What are the most important causes of lower rates of fixed capital investment in the UK compared to other countries, and how can they be addressed?

What are the most important factors which constrain quoted companies and fund managers from making longer term investment decisions, and how can we best address these factors?

Given public sector investment already accounts for a large share of equity deals in some regions, how can we best catalyse uptake of equity capital outside the South East?

How can we drive the adoption of new funding opportunities like crowdfunding across the country?

What are the barriers faced by those businesses that have the potential to scale-up and achieve greater growth, and how can we address these barriers? Where are the outstanding examples of business networks for fast growing firms which we could learn from or spread?

43. These questions fall outside of the scope of ACE's members' expertise and so we have nothing further to add to them.

Are there further steps that the government can take to support innovation through public procurement?

What further steps can be taken to use public procurement to drive the Industrial Strategy in areas where government is the main client, such as healthcare and

defence? Do we have the right institutions in place in these sectors to exploit government's purchasing power to drive economic growth?

44. There are a number of significant issues that were identified by ACE in its 2015 report Procurement Landscape, not least of all that the landscape of public sector procurement is incredibly complex. In our report, we identified some 40,000 procuring bodies involved in the public sector, presenting a huge challenge in ensuring investment achieves the best possible social and economic outcomes across the country.
45. In addition, between 1996's Latham Report and 2014, there have been 23 reports and initiatives looking at procurement processes and supply chain engagement by public sector client bodies. Understandably, this adds extra layers of uncertainty, confusion, and cost to the whole process, while generating little in the way of tangible, comparable benefits.
46. The main issue being faced by those in the infrastructure delivery sector is one of culture, however. ACE and its members feel that the procurement of large projects is not considered at the right strategic levels within the client bodies or as a significant opportunity to plan, invest, and enable social and economic outcomes with influences far beyond that of the initial investment.
47. The UK government estimates that it alone procures around £230bn of products, representing an enormous opportunity before the buying power of local and regional authorities is taken into account. It is, therefore vital that the investment process is considered in light of strategic social and economic aims. To think of such investment as purely transactional will only limit the benefits the public sector could generate.
48. Related to this need for a cultural shift when viewing public procurement, is the requirement for dedicated expertise when it comes to the process of buying services and products pursuant to the delivery of infrastructure projects. Too often at national, regional, and local government, an 'intelligent client' approach is hampered by a lack of appreciation at the need for skills and experience relevant to the type of procuring taking place.
49. The natural consequence of this is if the client does not fully understand the working practices and improvements industry can offer, and continues to procure and develop a project to the best of its ability and not that of the industry, it is constraining the outcome.

What can the government do to improve our support for firms wanting to start exporting? What can government do to improve support for firms in increasing their exports?

What can we learn from other countries to improve our support for inward investment and how we measure its success? Should we put more emphasis on measuring the impact of Foreign Direct Investment (FDI) on growth?

50. These questions fall outside of the scope of ACE's members' expertise and so we have nothing further to add to them.

What are the most important steps the government should take to limit energy costs over the long-term?

How can we move towards a position in which energy is supplied by competitive markets without the requirement for on-going subsidy?

How can the government, business and researchers work together to develop the competitive opportunities from innovation in energy and our existing industrial strengths?

How can the government support businesses in realising cost savings through greater resource and energy efficiency?

51. In 2014, ACE published a report, Electricity Market Reform: Generating Results, looking into the electricity generation sector and found a market that was not performing at its most optimal levels. The report found that over time there has been a shift towards short term 'spot' trading, that has led to increased volatility and cost owing to the higher price that can be demanded on a short term transaction.

52. In addition, market uncertainty around the exact nature of the future energy mix that the UK will be encouraging has held back investment in new generating capacity and technologies. This has had the result of increasing our reliance on older, more polluting, and more expensive stations that are at the end of their operating lives to ensure capacity at peak times.

53. While we have seen welcome progress on the likes of Hinkley Point C and the Swansea Tidal Lagoon project in the intervening years, this uncertainty is still a key factor in the slow pace of project development. Government needs to do more to mitigate this, to provide market certainty to investors and project developers who can then work on providing the long term energy capacity we require at affordable levels for the consumer.

54. ACE's report went on to suggest that the government should seek to create 'Generation Investment Vehicles' (GIVs) which would generate up £30bn in funds for a variety of energy projects, including:

- Six CCGT plants costing £3bn and generating 7,500MW of power;
- Eight waste to energy plants, costing £4bn and providing 575MW;
- A number of tidal lagoon projects worth up to £21bn and providing between 2,000MW and 3,000MW.

55. Alongside a more secure supply structure, ACE also recommends establishing a transparent and improved competition mechanism. This will be within that part of the market where competition for variable electricity demand takes place, and will be called the 'Priority Auction Mechanism'. This will entail:

- A new structure of two open market traded exchanges where government has to purchase 50 per cent of the capacity put forward in the first round, 75 per cent in the second round, and all remaining capacity then having to compete 'over the counter';
- The first round of purchasing will be on contracts longer than 24 months, while the second will see providers enjoy contracts of longer than 12 months duration.

56. These measures will have the dual impact of providing certainty of revenue for generators and encourage future investment, whilst also encouraging a transparent and efficient pricing mechanism for the electricity market.

57. Decreasing uncertainty will lead to greater opportunities within the energy sector for closer collaboration between government, businesses, and researchers to enable more innovation. As organisations develop confidence in the timelines and finances of a project, the space is created for new thinking and approaches, provided the relevant parts of the supply chain are engaged at an early enough stage in the design of a project. ACE members often form part of this stage and have continually raised the issue that clients want innovation but are not willing to engage early enough for it to be incorporated.

How can the government and industry help sectors come together to identify the opportunities for a 'sector deal' to address – especially where industries are fragmented or not well defined?

How can the government ensure that 'sector deals' promote competition and incorporate the interests of new entrants?

How can the government and industry collaborate to enable growth in new sectors of the future that emerge around new technologies and new business models?

58. ACE and its members are pleased to see that the government is keen to promote the idea of 'sector deals' as the best way for industries of varying types to help create the conditions for a thriving industry, supply chain, and institutions. We agree that these represent an excellent opportunity to overcome challenges such as those laid out in the Industrial Strategy Green paper, such as: improving productivity in the supply chain; promoting competition innovation; facilitating long term investment and coordination; and boosting skills.

59. We see the prospect of a sector deal as being of particular value and relevance to the construction sector, as these are all challenges that our industry is facing and, in light of the government's ambitious agenda of infrastructure projects, must deliver on. Much of the groundwork for this has already been completed, as excellent links exist between the various parts of the sector, while clients like HS2 and Crossrail have done much to

provide new financing models and boost skills. Formalising as a sector deal would be the natural conclusion of this process and would provide the official structures to progress.

60. It is vital, however, that these sector deals are flexible and responsive enough to adapt to the new, unforeseen challenges we will face in the years ahead. The risk is that as new technologies come along, they are not supported or adopted as quickly as they ought to be and competitive edges are lost. In construction, however, there are good lessons to be learned, for example in the adoption of BIM, which has led the UK becoming a world leader in the area. A combination of government mandate and industry engagement could be replicated for other areas, as required.
61. There is much expertise and knowledge within the various industrial sectors of the economy that the government would be wise to avail itself of more often and more thoroughly. The UK engineering and consultancy sector, for instance, is renowned the world over for its innovative approaches to the delivery of projects, as well as its effective adoption of new techniques and technologies.
62. Too often, however, the lessons that are hard learnt are not shared effectively across to other sectors and the opportunity for smoother transitions is lost. Likewise, there will be much that our sector and others can learn from the likes of the aviation and automotive industries, however a suitable mechanism for cross-fertilisation is not available and efficiencies are therefore lost.
63. Government can fill this role, however, and act as a clearing house, bringing different sectors together through sector deals and providing the opportunity for sharing of experience. These connections, once made, will form a key part of the connectivity that an overarching strategy such as this hopes to provide. We would encourage government to consider this a significant role that it could play when a final Industrial Strategy is produced.

Do you agree the principles set out above are the right ones? If not, what is missing?

What are the most important new approaches to raising skill levels in areas where they are lower? Where could investments in connectivity or innovation do most to help encourage growth across the country?

64. On the whole, ACE agrees with the principles outlined in this section of the Industrial Strategy Green Paper. Addressing all of these factors will be vital if we are to be successful in ensuring that the future growth we wish to see is spread across the whole country and not just focussed in a few key areas, such as London and the South East.
65. As one might expect from a trade association representing engineering firms, we are pleased to see that investment in infrastructure is one of the key areas being presented as key to the overall aim of narrowing the growth gaps. Without good connections both in terms of speed and capacity, these laudable ambitions would not be possible as

businesses and people would be unable to access markets, broaden supply chains, and widen job opportunities.

66. Likewise, skills are vital, and with a looming gap in the number of engineers we require, one which might be exacerbated in light of Brexit, as well as an ambitious infrastructure agenda from the government, action is highly important.
67. What is missing from this part of the discussion is any sense of a strategy regarding devolution and the measures that it might be necessary to devolve down to more local institutions. We are already seeing much in this regard, with metro-mayors being elected later this year, city deals being put in place, and more and more control of locally raised taxes being given to regional and local authorities. If this trend is to continue, and ACE is broadly of the view that it should, a future Industrial Strategy must make clear the aims and scope of such devolution to engender certainty and stability.
68. A key concern when it comes to raising the skill levels in areas where they are lower is always centred around access, i.e. being able to ensure those with the desire to learn and train are able to do so. The internet provides an outstanding opportunity for this process to be much simplified and streamlined, as online courses become available and remote learning via conference calling becomes much more of a reality.
69. Unfortunately, in many areas this is just not possible, as connections are unreliable, insufficient, or even unobtainable. A future Industrial Strategy should ensure that links into the country's broadband infrastructure is at the heart of its measures to enable skills growth.
70. An overarching strategic approach will be particularly important as mobile operators also rollout 5G access in the years ahead. A recent report from the National Infrastructure Commission criticised the government's reluctance to influence the implementation of 4G technology and says this must not be allowed to continue for future improvements in technology and connectivity. ACE and its members will hope to see provisions for this in the final Industrial Strategy documentation when it becomes available later this year.

Recognising the need for local initiatives and leadership, how should we best work with local areas to create and strengthen key local institutions?

What are the most important institutions which we need to upgrade or support to back growth in particular areas?

Are there institutions missing in certain areas which we could help to create or strengthen to support local growth?

71. Three already mentioned areas in particular suggest themselves to ACE and its members when thinking about bolstering local initiatives and leadership to enable strong growth in industrial sectors. Without these, it will be difficult to deliver on much else in the

government's agenda, while what is delivered might not be done so as effectively as it could have been.

72. Firstly, local authorities and institutions must be confident in the notion that they have the powers and responsibilities to be able to engage in delivery of large scale infrastructure projects. We have seen the benefits that can accrue to an area when this is the case when we look at the success of London over the past 15 years, as Transport for London has taken on the task of upgrading the city's antiquated infrastructure network.
73. Other areas around the country will be able to benefit from this approach, indeed some are already seeing organisations analogous to TfL established with the purpose of coordinating delivery of infrastructure. ACE and its members would recommend that the government look at where else it might be possible to grant local authorities the power and responsibility over more of their infrastructure delivery programmes.
74. Secondly, and related to this, we must ensure that local authorities have the resources to be able to do this. Elsewhere in this response ACE has already argued for further devolution of funding powers and that it will enable more local and appropriate solutions to be implemented. Much is already being done through the devolution of business rate retention in certain areas, and this is a good step, but the Industrial Strategy should ensure it covers this area.
75. Thirdly, and finally, local authorities and institutions should be encouraged and empowered to ensure they have the expertise and skills necessary to procure and deliver on the infrastructure projects that we will be seeing come through in the coming years. Too often, these have been parts of the operation of local bodies that have suffered when cuts have needed to be made but without these skills, the opportunity to utilise spending as a strategic function is lost.