Lessons from Levittown

The USA built affordable family homes fast in the 1950s, so why can’t we do it now?

PG. 6
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The Trailblazer apprenticeships are now under way in the UK, with the Geospatial Survey Technician at level 3 and the Geospatial Mapping and Science at level 6 to follow (see pp.14–15 of this issue).

Housing is also a key theme in this edition, an area sometimes overlooked by land and hydrographic surveying professionals. The collection of baseline spatial data sets enables the planning process or, in some parts of the world, is a function of that planning stage to help better define and describe potential development areas. Whether through traditional survey methods or the use of drones, or even remote sensing and satellite data, there is a role for professionals to ensure the data is fit for purpose and relevant to the requirements.

Meanwhile Governing Council and members will have the opportunity soon to vote on the amendments and updates that represent the effort of the PG2020 initiative. Can I urge you to read the proposals and vote. This is potentially a huge shift, and one that must keep members and groups engaged.

I was delighted to see many of you at our flagship rural conference at the Royal Agricultural University on 20 June. We now have seven annual UK rural conferences, in addition to regional meetings, CPD Foundation training, and events targeted at particular market needs – for example, the series of seminars on compulsory purchase orders. We are also in discussions with the Institute of Chartered Foresters on further collaboration following our successful joint conference in April. If you have any topics that you would like us to cover, please email Fiona Mannix (fmannix@rics.org).

In the telecoms sector, we are aware of some market disruption following the introduction of the new Electronic Communications Code, and we will include an article on this in our next issue.

Meanwhile, we have updated two key pieces of guidance on renewable energy. The valuation of assets in the commercial renewable energy sector guidance note is intended to help valuers highlight the main factors that affect the valuation of such installations, outlining the relevant process and approaches (www.rics.org/valrenew). A second guidance note on renewable energy, Negotiating options and leases for renewable energy schemes, is due to be published shortly.

Last, I encourage all rural members to engage with our consultation on the draft professional statement Countering bribery and corruption, money laundering and terrorist financing, which closes at the end of July (www.rics.org/amips).

One of the highlights of the FIG 2018 Congress in Istanbul, attended by more than 2,000 surveyors, was the extensive coverage of the International Land Measurement Standards (ILMS). These were presented to a full hall and also debated during an open session of the ILMS coalition. The standards are now in their second consultation period, which will last until December (https://bit.ly/2FvFYb4). We are also expecting translations of the draft into French, German and Russian, with Spanish and Arabic to follow.

RICS also had a joint launch event with UN–Habitat’s Global Land Tool Network (GLTN) for the RICS research paper Valuing unregistered land (www.rics.org/unregland). This important study has helped to build the empirical base for the development of the GLTN’s Valuation of Unregistered Lands: A Policy Guide, and represents the first time that informal markets in land and property have been researched and explored in different geographies; specifically Peru, Ghana and Indonesia (https://bit.ly/2IKUDnN).

This directly places RICS in the UN Sustainable Development Goals matrix by dealing with rapid urbanisation, the provision of services to people and land acquisition and compensation issues. The research is also one of the main outputs of the Land & Resources Global Board’s 2014–18 strategic plan.

Richard and Daniel Susskind in their 2015 book The Future of the Professions explore the impact that artificial intelligence and robotics may have on our ability to do anything of value for future clients. The question is, at what point might planning and development surveyors become redundant? Will developing new knowledge and skills be enough, or will we need to think and act in better ways? Given these challenges, could we learn from Leonardo da Vinci, the Renaissance genius whose talents included invention, painting, architecture, science, mathematics, geology and cartography?

The answer may lie in a book written by Michael Gelb in 1998 on how to think like Leonardo. Its seven key precepts are as follows:
**UK invasive weeds manual published**

A definitive guide to 38 species of invasive weeds has been produced by the Property Care Association (PCA).

The vast majority of the plants featured in *Practical Management of Invasive Non-Native Weeds In Britain and Ireland* derive from species listed in Schedule 9 of the Wildlife and Countryside Act 1981 and others of concern under the EU Invasive Alien Species Regulation 2014.

The PCA’s 128-page manual acknowledges and builds on guidance that is provided by organisations including the GB Non-Native Species Secretariat, the Environment Agency, the Scottish Environment Protection Agency, Natural Resources Wales and the Department of the Environment Northern Ireland.

Professor Max Wade, chair of the PCA’s Invasive Weed Control Group, said: “The coverage of each species includes a brief description of the plant, the habitats in which it is found and the problems it may cause. There is also corresponding photography, as well as distribution maps and identification details to help recognise each species. “Recommendations for immediate action are given, ranging from reporting the first occurrence to taking preventative measures to avoid spread, for example putting up fencing or informing key individuals or groups.”


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**Designated body scheme changes postponed**

New rules on the RICS designated body scheme (Land Journal April/May, p.5) had been scheduled to apply from 23 February, but following a request from the European Parliament and 16 member states, the European Commission proposed to postpone the application date by seven months to 1 October, to ensure the scheme complies with new requirements in the EU’s Insurance Distribution Directive (IDD). However, RICS will have the rules in place by the transition date of 1 July.

The key requirements of the new IDD include the following.

- **Increase in professional indemnity insurance cover**: minimum cover for firms in the DPB scheme is to be increased to €1.25m for single cases and €1.85m for the annual aggregate.
- **New insurance product information document (IPID) requirements**: DPB scheme firms will have to obtain and provide their clients with an IPID, which is available from the insurance provider. The firm will be required to issue this together with the demands and needs statement to clients before they place the insurance.

[regulatorycompliance@rics.org](mailto:regulatorycompliance@rics.org)

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**Consultation views sought**

Two consultations are currently open and we encourage you to share your views on these.


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**UPDATE**

1. **curiosita**: being passionately curious, and committed to continuous learning
2. **dimostrazione**: trying new things, testing knowledge and skills through practice and being willing to learn, as well as seeking others’ support, after making mistakes
3. **sensazione**: developing our senses, especially our ability to see better and not miss things; visual literacy is a fundamental skill for planning and development surveyors
4. **sfumato**: this literally means smoke, but in this context represents our need to accept and work with uncertainty, ambiguity and paradoxes
5. **arte/scienza**: trying to make better use of both creative and scientific thinking
6. **connessione**: understanding the connectedness of things, seeing underlying structures, patterns and possible links to apparently unrelated things, as well as developing skills in systems thinking
7. **corporalita**: the importance of wellbeing and general good health.

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**ENVIRONMENT & RESOURCES**

**Stephen McKenna**

**MRICS**

Our new national Environment & Resources conference in Nottingham in April was very well attended. I was pleased to meet a young surveyor who is earning while learning under a degree apprenticeship scheme run through the University College of Estate Management but with a minerals angle.

I hope the new system coming into many professional areas will be of increasing benefit to our work. For students the advantages are clear – they can learn on the job and get a qualification that steers them into work where there is a good prospect of progress, without building up huge debt in the process.
In autumn 2017, UK Chancellor Philip Hammond commissioned Sir Oliver Letwin to discover why so few dwellings were being provided on large housing development sites in England. At a time of acute housing shortage, there seems to be a disconnect between the 150 or so units per annum coming from such sites and the volume of housing that the country needs. In London, the projected requirement for 60,000 units per annum would need 400 of these large sites to be operating at any one time at the current rate of building.

Letwin has asked why developers cannot build more houses, more speedily, sell them more cheaply and achieve the same return on capital. He is due to deliver his report for the budget this autumn. To put this in context, it will have taken him a year to write it; in the same time frame in the 1950s, around 3,000 of Levittown, Pennsylvania’s 18,000 homes were built.

**Post-war property push**

After the Second World War, the USA had a crisis in housing as the economy boomed and military personnel returned home. Many different models for housing at scale were circulating at the time, from Le Corbusier’s European high-rise multi-family solution to Frank Lloyd Wright’s American low-density single-family detached dwellings.

Inevitably responding to the aspirations embodied by the American dream, the desire to own one’s own home on a plot of land won the day. Levitt & Sons, east coast developers, took the opportunity and began to build at great speed what became, in professional planning terms, one of the most criticised forms of urban housing – the low-density, car-dependent, socially segregated US suburb.

Levitt reacted to market conditions in much the same way as the current UK government expects private developers to respond. However, the US firm was armed neither with compulsory acquisition powers, nor with those that new town corporations had in the post-war UK. So how did it build so quickly?

**Giving people what they want**

RICS published the information paper *Placemaking and value* in 2016 (www.rics.org/placemaking), which looks at how creating great places contributes to enhancing and maintaining property value. An underlying premise is that, if you provide what people want, housebuyers will probably pay a premium for it. For too long developers and planners have imposed their own perceptions of consumer desires without understanding what those needs are, or meeting them in a way that is genuinely affordable.

Understanding such needs and desires and satisfying them at an affordable price was at the heart of the Levittown project; young US families starting out in life taking a stake in their community by buying their first house at a price they could afford, staking deposits they could save and relying on mortgage finance with affordable repayments. The mass production of thousands of houses at virtually the same time allowed the company to sell them for as little as $8,000, and with subsidies the front cost of a house to many buyers was only $400. The lesson for the UK is less about the form of housing than the delivery of so many homes in a short period of time.

**Complete community**

Levitt & Sons built three new self-contained settlements in the USA, two of which were called Levittown – one in Long Island, New York, the other in Pennsylvania. A third, called Willingboro, was built in New Jersey.

Levittown, on the north-east side of Philadelphia, is regarded as the city’s largest suburb and now has a population of around 52,000. When built, it was easily accessible by freeway for major new employers in the area. The land for its development was acquired in 1951 and the settlement completed in 1958.

Local estate agents acting on behalf of Levitt’s quickly bought up almost 170 local farms, eventually amassing a total
of 6,000 acres (2,4000ha), which was subsequently processed through the local planning regime.

Levitt & Sons set out to build a complete community based on neighbourhoods. The site was divided into master blocks about a mile square, bounded by parkways. Inside each block, the developer laid out three or four neighbourhood units of 400 houses, separated by local streets and landscape features. It introduced curvilinear roads as a traffic-calming measure, following 19th-century landscape architect Frederick Law Olmsted’s plans to create flowing spaces through open-plan gardens front and rear.

The Federal Housing Administration (FHA) also preferred such a street pattern. By providing mortgages to developments that followed this plan, institutional lenders began shaping US suburbs. To speed up transactions, Levitt pre-processed FHA and Veterans Association mortgages on its standardised houses; by adopting FHA site planning recommendations, this meant it could offer a seamless planning, financial and construction service.

Each neighbourhood had a site donated for an elementary school, and locations for churches and other public facilities were set aside on main thoroughfares also donated by the developer. Other amenities included swimming pools, parks, green belts, playgrounds and a shopping centre, all the facilities required to service a growing community. Landscaping was standardised so each plot received the same allotment of shade trees, fruit trees, evergreens and perennials and flowering shrubs. The final plan called for more than 400,000 plantings at a cost of $8m.

There were strict rules about the upkeep of homes and the use of property, not dissimilar to those applying to apartment blocks. Hanging laundry out to dry on a Sunday was prohibited as was fencing in gardens and yards, which would interrupt the free-flowing nature of the landscape around the houses. Most controversially there were also strict rules about who could buy in Levittown, preventing African-Americans from moving in until such segregational practices were outlawed in 1962.

Assembly-line building
Construction started in February 1952, shortly after the completion of Levittown, New York. Levitt perfected a 26-step rationalised building method – what was essentially an assembly line for timber-framed housebuilding. The individual house remained stationary while the construction workers moved from one to the next. Each worker had a single task such as pouring slabs, framing or installing electric sockets. This highly regimented process enabled Levitt’s workers to achieve dramatic economies.

Phillip Pilgren is a local amateur historian who was born and raised in Levittown. His parents were among the first to move into the community. He and his wife have adapted and expanded their own home, raised a family and lived there ever since. Pilgren told me: “Americans like the independence of a stand-alone house and being able to upgrade or change their home as they see fit.”

Significant annual property taxes are levied on dwellings in the USA by the township – that is, the local authority – whereas they are not in the UK. Pilgren says low property taxes are thus one of two important factors in people’s choice to live in Levittown, the other being that it is a good school district.

These apparent opposites are easier to reconcile if you consider that a township may have commercial sources of revenue that help keep residential taxes down, as is the case in his area. UK governments have tried to sensitize residents to the relationship between council tax payments and services provided by the local authority, but have never come close to the almost visceral relationship between US citizens, their tax dollar and the public services they receive. There was a sense that Levittowners were highly attuned to this compact.
Levittowner, Country Clubber, Rancher, Jubilee, Colonial and Pennsylvanian. The houses have since been adapted and extended with the carports enclosed and original sidings replaced. This, combined with the now mature landscape, has led to a much more diverse physical environment than the original form.

However, in the 1960s there was growing professional criticism of the uniformity of the American suburb. The benefits of diversity and a more urban lifestyle were being advocated by critics such as Jane Jacobs as they witnessed the inner cities being abandoned by the middle classes.

But not everyone wanted to live in the cramped inner city; in fact, the majority of the middle classes did not. This encapsulates the professional and political challenge still with us today: how do you plan and design housing for people in a way that meets their desires at a price they can afford and achieves social cohesion without consuming scarce, irreplaceable resources?

**Lessons for today**

Levittown introduced the US public to modern production building. It demonstrated how standardisation, assembly-line production and technical innovation could be used successfully to produce houses for a mass market. It showed that working Americans were attracted to suburban living no less than their wealthier counterparts. It also showed how entrepreneurial efforts could create cheap, quick, lasting and flexible housing that could not have been provided by government efforts.

The concept of the US suburb and the way it is built have proved remarkably resilient as an approach to housing successive generations affordably. But with an increasingly diverse population in the UK and USA and falling household sizes, can this uniform product continue to satisfy demand? Retrofitting neighbourhoods at higher density in pursuit of more sustainable development seems less likely in these suburbs since their infrastructure cannot support the more intense development that urbanisation would require.

**Could Levittown be built now?**

Witold Rybczynski from the University of Pennsylvania thinks not. Housebuyers’ expectations have moved on. Average house sizes in the USA when Levittown was being built were around 1,200 sq. ft (111 sq. m); today they are almost 2,500 sq. ft (232 sq. m). Even if a house size of around 1,200 sq. ft were to be supplied today, it would need to sell at $200,000 – significantly above an affordable price of $121,000 based on equivalent salary multiples paid in the 1950s.

In “The Pioneering ‘Levittowner’”, Rybczynski argues that it is neither the size nor the construction costs that are keeping prices high; rather, the cost of serviced land. Municipalities are no longer legally able to finance the upfront costs of infrastructure in new communities, costs that now fall directly to the developer. More recently, challenges to the model have come in the form of transit-oriented development, New Urbanism, smart growth and so on, all offering alternatives focusing on higher-density development and public transport.

**Affordable housing**

The term “affordable housing” has come to be associated with social programmes and government subsidies, but in the USA as in the UK it once meant commercially built houses that ordinary working people could afford. This was also a model that created profitable business for the company; as Levitt declared, “Any damn fool can build homes. What counts is how many you can sell for how little.”

The tenacity of the post-war American dream – the lure of the detached house with front lawn and backyard – and the profitability of catering to this aspiration, may prove difficult to dislodge.

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Top to bottom: a Levittowner home; a Jubilee home with front space and drive; the Rancher house, Levittown, with original cladding

Once construction was completed in 1958, 17,311 homes had been built.

Levitt was responsible for commercialising many of Frank Lloyd Wright’s ideas about the arrangement of living space. Wright had devised a highly simplified and modular method of wood-based construction. Levitt eliminated the basement and the attic and replaced the garage with a carport and introduced a novel form of heating under the floor. He made the kitchen a small work area and combined the living and dining rooms into a single space.

What set Levittown apart from previous residential developments was not only the number of houses and the speed at which they were built, but also their extreme architectural uniformity. Although buyers were offered relatively minor facade variations as well as several colours, there was a single house plan. This repetition reduced construction costs by enabling work crews to repeat identical building operations, and use of pre-cut timber and identical components.

Responding to criticism about the uniformity of housing, Levitt later created six house types, all appealing to the aspirational sensibilities of the buyer:
The Land Reform (Scotland) 2016 Act made changes to the laws around landownership, management and use of land north of the border, as well as establishing the Scottish Land Commission. The commission came into being in April 2017 to help create a Scotland where everybody benefits from the ownership, management and use of land and buildings. Land for housing and development is a priority.

“Dysfunctional” market
A significant proportion of the cost of a new home lies in the value of the land on which it sits, and many argue that it is the most significant factor in Scotland’s housing crisis and its “dysfunctional” land market, as it was described by Laurie Macfarlane in his discussion paper The housing land market in Scotland (https://bit.ly/2wbq9Wb).

The paper, commissioned by the Scottish Land Commission to stimulate debate, questions whether public-sector intervention might increase the supply of land for new housing. Macfarlane’s analysis suggests that at the heart of Scotland’s housing crisis is a lack of housing supply and rising house prices, due largely to rapidly rising land values.

He argues the Scottish housing land market is complex, and characterised by:

- a reliance on the private sector operating on a speculative model to supply new homes
- a legal framework that allocates planning gain to landowners rather than public authorities
- a taxation system that favours land and property, fuelling the demand for it as an asset
- a lack of information on land values and ownership, preventing policymakers from making informed decisions.

Policy proposals
Macfarlane suggests that bold action is required and he sets out a series of policy options to improve the operation of the land market, including public land-value capture – instead of a reliance on section 75 agreements – compulsory sale orders (CSOs), a new housing land development agency, and reforming taxation.

He argues that such interventions might generate long-term benefits for Scotland, including a more productive and dynamic economy, a fairer and more inclusive society, improved living standards and healthier public finances. However, some critics have argued that none of his proposals – even if implemented – would constitute the silver bullet to end Scotland’s housing crisis.

Land reform is an integral part of the policy response to improving land supply for housing. Ownership constraints, high land values and capture of development value all influence our ability to supply affordable housing where it is needed.

Commission consideration
The Land Commission is looking more widely at how to encourage public interest-led development, and how the state can work alongside the private sector to help unlock infrastructure and development, making more productive use of our land resource.

We are also investigating over the course of this year the potential role of land value-based taxation, specifically the contribution it could make to important land reform objectives. Our starting point is to look at international experience of land value taxation and investigate the potential to use this tool, to help bring about a more productive, accountable and diverse pattern of landownership and use in Scotland.

We are reviewing the UK’s historic experience of land value capture to identify what works, and what does not, and we will be reporting to ministers at Holyrood on the potential options for more effective land value capture.

Hamish Trench considers the role the Scottish Land Commission can play in tackling the national housing crisis

The Scottish government has committed to introduce CSOs, which could require sale of vacant and derelict land by public auction and affect the way land markets function by encouraging more rapid price adjustment in regeneration areas. We are working with stakeholders to create an outline proposal for new CSO powers that will form the basis of a formal consultation by the Scottish government.

We would encourage RICS members to join the conversation by following our blog or our Facebook feed, or tweet @ScottishLandCom or email info@landcommission.gov.scot.

Hamish Trench is Chief Executive of the Scottish Land Commission
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The housing land market in Scotland

Related competencies include
Access and rights over land, Capital taxation
How can cities improve the way land is used for housing? Nicholas Falk reports on research into the approaches taken by different cities around the world.

**Capital gains**

A request from James Murray, Deputy Mayor for Housing and Residential Development at the Greater London Authority (GLA), has led to the research report *Capital Gains: a better model for land assembly in London*, from consultancy URBED. There are eight fresh international case studies, which drew on URBED’s contacts and study tours, looking at good practice in France, Germany, the Netherlands and the USA and Canada.

The report makes 10 proposals for improving land assembly, including compulsory purchase and compensation. A number of recommendations are based on London’s past experience in Croydon, Docklands and King’s Cross, as well as the team’s practical knowledge – which included legal advice from Dentons and property advice from Gerald Eve – and are already being implemented, such as strengthening the GLA’s housing team.

Recommendations for London are to:

1. introduce a new planning designation of “land assembly zone” (LAZ)
2. require in-principle commitments to use compulsory acquisition powers
3. identify a lead body for land assembly
4. allow confirmation of compulsory purchase orders (CPOs) ahead of planning consent
5. allow mayoral confirmation of local authority’s CPOs
6. require developers to use compulsorily purchased land within a certain period of time or lose it
7. introduce statutory land pooling
8. freeze land values in LAZs
9. let district councils defer planning applications in LAZs for up to two years
10. create a multidisciplinary team to assist in all aspects of land assembly with additional finance.

**What kind of growth?**

As cities compete internationally to attract investment, many are adopting smart-city concepts such as the Internet of Things in the hope that digital technologies will resolve problems such as congestion or service provision. University cities such as Cambridge and Freiburg in Germany as well as Asian cities such as Singapore are leading the way, as we found in research for a Chinese developer that builds more than 100,000 homes a year (www.smarterurbanisation.org).

But if smarter urbanisation is to succeed, infrastructure and new development needs to be properly integrated. Far-sighted agreements are required to bind partners over the many...
Comparative locations. While there are limits to what can be achieved in areas that have suffered most from industrial decline, case studies suggest there is a large, untapped market for something different in areas of rapid growth that would appeal to those who currently make long commutes.

**Suburban drawbacks**
The conventional new British suburb favoured by many volume housebuilders performs poorly against all three tests. It is car-based, often in locations that cannot be served economically by public transport or cycling, and monofunctional. Housing tends to be largely for sale, requiring long-term commitments as well as substantial deposits.

Such housing does not suit the kinds of people employed in the knowledge economy and the lifestyles they adopt. At its best, in a new town such as Milton Keynes, the conditions for family life may be good, but neither the elderly nor the young professional are well catered for. Rental options are very limited compared with either the Netherlands or Germany.

**The Chinese mega-city**
Chinese mega-cities with more than 10m residents each are successfully housing a fast-growing urban population moving in from rural areas. But because housing can only be built on previously developed land, old villages have been replaced by 30–40-storey tower blocks linked by roads that are often congested.

Residents have little opportunity to meet their neighbours and children have nowhere to play. Furthermore, the rental market is underdeveloped, and the choices for workers in the knowledge economy are limited.

Something different will be needed as places mature. Though current planning policies aim to cut travel times and also pollution, the urban form is hard to reshape. With the Chinese government wanting some 1,000 new towns, something less wasteful is needed in terms of land and energy.

**Compact cities**
The continental or compact city model in contrast has grown up over centuries, even though many centres such as Freiburg had to be completely rebuilt after the Second World War. At the heart of such cities is an excellent public transport system supporting dense streets, not tower blocks, and with car-free areas where ordinary people can cycle safely. Most housing is for rent, which makes it much easier to build new settlements fast.

In the new town of Ørestad, part of the Danish capital, land value uplift has largely funded the metro line from Copenhagen to the airport. Innovations such as building groups in Freiburg or custom housing enable people to commission their own homes rather than depend on what a handful of housebuilders offer. With more time on their hands, young people can start up enterprises and enjoy a fuller life in the bars and cafés that spring up in car-free centres. New housing is designed to save energy and cut costs. These are 21st-century garden cities.

**Four-dimensional planning**
We will have to think more carefully about the kinds of futures we want. Three-dimensional planning means thinking in terms of densities so activity supports integrated public transport, shops and services. Stations become hubs for intensification rather than just car parks. In turn, four-dimensional planning takes account of the time it takes to implement strategic plans.

Geographical information systems enable the main constraints to be mapped, such as areas of natural beauty that need to be preserved or those prone to flooding. Different overlays can reveal which are best suited for development or intensification or left alone. By focusing efforts on underused or poorly used land in transport corridors within 10km of towns that have populations of more than 100,000, sites can be selected with most potential for sustainable development. Development frameworks can set out acceptable floor-to-area ratios, as in Portland, Oregon, and in Hong Kong. The uplift in land values can then be shared to fund improvements to the transport system or social and green infrastructure such as country parks that benefit the wider community.

**Long-term view**
But development takes time, and values change as locations become established or lose their appeal – which the transformation of the areas around London’s King’s Cross or Docklands illustrates. In places that benefit from transport improvements, such as along Crossrail or the Cambridge–Milton Keynes–Oxford arc, it is vital to have a longer-term perspective – at least 20–30 years – than planning in the UK usually takes. Land is then best assembled by a body with access to patient capital.
The extraordinary quality of Paris’ Rive Gauche, the development over the railway lines into the Gare de l’Austerlitz or the apartment blocks in Porte Marianne in Montpellier, France’s fastest-growing city, are a result of providing developers with serviced plots and clear briefs.

Planning trellis
Whole areas can be turned around by investment in good-quality connections or public realm. The key is not a masterplan that tries to fix everything, but a framework like a trellis that supports and shapes growth. Strategic development is more like a game of dominoes than a jigsaw puzzle; it deserves to be called smarter because it is more intelligent and futureproofed, and the results generally look much better.

Interestingly, the test cases for the GLA research project that Gerald Eve assessed identified clear contrasts between two locations at similar distances from central London on an improved railway line. In the case of a former industrial area in west London the impact was on the station’s immediate surroundings, whereas the impact on a station by a shopping centre in east London was less and spread further out into the adjacent residential areas, with significantly different implications for land value capture.

Land assembly model
Our eight case studies from four countries involved local authorities there playing a more proactive role, usually working through subsidiary development companies and partnerships with private developers. This approach was similar to that used in the past in the UK capital, whether by the great estates that built much of central London, the comprehensive development area schemes used to rebuild bombed-out areas, the redevelopment of central Croydon as a major office centre, or more recently Docklands and the railway lands north of King’s Cross.

Cambridge lessons
The lessons may also apply to fast-growing towns and cities outside London such as Cambridge, which has grown much faster in population than other parts of the UK after the local authorities in the sub-region agreed 20 years ago to expand the city to achieve its economic potential.

A simple assessment of seven alternative scenarios against economic, environmental and social objectives by Cambridge Futures, a collaboration between the university and the local authorities, was supplemented by modelling to assess the impact of different scenarios; these ranged from new towns and strings of connected settlements to a virtual highway. The results informed a spatial planning exercise to choose the best locations for major growth, such as the southern fringe, which is almost complete, and the exemplary high-density mixed-use development by the University of Cambridge of land taken out of the green belt in the north west of the city.

Higher design standards have been secured through the Cambridgeshire Quality Charter for Growth under five main headings – connectivity, community, character, climate-proofing and the cross-cutting theme of collaboration – with nine principles and examples under each. The charter was based on the findings from study tours looking at exemplary schemes in the South East of England and also in the Netherlands and Germany.

Significantly, however, it has taken almost 20 years to get the first homes under way at the proposed new town or eco-town of Northstowe, while the relocation of Cambridge Airport never took place. So land assembly remains a key issue if knowledge-based cities such as Oxford, Cambridge or London are to keep ahead of their international rivals.

Conclusion
Plenty of the advantages we admire in continental cities could be achieved in England if local authorities were once again to play a more proactive and far-sighted role. English public authorities already have powers to promote development and recover most of the cost of new infrastructure where that is viable. But changes are needed to the compulsory purchase compensation process so that more of the uplift in land values can be ploughed back, rather than going to free riders, disagreements over value mitigated at an early stage in the process, and transport integrated with development.

Many of our recommendations can be implemented right away, and indeed the GLA is reinforcing its housing team to support boroughs that step up to the challenge. Others, such as freezing land values in areas identified as Land Assembly Zones, will need government support. But if the government means to fix our broken housing market, as the Prime Minister has proclaimed, then it will give local authorities the powers and resources to make things happen. The alternative is insane.

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Capital Gains: a better model for land assembly in London
www.urbed.coop

Related competencies include
Compulsory purchase and compensation
Shared safety

International Fire Safety Standards are being set up to ensure a globally consistent approach on this key issue. Gary Strong outlines the work of the standards coalition.

Despite rapid globalisation, with investment across borders, money pouring into built assets and rising numbers of different professionals operating across the world, the industry lacks a consistent set of high-level principles for design, construction and management of buildings for fire safety.

Public risk
Differences in materials testing and certification, national building regulations or codes and guidance on managing buildings in use, particularly higher-risk premises, mean that there is confusion, uncertainty and risk to the public.

Multiple differing standards also mean that there is no single authoritative way to work. So for the first time, International Fire Safety Standards (IFSS) will bring greater consistency by setting minimum levels of fire safety and professionalism.

In the context of the IFSS Coalition’s work, an international standard is something that is established and agreed at a global level and implemented locally.

The IFSS will be owned by the coalition and not by any single organisation. Member bodies subscribe to the shared international standards and commit to their use and implementation.

Universal rules
The coalition will classify and define fire safety standards at project, state, national, regional and international levels. Professional institutions will incorporate these high-level standards and rules into their guidance or local standards, and we expect governments to support or adopt these principles, or both. All organisations in the coalition will implement the shared international standards through their respective memberships and staff.

At present, the many contrasting standards across the world have created uncertainty and confusion in the testing and approval of construction methods, products and operation of buildings.

Research has shown that inconsistent assessment and regulation of fire safety can lead to a loss of confidence by governments, financiers, investors, occupiers and the public in buildings and, in extreme cases, result in loss of life.

IFSS will be used in both developed and developing nations. Each organisation in the IFSS Coalition has committed to the adoption of the standards throughout its own professional membership.

Our aim is that all higher-risk buildings to which occupiers and the public have access will publicly display a certificate of compliance with the IFSS.

IFSS Coalition
The coalition is a group of professional and not-for-profit organisations responsible for researching, developing, publicising and implementing IFSS globally for the construction and real-estate sectors, and was established late last year after the Grenfell Tower fire tragedy in London in June 2017.

The coalition supports the creation, maintenance and use of high-quality international standards, developing these using a transparent and inclusive standard-setting process.

Each of the coalition organisations has signed a declaration of support and commitment to promote and implement IFSS, and to encourage world markets to accept and adopt them. It is establishing a standard-setting committee dedicated to realising shared and international fire safety standards.

Coalition members include:
- Association of European Experts in Building and Construction
- Building Control Alliance
- Chartered Association of Building Engineers
- Chartered Institute of Architectural Technologists
- Commonwealth Association of Surveying and Land Economy
- Consortium of European Building Control
- Council on Tall Buildings and Urban Habitat
- Fédération International des Géomètres, an international umbrella body of surveying professional bodies
- Institution of Fire Engineers

Prospective IFSS partners are asked to express their interest through any member of the IFSS Coalition, or by emailing the author for further details.

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Here are now many apprenticeships that meet the needs of employers working in land-based professions. One of the routes in the chartered surveyor degree apprenticeship is rural practice surveying, which will typically take five years. On completion of the degree, candidates are eligible to sit their RICS APC, provided they meet the experience criteria in the normal way.

During the five years of the programme, apprentices spend most of their time in the workplace and thus earning a wage and accruing structured training as part of the APC process. They normally attend college or university part-time, either on day release, week-block release or in line with other models to obtain their academic qualification. As long as 20% of their employed hours are spent undertaking this training, their provider, employer and the apprentice can agree how they study.

Apprenticeship definition
The Education and Skills Funding Agency defines an apprenticeship as “a genuine job with an accompanying skills development programme. Through the duration of their apprenticeship, apprentices will gain technical knowledge, practical experience and the wider skills they need for their immediate job and future career. The apprentice gains this through a wide mix of learning in the workplace, formal off-the-job training and the opportunity to practise new skills in a real work environment.”

Apprentices do not have to be new recruits, and apprenticeship programmes can also be used to train existing staff who have shown an interest in developing their careers. But if the apprentice is a recruit there must be a genuine opportunity in the workplace, which means a specific job role for them. The apprentice must have a contract of employment sufficient to cover the period of the apprenticeship, and they must be paid and supported by the employer throughout the apprenticeship. Normally, there should also be a job for them once they have successfully completed the programme. The apprenticeship finishes when they have passed the RICS APC, rather than at the point they obtain their academic qualification.

Off-the-job training
The Education and Skills Funding Agency defines off-the-job training as “learning which is taken outside the normal day-to-day working environment and leads towards the achievement of an apprenticeship”. Such training must be provided as part of the apprentice’s normal working hours by an organisation on the register of apprenticeship training providers, normally a college or university.

Those apprentices seeking a route to rural practice chartered surveyor status will need to be enrolled on an RICS-accredited qualification at degree level that they will acquire as part of the Rural pathway for the APC.

Funding
The government has taken the apprenticeship levy from employers with a staff bill of more than £3m since April 2017, and uses this money to pay college or university tuition fees. Large employers use their levy pot to cover 100% of the costs, and smaller employers that do not pay a levy contribute 10% of the cost of the apprenticeship. It is important for participants to look in detail at the funding rules and also to discuss with any training provider which elements of a training programme will be funded from the levy pot and which will not. Any travel costs to and from college or university and any residential accommodation charges will also need to be met, as will any additional costs negotiated between the employer and the academic provider.

Benefits
While the scheme’s attractiveness to potential apprentices is obvious, there are...
An employer’s perspective

Fisher German LLP, a national team of property consultants, planners, estate agents, utility project managers and sustainable energy experts, is committed to the development of recruits, and has a dedicated and experienced support and mentoring team for those interested in a surveying career. Fisher German employs around 50 graduates at any time and already had a commercial apprentice, while an offer has also now been accepted for a land-based apprenticeship.

Creating more routes into what is a varied, interesting and fulfilling career can only be to the benefit of the sector and the UK economy. Fisher German has liaised closely with Harper Adams University, which has an apprentice scheme that follows the RICS Rural pathway. The challenge has been to find individuals with the desire to commit to five years of study while working. In addition, it is an education for the team, because developing and managing someone at 18 is very different from taking on a graduate at 22.

Apprenticeships are not for everyone; careful discussion will need to be had with employers and potential apprentices as to whether this is an appropriate route for both parties. The ability to work, study and play will require enormous commitment and discipline by the apprentice over some years. It will also require similar levels of support from the employer, as well as a commitment to the apprentice to allow them to spend at least 20% of their working hours in off-the-job training.

In addition, both the employer and the educational provider are obliged to report to the funding agency regularly to continue to receive funding. Careful planning is necessary to ensure that all parties are aware of their obligations.

Making a five-year commitment to an individual who may be untested will require courage on behalf of the employer, but the potential rewards should, with the right apprentice, be worth the risk.

Clare Phillipson is a partner at Fisher German

also benefits for employers who find apprenticeships attract those who may not necessarily have achieved RICS membership via the more conventional routes. Employers have also found that apprentices are valuable additions to the workforce.

It is recognised that the majority of those entering rural chartered surveying have traditionally come from a rural background themselves. When demand for new blood in the profession is growing, apprenticeships would seem to ensure that a diverse, inclusive selection of young people have an entry route. University graduates have made up the bulk of new recruits, but in recent years considerable efforts have been made to stimulate interest in rural surveying from beyond the traditional areas.

Apprenticeships could be a chance for employers to recruit candidates locally and those who may not have considered going to university to study land and property management. Apprenticeships may also enable an employer to expand its skills base from within, engaging those already working in administrative or supporting roles who may be interested in the profession but who had not previously wanted to go into higher education.

There are a growing number of apprenticeships becoming available. All are designed by employers to ensure that they are relevant to current working practices. As well as the rural surveyor option in chartered surveyor degrees there are several other choices: you could select the minerals and waste management route or planning and development, for instance. Also at degree level there is the geospatial mapping and science apprenticeship, on which you could select either hydrography or geospatial surveying. Achievement of any of these will enable you to take the APC.

If you are not ready for a degree then there are also the surveying technician apprenticeship or the geospatial survey technician, both of which can lead to AssocRICS status. Keep checking the Institute for Apprenticeships website for updates (www.instituteforapprenticeships.org).

Mark Simcock is Principal Lecturer in Rural Land Management and Valuation at Harper Adams University

A student’s perspective

Alex Watts, a fourth-year student at Harper Adams University, writes: My dissertation researched how to make the rural practice chartered surveyor profession more accessible to young people. The research forms part of a larger web-based project at Harper Adams called Project Rural to identify the barriers young people face when considering higher education.

The objective is to promote rural practice chartered surveying to people from disadvantaged backgrounds, and also to a wider audience.

My dissertation included interviews and a “World Café” where students shared their experiences and frustrations in explaining what a career in rural practice chartered surveying entails. Analysis found that families were highly influential, followed by university promotion and advice from friends.

The research highlighted the importance of promoting the variety and opportunity of the career via school sessions, workshops, apprenticeships and correct engagement with social media channels.

Fiona Mannix, Associate Director RICS Land Group, adds: Alex’s dissertation encapsulates the issues and challenges the rural chartered surveying profession faces in making itself better known and more accessible.

The narrative from the World Café exercise is particularly illuminating and insightful. Key messages from the report will be considered by the RICS Future Talent Team. RICS is especially mindful of the need to engage with schools, and the new Inspire programme will contact more than 9,000 school students in its first year.

www.rics.org/nextgen

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www.rics.org/nextgen
STEEP learning curve

Re-establishing selected natural habitats is likely to benefit society as much as traditional infrastructure according to a report commissioned by the RICS Research Trust. Mark Everard discusses the findings.

The global Millennium Ecosystem Assessment of 2005 and the UK National Ecosystem Assessments carried out in 2011 and 2014 have found that the exploitation of land and other natural resources to serve humanity’s rapidly growing demands has resulted in serious, continuing degradation of most major habitat types.

Ecosystem damage in the last 50 years of the 20th century exceeded any comparable period of human history. Contemporary demands are estimated to consume the resources of one and a half Earths, according to the Global Footprint Network. While these pressures are not subsiding, there is an urgent need to use landscapes and other ecosystems more sustainably.

A RICS Research Trust report, Regenerative landscapes: Rejuvenation of linked livelihoods and catchment ecosystem services (www.rics.org/regenland), supports UK Natural Capital Committee calculations of 2015 (https://bit.ly/2rwjPnc) that show that targeted re-establishment of forests, wetlands, urban green spaces, saltmarshes and other habitats is likely to offer net returns to society at least as great as those from investment in traditional engineered infrastructure.

The STEEP framework

Thinking in systematically connected ways is vital if we are to make more sustainable decisions. There are many models that help achieve this, some of them already used to assess habitat management and reestabishment. One that has proven particularly helpful across the world is the social, technological, environmental, economic and political (STEEP) framework.

Although it was initially developed to categorise strategic business issues, STEEP has been systemically applied by looking at the complex interactions between its five principal elements. Systemic application of STEEP provides a conceptual framework to better understand the broader, interconnected socio-ecological outcomes of any action, such as the implementation of a technical solution or land-use management regime.

Though often applied for narrowly targeted outcomes, all such regimes have broad implications for ecosystems and the wider distribution of benefits and costs of their dependent stakeholders. Implementation of technologies and management regimes is also shaped by policy and market environments, and by power relationships between different societal groups.

Regenerative landscapes

The term “regenerative landscapes” refers to the use and management of natural resources to optimise the range of processes they perform and benefits they provide. In turn, the phrase “systemic solutions” describes techniques that work with natural processes to ensure the best outcomes across all ecosystem services.

A practical example is the transition in thinking about flood risk management from an historic focus on erecting defences around buildings, farms, infrastructure and other assets towards catchment-scale natural flood management that retains flood water and buffer flows. This ecosystem-centred approach offers multiple benefits such as rehabilitating wetlands and wildlife-friendly riparian habitat, natural regeneration of fisheries, landscape aesthetics, carbon sequestration and nutrient cycling.

Systemic solutions highlight the need for governance and reward systems that better reflect net value to all in society, both now and tomorrow, chiming with present government thinking about the shape of agri-environment subsidies after Brexit.

Planning systemically

Natural resource use that targets a narrow range of ecosystem service benefits, such as contemporary intensive farming or residential development on floodplains, can inadvertently undermine ecosystem integrity and wider societal interests. Degradation of these wider benefits, including the resilience of the ecosystem, creates degenerative rather than regenerative landscapes.

The Regenerative landscapes report applies the STEEP framework and explores many such instances of the “business as usual” model of natural resource use. Significantly, it then turns to application of the framework to explore exemplars of regenerative landscapes from across the world, where ecosystem-based thinking has successfully retained or rebuilt the integrity and functioning of supporting habitats along with their capacities to sustain continuing human wellbeing, including examples that have raised people out of poverty.

Restoration in Rajasthan

Many pressing challenges in the developing world relate to degradation of the water cycle, a threat also increasingly impinging on regions of the developed world. One initiative covered in the report is in the semi-arid Alwar district of the state of Rajasthan, India. With the support of the NGO Tarun Bharat Sangh (TBS), many villages in the district have restored former community-based catchment regeneration methods, using novel solutions that are based on traditional, local knowledge.

These enable sporadic run-off from monsoon rainfall to recharge groundwater, with careful stewardship supporting year-round, efficient uses. Better still, collaboration between villages at the catchment scale has restored not only water systems but also forests and other linked ecosystems.
The return of perennial surface water where rivers formerly vanished between monsoons has reanimated the socio-ecological systems of whole catchments and reversed cycles of poverty and village abandonment. TBS has worked with hundreds of villages in Rajasthan, advising on and directing international donor funding to geographically appropriate water-harvesting measures and, just as importantly, reinstating traditional communal governance arrangements and empowering women.

The NGO WaterHarvest, known for 30 years prior to 2017 as Wells for India, is also based in Rajasthan and has played a significant role over the past three decades in providing education, expert advice and directing financial support to help local communities and NGOs, including TBS, regenerate water systems supporting human wellbeing. WaterHarvest has been working increasingly closely with the government of Rajasthan, offering strategic outreach to Mukhya Mantri Jal Swavlamban Abhiyan, the ambitious water self-sufficiency mission of the state’s chief minister that aims to empower villagers to regain control of their local water supply using practices adapted to geographical, cultural and intensely episodic rainfall conditions.

Sustainable schemes

The Upstream Thinking programme in south-west England, New York city’s water supply and the Sustainable Catchment Management Programme in north-west England are three schemes also covered by the report. These focus on systemic solutions to protect raw water quality at source, rather than managing more contaminated water at the point of abstraction. All three have cut water treatment costs and helped protect fisheries, biodiversity, rural incomes and ecotourism, among other benefits.

At a grander scale, the report includes China’s Loess Plateau project, in which measures such as tree planting, terracing and zoned land use have stabilised highly erosive soil, retaining water and nutrients and making major contributions to lifting millions of people out of poverty. The Loess Plateau project demonstrates that large-scale landscape regeneration of socio-ecological systems is possible with vision, knowledge, policy, funding and the involvement of local people.

A range of other forest-related examples in the report, from places such as Costa Rica, New Zealand and the UK, highlight how consideration of broader outcomes when investing in so-called anchor services – which drive marketable or priority policy outcomes relating for example to water, biodiversity, carbon storage or tribal lifestyles – can promote conservation and regeneration of forests.

Landscape lessons

Contemporary sustainability challenges are difficult or impossible to solve simply because of incomplete knowledge, contradictory and changing requirements, and complex interdependencies. Taking account of the multiplicity of outcomes arising from natural resource exploitation and management is vital if the primary capital of ecosystems and their supportive processes is not to be degraded along with its capacities to support humanity into the future.

Doing so by finding systemic solutions in broader socio-political contexts is an ever-more pressing need. Meeting this need can be guided by consideration of interacting elements of the STEEP model, including integrating:

- **social factors**, such as a shift from competitive management to recognising implications for all beneficiaries or victims
- **technological factors**: realising that technology choice has multiple, broader consequences beyond the often narrow benefits for which solutions have tended

Formerly to have been applied

- **environmental factors**: recognising ecosystem resilience and processes as primary capital to be protected or restored to secure continuing and equitable wellbeing
- **economic factors**: considering overall distribution of costs and benefits, both now and in the longer term
- **political and governance factors**, tiered from high-level policy to local scales, enabling sustainable and equitable decision-making that takes into account natural resource limits and the needs of all in society.

The report provides a practical context for this work by applying lessons to two contrasting challenges: developing world water management; and ensuring that intensive farming in the developed world is sustainable.

There is a strong case for society to recognise the multiple benefits and greater security provided by the regeneration or more sustainable use of landscapes. A systemic approach using the STEEP framework can inform transparent assessment, design and policy reform necessary to promote both large-scale land-use measures and more localised, community-based approaches nuanced to local circumstances.

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UN Water, World Water Development Report 2018


Related competencies include

Management of the natural environment and landscape, Sustainability
Switched on
The UK is turning on to district energy systems, but these will only fulfil their potential with more regulatory support says Simon Woodward

From district heating and cooling schemes to private electricity networks, the district energy sector looks to be the next revolution in the way we supply our homes and businesses. District energy is widely recognised as one of the most cost-effective ways to decarbonise an urban area because it enables an entire community to be switched to a more sustainable power source collectively, rather than tackling the carbon footprint of each building in isolation.

District heating is widely used in Scandinavia, where uptake is much higher than the UK. In Denmark, for example, more than 60% of heat is supplied by networks that have been developed since the early 1970s, compared to 2% in the UK. Unfortunately there was until recently no clear indication from the UK government that it supported local energy networks – the first white paper considering low-carbon heat networks was only published in 2012 – and no targets were set for implementing this technology. Instead, the Department for Business, Energy & Industrial Strategy (DBEIS) focused its efforts on generation technologies such as wind and solar photovoltaics, although the recent reduction in government support for these suggests that DBEIS believes they are mature technologies that no longer require support. Together with business as usual by the UK mechanical and electrical sector, this means that district energy has often been disregarded for appearing to be too complex or expensive.

However, in recent years many local authorities have introduced planning requirements to support the development of schemes. In London, it is now hard to find a major new-build development that is not incorporating a district energy network as a result of planning regulations. And in 2016, the Heat Network Investment Project (HNIP) was launched by DBEIS with the aim of providing £330m in capital support for local authorities and the private sector to develop district energy schemes. Such government funding is vital to the future of district energy in the UK, with the potential to lay the foundations for long-term growth and meet its stated target of creating a self-supporting sustainable sector.

Defining district energy
District energy is the term used to describe the generation and distribution of heating, cooling and electricity in local energy networks. Although schemes that comprise only cooling networks – supplying, for instance, chilled water for air conditioning – are common in countries such as Saudi Arabia and Kuwait, district energy in the UK predominantly comprises heat networks supplying low-temperature hot water. This is typically below 95°C, and often much less, for space heating and domestic hot water generation. However, district cooling is becoming more widely adopted alongside district heating schemes where demand is high, particularly in London.

Private electricity networks, also called private wire networks, are becoming more common as well. These generate electricity in parallel with heat, often using gas-fired combined heat and power (CHP) units, and distribute it directly to customers through electricity networks installed by the heat network developer or owner.

Generation
One of the key benefits of a district energy network is that it is a means to use energy from a range of sources from gas-fired CHP to biomass, geothermal, solar and waste industrial heat or energy-from-waste plants. Indeed a network can even have a range of energy sources at the same time or over its lifetime.

A district heating network customer will not be aware of their heat source, which may change over the life of the network as technologies advance or new sources become available. While most UK schemes will be using gas-fired CHP, as the grid decarbonises these are expected to be replaced with other lower-carbon energy sources.

A new breed of innovative schemes are being created using a wide variety of sources including heat recovered from the London Underground. For example, the London Borough of Sutton has set up an energy company to purchase heat from an energy-from-waste plant in the borough under a long-term...
agreement. It then supplies this to customers across a wide area through a district heating network, as shown in Figure 1, under a heat shipper arrangement (www.sden.org.uk).

**Dos and don’ts**

Issues faced when developing a district energy scheme include the following.

- **Energy pricing:** always consider the prices you expect to charge customers at the outset, and aim to achieve these once the scheme is constructed and operational. This target can then inform all decisions regarding the way the plant and systems that make up the scheme are selected and link together. Your price should take into account what the customer would pay if not connected to the heat network; in most cases, this counterfactual or alternative cost is taken as the whole lifecycle cost of heat supplied from a local gas-fired boiler. A number of poorly conceived schemes have not used such a cost avoidance methodology, with the result that the developers have created a scheme with little thought as to the impact of their capital and operating costs on the subsequent customer charges. To recover these costs, they have had to set a heat tariff that results in annual costs to customers well in excess of a reasonable counterfactual.

- **Customer standards:** it is critical to define energy supply standards that reflect the natural monopoly of a district energy network; for example, it is not fair or reasonable to expect customers to purchase energy supplies on an exclusive basis without compensation when these supplies fail.

- **Design standards:** although the concept of district energy has existed for around 100 years, it is still a relatively small sector in the UK. Therefore, it is important to work with designers who have a good record in the area, who will understand how to create a scheme that not only supplies energy reliably but also operates efficiently with minimal energy losses and makes significant use of the scheme’s low- or zero-carbon (LZC) heat sources. For example, these LZC sources will typically be backed up by conventional boilers in a heat network that may also be used to meet peak heat loads, so it is critical that the operation of such boilers is minimised to maximise carbon savings and reduce operating costs.

- **Operational methodology:** an holistic operational methodology must then be implemented to ensure that all of the above are achieved in practice. Again, there are specialist operators that will understand how to do so.

**New structures**

A large number of local authorities are setting up their own energy companies and collecting much-needed revenues from a district energy network. As well as promoting sustainability, district energy schemes also have the potential to support the economic regeneration of their area. The local community can benefit from lower-cost heat and address fuel poverty for vulnerable households, as well as reducing the overheads of small businesses. All of this can potentially boost tax receipts for local authorities. Such arrangements are supported by DBEIS. The local authority-owned companies will act as the vehicles to apply for and implement the next round of the £300m HNIP grant and loan funding that will be launched in November. This follows a successful pilot phase that resulted in £24m being awarded to nine district energy projects across the UK in April 2017.

**Securing a brighter future**

District energy is a concept whose time has come in UK energy infrastructure, but state support is needed to ensure new schemes get the funding they need to come to fruition. It is good to see that, over the next two years, more than £300m will be invested in the sector, but it is equally important to ensure that this support continues into the 2020s.

In the meantime, local authorities need not wait to lay the groundwork for networks. They can start gathering the information they need to create the best initiatives for their communities through heat mapping, energy masterplanning and detailed feasibility. All these are supported through DBEIS’s Heat Network Delivery Unit, while the Greater London Authority’s Decentralised Energy Enabling Project Framework offers scheme development funding for boroughs in the capital.

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Related competencies include
Planning, Sustainability
Rural returns

Investors from Donald Trump in Scotland to Moominworld in Finland are bringing both opportunities and conflicts to rural areas, according to RICS research. Fiona Mannix highlights the main findings.

Case studies

The case studies in the research indicate the direction of change, and highlights from four of these follow.

Viticulture in Italy

An established vineyard in Sardinia was acquired by two multinational companies using a direct and active investment approach. The initial investors were the Campari Group and more recently Holding Terra Moretti.

In assessing overall investment impacts, the research found that 15 years of investment by multinationals have led to only modest changes at the vineyard. Nevertheless, as a once-local business has been absorbed into the structures of a multinational operation, employees’ working conditions have generally improved, with increased rights and new career paths. A wine-tasting centre has been developed following the restoration and conversion of a number of buildings by the Campari Group. However, there has been little or no engagement with local communities on the development of the wine operations during at least the past two decades.

Dyson farmland investment in England

The purchase of land in Lincolnshire by Beeswax Dyson Farming Ltd at Nocton Heath, Nocton Middle and Nocton Fen used a direct and active, or own and operate, approach, and brought an historic estate under single ownership. It ended plans for a mega dairy of 8,000 cows on land close to Nocton village, which had been considered a serious pollution risk.

Arguably the most significant impact has been the reassembling of a previously fragmented estate and the consolidation of the operations. Good relations with nearby communities were helped by owner Sir James Dyson’s role in ending plans for the proposed mega dairy.

Key economic and financial impacts include investment into new farm infrastructure. There has also been an array of measures to enhance and protect the local environment, including tree planting, hedgerow transplanting and the provision of bat and bird nest boxes. An environmental stewardship plan has also been developed to bring the estate up to higher-level standards.

Trump in Scotland

Donald Trump bought the 500ha Menie Estate in Aberdeenshire and created a high-end golfing resort and championship course. Before this, the estate had been used for farming and hunting, and covered an important dune system at Foveran, a Site of Special Scientific Interest (SSSI).

The investment model is direct and active, and motivated primarily by the pursuit of land conversion for the development of a new sporting complex. Since initial planning approval in 2008, only a fraction of the proposed on-site development has been completed.

While the investment has created economic capital and an estimated 95–200 jobs, original plans have been scaled back and there has been a reduction in planned residential development, ostensibly aimed at recovering costs and increasing viability.

On the social side, the nature of engagement with both planning and communities was problematic, as the original application was turned down and that decision was then reversed by the Scottish government. It concluded that the environmental risks to the dunes and the SSSI were outweighed by the development’s potential contribution to regional economic growth, despite the fact that the investor had failed to make the case for the development locally and had alienated much of the community through engagement exercises. The SSSI is currently under review by Scottish Natural Heritage.

New money in rural areas has the potential to bring major changes
Moominworld in Finland
This is an example of a direct and active investment by three business ventures in the small seaside town of Naantali in south-western Finland. These developments were motivated by a commercial opportunity and built on the strong ethos and identity of creator Tove Jansson’s characters.

The biggest and most visible of these is the Moominworld theme park on the island of Kailo, which attracts more than 200,000 visitors annually. The park contributes directly and indirectly – through the supply chain – to the local economy. It has also generated 250 seasonal jobs.

The Moomins embody an aspect of Finnish culture that is rooted in the countryside and respectful of the forces of nature. The park can be viewed as the commodification of important cultural and environmental values that were distilled into the Moomin stories. Overall, the schemes’ consistency with the key tenets of Jansson’s philosophy means that they have a low impact socially and environmentally, and are embedded in the local economy.

Three key messages
1. Where investors take a direct interest in an activity or area, there is a greater likelihood that their values will shape the local outcome. But direct investment is not automatically better than more passive forms, and much depends on the nature of the values that shape local outcomes. Also, much looser approaches to investing can create voids in which unscrupulous local actors are able to profit from investments that were intended, to some extent, to benefit communities and local economies.
2. The underlying values of investors have an important role to play in shaping community and environmental impacts. Different actors and investors have contrasting views as to the right balance between profit and local responsibility, often because their perspective on investment has either a long or short time horizon, or because they weight social goals more than economic ones or vice versa. The maintenance of local natural and cultural capitals tends to predicate the long-term success of a rural investment.
3. The level of investment does not necessarily correlate with impact in any simple way, and relatively small investments are having significant impacts through targeted valorisation of existing activities, diversification strategies and partnership working arrangements. Large companies acquiring farms, vineyards or other rural assets for instance may present local workforces with a variety of new opportunities ranging from training and upskilling to the opening of new career paths; the impact that these can have on rural economies or communities should not be underestimated.

Research recommendations
The research found many examples of good local relationships, built on trust between investors and communities, that are benefiting rural areas. Other examples, however, were characterised by growing mistrust and suspicion. In some cases, investment activities were being imposed on communities and there was little sense of embeddedness.

There is a general risk of investors pursuing short-term financial interests in ways that adversely affect nearby communities and environments, and more could be done by national governments to reduce the risk of bad behaviour by encouraging good practice through the setting of clear environmental, social and governance (ESG) standards.

Greater consideration of such standards as a prerequisite for funding and planning permission would have prevented some of the worst cases of local conflict identified in the research. The question is whether to trust local outcomes purely to investors’ goodwill or develop a framework in which good behaviour – and building strong local relationships – is the only way to achieve good returns from rural investments.

These case studies suggest rural investments should be assessed using an ESG framework to help ensure the myriad benefits are maximised. There is also growing market recognition that assessing ESG factors makes financial sense, as risks and opportunities with a material impact on returns to clients and beneficiaries are being considered.

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Related competencies include Development appraisals, Investment management (including fund and portfolio management)
Neighbourhood planning was introduced in England by the Localism Act 2011, and offered a new opportunity for communities to develop policies that, following approval in a referendum, come into force as part of a local plan.

In rural areas, it is town and parish councils that exercise neighbourhood planning rights; in rural Northamptonshire, however, only 25% of such councils had officially engaged with neighbourhood planning at the time we conducted our research last year.

Northamptonshire is a county of average geographical size, and its two-tier governance structure allowed for comparisons to be made between communities in different local authority areas. Using the Rural Urban Classification produced by the government (https://bit.ly/29ONpO9), 268 Northamptonshire towns and parishes were identified as being “rural”. A questionnaire was sent to 267 town and parish councils, and 57 replied. Of these, 49% had had experience of the neighbourhood planning process, while 51% had not.

Research results
Volunteer time was found to be the key factor behind both initial engagement and progress in neighbourhood planning, but the second factor influencing engaged communities was their lack of knowledge and skill. By contrast, towns and parishes with no experience of neighbourhood planning were not particularly concerned about the latter.

This disparity perhaps indicates the success of government rhetoric in presenting neighbourhood planning as an opportunity that is accessible to all communities; but, once they have started on the process, communities still feel that a knowledge gap significantly curbs their progress. These findings demonstrate the need for community members to have sufficient time and expertise to complete the various stages of the process, and raises questions about the best way to support them.

According to 96% of respondents their parish or town council had initiated involvement in neighbourhood planning. This indicates that having an existing governance structure in place before considering neighbourhood planning can enable the social collaboration needed to get started.

A relationship was also identified between localities’ previous involvement in community-led planning initiatives and the likelihood of their participation in neighbourhood planning. Seventy-one per cent of respondents who had prior experience of planning at community level, for example with parish plans or village design statements, were involved in neighbourhood planning.

Similarly, of those not involved in neighbourhood planning, 55% reported that they had not participated in any other form of community-led planning, which reinforces findings from previous academic studies.

The use of neighbourhood plans by town and parish councils in rural England varies significantly, so Louise Cashmore and Katharine Foot carried out research in Northamptonshire to find what influences take-up.
Council contribution
The study also sought to understand how external factors had influenced decisions and progress in rural communities. In particular, the role of local planning authorities was addressed, because their involvement in neighbourhood planning has been characterised in other research as having varying significance and consistency nationally. In Northamptonshire there were likewise differing attitudes to the support of the local authority: while 89% agreed they had received adequate support, levels of satisfaction differed between separate district and borough councils.

These satisfaction levels also appear to be reflected in the proportion of neighbourhood development plans that had been completed, or “made”, by September 2017. For example, the Borough Council of Wellingborough, where levels of satisfaction with support from the local planning authority were highest, had the largest proportion of neighbourhood development plans that had gone beyond the stage of being designated neighbourhood areas, effectively the first step of the process. This suggests a relationship between the support from local planning authorities and the progress made by communities, thus stressing the importance of councils in enabling neighbourhood planning.

Communities’ consultants
The availability of external support to assist neighbourhood planning was also perceived as significant by communities that had become involved. Fifty-two per cent stated that they had used more than one support mechanism, with the most popular of these resources being access to grant aid.

One of the main uses of such aid was hiring external planning consultants. This is perhaps unsurprising given the complexity of the planning system and the need for communities to produce documentation that is sufficiently robust to withstand scrutiny at the independent examination stage.

The importance of external planning consultants cannot be underestimated, and their support has been key to many communities’ success. However, this also raises questions about how easy it is to ensure that neighbourhood planning truly reflects the desires of all community members. Other researchers have suggested that involving external planning consultants can increase the number of influential participants, and therefore risks devolving decision-making too far from the community themselves. Despite this, our study suggests that consultants play a crucial role in neighbourhood planning, with one parish clerk noting that “the main reason [they] were able to complete the neighbourhood plan process was due to the engagement of an external consultancy who had the expertise to guide [them]”.

In addition, the introduction of the Neighbourhood Planning Act 2017 has given new weight to draft plans and neighbourhood development plans and orders in an attempt to speed up the process. While welcomed in some areas, this legislation also raises questions about whether it will result in an even greater reliance on external planning professionals, to ensure that the respective documents are robust enough to hold weight.

Central government has committed an estimated £22.5m between 2015 and 2018 for local planning authorities and neighbourhood planning groups. However, the cost of financing a neighbourhood plan remains a concern among some community groups. Thirteen per cent of respondents with experience of neighbourhood planning thought that external finance and funding had affected their progress.

The same percentage of respondents without prior experience of neighbourhood planning argued that having increased funding and financial incentives to participate would alter their decision to engage in future. This was further supported by 48% of respondents who had no prior experience of neighbourhood planning agreeing that concerns over the cost of producing a neighbourhood plan had influenced their decision not to get involved.

At the time of writing, there have been no announcements for funding beyond this year, and it remains to be seen whether any amendments will be made to the currently available financing. Ultimately, neighbourhood planning is still little researched and the effectiveness of funding is undocumented. While central government has put into effect a series of funding support mechanisms and amendments over recent years, it is not yet known whether and what changes will be made to ensure that the process is both more technically and financially viable for communities.

The future
As at September 2017, 75% of rural towns and parishes in Northamptonshire were yet to undertake neighbourhood planning, with 61% of communities that had embarked on the process only having got as far as registering as a designated neighbourhood area. Despite this, our questionnaire suggests that there is still an appetite for engagement in the initiative. Eighty-two per cent of the respondents who had experience of neighbourhood planning stated that they would recommend the initiative to another parish or town, and even 75% of respondents who had had no experience of neighbourhood planning agreed that the process could be a beneficial tool for local communities.

Clearly the research suggests that there is scope for improving the system. Both internal and external factors account for current limited levels of take-up of neighbourhood planning and it is hoped that the 2017 act will help to address some of the issues. Further research is thus necessary to record experiences of the process nationally and improve understanding of how to support communities in putting their evident enthusiasm for neighbourhood planning into practice.

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This research was undertaken by Louise Cashmore for her dissertation on the MSc Rural Estate Management at the Royal Agricultural University. She developed and carried out the project under the supervision of Katharine Foot. Thanks are extended to the councils who provided information for the research.

Related competencies include Planning
When local services and systems collapse in the wake of a disaster, international relief workers reach out to help, and volunteers from MapAction often go with them. The situation can be chaotic, confusing and, in some cases, dangerous. Aid workers have to assess needs rapidly and get aid to the right places.

To do this, they ask several key questions.

- **What has happened?** Was it an earthquake or hurricane, or a longer-term epidemic or drought?
- **Where has been affected?** How big an area has been hit, and what are the characteristics of the terrain?
- **Who and where are the affected people?** How many people live in the area and how many are in distress?
- **How can we reach them?** Are the roads passable? Can we land helicopters near settlements?
- **What do they need?** This can range from the basics of food, water, shelter and medicine to other needs such as communication and help rebuilding their homes and livelihoods.
- **Who is providing help?** Which relief agencies, government offices, international organisations and NGOs are on the ground and what are they doing?
- **Is the help getting to where it is needed?** Can we monitor the effectiveness of the relief effort?
- **Do we have the common operational picture?** Do all the actors and the communities involved understand the answers to these questions, and are they working together as effectively as they can?

Humanitarian mapping charity MapAction has a large team of geographical information and land surveying professionals who volunteer their time and skills and are ready to travel to disaster zones at very short notice to help coordinate responses. Working with humanitarian agencies, governments and in-country response teams, MapAction volunteers consolidate vast amounts of data into easily understandable products as fast as possible – often turning around map requests in less than a day. Our team includes geographical information system (GIS) specialists from private consultancies, government agencies, academic institutions and the humanitarian sector.

We meet regularly for training, not just to hone our mapping skills but to ensure that we are aware of all the difficult conditions in which we may have to deploy, and understand the humanitarian system so we can best support it.

**Speed**

Critical to MapAction’s success is the speed at which we deploy. When a disaster occurs, our office team alerts volunteers via SMS, who then see whether they can clear their schedules so they can mobilise. Once a team is picked, the rest of us obtain as much information about the country and disaster as we can. Meanwhile, our logistics team plans flights and gets the kit, which is always kept ready, to the people who need it. Within 24–48 hours, we can be on the ground helping aid workers.

The conditions vary; sometimes we are in a capital city in a normal office environment, with air conditioning, electricity...
and internet all taken for granted. On other occasions we can be under canvas, working in extreme heat, battling to make ourselves heard over the noise of relief planes.

We have sent teams to almost 80 disasters, including cyclones in the South Pacific, floods in many parts of the world, the Ebola epidemic in West Africa, earthquakes in Haiti, Nepal and Pakistan, migrant crises in Europe, Libya, Syria, East Africa and Bangladesh, wildfires in Chile and hurricanes in the Caribbean.

Hurricane season

Last year’s Caribbean hurricane season was our most intensive and extensive period of operation. We had teams across the region supporting the UK Overseas Territories of the British Virgin Islands, the Turks and Caicos Islands (see panel, p.25),

although I have been volunteering with MapAction since February 2016, the response to Hurricane Irma was the first opportunity to test my skills on a real-life mission. Problems with flights caused me to miss my connection to Jamaica on 16 September, and I was initially worried that my late arrival would let people down; but then I remembered my training to make the most of every situation.

With the extra time, I made rough and ready base maps for emergency responders on the ground to annotate with their knowledge of the current situation. Arriving later than planned also meant I shared the tiny plane to the Turks and Caicos Islands with the Jamaican group from the Caribbean Disaster Emergency Management Agency.

By the time we landed, I was already considered part of the local team, and I helped communication between the international and in-country responders immeasurably.

For the first few days, I helped assess the damage and identify the most vulnerable areas to assist recovery teams in prioritising their response. This meant I saw for myself the impact of the hurricane, which, in the case of the poorest settlements, had meant complete destruction.

This provided context for mapping requirements and led me to create an assessment plan for the territory to coordinate recovery responders and minimise the risk of missing data. It improved data acquisition to allow a full-country overview of the damage severity, and two weeks later was needed again for recovery assessment after Hurricane Maria, another category 5 hurricane.

I wasn’t sure what additional help I could offer, but I was pleasantly surprised that I could make myself useful elsewhere in the islands. Once word spread that I was a duty flood forecaster for Scotland, I was asked to put together a 10-minute briefing for the British Army, all NGOs and the UN on the areas that would be most vulnerable to the incoming hurricane. Although I am not a meteorologist, I was able to use meteorological tools to gather information and advise the various organisations in the same way that I prepare briefings for the flood risk in Scotland, so these groups could make informed decisions.

My first MapAction mission was a fantastically interesting experience. I learned a lot, met some great people and saw a different response method to aid my professional work. MapAction enables me to apply my professional skills to help people in great need, and that is incredibly rewarding.

Karen McDonald is a senior scientist focusing on flood risk data management at the Scottish Environment Protection Agency
and Anguilla, and also helped extensively in Dominica and supported regional relief coordination from Barbados.

I myself worked with another volunteer, Kirsty Ferris, and headed out to the Caribbean ahead of Hurricane Irma’s landfall on 6 September. It became apparent that it was the northern Caribbean bearing the brunt, so Kirsty went to Anguilla and I went to the British Virgin Islands, both as part of a larger team comprising members of the Caribbean Disaster Emergency Management Agency (CDEMA) and a UN Disaster Assessment and Coordination contingent, with others from the UK’s Department for International Development (DfID).

I’ve been on many emergency deployments since becoming a volunteer for MapAction, but this one was special. Back in 2001, I lived and worked in the British Virgin Islands as National GIS Coordinator and know the archipelago of 60 islands and its people well. It seemed both sensible and right to go back and help my friends there. It was difficult enough to get in; the islands’ main airport control tower had been knocked out, closing it to commercial traffic, so our team had to hitch a ride on an RAF Airbus A400M Atlas alongside vital water and food supplies.

The short drive across the main island of Tortola to the capital, Road Town, gave a clear transect of the extent of the destruction. So many houses were damaged, most of them now without roofs. Boats, many of which are used in the islands’ yachting charter industry, had been tossed around like matchsticks. Roads were impassable. At one location, people were congregating on a beach as it was the only place to get a mobile phone signal.

We rendezvoused with the local disaster management team, then relocated to the only public building still operational, the Peebles Hospital, as the team’s own offices had been knocked early in the storm. There was no spare accommodation in the hotels, so we also bedded down in the hospital’s chapel each night. For the first couple of days, we ate rations that we had brought with us.

Assessing the damage
Our main job was to assess the extent of damage, particularly on two of the sister islands, Virgin Gorda and Jost Van Dyke, with which there had been little contact since the storm. Jost Van Dyke is a small community of about 350 people. Many of the houses had been destroyed, with debris blown high into the hills above the three small settlements on the south coast, and there were several people needing medical evacuation. The largest beach bar was offering free meals to people in one village and a second house at the east end was doing something similar.

On many small islands, where everyone is used to helping each other, they were able to roll up their sleeves and get the basics sorted. On Virgin Gorda, we saw how the storm surge had badly damaged the desalination plants from which the islands get the majority of their fresh water, and how tornados had ripped narrow paths of destruction.

On Tortola, most of the electricity poles and mobile towers had been snapped or damaged and the storm surge had pushed into houses along the north coast. With the data I had from my time working there, I was able to provide the Royal Engineers who were fixing the water and electricity supply with detailed maps of the assets across the islands. We also produced maps to support CDEMA’s rapid assessment, to highlight where the concentrations of damaged property were.

Fortunately, the loss of life in the Caribbean was low compared to some disasters, but the destruction of property and livelihoods, as well as a deep and extensive trauma across these small islands, was huge. For me it was also deeply personal — it was up to me to tell one friend who had been absent when the storm had hit that her house had literally blown away.

Changing trends
Humanitarian response is changing and MapAction is also evolving to meet new demands. In addition to responding as part of the UN system, we are increasingly working with regional and national mechanisms, such as CDEMA, which are becoming more established to coordinate aid delivery.

It’s also apparent that humanitarian agencies and others are much more information management-savvy than when we started out. We take care to remain flexible and adapt our products to more and more applications. We are also considering potential uses for new technology — for example, we have seen that drones are becoming more prevalent, and we want to find out how best to make use of the data they provide.

However, the situations in which we worked on these isolated, small island Caribbean states, with cramped working conditions, poor internet connections and many tasks to complete, show again how disasters completely disrupt normal life, and those who respond still have to adapt to difficult circumstances. The usual technologies and solutions do not always work. We have to focus our attention on collecting and providing good information so we can save lives and help populations recover from dreadful conditions. This will remain central to MapAction’s vision as we adapt and innovate.

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Related competencies include GIS (geographical information systems), Legal/regulatory compliance, Spatial data capture and presentation (advanced mapping)
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