

Reclaiming Doggerland – Europe’s lost Atlantis

Technologically feasible but financially unviable? – ponders Dan Lewis

Europe’s immigration crisis and the UK’s seeming inability to build enough homes to meet demand may ultimately demand a gargantuan long term radical solution – a new country with new land for greenfield development. Potentially, this could be the architect’s, planner’s and environmentalists’ ultimate dream. But where would it be, how could you do it and at what cost?

Imagine an island the size of Scotland right in the middle of the North Sea, teeming with wildlife and tens of thousands of people. You may be surprised to learn that it actually existed until 7,500 years ago and it was called Doggerland. At its maximum extent, during the Ice Age when sea levels were 120 metres lower than today, Doggerland made up one continuous plain from Norfolk to Denmark.

This pre-historic Eden was wiped out slowly first by melting ice caps then dramatically by a tidal wave caused by the Storegga subsea landslide just off the coast of Norway. Today it is called Doggerbank – a shallow area of the North Sea between 15 and 36 metres deep covering just over 17,000 square kilometres.

So could we ever get it back?

Worldwide, reclaiming land from the sea is a long estab-

lished industry. And you could certainly say that the Netherland has been reclaiming pieces of Doggerland for hundreds of years, 7,000 km² in total or about 4.5 times the size of London. Today, China leads the world in land reclamation. From 1949 to the 1990s, approximately 12,000 square kilometres were reclaimed. In more recent years, the tempo increased considerably; 2006-2010 saw reclamation grow to a staggering 700 km² per year. Since then it has dwindled to a mere 200 km² per year with quite a bit more going on below the radar. New ports, cities and industrial zones are springing up where there was once open sea, according to Wade Shepherd, author of *Ghost Cities of China*.¹

For Doggerland’s revival, recreating an island at sea, there would be only two ways to do it. The first is known as the dry method or land fill. This is essentially layering heavy rocks and cement down first, followed by clay and soil until the desired height is reached. Another method, hydraulic reclamation, requires dredging and sucking up sediment from the sea floor which is then transported and deposited quite precisely using nozzles in a rainbow arc on the new island. This is the method that was deployed in Dubai for construction of the Palm Islands and The World island.

Figures 1 and 2: Doggerland 20,000 and 10,000 years ago



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Figure 3:
Doggerbank on
April 1st 2016



>>> For understanding the costs of land reclamation, there are some clear metrics. These are the depth of water to be filled in, the available quantity of material required to do it and the transportation of rocks and sediment to the site. Add to this the cost per cubic metre of water displaced. In Doggerland's case, as it is not adjacent to land, these costs would be substantial but crucially, it is not that deep. One future supply of rocks could come from the tunnelling of the Pennines for a new motorway as proposed by the National Infrastructure Commission to link up the Northern Powerhouse.

The rest of the world does offer some comparative costs. Marine-based fill using hydraulic reclamation in Hong Kong came in at \$3.9 per square metre and \$6.4 for land-based fill material in 2009 working to a typical depth of around 6 metres. This is very cheap and has been the basis of the Hong Kong's government's source of fiscal revenue for a long time. Malta, which in the postwar period did quite a lot of land reclamation, more recently in 2005 conducted a very detailed study of land reclamation options including new islands using inert demolition waste. Working to much higher environmental standards and to depths of up to 20 metres, the costs came in between EUR 300 and 1500 per square metre. Malta decided it was too expensive to proceed although the debate continues as they cast a jealous glance towards Singapore, another micro-state that had no such qualms.

However the costs don't matter if the yield from the investment justifies the investment. Globally, very few land reclamation projects lose money. The most successful areas appear to be those adjacent to fast growing economies and successful city hubs.

So it's interesting to estimate the cost of what reclaiming Doggerland would be. Let's assume that doing anything in Britain costs triple what it costs in Hong Kong. Then aim for the island to reach four metres above sea level and that the average depth is 26 metres rather than six. This could equate to around £52 per square metre ($\$15 \times 5 = \75 or £52) recovered or £884 billion for the whole of the Doggerbank, or just over a third of UK GDP. That's not too bad for a new country that could comfortably hold 10 million people. However if the costs were more like what was turned down in Malta, then it could easily be twenty times that. Yet these costs may fall in the future with the work done by robot drones operating barges that would not require wages or sleep.

Allowing our imagination to run ever more wildly, reclaiming Doggerland could be done simultaneously with creating an enormous tidal lagoon, capturing the large tidal range of the North Sea and big enough to power most of Western Europe.

Using the proposed Swansea Tidal Lagoon as an example which would enclose 11.5 km² and produce 320 megawatts of power at peak, every square kilometre would produce 24 megawatts of power. So if 2,000 km² were given over to the tidal lagoon, then the UK could tap into 48 Gigawatts of predictable green power – over half of its current capacity. If you were to forego the whole 17,000 km² of Doggerbank, this would give you 408 gigawatts, enough to power most of Europe. And as an area relatively untouched by air traffic, it might make a good site for a spaceport.

Of course there would be environmental concerns. Would the creation of the island affect the Gulf Stream?

But then there are the environmental benefits. Very fertile land that could be the ultimate wilderness park, perhaps repopulated with genetically reconstituted woolly mammoths, a bit like Jurassic Park. For all that, it wouldn't all belong to Britain. Doggerbank falls between UK, German, Danish and Dutch waters. So it would have to be a multilateral effort.

Of course, this may seem all rather fantastical although we are in an age where billionaires like Elon Musk are planning to go to and colonise Mars within 20 years and self-driving cars and virtual reality are just around the corner. Perhaps the greatest threat to reclaiming Doggerland is not our imagination, but the next Ice Age, which would render the reclaimed land a stranded asset for its investors.

Thinking big in a game-changing way about planning where more people can live more comfortably than today, remains in short supply. ■

¹ See <http://www.citymetric.com/skylines/gift-sea-through-land-reclamation-china-keeps-growing-and-growing-1350>



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Does the government know what it is unleashing on the planning system?

The Housing & Planning Bill will make planning worse not better, argues David Vickery

At the heart of planning is the weighing up of the social, economic and environmental impacts of future development for the benefit of the wider public, resolving the differences between individual interests and collective community needs while protecting the things society has decided are important to our way of life.

It's not easy. And the planning proposals in the Housing & Planning Bill do not make it any easier.

What we have in the bill is a series of simplistic solutions which are essentially the government's panicked reaction to low house building rates, done without much thought to their future consequences.

Goodbye democracy and hello permission by council diktat

The result will be centralised government control and developer-led privatisation of parts of the planning system.

Yes, there are a few good points, although even those are marred by implementation problems: forcing authorities to produce Local Plans by early 2017 to allocate housing and other development sites; giving certainty to those allocations by auto-

matically granting them permission in principle; and making s106 obligations quicker to draft (a dispute resolution process) with enforcement restrictions on certain (presently unknown) existing affordable housing requirements.

But the rest of it is ill-thought-out and a lost opportunity to move planning back to its real purpose.

Take the "permission in principle" provisions for allocations in Local and Neighbourhood Plans, plus "registers" and "other documents". This will initially be limited to housing-led sites in plans and on individual brownfield sites via "registers", but it could be changed later to apply to other development proposals. I don't think it will help developers any more than a present Local Plan allocation because the devil is in the detail of the proposal.

It will be the effective end of independent and impartial examination of plans

But it does mean that you can expect more local opposition, more barristers, and more court challenges during Local Plan preparation. And the Planning Inspectorate has been brought under the control of the Secretary of State who can tell the

David Vickery recently retired as a senior planning inspector and previously worked in an architectural practice and in an estate agency.



examining inspector what not to do, what to do, and who to listen to. It will be the effective end of independent and impartial examination of plans, which may be worrying if you are aiming to get your client's land allocated.

Permission by "registers" and "other documents" will be quick, bottom-drawer plans drawn up by authorities, but neither includes any mechanism for independent examination, appeal or ministerial intervention. So it's tough luck if your client's land is excluded from the development list. And why have Local Plans if sites can be allocated so easily in this way? Goodbye democracy and hello permission by council diktat.

Architects protest against the Housing & Planning Bill

Permission in principle will inevitably lead to a system of zoning in England. This is a fundamental planning change and no one, least of all the government, knows what the consequences, unintended or otherwise, will be. They could be huge.

Meanwhile council planning departments are under-resourced and the bill privatises some of their work. For instance, developers will be able to engage a "designated person" to process their planning application. One wonders what local people will make of this and the disputes that could result.

And councils will have to ensure that housing sites have a proportion of starter homes built on them, which will cause problems for some.

Yes, we need to deliver new homes in larger numbers. But this is not the way to do it or to build the attractive and sustainable places that we all want to live in. ■

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Sovereignty is not a phrase to be abused lightly

Architects have nothing to fear from a Brexit, writes Paul Finch

Distance can offer perspective, so while in Melbourne I read with puzzlement the statement by Prime Minister Cameron that leaving the EU would only give Britain 'the illusion of sovereignty'. Surely the illusion of sovereignty is what we have now as a result of being an EU member, though not, thankfully, part of the Euro- or Schengen-zones. Quite clearly we do not have control over our own borders, a fundamental measure of whether you are in charge of your own country.

You always worry when language is abused, or obvious whoppers put about as absolute truth. If I read about one more 'captain of industry' claiming that we will not be able to trade with EU members if we were to leave Brussels behind us, I will run screaming for the Brexit. Do these people think we are really as stupid as they imagine? How do Japan, the USA, Canada and China trade with the EU when they are not members of it? With no great difficulty is the answer, since world trade is covered by GATT, not the EU.

And since our biggest EU trading partner is little old Ireland, we wouldn't have much difficulty either, particularly as we run a trade deficit with the EU, but a surplus with the world beyond. Would architects suffer were we to leave? I can't see why. Architecture is a global activity and anyone can work more or less anywhere if they want

to. We would, however, be able to ditch EU procurement rules, thereby saving ourselves vast amount of time and money, with only lawyers regarding this as a matter for regret. We would also be able to stop the nonsense of people with EU-approved qualifications coming here and registering themselves as architects while our own folk have to study for longer and pay for the privilege.

I can't see why architects would suffer if we left the EU

Would the construction industry collapse if we could not rely on cheap foreign labour? The answer is there would be some disruption in the short term but it would soon fade. We would start training people in large numbers again, though whether the Construction Industry Training Board is the right organisation to do it is another matter, given its long-term failure to generate sufficient workers (hence the imports).

Scare stories will come thick and fast as we approach the EU referendum, not least the 'threat' by Scottish Nationalists to call another referendum should a Brexit vote triumph. I can't say the threat frightens me much and, were Scotland to leave, it could rely on economic success stories like Greece and Portugal to give it hand-outs instead of the English. We would save even more money than we would already be doing by no longer pay-



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ing billions to Brussels every year for little or no return.

The EU is a bloated corporate, with a record of financial irregularities that leave FIFA and the IAAF looking like small fry, run by a cult who think of European integration as the Holy Grail of world politics. It is, of course, completely meaningless, except in the sense that EU citizens can go and live anywhere they like, whatever the social cost to the host communities who begin to experience being a host in a biological sense.

One nice piece of gossip from Sydney: Goldman Sachs has come to the conclusion that the best way to reform the EU would be for Germany to pull out of the Euro and reconstitute the Deutschmark, allowing Euros to float against the Neumark, thereby rebalancing/resetting their economies. This is such a good idea that in EU mind-sets it is completely unthinkable. ■

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Housing: why we can't 'build our way out'

Like the Government, your contributor Tim Hellier (*Opinion Pil96, 'Six steps to boost housing supply'*) believes that the housing crisis can be solved by building more houses, matching output to the projected number of additional households. This article should convince you that he and they are mis-

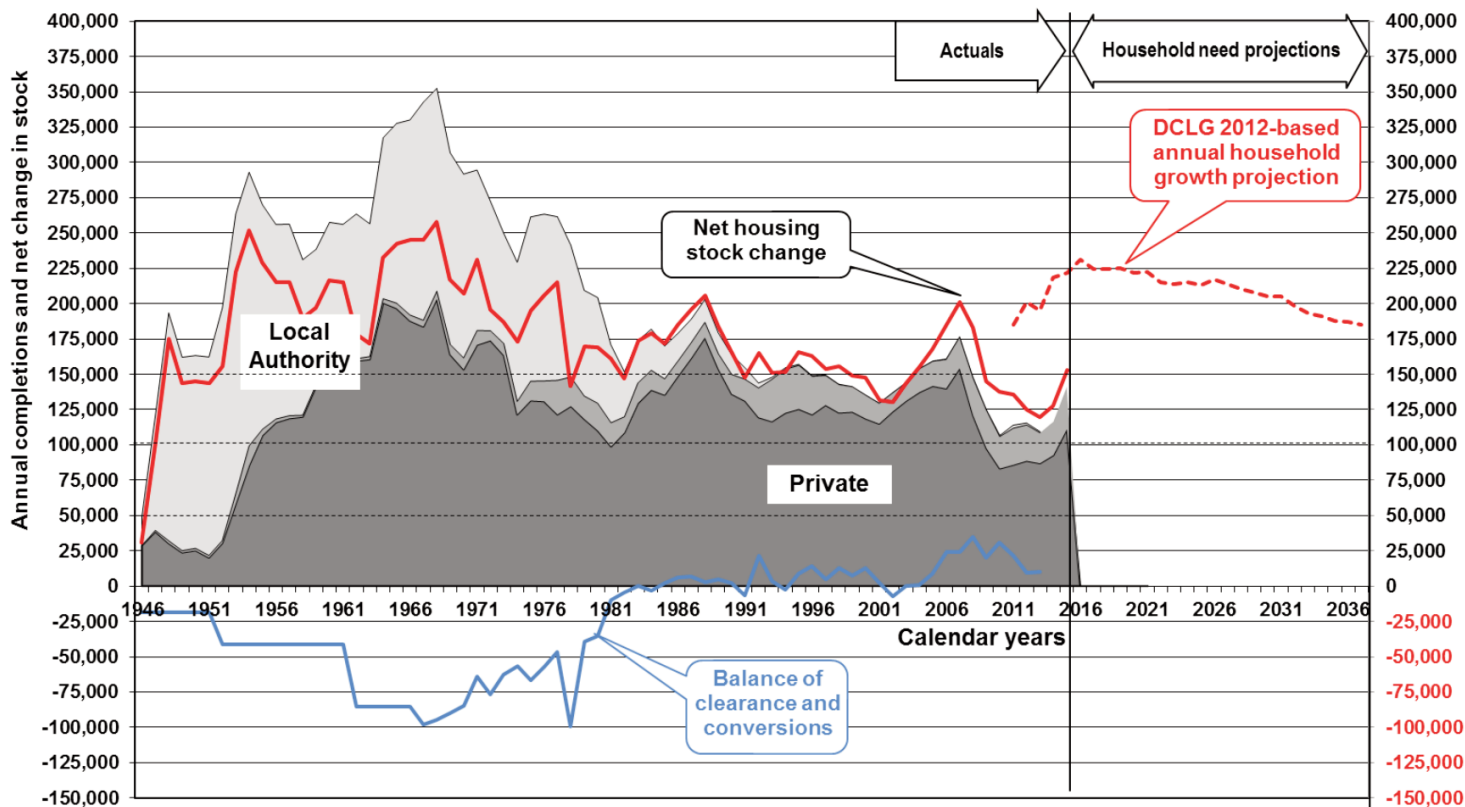
taken: there are fundamental reasons why new houses cannot be built in sufficient numbers to meet needs directly or lower house prices generally. Plans for 'building our way out' (including the ideas suggested by Tim Hellier) will not only fail, but will also cause collateral damage out of all

proportion to any benefits. We must consider other approaches.

Official projections for England show growth averaging about 210,000 households a year over the next 20 years. Figure 1 puts this in the context of house-building (and demolition) since WW2. >>>

Figure 1. House completions & net change England (1946-2015), Household projections 2012-2037

(Sources: DCLG Live Tables: completions Table 244; total stock Table 104, Projection Table 406)



>>> While the net increase is similar to what was achieved in the 1960s and 1970s, a large chunk of that was council house building. In spite of the theory that public housing was ‘crowding out’ private, since 1979 building for sale has only twice (briefly) exceeded 150,000 pa – which was the average for the previous two decades. After the 2008 crash private output fell to around 90,000 pa, recovering to only 111,000 last year (137,000 in total).

The pressures for growth and the shortfall of performance are even more pronounced in London. With about 16 per cent of England’s population London accounts for about a quarter of the projected increase in households (54,000 pa). Meanwhile, completions in London last year (18,000) were only about one third of projected need, while the equivalent figure for England was nearly two thirds. For some this is a signal to redouble their efforts: for me it is a clear indication of the impracticality of the target.

This is not mere defeatism in the face of poor results, but recognition that there are at least three fundamental reasons for this outcome:

1 New building provides only about 10 per cent of the annual supply of housing for rent or purchase, with the other 90 per cent coming from turnover of the existing stock (‘churn’). Even if targets for housebuilding were achieved, they would represent an addition of less than 1 per cent of

stock annually. The overall market supply and prices are therefore only marginally affected by new build. Kate Barker’s 2006 report estimated that an additional 70,000 private homes pa would only ‘price into the market’ about 5,000 households pa, and then only after 10 years (Barker Report Table 1.1)

2 New households and other first time buyers are seldom able to afford new homes. The average new price in London last year (2015 Q2) was £527k, while the average price paid by first time buyers was £376k (with average household incomes of £114k and 78k respectively). These prices are clearly unaffordable to all but a few newly-forming households, and since incomes of young people and house prices are on divergent trajectories, there is little prospect this changing in the foreseeable future.

3 Housebuilders respond to demand, not need: they require customers who can pay for their product. This means that their target market is primarily those with a home to sell – but such buyers have a much wider range of other choices from within the existing stock. The relative stability of private output for the last 60+ years may well be an indication of the size of the market niche for new homes.

In essence housing output is low because there is insufficient effective demand at the prices now obtaining. And if prices were to fall, the immediate



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reaction of builders would be to reduce production, not increase it.

I have analysed the 2012-based projections in terms of the underlying dynamics (Figure 2), so as to highlight the significance of newly-forming households. The national projection is for 4.4m additional households 2011-31, but no fewer than 7.3m new households are projected to be formed by those under 25 in 2011. This increase is balanced by a 4.1m decrease in households over 65 in 2011, and a 1.1m increase in the 25-65 group (45-85 in 2031). The equivalent figures for London would be likely to show an even more extreme concentration of growth in need at the younger end of the age spectrum.

The mismatch between how housing needs arise in London and the prospect of new homes to meet these needs is extreme. For example, the Chancellor’s November announcement of “400,000 affordable new homes by the end of the decade” implies a cost to the Exchequer of about >>>

£8 bn (£1bn pa 2017/7 to 2017/8; £2 bn pa 2018/9 to 2020/1), giving an average cost per unit of some £20k. This means that actual output will continue to depend, to a very major extent, on other existing resources such as Planning Obligations, CIL and Housing Associations reserves.

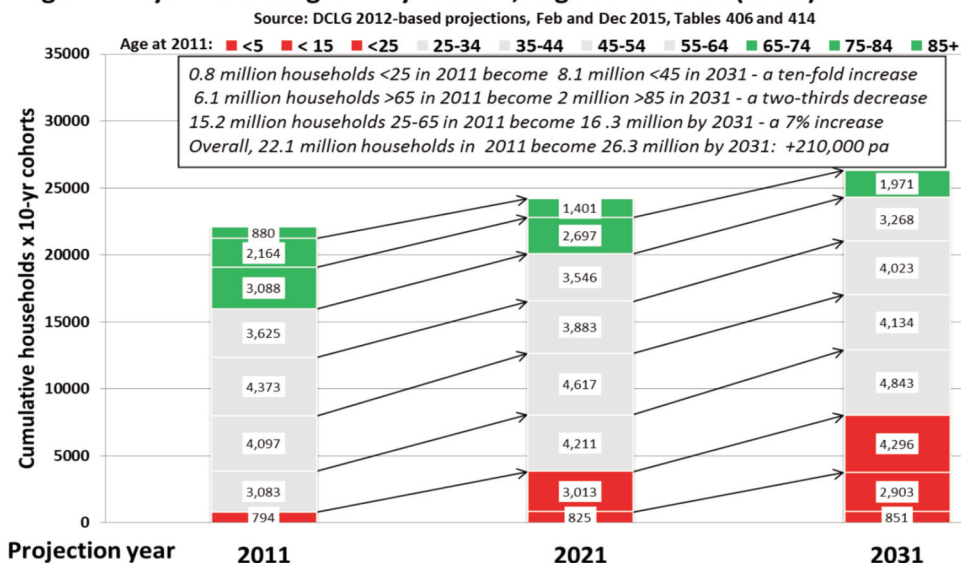
At 80 per cent of open market price/rent it is clear that very little 'affordable housing' will in fact be affordable to newly-forming households. In spite of this, builders are being encouraged to renegotiate s106 agreements (already under-performing) 'to improve viability', and CIL is under attack on the same grounds (from Tim Hellier among others). Capital grants to Housing Associations are being reduced and they are being forced to sell off their best stock, undermining their ability to fund genuinely affordable new housing.

Because the overall housing supply can grow only very slowly, financial support to buyers like 'Help to Buy' simply pumps more money into an almost static stock of housing, raising prices still further. The £billions of credit created by Quantitative Easing have had a similar effect, inflating asset values, including housing. On top of these national factors, London's frenzied and unbalanced growth in jobs is pushing the price of housing to ever more unsustainable levels. This is a train crash: London's economic growth will hit the buffers as the labour supply is choked off by the housing shortage.

Many of the worst consequences flow from the obsession with new construction as the main means of meeting increasing needs. As we have seen, few new households will be able to meet their needs in this way. Most must rely (as they always have) on 'churn' of existing stock, especially at the cheaper end of the purchase and rental markets. The crucial issue then is the quality of the homes themselves, and of the places where they are located: the social fabric, the labour market, the environment, and local services and infrastructure. Current national policies for social housing, such as limiting tenure, forcing people out if their incomes rise and socially destructive redevelopment, are particularly damaging to the stability of such neighbourhoods.

These effects are exacerbated by national planning policies, pursued since 2007, designed to increase housing output by providing more land. Since that date permissions have exceeded starts each year by around 50,000, and the land banks of major builders now exceed 800,000 plots. As discussed above, the official household projections are running far ahead of effective demand, but these projections are universally regarded by builders and landowners as the merely the starting point for further upwards revision. In Oxfordshire, for example, the current ruling assessment of need

Figure 2. Dynamic change x 10-yr cohort, England 2011-31 ('000s)



is 2.6 times the official projection.

Around London, the Shire counties will be required, in addition to providing for continuation of past trends of migration, to provide land to meet such of London's needs as cannot be met within its boundary. The more land there is in the planning system in the wider London market area, the more will be built on the greenfield sites which builders find the easiest and most profitable to develop. However, the total amount of new housing built is unlikely to increase much, since builders are all 'fishing in the same pond' for buyers, and new exurban homes are a niche market. Such development will not be affordable to those who cannot afford to live in London, nor to local younger and lower-paid employees

Laying on a superfluity of land in the hope that it will trigger additional housebuilding is mistaken in its own terms, but it also has serious wider consequences. The effects of the widening gap between the needs embodied in development plans and effective demand are illustrated in Figure 3. A vicious cycle is established in which a more socially polarised and dispersed population is worse served by its infrastructure and services, and becomes both less environmentally sustainable and less economically productive.

Looking at Tim Hellier's six steps to boost housing supply from this perspective I would comment as follows:

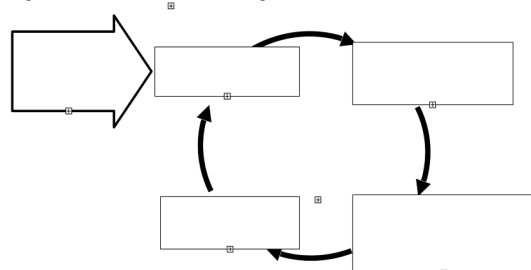
1. Increased density and reduced emphasis on natural light: in London prices are set by location and shortage, so this seems more likely to deliver lower costs to developers than lower prices to occupiers.
2. Reduce CIL: already inadequate resources for provision of services and infrastructure would be further compro-

mised.

3. Relax standards for private rental: substitute 'landlords' for 'developers' in 1 above
4. Release more public land: incomes of new households relative to prices are the limiting factor – not land.
5. Long-term public/private deals: while a good thing in itself, this is presumably favoured because it costs less than CIL, which is proposed to be scrapped (see 2 above).
6. Allow London to keep and set Stamp Duty rates: this is effectively a bung to the already-housed of London at the expense of the country as a whole.

The housing problems of London and its hinterland cannot be solved at a regional level, nor by relying on the actions of people and businesses individually seeking market advantages. We are looking at market failure on an epic scale, requiring purposeful action to rebalance the geography of the UK economy between London and the rest of the country. This will be difficult, but a lot easier than clearing up the mess if we carry on as we are going: with positive planning Germany is managing a much bigger East-West disparity after reunification. The 'northern powerhouse' idea may be the seed of an answer to our own North-South issue, but it was late in coming and lacks signs of a real determination by Whitehall to 'let go', so I am not holding my breath. ■

Figure 3. Effects of current housing land



London's broadband infrastructure is pitiful

Britain needs to take a giant leap forward and embrace radical competition to achieve ultrafast broadband says Dan Lewis

London is one of the world's greatest cities, and arguably the pre-eminent global financial centre. The UK has 17 of Europe's 40 tech unicorns (start-ups valued at \$1bn or more), and all but three of these are in London.

And yet, compared to other European cities, its broadband infrastructure – the vital sensory network of a modern metropolis – is pitiful. The UK's capital ranks twenty-sixth on broadband speeds, below rivals such as Paris, Berlin, Amsterdam and Madrid, but also below relative minnows Bucharest, Vilnius and Bratislava.

The IoD is calling for a giant leap forward in broadband speeds for the UK. Currently, the government aims for all households to have a connec-

tion of 10 megabits per second by 2020. We want an ambition 1,000 times higher: 10 gigabits per second, by 2030. This is bold, but it is far from impossible.

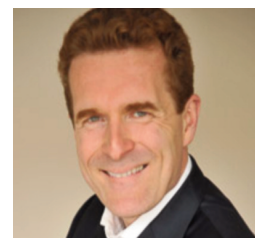
For us to achieve these speeds, the UK will have to replace its copper network with the much faster fibre-optic cable. That we haven't done this yet is, in part, the fault of the Victorians and Edwardians who nationalised the telegraph and telephone companies over 100 years ago.

De-monopolisation only began in 1979 and was never truly completed. BT may have been privatised, but it is now not only the major broadband provider but it also owns Openreach, which controls the ducts, poles and cable which make up our communications network.

It is a bizarre situation where the incumbent doesn't have to pay to access its own legacy network but can extract a rent from competitors that do. No wonder BT has gained 74 per cent of the superfast connections and 84 out of 91 government contracts to deliver the current 10 megabits per second target. Last week, Ofcom rightly took steps to improve competition, and said that it would keep its eye on the situation to make sure things improved.

The lack of telecom infrastructure competition in the UK is holding back what should be one of our most dynamic industries. But it can be different, and Lithuania shows us how. In 2004, this small Baltic nation mandated open access to the physical infrastructure of the telecom incumbent

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and dramatically lowered the cost of this access. Twelve years later, it has among the fastest internet in the world because of the competition created by AltNets – alternative network providers – who built 61 per cent of the new network capacity, and generated a burgeoning IT sector. Across Europe, in fact, a number of countries like Spain are lowering access charges and focusing on fibre to the premise.

In the UK, in contrast, we are being left behind. With 5G, virtual reality, self-driving vehicles, drones and AI all becoming reality, there is a very real risk that we will simply not have the network capacity to join the future. In addition to the higher target, the government must set itself three tests to prove it is heading in the right direction: is BT's market share decreasing; is fibre being deployed, rather than just improving the old copper network; and is the UK moving up the international league tables? Only when the answer is yes to all three can we be sure that London's status as Europe's most commercial and dynamic city is secure. ■



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