Keith Boyfield Associates Limited

BUILDING A NEW GATEWAY TO EUROPE
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Keith’s study on Garden Cities: Why Not? co-authored with Dr Susan Parham, was published by the International Garden Cities Institute (IGCI) , where he is a founding partner. Earlier this year he co-authored, with Oni Oviri, another publication for the IGCI entitled Garden Cities in Africa. This has triggered considerable interest among policy makers in Sub-Saharan Africa.


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Keith is a Fellow of the Initiative for Free Trade.

TABLE OF CONTENTS

Executive summary 4
Introduction: What this study examines 6
• Britain’s Urgent Housing Shortage 7
• Britain’s Export Strategy 9
Crossrail to Ebbsfleet (C2E) 10
• Crossrail Route Map 11
• C2E Route Map 11
• C2E: where it will run and how many stations? 12
• Travel times: transforming London into one integrated capital city 12
• The Mayor’s London Plan 12
• A New Vision for Thamesmead 13
• Erith 14
• Dartford 15
• Ebbsfleet: further powers recommended for the Ebbsfleet Development Corporation (EDC) 15
• C2E: How it plugs a crucial need 17
A Cost Benefit Analysis of C2E 18
• Introduction: Why undertake a CBA? 19
• Three Potential Scenarios 19
• CBA of C2E 20
• Investment Spend Impact on GVA 21
• Construction Benefits 22
• Tangible Continuing Economic Benefits 23
The Place & Making Institute in Bexley 28
• What’s involved and why we need it 29
• The Farmer Review 31
• How The Place & Making Institute can contribute: Putting Thamesmead on the Map 32
• The Future Skills Training Vision 33
Ebbsfleet: a logistics hub 36
• Logistics as the specialism of the Thames Estuary 37
• Remaining Challenges 38
Conclusions 40
• Key Themes 41
• Idealism can lurch into dystopia 41
Recommendations 44
EXECUTIVE SUMMARY

• This short study provides a snapshot cost-benefit analysis (CBA) on the potential macro-economic and regional and sectoral benefits of developing the Crossrail Elizabeth line to Ebbsfleet International (C2E) on the HS1 Eurostar link to the continent.

• It also examines the case for the creation of a Place & Making Institute at Thamesmead in Bexley, specifically focused on providing the skills and know-how to create and build new communities.

• In conclusion, this study assesses the potential to develop a state of the arts logistics hub at Ebbsfleet International to optimise trade opportunities with the Continent.

• Britain urgently needs to build more homes. This crucial piece of investment infrastructure provides the catalyst to deliver up to 60,000 new homes over the next decade and dramatically improves the region's connectivity with the rest of the capital and beyond.

• On the basis of the cost benefit analysis undertaken for this study it can be argued there is a strong case for investing in a dedicated four track extension to Crossrail from Abbey Wood to Dartford with a new realignment to Northfleet station. This is likely to cost around £2.75 billion.

• Journey times to and from the rapidly expanding financial hub at Canary Wharf will be significantly improved greatly to the benefit of the region and business travellers to and from the continent.

• Moves to diversity the economy and attract higher paying jobs in rapidly growing sectors of the economy need to be encouraged. The southern Thames estuary needs to develop employment in the services sector. Improved transport connectivity and high speed broadband access will underpin achieving these imaginative goals.

• In this context, plans to expand Canary Wharf and create 85,000 new well paid jobs are likely to exert a powerful influence on the future economic prosperity of the South East quadrant of London. To realise this potential, extending Crossrail to Ebbsfleet is crucial.

• This study undertakes a cost benefit analysis of three scenarios with respect to investment in this project: a base case, a more pessimistic option and an optimistic case which envisages a speedy investment commitment. The accompanying table summarises the number of new homes, commercial space and jobs that these three scenarios will generate:

<table>
<thead>
<tr>
<th>THREE SCENARIOS</th>
<th>INVESTMENT OPTION</th>
<th>ANNUAL NUMBER OF NEW JOBS CREATED THROUGH INVESTMENT IN C2E INFRASTRUCTURE UNTIL 2028</th>
<th>NEW JOBS GENERATED FROM C2E INVESTMENT</th>
<th>NEW HOMES BUILT</th>
<th>NEW COMMERCIAL SPACE CREATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>PESSIMISTIC CASE (1)</td>
<td>B or C implemented</td>
<td>170 to 260 Rail and Real Estate, 4,100</td>
<td>58,100</td>
<td>Up to 30,000</td>
<td>700,000 sq m</td>
</tr>
<tr>
<td>BASE CASE (2)</td>
<td>A or D implemented</td>
<td>725 to 1,150 Rail and Real Estate, 6,800</td>
<td>89,800</td>
<td>Up to 50,000</td>
<td>1,082,000 sq m</td>
</tr>
<tr>
<td>OPTIMISTIC CASE (3)</td>
<td>E implemented</td>
<td>1,558 Rail and Real Estate, 8,150</td>
<td>99,600</td>
<td>Up to 60,000</td>
<td>1,200,000 sq m</td>
</tr>
</tbody>
</table>

• On the basis of the cost benefit analysis undertaken for this study it can be clearly argued that there is a strong case for investing in a dedicated four track extension to Crossrail from Abbey Wood to Dartford with a new realignment to Northfleet station. This is likely to cost around £2.75 billion.

• The boost to economic productivity and the multiplier influence on property values, new building and increased tax revenues is impressive.

• The Government should lose no time in giving the go ahead to this affordable project which promises to deliver up to 60,000 new homes and up to 100,000 new jobs. It is a win-win proposition.

• Experience elsewhere in the world, notably Scandinavia, modular construction clearly has a crucial contribution to make. Britain needs to get building: quicker and smarter.

• Future development at Ebbsfleet is faced with some daunting challenges, not least its complex brownfield location. Land ownership issues need to be resolved so that development can proceed while central government must provide Ebbsfleet Development Corporation (EDC), which is primed to play a pivotal coordinating role, with the governance and statutory powers it requires to fulfil its mandate. Central government will need to fund the feasibility studies and related initiatives to bolster this ambitious public-private investment initiative.

• The Government should approve a Development Consent Order for junction improvements at Bean and Ebbsfleet as a matter of urgency. Without this go ahead, economic development and the smooth flow of trade will be seriously handicapped, particularly as it relates to trade in and out of Dover, Britain’s second most significant port.

• The Government should lose no time in giving the go ahead to this affordable project which promises to deliver up to 60,000 new homes and up to 100,000 new jobs. It is a win-win proposition.
This short study provides a snapshot cost-benefit analysis (CBA) on the potential macro-economic and regional and sectoral benefits of developing the Crossrail Elizabeth line to Ebbsfleet link (C2E) and examines the case for the creation of a Place & Making Institute at Thamesmead in Bexley, specifically focused on providing the skills and know-how to create and build new communities.

A third related strand to this study centres on the potential to develop a state of the arts logistics hub at Ebbsfleet International to optimise trade opportunities with the Continent.

The C2E initiative is important for Britain’s post-Brexit export strategy in so far as it greatly improves communications for people travelling to and from the continent. Travellers will be able to get on and off at Ebbsfleet and travel by the Elizabeth line to the rapidly expanding financial centre at Canary Wharf. This vital transport link will also improve connectivity to Heathrow and London City airports both of which are earmarked for significant expansion. Developing Ebbsfleet as an interconnecting transport hub should also boost business activity at what promises to be the business hub for North Kent while promoting logistics and warehousing facilities in and around Ebbsfleet. Another important aspect of developing the Elizabeth Crossrail line to Ebbsfleet is the impact it will have on attracting investment in much needed housing and related social and physical infrastructure to this relatively neglected south east quadrant of the capital. As the Thames Estuary 2050 Growth Commission highlights, “The area needs to cater for population growth and demographic change. Whilst an increased number of planning permissions are being granted, this is not being reflected in delivery rates. Between 2012/2013 and 2014/2015, on average, fewer than 10,000 homes were built per annum against Local Plan targets of 19,495 per annum”.

However, as the LSE’s leading expert on Greater London, Professor Tony Travers, observes, “It seems inevitable that at some point in the future, given the pressure for development in the Greater South East, government will refocus its attention on the East Thames. The experience of the Olympics and IDDC both suggest that major regeneration schemes can be delivered according to a set plan and within a limited time-scale. But this can only happen if governance and funding are in place”.

BRITAIN’S URGENT HOUSING SHORTAGE

Britain needs to build more houses. In 2012/3 house completions in England fell to 124,720 while last year (2017) 217,350 new homes were delivered according to official statistics. But at least 250,000 new homes a year are required if the Government is to meet its targets of one million new homes by 2020. This target looks as though it will be missed by a considerable margin.

House prices - whether they be for flats, semis or villas – have soared in Britain over the last 50 years. This increase is in striking contrast to most other European countries, particularly when one looks at the increases in real terms. In fact, house prices in the UK have more than quadrupled since the 1970s according to OECD data. This is far higher than increases in other EU countries such as Germany, France and Spain. Chart 1 shows the striking rise in UK house prices in real terms since 1980 compared with the Eurozone and US (see next page).

Meeting demand for housing has leapt up the national agenda of priorities with politicians of all parties now committed to delivering more homes. The crucial issues remain where and when and at what price? Creating new communities in and around major new infrastructure routes, such as Crossrail and the HS1 Eurostar route to the continent, are therefore pivotal when it comes to identifying our future post Brexit strategy.

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Nowhere is the housing crisis more urgent than in the nation’s capital. The ratio between average house prices and average earnings for Londoners has soared to 12.9 in 2016 compared with 7.8 in 2009. Those working in London find it difficult to find somewhere affordable to live, particularly couples with young families. Without support from the ‘Bank of Mum & Dad’ (BoMaD) many would not be able to afford to buy or even rent a home. Research by the Centre for Economic & Business Research commissioned by Legal & General reveals that ‘BoMaD’ remains a major force in the UK housing market with 27 per cent of buyers will receive help from friends or family, up from 25 per cent in 2017.

The C2E initiative offers a crucial opportunity to realise this vision so long as time and financial targets can be met.

BRITAIN’S EXPORT STRATEGY

Britain trade in goods with the EU runs a substantial deficit. In 2017, 43 per cent of UK exports went to other EU countries – considerably less than the 54 per cent share recorded in 2006. While the EU is no longer so important as an export destination it remains Britain’s largest trading partner. Table 1 ranks the top nine EU destinations for UK exports in goods and services in 2016 showing total value and ranking within the top 25 national markets globally.

The UK’s balance of trade with the EU shows a substantial deficit on goods, as opposed to services. Compared with the position in 2005 it is considerably worse with almost all sectors generating a bigger deficit. Indeed, the manufacturing trade deficit with Germany has increased by five per cent a year (reflecting Brits love of Audis and BMWs along with German engineering in general), with France by seven per cent a year and with the rest of the EU by 11 per cent a year. The last time the UK achieved a trade surplus with the EU was in 1999. What’s more, the deficit is getting larger over time, doubling from £41bn to £82bn between 2012 and 2016.

Clearly, there is a lot to do to improve our trade balance in manufactured goods. In the 12 months to March 2018 it narrowed by £2.9 billion to £94.7 billion. Yet Britain’s trade deficit for goods and services combined with the EU is an alarming four per cent of GDP. Clearly, the UK needs to invest in infrastructure schemes that will help it promote its export effort.

Investing in C2E should provide a crucial boost in this direction and for a relatively modest sum. These issues provide a mix of exciting opportunities as well as daunting challenges, centred on Britain’s ability to make a success of its post Brexit future.

Investing in well thought out infrastructure projects, such as C2E, bringing with it bonuses in terms of meeting the capital’s pressing housing needs and boosting our export orientated trade in goods, is likely to reap significant dividends. That is why the initiative for Free Trade is committed to exploring how such an exciting opportunity can be achieved.

This short study sets out the case for such an investment.

It therefore makes sense to invest in extending the Crossrail line to Ebbsfleet in order to transform accessibility for this relatively overlooked part of the capital, thereby attracting investment in much needed housing. What is more, it makes sense to enable local authorities to share in the land value uplift associated with such investment in transport infrastructure, enriching all the relevant stakeholders concerned. Wealth generated from the uplift in land values – whether it be for residential, commercial or retail use – will play a crucial part in funding the provision of necessary social and physical infrastructure crucial to the development of integrated, attractive communities.


[5] ‘Why the UK trade deficit with the EU is woeful and widening,’ Larry Elliott, 8 April 2018, The Guardian.
Crossrail to Ebbsfleet (C2E) is an ambitious project aimed at delivering over a relatively short period of time a high speed extension to the Crossrail line, which is now due to open in Autumn 2019. Crossrail will connect Heathrow airport and Reading to central London and will extend to Shenfield in Essex and, crucially, in the context of this report, a line to Abbey Wood on the southern side of River Thames, adjacent to Thamesmead. The map below shows the stations and line of the routes to be connected by Crossrail.

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C2E: WHERE IT WILL RUN AND HOW MANY STATIONS?

This report examines the merits of extending Crossrail, as originally planned prior to the financial crisis in 2008, along the southern side of the Thames estuary, thereby dramatically improving this region's transport connectivity. C2E is planned to continue from the Crossrail station at Abbey Wood and call at seven newly refurbished stations – Belvedere, Erith, Slade Green, Dartford, Stone Crossing, Greenhithe and Swanscombe - before terminating at what promises to be a major new transport hub at Ebbsfleet International, the site of the Eurostar HS1 station. Including Abbey Wood and Ebbsfleet international this extension to the Elizabeth Line will therefore comprise nine stations (see map).

C2E will connect three areas identified as key economic growth zones: Bexley Riverside, Dartford Town Centre and the new Garden City being built at Ebbsfleet. The area now branded Bexley Riverside spans over 1,850 acres (475 ha) of underused industrial land beside eight kilometres of Thames river front. It is planned to create a major dedicated shared living and working neighbourhood, with over six million sq ft of commercial and industrial space, alongside a substantial residential community.

TRAVEL TIMES: TRANSFORMING LONDON INTO ONE INTEGRATED CAPITAL CITY

When it opens next year the Elizabeth line will transform commuting times between Abbey Wood and London's financial districts and West End. It will take a mere 11 minutes to travel to Canary Wharf from Abbey Wood, 17 minutes to Liverpool Street, and only 25 minutes to Bond Street in the heart of the West End.

C2E will offer further radical improvements in journey times saving at least a crucial ten minutes on journey times from Dartford and further East (see Table 8). The whole southern stretch of the Thames estuary towards Dartford will see transport access transformed. Completion of the extension would see the quality of life and economic potential of whole areas of South East London currently handicapped by poor transport connections dramatically enhanced. In particular, extending Crossrail to Ebbsfleet will serve a crucial role in relieving a forecast build up in road traffic, thereby tackling congestion and a range of environmental and air quality challenges triggered by soaring congestion in and around a Dartford Crossing bottleneck. By delivering this infrastructure project at relatively modest capital cost the quality of life for residents and workers is vastly improved. As a result, London truly becomes one integrated city.

THE MAYOR’S LONDON PLAN

Extending Crossrail to Ebbsfleet mirrors plans for the Thames Estuary Corridor set out in the Mayor’s draft London Plan issued last year (November 2017). This Plan identifies the Corridor either side of the Thames Estuary as a priority for regeneration. Sadiq Khan, the capital's Labour mayor, argues that this represents the largest potential supply of land suitable for development in Greater London. Indeed, the Mayor suggests that the riparian banks either side of the Thames could generate over 250,000 new homes and 200,000 new jobs.

Significantly, confirming cross party support for the idea, C2E is identified as a crucial future transport link to help fulfil this vision. Similarly, the draft Mayor’s Transport Strategy identifies C2E as a scheme of regional and national importance, and confirms the support of the Mayor of London and TfL for a government-led extension of the Elizabeth line running east from Abbey Wood.

In addition, the Mayor of London is committed to bringing forward a new extension of the Docklands Light Railway into Thamesmead by 2026 at a cost of £600 million. This has yet to receive the go-ahead but such an extension would help transform connectivity and spur the establishment of new businesses and cultural facilities while making the proposed new construction training/education campus at Thamesmead far more accessible and viable.

A NEW VISION FOR THAMESMEAD

Peabody[6], the housing association charity and main landowner in the locality, has recently published a new Masterplan for Thamesmead, situated just north of Abbey Wood station, more specifically for a massive site of approximately 750 hectares (ha). As well as the potential for 20,000 new homes, Peabody plans to work with partners to create thousands of new high value jobs alongside new leisure, cultural and commercial developments. A brand new town centre will be created beside the Thames waterfront, which up till now has been largely ignored. In many respects Peabody’s role is similar to that of a traditional estate, such as the Duchy of Cornwall,[7] in so far as its non-fragmented land ownership enables it to plan in a holistic, area-wide manner.

Peabody is engaged in several construction schemes across Plumenhead and Abbey Wood involving 2,000 new homes; it began building a further 500 properties in South Thamesmead in May 2018 and another 66 homes are earmarked for West Thamesmead.[8]

Peabody plan to build up to 20,000 new homes over the next 30 years. Currently, it is constructing around one thousand new dwellings a year with an equal mix of rent, shared ownership and sales. Such a combination coupled with the charging of market rent helps de-risk Peabody’s market sale programme and makes its bonds more attractive to investors.[9]

Peabody want to create a unique sense of place at Thamesmead[10], says John Lewis, responsible for Peabody’s Thamesmead initiative. In a nutshell, Peabody wants to give Thamesmead a sense of identity, employing a ‘whole place’ philosophy and a set of principles that Lewis and his team have developed to guide its approach to regeneration. Significantly, John Lewis’s previous role was as the chief executive of Letchworth Foundation, the world’s very first pioneering Garden City.

Thamesmead currently sorely lacks leisure and cultural facilities: there are no clubs, theatres or restaurants with table cloths, just a Harvester pub.[11] This omission is set to change. Peabody’s management team are clear in their commitment to improve, grow and look after Thamesmead for the long term. ‘Culture will help to bring the community together and we need to work with the residents to develop an identity that gives them a sense of emotion to the place (its past, present and future).[12] In this context it is encouraging to see that Peabody aims to provide space for culture and studios for artists, specifically through the adaptation of empty or under-used spaces, buildings for cultural uses, and making sure adequate provision for artists and people in the creative industries is part of the new Masterplan[13].

[7] Peabody housing association is one of London’s oldest and largest housing charities. It owns and manages around 55,000 homes in the capital and South East and it offers care and support as well as large scale community regeneration programmes of which Thamesmead is one of the most ambitious. The Housing Association group is proving to be innovative: it is pursuing collaboration with JV partners and alternative funding structures backed by a robust credit rating (currently, for example, rated A3 outlook stable from Moody’s).

[8] This is significantly greater than two other major Masterplans in the capital, namely Old Oak Common and Nine Elms Masterplan areas combined.

[9] The Duchy’s ownership of land in Dorchester, Dorset, has allowed it to develop a whole new community at Poundbury.


[11] Peabody raises finance through issuing bonds on the capital market. For example, in 2011 it issued a £200m capital market bond to develop new housing, regenerate existing areas and provide more services and, two years later, it successfully issued a further £150m capital market bond.

[12] Interview with the author.

[13] The LSE’s Professor Tony Travers points out in London’s Boroughs at 50, in so far as its non-fragmented land ownership enables it to plan in a holistic, area-wide manner.


fortunate citizens. Not just for its physical rubbish but also for its less reputation as a dumping ground for the capital – ditching Thamesmead’s previous damaging on creating a wide variety of tenures, thereby integral part of Peabody’s strategic goal centred aims to deliver a total of 11,500 new homes over Thamesmead Waterfront regeneration scheme.

Just recently, Peabody has shortlisted two bidders - Lendlease and Morgan Sindall Group to form a joint venture to deliver its £4 billion Thamesmead Waterfront regeneration scheme. This part of the overall development programme aims to deliver a total of 11,500 new homes over 14 years (i.e. between now and 2033). This is an integral part of Peabody’s strategic goal centred on creating a wide variety of tenures, thereby ditching Thamesmead’s previous damaging reputation as a dumping ground for the capital – not just for its physical rubbish but also for its less fortunate citizens.

ERITH

Further down river in Erith it is proposed to construct a totally new and innovative neighbourhood on currently underutilised riverside - establishing 80 acres (32.38 ha) of mixed residential, industrial and commercial space. This will be expressly developed along co-work/co-live lines. Similar developments are proving a great success in the USA where entrepreneurial talent has been attracted to set up businesses on a campus style model. These communities feature shared living and working spaces. The aim at Bexley Riverside is to encourage a hub where small start-up creative businesses can prosper. This potential is likely to be greatly encouraged by the opening of a major new arts and cultural centre at nearby Woolwich Arsenal. Utilising the historic Royal Artillery Barracks and factories, an independent trust set up by Greenwich local authority is set to transform this former military complex into an exciting new cultural venue, featuring a new 1200 seat concert hall and a home to theatre groups, dance studios for English National Ballet and an art gallery. The newly branded Woolwich Creative District is due to be opened in November 2019.

DARTFORD

A new residential community of up to 5,000 homes is in the process of being planned in what is currently the rather forlorn town centre of Dartford, which is prone to serious traffic congestion. However, on a more positive note, Sir Mick Jagger’s home town has been experiencing unprecedented growth in recent years with several new commercial centres established, notably the Bluewater retail mall and the Crossways Business Park.

Traffic congestion is a major problem on both sides of the Dartford Crossing and it is particularly acute on the roads leading through Bexley and down to the channel ports. Two thirds of UK road based trade with Europe travels via the Straits of Dover. Improvements to transport infrastructure at this pinch point are therefore a national priority and a crucial step towards boosting GDP growth.

EBBSFLEET: FURTHER POWERS RECOMMENDED FOR THE EBBSFLEET DEVELOPMENT CORPORATION (EDC)

Ebbsfleet, named after a river the new town straddles, is emerging as the first new ‘garden city’ to be built in a century, delivering 15,000 new homes for the area and establishing a major economic offer built around its new commercial zone. This will create up to 30,000 new jobs in 45,000m² of commercial space. BT plc is installing a fibre network which promises to offer the highest speed internet connection to home users in the UK. However, the Thames Estuary 2050 Growth Commission, highlights the slow pace of delivery of any land required. Clearly, this is a prime goal since the future of this initiative hinges on winning the go-ahead for economic development and increasing much needed road capacity to meet future growth.

Extending Crossrail to Ebbsfleet will create a valuable new strategic transport hub outside the M25, offering direct interchange between Crossrail and Eurostar passenger and freight services (HS1), transforming existing transport capacity and tackling severe bottlenecks in and around the Dartford Thames crossing – the main arterial trade route to the continent.

A recent review into the Ebbsfleet Development Corporation, commissioned by the Ministry of Housing, Communities & Local Government, recommends strengthening the powers of this development vehicle, originally set up in 2015. The Corporation’s task has been hampered by the fact that it needs to acquire a lot of land to realise the MasterPlan. The review, completed in February 2018 and led by Malcolm Sharp, a planning and local authority consultant, found that delivering


[17] Mick Jagger and Keith Richards were class mates at Wentworth Primary School, Dartford. There is now a Mick Jagger Centre at Dartford Grammar, his old school.

[18] Ebbsfleet Valley is located in the London Borough of Dartford.

[19] Letchworth, the country’s first garden city was begun in 1906 while Welwyn Garden City was also constructed prior to the First World War – see chapter two, ‘The Art of Building a Garden City’, by Kate Henderson, Katy Lock & Hugh Ellis, RIBA Publishing, 2017.

Ebbsfleet’s garden city centre will prove “highly complex”, given land ownership, contractual commitments and the presence of planning permissions granted prior to the establishment of the Corporation. As the review concludes: “It requires relevant government departments to work in partnership with the private sector to find a solution,” Sharp’s team also warned that the Corporation appears to lack sufficient funding to undertake feasibility studies and it needs to strengthen certain key skills, such as direct commercial development skills along with design capacity. The Secretary of State is considering the recommendations contained in the Sharp review but clearly a renewed focus and resources will need to be channelled into the Corporation if its development timetable is to be met.

C2E: HOW IT PLUGS A CRUCIAL NEED

Extending Crossrail along the Thames estuary to Ebbsfleet - the C2E initiative - addresses a fundamental strategic weakness with respect to South East London and North Kent transport infrastructure. Currently, this part of the capital is entirely disconnected from the Crossrail network as well as the London underground system. Investing in this vital piece of transport infrastructure will energise a major new growth corridor, generating up to 100,000 jobs and supporting as many as 60,000 new homes over the period 2018 – 2030 to meet the capital’s chronic housing shortage. Crucially, it will substantially improve access to a massively expanded Heathrow with three runways and the rapidly growing London City airport.

This proposed extension to the Elizabeth Line will transform residents’ quality of life as it dramatically reduces journey times into the centre of the capital and across the conurbation. This will not only enhance productivity but trigger new employment opportunities in this comparatively disadvantaged part of Greater London. On the basis of our independent CBA we estimate that up to 100,000 new jobs will be created. These are likely to be better paying jobs in new economic sectors such as the creative industries - following in the footsteps of local boys Keith Richards and Sir Mick Jagger - and fintech in contrast to the existing spectrum of jobs, many of which are in the public sector and relatively low paying warehousing and basic manufacturing trades.

A problem common to many of the Boroughs along the southern bank of the Thames estuary east of Greenwich is an exodus of younger people looking for better paid jobs. Consequently, the age profile for the London Borough of Bexley is skewed towards the retired, which in turn means that the local authority faces additional pressures to fund social care costs. It can therefore be argued that investing in improved transport infrastructure is a vital cog in transforming the demographic and generational composition of the communities based on the southern bank of the Thames estuary. C2E literally represents a lifeline to improved prosperity and helps combat the threats to economic development.

INTRODUCTION: WHY UNDERTAKE A CBA?

Cost benefit analysis (CBA) is now a well-established methodology in economics used to evaluate the rate of return where there are identifiable costs and benefits which are indirectly related to the main project, but which need to be quantified and evaluated. It involves the analysis of the return on alternative investment projects usually those instigated from the public sector, when some of the costs and benefits do not result in transactions or changes in economic welfare accruing to the body financing and undertaking the project. In a UK context, CBA was first employed to assess the first motorway project the M1 and later on it was employed to analyse the merits of the Victoria Underground Line in a paper published in 1963.

In this chapter we seek to define, estimate and where possible quantify the main direct, indirect and intangible economic impacts of an extension of Crossrail from Abbey Wood, a project which is estimated to be completed within ten years, assuming a start date in 2019. The study is restricted to the impact within the two Boroughs of Bexley and Dartford, but naturally there would be main spill-over effects beyond these two areas.

THREE POTENTIAL SCENARIOS

Three potential outcomes are outlined in this analysis of the economic viability of C2E: first, a Base Case; second, a Pessimistic Case; and thirdly an Optimistic Case. Each of these is distinguished by the scale of the investment undertaken in terms of the Options outlined in Table 4. All three cases assume work begins in 2019 and is completed to schedule after ten years. This is realistic in two of the investment options, but there is always the danger that the more ambitious project underpinning the Optimistic Case could face construction delays and climbing costs.

In undertaking a standard CBA we need to make a number of estimates of economic effects, many of which are tangible and readily measurable, such as the likely impact on the uplift on land and property values. In the case under review, much of the area concerned along the Thames has suffered from decades of neglect and the potential upside in land value is significant as there is considerable scope to improve rental income and enhance capital value.

Another crucial economic benefit centres on job creation – split into short term (construction jobs for the C2E extension, etc.) and the longer term (logistics hubs, retail jobs, services, etc.) arising from multiplier effects. Apart from the direct generation of additional ticket revenues on the propose C2E rail line, many of these benefits will not accrue directly to the project core, but will be diffused in terms of additional consumer expenditure, additional revenues and profits to enterprises, salaries and wages generated in the area and additional public revenues, both locally in terms of council tax income, and centrally in terms of VAT, income tax, corporation tax and capital gains tax.

In this analysis we also look at indirect intangible economic and social benefits to help complete the picture of the project return. These do not necessarily arise from monetary transactions.

[22] It was originally suggested by the French Economist Jules Dupuit in 1848 to evaluate setting optimal tolls on bridges.

[23] C2E is confident that up to 30,000 new homes may be created through the creation of new businesses and entrepreneurial hubs.
Accordingly, the CBA analysis undertaken for this project calculates the value of savings in time (derived from people’s earnings). Traffic congestion is a major problem on both sides of the Dartford Crossing and it is particularly acute on the roads leading through Bexley and down to the channel ports. It is worth emphasising that two thirds of UK road-based trade with Europe travels via the Dover Strait. Indeed, 60 per cent of all fresh food is traded through the port of Dover.

The expected economic impacts from the project are illustrated in Tables 2 to Table 11 along with the assumptions underlying the estimates. As yet, there is a large degree of uncertainty with respect to developers’ plans for housing and commercial real estate plans since these hinge on approval for the C2E project. Consequently, it is impossible to calculate a definitive estimated project net present value based on commercial and social returns as well as a private and social rate of return. To do so, one needs more precise information and data on the timing, capital expenditure allocations, costings and the financing of the project.

However, what this chapter does undertake is an appraisal of the expenditure and benefit flows which should be taken into account for such a larger, more detailed CBA study, and it then makes a tentative estimate of the viability of the project in CBA terms.

**CBA OF C2E**

The population projections and economic activity rates for the two main Boroughs that would be directly affected by C2E are shown in two tables: Table 2 gives the current population projection without a go ahead for the C2E project while Table 3 details population estimates assuming the project is given approval. Total population in the two Boroughs is expected to grow by approximately 11 per cent between 2019 and 2028 and by a further ten per cent over the following decade. Hospital maternity units in Dartford are already full to capacity. This projected population rise of 39,000 will require around 13,000 new homes by 2028 and an additional 13,400 over the following decade - a total of 26,000 over 20 years. In making this calculation, economic activity rates are assumed to remain unchanged if the project does not proceed.

The dramatic impact of the Crossrail Extension on population is shown in Table 3. These population estimates are based on a period of construction over ten years, but it is anticipated that the impact of the project on population growth and on economic activity in the two Boroughs would continue for many years after completion, particularly in attracting people into the improved areas which would benefit from much better transport connectivity. The population of the two Boroughs is assumed to increase by 72,700 between 2019 and 2028 necessitating the construction of 24,200 new homes and by a further 109,000 by 2038, pushing up the demand for new homes by a further 36,400. The extension would transform economic activity in the two Boroughs, pull population shifts inwards and push up the need to expand the residential housing stock by as much as 60,000 units.

**INVESTMENT SPEND IMPACT ON GVA**

There are number of options that have been explored to improve existing rail links in the corridor including one which necessitates no real extension but simply investment in improving existing services. The capital expenditure costs of the main project options has recently been reviewed by consultants for a SOBC exercise. These are shown in Table 4. They range from £412 million for the minimum improvement to existing services and rise up to a maximum of £2.765 billion for implementing the full project. This more ambitious option would include building new track for C2E along with the redevelopment of stations and new rolling stock.

Based on ONS data and our calculations we estimate that the Gross Value Added (GVA) of the affected area (Bexley and Thames Gateway) was approximately £12 billion in 2016. This is projected to rise to £12.7 billion by 2019, the estimated early start date of the project. An injection of capital expenditure would normally have a multiplied effect on GVA and, although the empirical literature on the size of multipliers is now extensive, it remains a controversial issue. For the purpose of this exercise we assume a multiplier of 0.75 as appropriate for the UK.

This means, for example, that spending £2 billion (Option A), on the CR Extension would raise GDP in the area by £1.5 billion, or an uplift of nearly 12 percent on its 2019 level, equivalent to £150 million per year. This is a rough estimate of the one-off effect of the project on the wider economy of the area based on macroeconomic assumptions. The next section offers a breakdown of C2E’s impact on various economic sectors, including the crucial construction sector, from a microeconomic perspective.

---

**Table 2 POPULATION DATA WITHOUT EXTENSION**

<table>
<thead>
<tr>
<th>Borough</th>
<th>2016</th>
<th>2019</th>
<th>2023</th>
<th>2028</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bexley</td>
<td>245.1</td>
<td>254.0</td>
<td>266.6</td>
<td>281.3</td>
</tr>
<tr>
<td>Population (‘000)</td>
<td>154.3</td>
<td>159.9</td>
<td>167.8</td>
<td>177.1</td>
</tr>
<tr>
<td>Population 16-64</td>
<td>127.9</td>
<td>132.5</td>
<td>139.1</td>
<td>146.8</td>
</tr>
<tr>
<td>Economically Active</td>
<td>82.3</td>
<td>82.3</td>
<td>82.3</td>
<td>82.3</td>
</tr>
<tr>
<td>% of Adult Population</td>
<td>105.1</td>
<td>109.4</td>
<td>115.1</td>
<td>121.8</td>
</tr>
<tr>
<td>Population (‘000)</td>
<td>67.4</td>
<td>70.2</td>
<td>73.8</td>
<td>78.1</td>
</tr>
<tr>
<td>Economically Active</td>
<td>64.4</td>
<td>67.0</td>
<td>70.5</td>
<td>74.6</td>
</tr>
<tr>
<td>% of Adult Population</td>
<td>95.5</td>
<td>95.5</td>
<td>95.5</td>
<td>95.5</td>
</tr>
<tr>
<td>Total Population</td>
<td>350.2</td>
<td>363.4</td>
<td>381.7</td>
<td>403.1</td>
</tr>
</tbody>
</table>

**Table 3 POPULATION DATA WITH EXTENSION**

<table>
<thead>
<tr>
<th>Borough</th>
<th>2019</th>
<th>2028</th>
<th>2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bexley and Dartford</td>
<td>363.4</td>
<td>436.1</td>
<td>545.1</td>
</tr>
<tr>
<td>% Increase</td>
<td>N/A</td>
<td>20.0</td>
<td>25.0</td>
</tr>
</tbody>
</table>

---

[25] Fiscal multipliers can be measured in several ways. Generally, they are defined as the ratio of a change in output (ΔY) to a discretionary change in government spending or tax revenue (ΔG or ΔT). Thus, the fiscal multiplier measures the effect of a £1 change in spending or a £1 change in tax revenue on the level of GDP. Two multipliers are commonly used (focusing on expenditure): Impact multiplier = (∆Y(t))/(∆G(t)) and Revenue multiplier = (∆T(t))/(∆G(t)). Multipliers at horizon i = (∆Y(t+i))/(∆G(t)) where t can be a quarter or a year depending on the frequency of the data that is used in the study.

This estimated is taken by dividing the value of the project by the average turnover per employee of the construction sector of £168,000.

In the sections that follow we outline three broad scenarios. The Base Case scenario is based on the assumption that either Option A or Option D is implemented. The Pessimistic Case is based on a minimal plan being adopted with investment corresponding to either Options B or C. In contrast, the Optimistic Scenario assumes Option E is adopted in terms of total capital expenditure on the project.

CONSTRUCTION BENEFITS

Crossrail

The estimated uplift with respect to GDP is based on a simplified macroeconomic model and is sensitive to a number of additional factors, such as how the project is financed and the impact of any disruption on economic activity in the area during the build phase.

Clearly, the number of jobs created in the construction phase hinge on the Investment Case option chosen. In the Pessimistic Case, construction expenditure (excluding rolling stock) will vary between £283 and £438 million, leading to additional continual annual employment of between 168 to 260 new jobs a year. The Base Case would trigger many more jobs: we estimate an annual net increase of between 725 and 1,144 new jobs depending on the level of construction expenditure (excluding rolling stock). This equates to a figure of between £1.22 billion to £1.87 billion. In the Optimistic Case, capital construction expenditure of £2.62 billion would likely generate a total of 1,558 new construction jobs for each year over the projected ten year build phase. (28)

Real Estate

On the basis of the interviews and discussions undertaken for this project it is estimated that the project will trigger the development of a Base Case scenario of 50,000 new homes and an additional 1.1 m² of commercial real estate distributed along the line of the C2E route, as shown in Table 5. The construction cost of each new home is estimated at £212,000. We also model assumptions for a Pessimistic Case of 30,000 new homes and 700,000 m² of additional commercial real estate and an Optimistic Case of 60,000 new homes and 1.2 million m² of commercial real estate.

The Base Case scenario is based on developers’ current plans and discussions with Bexley and Dartford Councils and the assumption that Option A or Option D for the investment spending is carried out. The Pessimistic Case (based on Options B or C) with respect to the building of new homes is close to the expected demand for housing as already forecast by the two Boroughs – this is estimated on the basis of no infrastructure investment in extending Crossrail (see Table 2). Such an outcome clearly implies that a minimal investment in transport infrastructure would have a modest impact on the size of the housing stock. In contrast, the Optimistic Scenario, (based on Option E with respect to future capital expenditure) suggests that the number of residential homes and commercial space will be 20 per cent higher than in the Base Case.

In the Base Case our model estimates that approximately 6,541 jobs will be generated from the construction of new homes with a further 3,474 new jobs triggered by the creation of additional commercial space. In the Pessimistic Case, we estimate that new residential construction will still generate almost four thousand jobs - 3,924 jobs per year to be precise with a further 2,248 jobs directly linked to the construction of commercial real estate. Far more hires are generated by the Optimistic Case: our model shows that, on an annual basis, 7,849 jobs will be created with respect to the construction of 60,000 homes over this ten year time span with an additional 3,853 jobs spawned by the construction of additional commercial space.

Turing to investment our model indicates that the estimated additional private sector investment – costed in 2018 prices – on new homes and additional commercial space triggered as a result of C2E will amount to £11.1 billion (28) and £4.38 billion respectively in the Base Case, £6.6 billion and £2.8 billion in the Pessimistic Case and £13.2 billion and £4.9 billion in the Optimistic Case.

TANGIBLE CONTINUING ECONOMIC BENEFITS

Residential Assets

The Crossrail Extension is expected to stimulate the building of new homes ranging in value from £250,000 to £750,000 (28) with an average value estimated of £400,000. This creates a capital stock of residential assets with an estimable market value, but at the same time these properties create a rental income stream for the asset owners whether they are housing trusts, local authorities or private landlord, and an imputed income stream if they are housing trusts, local authorities or private landlords.

In the Pessimistic Case we estimate that new residential construction will still be 16.5 per cent higher than in the Base Case.

(28) Based on an assumption of a construction cost of £220,000 per home.
in most circumstances will appreciate (in the case of our capital city values have indeed soared over the last 20 years, albeit prices have moderated over the last 18 months). Statisticians at the Office for National Statistics treat the consumable component as being represented by the cost of the building with the asset component attributable to the cost of the land it is built on.

The methods used to impute rental value from the owner occupied housing stock are recommended by Eurostat, but for this study we take a simple ratio based on the yields attributable to buy-to-let investments in the area. The additional estimated income generated per annum after the end of the project is estimated and shown in Table 6 (excluding any potential uplift in property values).

It is estimated in the Base Case that the stimulated investment in new residential homes as a result of the project will have a market value of £20.0 billion in 2018 prices and will generate an annual money stream in rents or an imputed rental income of £600 million per annum in 2018 prices after construction. The Pessimistic Case and the Optimistic Case scenario results are also shown in Table 6.

In our model we review likely council tax receipt over time and, in this context, we estimate annual council tax income to amount to £167 million per year in 2028 at 2018 prices for the two Boroughs (Bexley and Dartford) combined.

### Commercial Assets

The additional commercial space created in the area will raise Gross Value Added (GVA) in the areas affected for many years after the project is completed as a result of a boost in economic activity over and above the one-off investment multiplier effect noted above. Measured in terms of income generated the commercial space will generate rental income, additional employment income from new jobs and income from company profits.

In the Base Case, 1,082.4 (1000m²) of additional commercial real estate is assumed to generate annual rental income of £292 million with 89,800 continuing new jobs producing employment income of £22.9 billion per year at 2018 prices. This additional economic activity will also generate rental income and profits and provide benefits to HM Treasury in terms of extra VAT, PAYE and NI and Corporation Tax. These flows are shown in Table 7, but there will also be additional municipal income from business rates, but this is difficult to estimate on the limited information available.

### Rail Income

It is estimated that the CR Extension will generate additional passenger miles per year in traffic along the main route as it encourages traffic to move off the roads. This will produce producing additional revenue for the operators of the CRE. There will be other income generated as commuters from Kent are attracted as a result of estimated time savings (See Table 9).

### Intangible Continuing Economic Benefits

The provision of faster trains between the new stations and the centre of London will lead to a saving in journey time. Many CBA transport studies have estimated the average value of time saved as a benefit of transport projects. We use an average value of time of £39.60 per hour (£0.66 per minute). The analysis of time saved and its imputed economic value in the analysis summarised in Table 8. The analysis concentrates only on time saved for trips in and out of central London and not for passengers alighting between stations on the new extended line.

### Property Value Uplifts

The long term benefits not captured directly are twofold: firstly, the uplift in property values arising as a result of the Crossrail extension in the Bexley and Dartford areas, and secondly, the addition to added real estate value stimulated by investment as a result of the project. Property consultants GTA

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### Table 6 RESIDENTIAL INCOME GENERATED

<table>
<thead>
<tr>
<th>Pessimistic</th>
<th>Base</th>
<th>Optimistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Homes Created</td>
<td>30,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Market Value at 2018 prices (billion)</td>
<td>£12.0</td>
<td>£20.0</td>
</tr>
<tr>
<td>Imputed/ Rental Income per year in 2028 in 2018 prices (million)</td>
<td>£420</td>
<td>£700</td>
</tr>
<tr>
<td>Council Tax Income per year in 2028 £m at 2018 prices (million)</td>
<td>£118</td>
<td>£196</td>
</tr>
</tbody>
</table>

### Table 7 COMMERCIAL REAL ESTATE INCOME GENERATED 2018 PRICES

<table>
<thead>
<tr>
<th></th>
<th>Pessimistic</th>
<th>Base</th>
<th>Optimistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Space Created (1000m²)</td>
<td>700</td>
<td>1,082</td>
<td>1,200</td>
</tr>
<tr>
<td>Rental Income £m</td>
<td>£189</td>
<td>£292</td>
<td>£214</td>
</tr>
<tr>
<td>New Jobs Created</td>
<td>58,100</td>
<td>89,806</td>
<td>99,600</td>
</tr>
<tr>
<td>Employment Income (£ million per year) prices</td>
<td>£1,891</td>
<td>£2,923</td>
<td>£3,242</td>
</tr>
<tr>
<td>Profits (£ million per year) 2018 prices</td>
<td>£416</td>
<td>£643</td>
<td>£713</td>
</tr>
<tr>
<td>Tax Income (to Treasury) (£ million per year) 2018 prices</td>
<td>£904</td>
<td>£1,397</td>
<td>£1,549</td>
</tr>
</tbody>
</table>


[31] Based on the assumption of £270 per year per square metre


[33] Based on the assumption of gross weekly average wages of £626 per week.


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recently estimated that residential values along the existing Crossrail route will see an expected uplift above baseline forecast of 19 per cent by 2021 and 29 per cent by 2026. The uplift above baseline expected in office values was eight per cent and 14 per cent and 29 per cent by 2026. The uplift above baseline forecast of 19 per cent by 2021.

For this study, we assume more modest uplifts. In our Baseline projection this works out at between ten per cent and 15 per cent over the time span.

Besides the uplift in the value of new real estate with the area (a point underlined in the GVA study). Nevertheless, as shown in Table 10 these uplifts strengthen the project case significantly. Besides the uplift in the value of new real estate assets created as shown in Table 10, there will be additional positive effects on the value of existing residential and commercial property close to the route.

To summarise the conclusions derived from this CBA of three investment scenarios our model demonstrates that if the Pessemistic Case was adopted, up to 260 new jobs a year would be created with respect to the construction of C2E with the area and investors’ lack of familiarity created with respect to the construction of C2E with the area and investors’ lack of familiarity.

Table 8 PASSENGER NUMBERS AND VALUE OF TIME SAVED TO CENTRAL LONDON

<table>
<thead>
<tr>
<th>STATION</th>
<th>2018 mins.</th>
<th>Cost Single (£m)</th>
<th>CR Extension mins</th>
<th>Average Time Saved</th>
<th>Value per minute saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belevedere (1)</td>
<td>36</td>
<td>6.40</td>
<td>25</td>
<td>11</td>
<td>£7.26</td>
</tr>
<tr>
<td>Erith</td>
<td>38</td>
<td>7.20</td>
<td>28</td>
<td>10</td>
<td>£6.66</td>
</tr>
<tr>
<td>Slade Green</td>
<td>41</td>
<td>7.20</td>
<td>30</td>
<td>11</td>
<td>£6.66</td>
</tr>
<tr>
<td>Dartford</td>
<td>46</td>
<td>8.90</td>
<td>36</td>
<td>10</td>
<td>£6.66</td>
</tr>
<tr>
<td>Stone Crossing</td>
<td>51</td>
<td>9.80</td>
<td>40</td>
<td>11</td>
<td>£7.26</td>
</tr>
<tr>
<td>Greenwich</td>
<td>53</td>
<td>9.80</td>
<td>42</td>
<td>11</td>
<td>£7.26</td>
</tr>
<tr>
<td>Swanscombe</td>
<td>56</td>
<td>10.80</td>
<td>45</td>
<td>11</td>
<td>£7.26</td>
</tr>
<tr>
<td>Ebbsfleet (2)</td>
<td>19</td>
<td>16.80</td>
<td>15</td>
<td>4</td>
<td>£2.64</td>
</tr>
</tbody>
</table>

(1) Cannon Street or Charing Cross (2) St Pancras

Table 9 VALUE OF TIME SAVED BY COMMUTERS

<table>
<thead>
<tr>
<th>STATION</th>
<th>Best journey time from 2019</th>
<th>Best journey time with C2E</th>
<th>Time Savings</th>
<th>Value of Time saved per commuter journey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashford</td>
<td>59 min</td>
<td>44 min</td>
<td>15 min</td>
<td>£9.89</td>
</tr>
<tr>
<td>Canterbury</td>
<td>7:17</td>
<td>1:02</td>
<td>15 min</td>
<td>£9.89</td>
</tr>
<tr>
<td>Dover</td>
<td>1:26</td>
<td>1:11</td>
<td>15 min</td>
<td>£9.89</td>
</tr>
<tr>
<td>Folkestone</td>
<td>1:15</td>
<td>1:00</td>
<td>15 min</td>
<td>£9.89</td>
</tr>
<tr>
<td>Maidstone</td>
<td>1:12</td>
<td>57 min</td>
<td>15 min</td>
<td>£9.89</td>
</tr>
<tr>
<td>Margate</td>
<td>1:49</td>
<td>1:34</td>
<td>15 min</td>
<td>£9.89</td>
</tr>
</tbody>
</table>

Table 10 BASE CASE PROPERTY VALUE UPLIFT

<table>
<thead>
<tr>
<th>Real Estate Asset Value £m</th>
<th>Baseline 2018 Prices</th>
<th>2028 Value £m</th>
<th>2032 Value £m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>£20,000</td>
<td>£22,000</td>
<td>£23,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>£4,382</td>
<td>£4,469</td>
<td>£4,820</td>
</tr>
</tbody>
</table>

In our third optimistic scenario, which involves an upfront investment of over £5 billion, the number of new construction jobs created is likely to run to nearly 1,600 with over 8,000 jobs generated by real estate construction; meanwhile the number of new jobs triggered following the opening of the extension would be almost 100,000. Furthermore, we are likely to see the construction of up to 60,000 new homes and as much as 1,200,000 sq metres of additional commercial space. Even a minimum investment of £2 billion (Option A), on the CR Extension would raise GDP in the area by £1.5 billion, or an uplift of nearly 12 percent on its 2019 level, equivalent to £150 million per year.

These figures demonstrate a highly attractive return on much needed transport infrastructure investment. It is a win-win proposition.

Table 11 NEW JOBS, NEW HOMES AND NEW COMMERCIAL SPACE GENERATED BY THE THREE SCENARIOS REVIEWED FOR THIS CBA

<table>
<thead>
<tr>
<th>THREE SCENARIOS</th>
<th>INVESTMENT OPTION</th>
<th>ANNUAL NUMBER OF NEW JOBS CREATED THROUGH INVESTMENT IN C2E INFRASTRUCTURE UNTIL 2028</th>
<th>NEW JOBS GENERATED RESULTING FROM C2E INVESTMENT</th>
<th>NEW HOMES BUILT</th>
<th>NEW COMMERCIAL SPACE CREATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>PESSIMISTIC CASE (1)</td>
<td>B or C implemented</td>
<td>170 to 260 Rail and Real Estate, 4,100</td>
<td>58,100</td>
<td>Up to 30,000</td>
<td>700,000 sq m</td>
</tr>
<tr>
<td>BASE CASE (2)</td>
<td>A or D implemented</td>
<td>725 to 1,150 Rail and Real Estate, 6,800</td>
<td>89,800</td>
<td>Up to 50,000</td>
<td>1,082,000 sq m</td>
</tr>
<tr>
<td>OPTIMISTIC CASE (3)</td>
<td>E implemented</td>
<td>1,558 Rail and Real Estate, 8,150</td>
<td>99,600</td>
<td>Up to 60,000</td>
<td>1,200,000 sq m</td>
</tr>
</tbody>
</table>

WHAT’S INVOLVED AND WHY WE NEED IT

A new complex - The Place & Making Institute - has been proposed as a core element in the regeneration of Thamesmead. If the ambitious timetable for this project is met, it should open its doors at its new location in 2025. This brand new campus represents one of the most exciting proposals to have materialised in this neglected part of our capital city in recent years. It will literally put Thamesmead on the map and give the place a sense of identity. Thamesmead will offer a much needed crucible for construction skills.

In a combined initiative, the London Borough of Bexley, Peabody Housing[36] and London South East Colleges are developing detailed plans for this new educational and training campus, centred on offering a coordinated range of skills relevant to the building trades, covering everything from traditional skills, such as bricklaying and plumbing, to newer disciplines like landscape architecture.

In terms of its site based workforce, the residential home building industry’s workforce is made up of a wide range of different occupations and trades including engineers, bricklayers, roofers, plumbers, plasterers, electricians and nowadays – increasingly - IT and 3D printing based on a computer-aided design model (CAD).

What is clear from recent surveys of employment across the construction trades is that our national economy is urgently in need of these fast disappearing skills across the UK domestic workforce.

In practice, building sites in London and the South East rely heavily on labour and craftsmen from elsewhere in the EU and beyond. Indeed, analysing the data on where these craftsmen and staff come from highlights the industry’s alarming dependency on overseas workers. Just how much we need to address the skills gap on building and construction sites is illustrated by a recently published Home Builders Federation survey which indicated that 56 per cent of those working on construction sites in London are from overseas. Furthermore, our understanding from informal soundings taken within the industry indicate that these percentage may climb to as much as 75 per cent on a number of major sites.

Recent Survey Evidence

In autumn 2017 the HBF conducted the first ever census of its members’ on-site home building workforce. The census was supported by almost 40 house building companies around the country, operating on 1,090 sites and included responses from no less than 37,167 participants. Non British workers form the majority of the workforce in London and the South East. On average, well over half of them (56 per cent) are from overseas, primarily from Romania, Bulgaria, Poland, Lithuania and Ireland. Furthermore, foreign workers are younger than the locals. The survey evidence indicated that overseas workers are much more likely to be aged in their 20s or 30s than their UK counterparts. The majority of non-British workers on construction sites across the capital come from the EU. Over half are Romanian citizens (53.8%) with 10.5% from Ireland, 10.2% from Lithuania, 8.5% are from Bulgaria, and just 6.4% from Poland, which has been a key source of both skilled and unskilled labour over the last two decades or more. More than seven out of ten carpenters working in the capital on construction sites are from overseas and non UK citizens comprise 71.4% of the total number of general labourers.

[36] Peabody is one of London’s oldest and largest housing associations responsible for around 55,000 properties across London and the South East. Following a series of mergers, Peabody owns around 65 per cent of all housing in Thamesmead and is the major landowner. It is in a position to play a crucial role in the £1 billion regeneration of Thamesmead, Abbey Wood and Plumstead in South-East London. Working in collaboration with the Royal Borough of Greenwich and the London Borough of Bexley it has won Greater London Authority housing zone status, which provides a further £80 million for investment.
In February 2016 the Construction Leadership Council, an official body advising government, commissioned the business consultant Mark Farmer, the CEO and founder of the Cast Consultancy, to investigate the reasons behind the construction industry’s comparative poor performance. His penetrating analysis, contained in an in-depth report entitled Modernise or Die: Time to decide the industry’s future, sets out ten key weaknesses to explain the poor health of the construction industry, which for years has suffered from low margins, poor productivity and a marked tendency towards concentration and oligopoly.

The Farmer Review of the UK Construction Labour Model was asked to focus on:

- Evidence of how the construction labour model and recruitment practices impact on incentives for skills development in the sector (including in the supply chain) and on the introduction of more novel techniques such as off-site construction.
- What business models and other arrangements could better support skills and skills pipelines in the sector?
- What measures could improve wider incentives for capacity investment and the introduction of new ways of working?
- What are the barriers and enablers to greater use of off-site construction?
- How could the range of participants in the UK housing market be broadened, including through the better introduction of institutional funds?

The Farmer Review highlights the fact that action is urgently needed to transform Britain’s flagging capacity to deliver the infrastructure and housing the country badly needs. Otherwise, Farmer warns, there is a real danger that, based on the existing workforce age and current levels of new entrant attraction, “we could see a 20-25% decline in the available labour force within a decade”, which would “undermine the UK’s ability to deliver critical social and physical infrastructure, homes and built assets”.

The Farmer Review argues that these fundamental flaws owe a lot to a lack of investment in research and development in innovation and a dysfunctional model when it comes to funding skills training. Modernise or Die therefore recommends that government should be willing to intervene to improve the performance of the construction sector, through investing in a major new programme of education and training, a revised system of skills funding and an overhaul of tax/employment policies.

Clearly, urgent action needs to be taken to address this glaring skills deficit. Not only does the trained workforce need to expand to meet soaring demand, but many of these new jobs also require higher-level entry qualifications and skills in order to apply fast changing emerging technologies such as 3D printing. Forecasts underline the need to plan ahead to train our young people to fill what is expected to be a major surge in employment in the construction sector in London and the South East. These forecasts, for example, as conducted by Emsi Economic Modelling, predict that 56,000 new jobs will be created within the sector by 2024 with nearly three quarters of these roles (72%) reckoned to require at least a level 3 qualification and over a quarter (26%) judged to require at least a level 4 qualification. The message is therefore clear: we need to focus on training urgently.

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[37] Mark Farmer was previously a senior executive at the global consultancy, Arcadis.

[38] In February 2016, Cast CEO, Mark Farmer, was commissioned by the Construction Leadership Council, at the request of Brandon Lewis and Nick Boles (the ministers for Housing & Planning & Skills respectively at that time) to undertake a review of the UK’s construction labour model.

[39] The Farmer Review of the UK Construction Labour Model by Mark Farmer, Construction Leadership Council,
HOW THE PLACE & MAKING INSTITUTE CAN CONTRIBUTE: PUTTING THAMESMEAD ON THE MAP

Thamesmead’s Place & Making Institute, located in what is earmarked to be a rapidly developing part of the capital and now awarded London Opportunity Area status, aims to address this urgent shortfall in skills. What is envisaged at Thamesmead is a brand new campus expressly devoted to a wide range of training courses and educational programmes. It will be funded by a variety of ‘champions’, each bringing their own expertise and experience to the Place & Making Institute.

Accordingly, the Institute will bring together on one integrated site a range of training facilities with respect to the built environment, digital design, engineering, business & management, construction and landscaping facilities. There are additional plans to complement these initiatives with courses offered by other specialist training providers, possibly trade guilds or professional institutes, and in house training for specific employers within the industry.

David Brown, Berkeley Homes’ Land Director confidently observes that, “A state of the art, forward looking and multi-disciplinary Place & Making Institute will add significant value to our business, the supply chain and perhaps most importantly to the communities that we work within, create and nurture.” This represents a major vote of confidence, coming as it does from a Group that was voted one of ‘Britain’s Most Admired Companies’ across all industries from 2012 to 2016 to add to its list of honours including the Queens Award for Enterprise in 2014 and Housebuilder of the Year in 2015.

Plans for the campus are moving forward. The principle underpinning this new campus hinges on multi-use and the flexibility to respond to technological innovation and both employers’ and employees’ shifting demands and requirements. There will be an onus of the promotion of collaboration between industry and educationalists, thereby ensuring that the curricula meets the needs of employers and learners. The team behind the Institute are seeking to enable progression for all levels and ages, with fresh pathways so students can move between technical, vocational and academic routes and courses, allowing learners to up-skill, re-skill and grow throughout their careers.

“The drive to build more homes in the UK must not derail the importance of creating attractive places to live and work”, observes John Lewis[40]. “This country has a mature construction industry and a wealth of experience in all aspects of placemaking” he adds. But this range of skills are not developed in one training environment, denying young talent direct access to the full breadth of opportunities available”. What is more, John Lewis highlights, “The Place & Making Institute has the potential to change this”.

In summary, then, the skills that will be taught at the Place & Making Institute cover a wide range of construction trades along with more academic disciplines, such as civil engineering, architecture, landscape planning, surveying and associated disciplines like project management, project finance and wider economic development. This compliments recent moves to improve and enhance apprenticeship schemes in Britain, partly through placing a levy on all employers in the UK with a wage bill of more than £3m – equivalent to a 0.5 per cent tax on their payroll. As part of this scheme, introduced last year, employers can reclaim vouchers from the government that then can spend them on apprenticeships. Firms whose payroll falls under the threshold can also apply for apprentice funding and will receive a 90 per cent government subsidy towards apprenticeship training needs. The levy is set to raise about £2.8bn for the Treasury by 2019-20[41]. Employers can reclaim their levy money, but only if they spend it on government-approved apprenticeships. As Sir John Armitt[42], Deputy Chairman of Berkeley Group plc and chairman of the City & Guilds Group noted in

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[40] Interview with Keith Boyfield, May 25 2018.
[42] Among his other roles Sir John chairs the Thames Corridor Commission as is a member of the Transport for London Board and the National Infrastructure Commission and President of the Institution of Civil Engineers.
The Institute is placed to make a vital contribution to this commitment by Government, which has promised to create three million apprenticeships by 2020 in pursuit of a more productive economy.

Besides a commitment to first class teaching, the Institute is expected to develop a research hub. Using strong partnerships between learning providers and employers one of the Institute’s prime goals is to improve sustainability and innovation. The learning offer at the Place & Making Institute will reflect this objective with much of the learning centred on newly developed apprenticeship standards designed to address business needs. The new apprenticeship standards range from level 2 (equivalent to GCSE) to level 7 (equivalent to post-graduate).

Naturally, aesthetics and design will play a pivotal role in this new facility - after all it is a campus devoted to erecting appealing buildings in environmentally attractive surroundings, so it is crucial that the campus is itself an exemplar scheme incorporating new public spaces promoting a well-designed public realm.

### THE FUTURE SKILLS

#### TRAINING VISION

Looking ahead, the Institute’s goal will be to form a vital cog in the move to raise productivity (a flaw identified by the Farmer Review) in this sector and assist in supplying skilled labour for this expanding part of the capital’s economy. The fact that tomorrow’s construction industry will need to embrace innovation and digital production is reflected in the way in which modern methods of construction and prefabrication are changing the way buildings are completed. As the Farmer Review notes[43]:

“There are some early signs of manufacturing-led foreign corporates considering entering the UK market and overcoming traditional barriers to market entry through use of pre-manufactured construction products as opposed to traditional construction methods. New foreign entrants in this field, if meeting technical and quality standards, would potentially be a much needed boost to UK housing supply capacity. But reliance on foreign entrants would represent a lost opportunity for the UK to retain value added, including direct and indirect employment, IP development and to potentially build an export base”.

Legal & General plc, one of the UK’s largest financial conglomerates, has been at the forefront of investment in prefabrication and other forms of housing innovation. The insurer launched a subsidiary in 2016 to deliver precision-engineered homes more cheaply and quickly. In pursuit of this vision it has established what is set to become one of the largest modular housing construction factories in the world, based in Sherburn, Yorkshire. This is a significant move since - to paraphrase Joseph Schumpeter - the factory constitutes one of the biggest potential gales of creative disruption in the UK residential sector for many a year: its focus is a manufacture-led approach adopted on an unprecedented scale.

And not before time. After all, one of the criticisms levelled at the construction industry is that building techniques have hardly advanced in decades, if not centuries. This is an issue Legal & General’s Group CEO, Nigel Wilson, cares about passionately. “Housing is the archetypal UK asset problem”, he observes, “We build 120,000 homes a year, but need twice the number. There needs to be a revolutionary and disruptive change in how we build houses - with modern, modular construction to the forefront[44].”

In this context, it is worth highlighting the fact that Building Information Modelling is now starting to change how projects are designed and delivered. Accordingly, one of the key roles to be played by the Place & Making Institute is to support this transformation alongside highly valued, more traditional skills.

The new Institute should catalyse change in this part of the capital which hitherto has been outpaced in terms of economic growth by its better connected neighbours. In terms of education, training and skills the proposed Institute should also exert a transformative impact since this locality suffers from relatively limited provision – so opening a new technical tertiary education centre should lift locals’ aspirations and create new opportunities. Furthermore, on account of its location in Thamesmead, students and graduates of the Institute should be able to use their newfound skills on projects in and around this London Opportunity Area on directly linked employment opportunities.


[45] "We need to invest in assets for the long term, not shareholder gains," by Nigel Wilson, Daily Telegraph, 4 January 2016.

34

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As noted in chapter 2 extending Crossrail to Ebbsfleet will trigger the creation of a new strategic transport hub outside the M25, including the timely delivery of the A2 Bean and Ebbsfleet junction schemes offering direct interchange between Crossrail and the Eurostar (HS1) services. From Ebbsfleet, Paris and Brussels are a two hour journey of around two hours while King’s Cross/St Pancras in central London is a mere 17 minutes away. As a result of this concentrated investment in transport infrastructure Ebbsfleet is well positioned to become the new regional centre for north Kent.

In tandem, Ebbsfleet is emerging as the first new ‘Garden City’ to be built in a century. A third of the development area will be open space incorporating a large urban park with smaller neighbourhood greens, local parks and play areas, contributing to a Garden City environment.

Ebbsfleet is being built on previously used land that was owned by a range of private landowners and developers. Planning permission has already been secured for most of the site but a wide range of conditions and legal agreements have been negotiated as part of this process, many of which capture a share of the forecast rise in land value for the public benefit. One of the distinctive characteristics of this entire ambitious project is the transformation of over nine miles of river front along the Thames estuary, greatly enhancing an area currently characterised by heavy industry, power generation plants and derelict factory sites including a major disused cement works. None of these added much to the aesthetics of the locality but with redevelopment and direct access to the river, the prospects are exciting.

Ebbsfleet will build on its proximity to the capital but establish complimentary employment opportunities, notably in logistics, rather than simply morph into another commuter town.

In a significant step, EDC granted planning permission in January 2018 for a 220-home development at Swanscombe together with a factory which will produce modular homes. The factory to be operated by Berkeley Group, will manufacture finished modules complete with plumbing, electrics and internal finishing, including flooring and fittings. Berkeley Group are confident that this plant will be able to produce up to 1,000 homes a year.

Major plans have now been approved for the largest part of Ebbsfleet Garden City, which will include 6,250 homes, a market centre, education campus and a major urban park. In time, it is planned to deliver 15,000 new homes and a significant new commercial zone generating up to 30,000 new jobs on 82 hectares of derelict land. Road junction upgrades will be part of this scheme aimed at attracting a diverse range of employers attracted by Ebbsfleet’s Enterprise Zone status. The Development Corporation plans to encourage inward investment targets including medi-tech, bio-sciences and related research and innovation. Ebbsfleet Development Corporation (EDC) was established in July 2015 with combined development control powers transferred from Dartford Borough Council, Gravesham Borough Council and Kent County Council. Its brief is to help developers and landowners with stalled sites, accelerating infrastructure provision to deliver a high quality development of which everyone can be proud.

As (Lord) Andrew Adonis, Ben Rogers and Sam Sims highlight in a study on Unlocking the Potential of the Thames Estuary: “The lesson of Docklands, North Greenwich and the Olympics is that to get large new developments going you need to concentrate intensively, and sequentially, on a series of tightly defined, high potential development zones”

**LOGISTICS AS THE SPECIALISM OF THE THAMES ESTUARY**

Logistics and distribution are the way forward as a distinctive specialisation for the Thames estuary. This is one of the prime goals of the Thames Estuary 2050 Growth Commission. Already, on the opposite side of the estuary to Ebbsfleet, a giant facility is under development at London Gateway port and logistics centre, near Basildon. This is set to transform the way in which goods and imported and exported out of the country. This initiative
alone is forecast to directly create an additional 12,000 jobs including a new Marks and Spencer distribution centre. Also on the norther bank of the estuary at Thurrock, a new deep-sea container port is being opened with one of Europe’s largest logistics park with a capacity equivalent to 3.5 million containers.

On the southern side of the estuary there are ambitious plans for developing Ebbsfleet, which, of course, require appropriate funding. Right at the core is the creation of an ‘Ebbsfleet Hub’ interchange at what has been named Ebbsfleet Central – the area surrounding the key rail hub. Anticipating future demand, EDC is working on providing up to 9,000 car parking spaces associated with the International Eurostar Station with a patchwork of new development parcels. Adjoining this central transport hub there are plans to develop Northfleet Riverside, a 87 hectare zone which was previously the site of the Lefarge cement works, as a bulk aggregates terminal coupled with a bulk powders terminal. Permission for these facilities has already been granted, along with associated rail and wharf infrastructure. This site boasts both deep water access and high speed rail connections via Ebbsfleet International Station.

Another area due for redevelopment is Northfleet Embankment East - the only substantial area within the Ebbsfleet redevelopment zone that falls within public ownership – specifically Homes England, previously known as the Homes and Communities Agency. This former industrial site, which was home to a host of activities including an aggregates works, power station and cable manufacturing factory is now being redeveloped by EDC having acquired the appropriate statutory powers with respect to Northfleet Embankments East and West so as to speed up delivery on the ground. A start has already been made with a £40m 20,000 sq metre Lidl distribution centre, opened in September 2014.

**REMAINING CHALLENGES**

Development at Ebbsfleet is faced with some daunting challenges. The proposed Garden City is located across a cluster of extensive brownfield sites, many of which are characterised by contaminated land and complicated levels of hydrology. Considerable care – and money – needs to be devoted to redevelop these areas. Progress will take time coupled with a sense of commitment from the EDC and its private sector partners. Within this context, it is crucial that central government offers the certainty and support that this ambitious scheme merits and provides the EDC with the governance and statutory powers it requires to fulfill its mandate.
KEY THEMES

This cost benefit analysis clearly demonstrates that there is a powerful economic case to proceed as quickly as possible with an extension to the Elizabeth Line from Abbey Wood to Ebbsfleet. What is more, to take full advantage of the latent economic potential across this South East quadrant of the UK’s capital city, Government needs to give the go ahead to a four track from Abbey Wood to Dartford with a new realignment to Northfleet station adjacent to Ebbsfleet International. This is estimated to require a capital investment totalling £2.75 billion but it will be money well spent. Over time, the return on capital is likely to vastly exceed this outlay.

As this cost benefit analysis shows investing in a full extension of C2E will lead to the construction of up to 60,000 new homes and as much as 1,200,000 sq. metres of additional commercial space. Furthermore, our model indicates that meanwhile the number of new jobs triggered following the opening of the extension would be almost 100,000. If a less ambitious capital expenditure programme was adopted, this would still lead to the creation of 50,000 jobs and nearly 90,000 new homes. In addition, valuable jobs would be created in the construction of the C2E transport link, a practical springboard for the proposed new constructions training centre at Thamesmead.

Regional GDP will greatly benefit from this relatively modest infrastructure investment. Our model suggests that a Crossrail extension would raise GDP in the area by £1.5 billion, equivalent to an uplift of nearly 12 percent on its 2019 level, equivalent to £150 million per year.

C2E would provide the key artery to revive this neglected part of South East England. It will connect three crucial economic growth zones: Bexley Riverside, Dartford Town Centre and the new Garden City being built at Ebbsfleet. Most exciting of all, it would help transform over eight kilometres of underused industrial land along the Thames river front, creating dedicated shared living and working neighbourhood that could act as a magnet for new enterprise and creative output.

Thamesmead’s planned training campus could fulfil a much needed role as a crucible for construction skills: something increasingly in demand in London and the South East. As consultants Emsi Economic Modelling have forecast, 56,000 new jobs will be created within the sector by 2024 with nearly three quarters of these roles (72%) reckoned to require at least a level 3 qualification and over a quarter (26%) judged to require at least a level 4 qualification. The message is therefore clear: we need to focus on training urgently.

Working as part of a public private partnership involving the Third Sector (Peabody is a charity) the redevelopment of unloved Thamesmead offers a remarkable opportunity to create a new identity and sense of place – somewhere people want to live and work. John Lewis, who heads up Peabody’s Thamesmead initiative, is determined to go beyond a “bricks and mortar” approach, and, working with partners from the private and public sectors, Peabody aims to enhance employment, enterprise, cultural, social and leisure opportunities for local people and others from further afield in a concerted move to transform the outlook for this previously neglected part of the capital.

For its part, Peabody is concentrating its focus on risk management and strong corporate governance so as to avoid the pitfalls that damaged Thamesmead’s reputation in the past. Here, it is worth adding a note of caution: it is important not to repeat previous mistakes. Thamesmead, originally built on former Ministry of Defence land adjacent to the Thames, offers a classic example.

IDEALISM CAN LURCH INTO DYSTOPIA

In the past, Thamesmead was a place to avoid: it was the default option at the end of the (railway) line. The architectural critic Jonathan Glancey points out that “A fortune was spent in the first five years (1965-70) on this new town development. He explains that ‘Local government was a costly business in the ’60s because there was a consensus that new housing, schools, hospitals, parks and other amenities were needed and that these could not, should not, be left in the hands of the
private sector. In practice, this approach led to immense disappointment as budgets ran out and maintenance repairs were ignored. Nor did the Brutalist system built concrete architecture beloved by disciples of Le Corbusier help with its elevated walkways, concrete towers, shoddy construction and non-functioning lifts. First perceptions are all important and on windswept days in the winter Thamesmead looked bleak; in the summer the smell of the sewage works (now fortunately replaced by Thames Water) was ‘strong enough to peel paint at fifty paces according to one local’.

The lesson to be drawn from history is that any redevelopment plan for the area must be consistent and funding should not be allowed to slide after the strategy is launched. In many ways this is the conundrum currently facing Ebbsfleet. As the Thames Growth Commission report recently recommended, we need a series of Development Corporations along the river, backed by substantial investment, planning powers and freedoms conferred by central government, to drive growth in the Thames Estuary in key opportunity areas.

It added: “there is scope for the Thames Estuary to be even more ambitious in responding to London’s ever growing housing need.”

Land value enhancement is pivotal. Up till now land values in many of the C2E opportunity areas have been suppressed by the poor connections within the C2E corridor, and with London. The result is that significant areas of brownfield land currently have limited viability for development.

C2E offers a remarkable opportunity to harness the suppressed land value to help secure value for public investment - potentially through a development rights auction model, or by piloting new approaches to infrastructure funding.

The C2E extension and the associated creation of The Place & Making Institute in Thamesmead and a state of the art logistics centre in Ebbsfleet compliments the six delivery themes which form part of The Thames Estuary Production Corridor. This vision sets out six pillars as the key steps necessary to revitalise this corridor. In summary they are:

- Build big by making investment in new large scale infrastructure to stimulate cluster growth and connect businesses.
- Establish a creative business destination with state-of-the-art facilities underpinned by first rate transport links and digital connectivity.
- To aim for an exemplary zero carbon target to provide the required long-term rail capacity for South East London and the whole of Kent.
- Promote innovation to create one of the world’s leading clusters of innovation thereby triggering a range of creative businesses and manufacturing, while encouraging creative collaboration with other sectors of the national economy.
- Create an ultra-fast digital highway along the Thames Estuary mirroring advances in improved transport links.
- Encourage talent through the development of a skills pipeline - The Place & Making Institute is well placed to contribute a crucial role in forging the skilled workforce we need for the construction and delivery of much needed homes, work places, retail and leisure facilities that, together with social and environmental infrastructure, will create the exciting, attractive new communities of the future. Given the land available to create a new bespoke educational campus, Thamesmead is in an unrivalled position to offer an educational and training centre which provides skills and learning opportunities for an aspirational community.

Recommendations

- On the basis of the cost benefit analysis undertaken for this study it can be clearly argued that there is a strong case for investing in a dedicated four track extension to Crossrail from Abbey Wood to Dartford with a new realignment to Northfleet station. This is likely to cost around £2.75 billion but it is money well spent. The boost to economic productivity and the multiplier influence on property values, new building and increased tax revenues is impressive. The Government should lose no time in giving the go ahead to this affordable project which promises to deliver up to 60,000 new homes and up to 100,000 new jobs. It is a win-win proposition.

- Plans to expand Canary Wharf and create 85,000 new well paid jobs are likely to exert a powerful influence on the future economic prosperity of the South East quadrant of London. To realise this potential, extending Crossrail to Ebbsfleet is crucial. Such an investment dramatically improves connectivity, offers a quick link to continental rail services and high speed broadband access will underpin achieving these imaginative goals.

- Moves to diversity the economy and attract higher paying jobs in rapidly growing sectors of the economy need to be encouraged. The southern Thames estuary needs to develop employment in the services sector. Steps to attract the creative industries (exemplified in the new arts complex at Woolwich) coupled with initiatives in the medi-tech and biotech research field (a new centre is planned for Ebbsfleet) are the sorts of schemes to be welcomed. Improved transport connectivity and high speed broadband access will underpin those living south of the Thames in these London Boroughs and North Kent will exacerbate traffic congestion, damage already alarming air pollution levels, and stymie future economic diversification and development.

- Given the urgent need for developing a skilled workforce in the construction industry no time should be lost in establishing the proposed new Place & Making Institute in Thamesmead. This new educational and training facility will attract the creative industries (exemplified in originally outlining the EDC’s mandate, insufficient consideration was given to the necessary governance and statutory powers required to realise this ambitious vision.

- Ownership issues relating to land that needs to be developed at Ebbsfleet to realise the vision of a C21st Garden City and logistics hub need to be resolved quickly. Unless agreement can be made on these land issues progress will be seriously handicapped. Clearly, following up the recommendations of the Sharp Review for the Ministry of Housing, Communities & Local Government, Ebbsfleet Development Corporation (EDC) should be awarded the additional statutory powers it requires to deliver its objectives. It would appear that, in original outlining the EDC’s mandate, insufficient consideration was given to the necessary governance and statutory powers required to realise this ambitious vision.

- The Government should approve a Development Consent Order for junction improvements at Bean and Ebbsfleet as a matter of urgency. Without this go ahead, economic development at the smooth flow of trade will be seriously handicapped, particularly as it relates to trade in and out of Dover, Britain’s second most significant port.

- The way in which we build houses needs to be radically rethought. Borrowing from experience elsewhere in the world, notably Scandinavia, modular construction clearly has a crucial contribution to make. As Legal & General’s Chief Executive Nigel Wilson urges, “There needs to be a revolutionary and disruptive change in how we build houses – with modern, modular construction to the fore”.

- The Government should develop a Garden City at Ebbsfleet to realise the vision of a C21st Garden City and logistics hub need to be resolved quickly. Unless agreement can be made on these land issues progress will be seriously handicapped. Clearly, following up the recommendations of the Sharp Review for the Ministry of Housing, Communities & Local Government, Ebbsfleet Development Corporation (EDC) should be awarded the additional statutory powers it requires to deliver its objectives. It would appear that, in original outlining the EDC’s mandate, insufficient consideration was given to the necessary governance and statutory powers required to realise this ambitious vision.

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- Central government will need to fund the feasibility studies and related initiatives to bolster this ambitious public-private investment initiative. The EDC has a pivotal coordinating role to play in bringing together private sector partners and funding the initial infrastructure development work that will underpin future development. As the Sharp Review highlights, “To galvanise co-ordinated action by government, the private sector and local authorities in order to deliver a quality sustainable community, the scheme for a garden city at Ebbsfleet should be restated, giving confidence around a shared vision with realistic goals and performance measures”.

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The IFT launched in September 2017 at the UK Foreign & Commonwealth Office, with speeches by Foreign Secretary Boris Johnson and Trade Secretary Liam Fox.

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