



Programme Area: Smart Systems and Heat

Project: WP2 Manchester Local Area Energy Strategy

Title: Planning Briefing Notes Informing Stage 0 GM Spatial Energy Plan – Briefing Note 1

Abstract:

This Deliverable comprises one of a series of four briefing notes regarding the planning policy and related information to inform the production of a high level energy evidence base prior to the completion of a detailed EnergyPath modelling study with a local authority in Greater Manchester. It provides advice and recommendations relating to the current and future policy framework in GM which has informed the Catapult high level energy study for Greater Manchester. This Deliverable, Briefing Note 1, sets out the Key Considerations for the Evidence Base to support the Greater Manchester Spatial Framework.

Context:

The Spatial Energy Plan for Greater Manchester Combined Authority project was commissioned as part of the Energy Technologies Institute (ETI) Smart Systems and Heat Programme and undertaken through collaboration between the Greater Manchester Combined Authority and the Energy Systems Catapult. The study has consolidated the significant data and existing evidence relating to the local energy system to provide a platform for future energy planning in the region and the development of suitable policies within the emerging spatial planning framework for Greater Manchester.



Briefing Note 1

Key Considerations for the Evidence Base to support the Greater Manchester Spatial Framework

on behalf of

Energy Systems Catapult

August 2016

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1 Introduction

1.1 Background and Scope

1.1.1 JLL has been commissioned by Energy Systems Catapult (ESC) to prepare a Briefing Note “on the requirements for the production of an evidence base document to support the Greater Manchester Spatial Framework (GMSF) and the key considerations for ESC in meeting the requirements of the Planning Inspectorate and key risks / considerations in production of the evidence base study to support GMSF”.

1.1.2 This Briefing Note considers:

- the background to the GMSF and its current status;
- the requirements and Regulations covering the preparation of Development Plan Documents;
- the current evidence base supporting the GMSF; and
- the implications and requirements for ESC to prepare a supporting evidence study relating to the Smart Systems and Heat Programme. It is understood that ESC has an evidence base Study under preparation at the present time. We have only seen a draft ‘contents’ page for this at this stage.

1.1.3 This Briefing Note forms one of a series of four: the others cover in summary:

- The applicable planning policy framework;
- Technical Housing and Sustainability Standards for the built environment; and
- Possible ‘policy’ levers’ to be considered for the GMSF.

1.1.4 In preparing all of the Briefing Notes, preliminary legal input has been provided by David Hardy, Partner with Squire Patton Boggs.

1.2 Approach

1.2.1 The Smart Systems and Heat (SSH) programme being delivered by the ESC is focused on creating future-proof and economic local heating solutions for the UK. Heat accounts for over 40% of the UK’s demand for energy, and almost 20% of the UK’s CO₂ emissions come from domestic heating. There is recognition that the vast majority of the existing 26 million homes in the UK will still be in existence by 2050. The primary focus of the programme is therefore on domestic retrofit and decentralised heat and energy solutions across different house types.

1.2.2 The approach taken to the preparation of this Briefing Note has involved a desk based review of available literature. It should be noted that at this stage, no consultation has been undertaken with planning officials within the GMSF planning team.

1.3 Structure of Briefing Note

1.3.1 The structure of this Note is as follows:

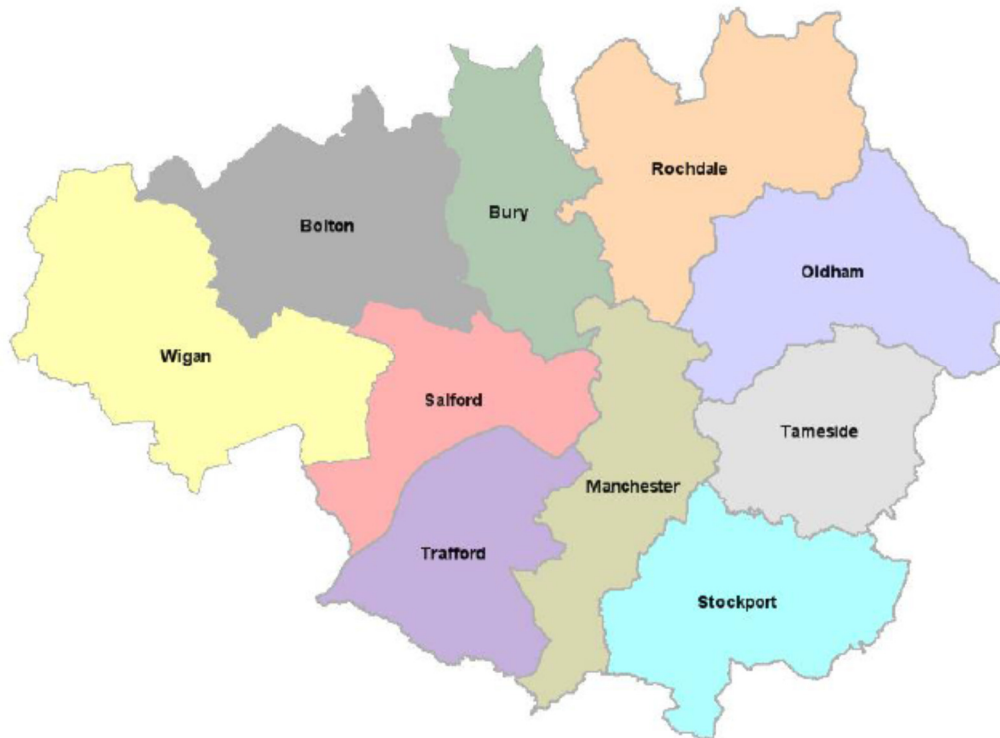
- Chapter 2 summarises the position at the present time with regard to GMSF, describing its current status and setting out the background to its preparation;
- Chapter 3 makes reference to plan preparation in terms of national policy and guidance recognising that the detail of this topic is contained within Briefing Paper 2, which specifically deals with national, regional and local planning policy;
- Chapter 4 provides our findings in term of the detailed review of available documentation that we understand makes up the broad evidence base at the present time, supporting the GMSF. Whilst a number of the documents we have reviewed in this regard have extensive coverage of technical matters, we have sought to pull out key objectives and spatial / town planning policy references.

- Chapter 5 draws upon our overall document review and sets down high level observations and conclusions on the available suite of evidence base documents.

2 The Greater Manchester Spatial Framework

2.1 Introduction

2.1.1 “Greater Manchester” (GM) comprises the ten local authorities of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford, and Wigan centered on the city of Manchester. The authorities increasingly operate together as a single economic entity with high levels of inter-connection, an established labour market and broad identity.



- 2.1.2 The constituent authorities have a history of co-operation and collaboration through the Association of Greater Manchester Authorities (AGMA), the Greater Manchester Combined Authority (GMCA), the Greater Manchester Local Enterprise Partnership (LEP), Transport for Greater Manchester (TfGM), Greater Manchester Police Authority and the Greater Manchester Fire and Rescue Service.
- 2.1.3 These collaborative bodies build on a 12-year period from 1974 to 1986 during which the area was governed by the Greater Manchester County Council and the constituent Borough Councils. On the abolition of the County Council by the Local Government Act 1985, the constituent authorities became single tier City Councils or Metropolitan Borough Councils, however AGMA continued to co-ordinate services such as waste and transport which benefitted from wider cooperation.
- 2.1.4 Continued pressure from AGMA resulted in the formation of the GMCA, announced in the 2009 United Kingdom Budget and enacted by the Local Democracy, Economic Development and Construction Act 2009, which allowed for the creation of the Combined Authority with devolved power to cover public transport, skills, housing, regeneration, waste management, carbon neutrality and planning, subject to the approval of the constituent authorities. Consultations were carried out within the constituent authorities and with national Government in 2010 following which the GMCA came into being on 1st April 2011.

2.2 The Greater Manchester Spatial Framework

2.2.1 In January 2014, the GMCA agreed to bring forward a Greater Manchester Spatial Framework (GMSF) in order to identify and guide future housing and employment land requirements, allowing GM to effectively steer development within the city region. The stated purpose of the GMSF is:

“to manage the supply of land across the conurbation thus supporting sustainable growth over the next two decades. It will provide the basis to secure the strategically important sites which will drive future economic growth and bring forward the supply of land necessary to accelerate housing development to meet forecast housing requirements.”

2.2.2 To this end, GMSF launched a consultation in September 2014 to determine a number of key issues upon which subsequent consultations could be framed. The consultation sought views on:

- Whether Greater Manchester, as defined by the ten constituent Local Authorities, was an appropriate geographical area for assessing housing and employment land requirements;
- Whether the analysis of Greater Manchester’s competitive strengths was accurate;
- The appropriateness and soundness of the assumptions made by GMCA and the methodologies used to assess the requirements for housing and employment to 2033;
- Whether the evidence base was appropriate; and
- The whether the conclusions reached by GMCA were appropriate.

2.2.3 The consultation closed on 7th November 2014 after receiving responses from over 70 organisations and groups.

2.3 The Greater Manchester Devolution Deal

2.3.1 On 3rd November 2014, the UK Government and GMCA announced that a “Devolution Deal” had been reached between GM and national Government. The wide ranging deal would allow for a range of powers and funding to be devolved from national level to the GMCA which was to be led by a directly elected mayor. With specific regard to planning, the devolution document stated:

“the Mayor will receive strategic planning powers. This will give the Mayor the power to create a statutory spatial framework for the city region, which will act as the framework for managing planning across Greater Manchester, and will need to be approved by unanimous vote of the Mayor’s Cabinet. This will be in line with the strategy currently being developed by the Greater Manchester Combined Authority (GMCA).”

2.3.2 In GMCA’s summary of responses to the 2014 consultation, it was acknowledged that the devolution announcement would have clear implications on the development of the GMSF, however work was to continue on the GMSF in the anticipation of appropriate legislation from national Government to give the Framework statutory status. It is understood that on the election of the Greater Manchester Mayor in 2017, the GMSF will become “The Plan of the Greater Manchester Mayor” and will be the first of a number of Manchester-wide documents to be produced by that office.

2.4 Current Status of GMSF

2.4.1 The most recent public consultation on the GMSF, the “Strategic Options Consultation” which ran from November 2015 to January 2016 provided a range of Strategic Approach and Objectives which covered a diverse range of topics including the economy, housing and infrastructure.

2.4.2 The more relevant objectives with regard to the promotion of Smart Energy Systems are outlined below.

Climate Change

“Climate change will therefore be a key theme running throughout the GMSF, for example in terms of ensuring that development is located so as to reduce the need to travel, maximise the

use of sustainable travel modes, support low carbon energy use and minimise the impacts of extreme weather events. It will also further enhance the importance of high quality green infrastructure, helping to reduce the impacts of the urban heat island and enabling plants and animals to adapt to a changing climate.”

A Smart City

“The GMSF will support Greater Manchester’s development as a smart city, and a key component of this will be ensuring high levels of digital connectivity across the urban area.”

2.4.3 A “Call for Sites” was carried out in tandem which sought submissions on future housing and employment land.

2.5 Future Stages of the GMSF / Programme

2.5.1 As detailed above, the GMSF will fall within the office of the Greater Manchester Mayor once in office. The Mayor is then expected to continue to produce Greater Manchester-wide strategic documents including:

- A Greater Manchester 'Vision' which extends beyond the Greater Manchester Strategy;
- A residential growth strategy setting out how we will bring forward land to meet our identified demand;
- A transport strategy;
- An infrastructure plan; and
- An investment strategy, sitting alongside financial tools such as the Manchester Investment Fund and the Housing Investment Fund.

2.5.2 Table 2.1 below, adapted from the Manchester City Council Local Development Scheme, provides an overview of the completed and future stages of the GMSF and the proposed “milestone dates”. The timeframe is subject to the adoption of appropriate legislation confirming the status of the GMSF.

Table 2.1: Key Stages of the GMSF

Stage	Stage Date
Initial consultation on the objectively assessed development need	October-November 2014 (complete)
Consultation on Vision, Strategy and Growth options	November 2015- January 2016 (complete)
Public Consultation on Draft Plan	Autumn 2016
Publication of Plan	June 2017
Submission	November 2017
Examination in public	February - April 2018
Adoption of the GMSF by Greater Manchester Mayor/Greater Combined Authority	January 2019

2.5.3 Each constituent Authority within GM will also restart the process of producing individual Local Plans which will be required to conform to the GMSF. It is anticipated that initial consultation work on these Plans can begin, or restart where appropriate, in December 2016 following the completion of the Draft GMSF consultation in Autumn 2016.

3 Plan Preparation

3.1 Introduction

- 3.1.1 Local Authorities are required by statute to prepare, maintain and adhere to a Development Plan as defined by the Planning and Compulsory Purchase Act 2004.
- 3.1.2 The National Planning Policy Framework (NPPF or 'Framework') makes it clear that the planning system should be plan-led and that plans should be supported by a robust evidence base or "objectively assessed development needs". During the examination of a Local Plan, the Planning Inspectorate will ask a range of questions in order to determine the robustness of the evidence base, including whether the aims, objectives and overall content of the plan are justified and informed by an appropriate evidence base.
- 3.1.3 A key element of the Inspector's decision as to whether the evidence base is appropriate is whether or not the evidence is up to date. Some elements of the evidence base are relatively static, such as Landscape Character or the Historic Environment, however other elements, such as housing and employment land supply are more fluid and require regular updates as developments are brought forward or economic projections are updated following national trends.
- 3.1.4 Due to the substantial time periods required to undertake research, determine strategic objectives, develop policy and publish documents, each of which require appropriate periods of public consultation, it is important for Local Authorities to determine which elements of the evidence base are "static" and which are "fluid". Once "static" elements of the evidence base are deemed robust and appropriate, no further updating is required ahead of the formal adoption hearings. Local Authorities must however ensure that "fluid" elements are considered up to date in advance of the formal submission to the Planning Inspectorate to avoid delays and to limit the risk of the Plan being found unsound.

3.2 The National Planning Policy Framework

- 3.2.1 The NPPF was published on 27 March 2012 and contains national planning policy for England. The NPPF is a key guidance document for plan-makers.
- 3.2.2 Paragraphs 150 to 185 provide guidance for plan makers on a range of topics initially reiterating the importance of Local Plans in reflecting the aims and objectives of local communities and forming the basis upon which decision should be made, while contribution to the delivery of sustainable development.
- 3.2.3 Paragraph 153 allows for the use of additional Development Plan Documents (DPDs) and Supplementary Planning Documents (SPDs) where there is a justified need and will not cause unnecessary financial burdens to developers.
- 3.2.4 Paragraph 156 sets out the need for LPAs to define the strategic priorities of the plan including:
- the homes and jobs needed in the area;
 - the provision of retail, leisure and other commercial development;
 - the provision of infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);
 - the provision of health, security, community and cultural infrastructure and other local facilities; and
 - climate change mitigation and adaptation, conservation and enhancement of the natural and historic environment, including landscape.
- 3.2.5 Paragraph 158 reiterates the need for Local Plans to be founded on "adequate, up-to-date and relevant evidence" relating to the local economy, environment and social needs. As part of the evidence base, Paragraph 162 states

that Local Authorities should work with a range of other parties to assess the capacity and quality of infrastructure for a range of utilities and services such as “energy (including heat)”.

3.2.6 Paragraph 182 details the grounds on which Local Plans will be examined including assessments against the Duty to Cooperate, legal and procedural requirements and whether or not the plan is sound. “Soundness” is considered against whether the plan is:

- *“Positively prepared – the plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;*
- *Justified – the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;*
- *Effective – the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and*
- *Consistent with national policy – the plan should enable the delivery of sustainable development in accordance with the policies in the Framework.”*

3.3 The Planning Practice Guidance

3.3.1 The Planning Practice Guidance (PPG) was launched on 6th March 2014 following a period in “beta”. The online resource is designed to accompany and cross-reference with the NPPF and will be regularly updated as policy, guidance and case law develops.

3.3.2 The Local Plan section of the PPG reiterates the importance of the Local Plan in providing a plan-led planning system and includes “adapting to Climate Change” as a key issue to be addressed in Local Plans. The section provides clear guidance on the purpose of Local Plans which should “make clear what is intended to happen in the area over the life of the plan, where and when this will occur and how it will be delivered.”

3.3.3 The chapter provides the following guidance on infrastructure on in the preparation on a Local Plan:

“A Local Plan is an opportunity for the local planning authority to set out a positive vision for the area, but the plan should also be realistic about what can be achieved and when (including in relation to infrastructure). This means paying careful attention to providing an adequate supply of land, identifying what infrastructure is required and how it can be funded and brought on stream at the appropriate time; and ensuring that the requirements of the plan as a whole will not prejudice the viability of development.”

3.3.4 The Local Plans section reiterates that the responsibility of preparing a Local Plan lies with local authorities however the section highlights s.28 of the Planning and Compulsory Purchase Act 2004 which allows two or more Authorities to work together to prepare a Local Plan. The section also reiterates the statutory Duty to Cooperate with other local authorities.

The Local Plan chapter discusses the evidence required to underpin a Local Plan which should be focussed on justifying policies within the plan and should be prepared proactively rather than retrospectively. The broad steps in preparing a Local Plan are outlined below:

- Initial evidence gathering – formulate aims and objectives, begin evidence gathering and identify specific environmental, economic and social objectives;
- Initial consultation on evidence and continued evidence gathering – engage with local community and stakeholders, assess representations made under Local Plan Regulations 2012, undertake Duty to Cooperate responsibilities, ensure compliance with Statement of Community Engagement;
- Publication Draft – consult on Draft Plan for a minimum of 6 weeks;

- Submission – plan submitted for examination with Sustainability Appraisal, evidence base and details of representations;
- Examination – Inspector examines the plan to assess whether due process has been followed and requirements of legislation and Regulations have been met; and
- Adoption – plan formally adopted by local authority.

4 GMSF Evidence Base & Review

4.1 Introduction

4.1.1 In this chapter we set out the results of our view of a number of evidence base documents, with particular focus on providing a key summary of relevant content and identifying spatial planning and other town planning policy references of particular relevance.

4.2 Strategic Options Background Papers

4.2.1 The GMSF Strategic Options Consultation was supported by five Strategic Options Background Papers focussing on the Area of Assessment, Economic Development Needs Assessment, Objectively Assessed Housing Need and Integrated Impact Assessment and Paper 4 on Infrastructure and Environment. Paper 4 addresses Critical Infrastructure and Transport and is dated November 2015.

4.2.2 The scope of Critical Infrastructure includes “*broad location of strategic schemes for water, waste water, gas, electricity and heat to deliver the proposed scale and distribution of development*” and “*overall strategy for delivering low carbon energy and any GM wide significant opportunities*”.

4.2.3 Part A of Paper 4 deals with ‘critical infrastructure’ and this includes all utilities infrastructure including gas, electricity and heat. It sets out at paragraph 3.2 that infrastructure is a critical ingredient to supporting growth and one of the priorities of the GM Strategy (2013) is to masterplan and deliver the investment necessary to support growth.

4.2.4 Section 16 of the document sets out that national planning policy requires that the GMSF should consider its role in reducing carbon emissions by *inter alia*:

- Providing opportunities for renewable and low carbon energy, technologies and providing opportunities for decentralised energy and heating.
- Promoting low carbon design approaches to reduce energy consumption and buildings.
- Reference is made to all communities having responsibility to help increase the use and supply of green energy.
- Reference is made to the transformation underway in the UK energy system and that this will see a significant shift away from gas towards heat and electricity, with gas primarily being used in power stations and in district energy systems.

4.2.5 Under the subheading “Utilities” Paper 4 (page 11) recognises a number of key issues relevant to Smart Energy Networks:

- “A major transformation of the UK energy system is underway with a shift to dynamic, smart energy networks, embedded generation at the building and community scale, and active, two way flows of demand and response. This alters the amount of capacity existing infrastructure is capable of delivering and requires a more integrated approach to spatial, building design, servicing and consents;
- Developing a shared understanding of issues and solutions remains a challenge. There is an abundance of data available and applying this in an integrated way is one area where further work is required;
- There is a need to provide better co-ordination and alignment of utility planning with GM development and growth plans to reduce the risk of the untimely identification of constraints that could delay or even stop development / growth proposals;
- there is often a “first mover” disadvantage with the first developer / investor incurring the greatest costs and risks in an area of potential development;

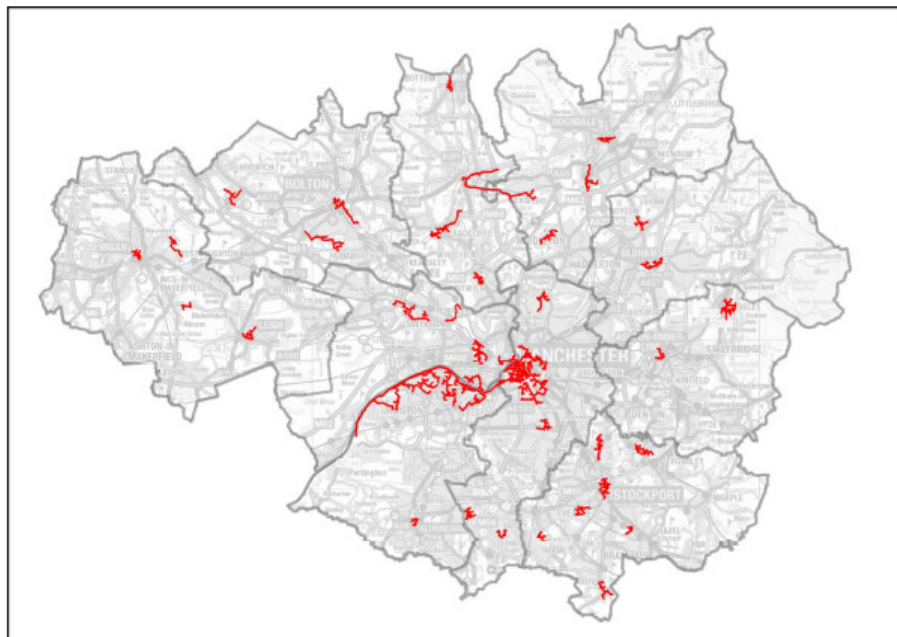
- integration of information at a geographical basis is useful and helps reduce the risk of development and growth proposals being unattractive, delayed or made unviable through constraints being identified late in the development process and
- some strategic issues (e.g. electricity capacity) illustrate how the simple integration of datasets on a 'place' basis leads to a clearer identification of challenges (electricity sub stations in flood risk areas; capacity in electricity substations supplying strategic sites and town centres, flood risk to major transport infrastructure) and vehicle for identifying solutions."

4.2.6 Paragraph 6.4 refers to decarbonisation of the grid and the growth of renewable technologies and there is particular reference at paragraph 6.5 to the role of wind turbines. There is a quotation provided from the June 2015 Written Ministerial Statement in this regard. However, the document sets out that the questions for the GMSF are:

- is there sufficient potential for renewable energy generation in GM ?
- should this be within the scope of the GMSF ?
- is the available evidence sufficient ?

4.2.7 The document contains an illustration of potential heat networks and this is provided below for information (Figure 10 Extract). These relate to short to mid-term opportunities (2015 – 2022) for heat networks in GM identified in 2013.

Figure 10. Potential Heat Networks



4.2.8 Paragraph 16.7 adds that the Combined Authority has adopted a carbon target to deliver 48% reduction or 11m tonnes of CO₂ by 2020. It adds that new targets beyond 2020 are being established.

4.2.9 Reference is made to the 'Low Carbon Wedges' work which predicts that between 2015 and 2020 various reductions will be achieved. The document adds that there is a gap of some 3.61m tonnes and less than two thirds of what is required with less than 5 years to go to 2020. It adds "*it is likely therefore that significant catch up will be needed to get back on track to an 80% reduction by 2050 between 2020 – 2035*".

4.2.10 Reference is made to UK level targets and the figure of an 80% reduction in carbon emissions by 2050 with various milestones recognised to be identified in UK Carbon Budgets. The document adds that *“this would require a reduction in emissions to less than 5 million tonnes by 2050. GM existing strategies and plans include specific targets only up to 2020 which is 15 years before the GMSF end date. However GM is publically committed to reducing emissions to maximum of 2 tonnes per capita by 2050 and to doing its part in keeping global mean temperature rises below 2 degrees as part of its Under 2 Memorandum of Understanding and compact of Mayors commitments”*.

4.2.11 In conclusion with regard to carbon emissions, Paper 4 states that:-

“in order for the carbon emissions impacts of key policy options in housing, employment land, transport and infrastructure to be understood, ongoing work will be needed to model the emissions implications of different spatial options, to act as evidence which can inform decision making. A process, methodology and approach to undertaking this will need to be established.”

4.2.12 The conclusions include further points as follows:-

- information on planned investments will be utilised to inform the appraisal of spatial options to maximise opportunities to plug into existing and planned low carbon energy networks;
- the layout, grouping and orientation of employment, housing and amenities has significant implications for Greater Manchester’s direct and indirect carbon emissions;
- evidence on the detailed energy generation output of GM, e.g. current, potential and required for compliance needs to be strengthened;
- if GM is to achieve its current targets and deliver on its commitments for the future it will need to ensure that the energy (heat and power) provision for new development is renewable and low carbon.
- Space for energy generation, management and additional heat network infrastructure will need to be planned for.
- There are clear interdependencies between the design of distribution infrastructure, the preferred approach to ‘smart’ infrastructure and lifestyles, energy market structure and the positioning of housing and employment land, with different ‘smart futures’ and energy system models suiting different spatial configurations. Evidence on the implications and actions arising from this interdependency need to be strengthened to ensure that policy conflicts are minimised.

4.3 Greater Manchester Climate Strategy (2011-2020)

4.3.1 The Greater Manchester Climate Strategy (GMCS) was intended to *“fuse together the various carbon reduction plans and adaption strategies that had been crafted by the ten districts of the city”*. The Strategy was intended to guide the actions of and be owned by:

- The Association of Greater Manchester Authorities (AGMA);
- The Local Enterprise Partnership (LEP);
- The Greater Manchester Combined Authority (GMCA); and
- The ten District Councils as well as various partners from all sectors.

4.3.2 The introductory sections of the document make reference to city leadership on climate change and the context is set in terms of key international agreements on climate change, as well as the UK Climate Change Act (2008) and the target to reduce carbon dioxide emissions by minimum of 80% by 2050. Cross reference is also made to the UK Low Carbon Transition Plan (2009) and the associated UK Annual Carbon ‘Budgets’. The Strategy looks out to 2020.

- 4.3.3 Chapter 5 of the document refers to 'the state of play' in Greater Manchester and it explains that the Strategy pulls together and strengthens a range of existing plans and policies which contribute to the Greater Manchester (GM) Strategy. It states that it will *"provide a framework of objectives and priority actions that constitute our collective action on climate change, the details of delivery will be set out in a suite of thematic plans and local policies"*.
- 4.3.4 Section 5 cross refers to a number of other documents including the GM Energy Plan and there is specific reference to the GM Spatial Framework (GMSF). It states that the action plans of the Climate Change Strategy as well as its aims and objectives *"will be set in a spatial context through the GMSF"*.
- 4.3.5 Section 5 also refers to local authority and district plans and there is a specific town planning reference (page 20) where it states:
- "All districts also have 'Core Strategies' adopted or in development which set out the policy planning framework for the period 2020. These Core Strategies take account of climate change issues and targets and set out how local planning policy in practice can steer the capacity for energy efficiency and climate change resilience in new developments"*.
- 4.3.6 Section 6 of the document refers to strategic objectives and goals on climate change as follows:-
- We will make a rapid transition to a low carbon economy;
 - Our collective carbon emissions will have reduced by 30% to 50%;
 - We will be prepared for and actively adapt to a rapidly changing climate; and
 - Carbon literacy will have become embedded into the cultural of our organisations, lifestyles and behaviours.
- 4.3.7 In terms of the objective of reducing carbon emissions by 30% to 50%, the document sets out that energy use in buildings, transport and infrastructure will be reduced and used more efficiently. It also refers to the need to work to facilitate the generation and deployment of renewable energy to support the decarbonisation of the national energy supply, the creation and support of 'smart' decentralised energy systems for communities and businesses, and the need to utilise alternative fuels for power, heat and transport. There is a clear urban planning policy position required to realise these actions.
- 4.3.8 Progress on this objective is to be measured through two indicators, namely:-
- Annual direct CO₂ emissions / emissions per capita; and
 - Energy generated by renewables.

Actions to 2020

- 4.3.9 A key section of the document is part 2 entitled 'Actions to 2020'. Of particular reference to the remit of retrofit is the reference at the start of the section that *"most of our direct emissions arise from our buildings, from energy generation and from transport"*. It adds:
- "by undertaking and co-ordinating programmes of activity across these five key themes – buildings, energy, transport, green spaces and sustainable consumption – we can develop and manage the co-ordination and interdependency necessary to achieve successful outcomes against all four of our objectives"*.
- 4.3.10 Section 7.1 of the document refers to buildings and it highlights that 80% of the current buildings stock in GM will still be in use by 2050 *"underlining the strong need for a retrofit programme"*.
- 4.3.11 Other key building metrics given for the position in 2011 include:-
- 2.6 million people living and working in buildings across the GM conurbation with 1.14 million homes;
 - Those homes generate 36% of direct carbon emissions;
 - The commercial sector generates a further 36%, much of it associated with building use;

- Most of the building stock is pre 1970 and highly energy inefficient;
- Four out of five buildings are likely to still be in use by 2050; and
- Retrofit programmes need to play a very substantial part in meeting the 80% carbon target.

4.3.12 The document highlights that *“the challenge of retrofitting all our building stock to such very high standards is immense, but, over a 40 year period, the efficiencies are immense too. Taking the economic opportunity to be a leader in this fast growing field of ‘green retrofit and construction’ has already begun with the delivery plan for Greater Manchester as Low Carbon Economic Area for the built environment (LCEA)”*.

4.3.13 The document refers to investing in programmes that would achieve a ‘step change’ in the energy efficiency of the existing building stock (domestic, commercial and public) and that this lies at the heart of the Strategy. Recognition is given, not only to how this would improve environmental sustainability, but to how it would improve energy efficiency and security and that it can be an engine for jobs and business development.

4.3.14 The document refers to key outcomes by 2020 and these include:-

- Climate change adaption measures will be embedded in retrofitting programmes and will be a key design feature in all regeneration programmes;
- Reference is also made to the position that GM has over 240,000 homes (22% of total stock) that will require comprehensive whole house retrofit treatment in order to meet Government requirements for energy efficiency and reduced carbon emissions; and
- In terms of capital expenditure required, this is estimated to be some £8 billion¹ over the next 20-30 years.

Energy Distribution and Generation

4.3.15 A further action in the Strategy is ‘energy distribution and generation’. The document explains that GM is powered by a mix of gas, electricity, transport fuels and a small amount of oil, solid fuel and biomass. Only a small percentage of energy for the city comes from renewable sources.

4.3.16 Reference is made to the likely significant growth in electricity use and recognition is given to the position that opportunities for large energy generation projects to be sited within Greater Manchester are relatively limited, and the policy levers is available to Local Government to shape the energy system are also limited.

4.3.17 Reference is made however to local contributions to generation, in particular with regard to heating and cooling networks and smart grids – all of which it is acknowledged can form part of a process of decentralisation of energy networks. Such actions are also recognised as being important with regard to creating wider supply chain opportunities and market conditions for GM to deliver a low carbon economy. Cross reference in this regard is made to the GM Energy Plan which can provide a framework and pathway to achieving certain actions and outcomes by 2020. Various outcomes by 2020 are set out and included within these is:-

“to have integrated the developed of new heating and cooling networks and the development of locally generated power networks with the development of major retrofitting programmes and roll out of smart technologies so that networks can expand as heat demand from the retrofitted property decreases”.

4.3.18 In terms of achieving the various outcomes, there is an important planning policy reference (page 35) as follows:-

“Deliver a spatial strategy and policy instruments which optimise collaboration between District Core Strategies, the National Planning Framework and local opportunities, and create a robust, transparent and supportive framework which engages communities in balancing the need to encourage large and small scale generation and secure locations for energy infrastructure with local interests and amenity concerns”.

¹ The source for the £8 Bn figure is a direct reference in the Greater Manchester Climate Strategy 2011-2010 version 21, page 31.

4.3.19 Targets for work on the theme are identified as reducing emissions through the development of heating and cooling networks and generation from renewables.

Enabling and Cross Cutting Actions

4.3.20 Section 8 of the document makes reference to the policy context with regard to 'working across different spatial levels'. There is recognition that the success of the Strategy will depend upon collaboration at every spatial scale.

4.3.21 Section 8.6 refers to 'embedding action on climate change within the spatial strategy'. This section of the document contains important references to planning policy and in this regard states:-

"the development of our spatial framework will recognise the connections and interdependencies between different geographical areas and environmental and economic capacity for change, including our interactions with the climate".

4.3.22 It goes on to say that *"it will add value to Local Plans produced by individual districts and help to plan and manage our shared opportunities, risks and consequences"*.

4.3.23 A key outcome in 2020 in this regard is to have developed and applied knowledge of climate change challenges and opportunities in the cross boundary frameworks *"for spatial and infrastructure planning within Greater Manchester and our neighbours"*.

4.3.24 It adds that to achieve this outcome we will *"enable convergence on key development requirements such as low carbon energy and prioritise energy planning at the sub-regional, district and neighbourhood level"*.

4.3.25 It further adds that this will include enabling co-ordination of climate change and sustainability requirements in Core Strategies and Development Plan Documents across GM to create and maintain a GM standard.

4.4 The Greater Manchester Energy Plan (2011)

4.4.1 The Greater Manchester Energy Plan (GMEP) sets out then situation in terms of potential issues and proposed solutions to energy planning in GM. It states that it has been developed by The GM Energy Group and has been endorsed by AGMA. It sets out in the introductory section that there are challenges that will affect Greater Manchester including:

- Carbon emissions;
- Aging and vulnerable distribution infrastructure;
- Increasing electricity demand;
- Identifying opportunities and locations for new energy generation and distribution infrastructure;
- Harnessing substantial economic opportunities; and
- Making sure the right skills, expertise and knowledge is in place to deliver GM's future energy system.

4.4.2 The document highlights (page 7) that there is a significant inter-relationship between the GMEP and the GM Climate Change strategy. It sets out that the plan *"aims to progress the energy challenges identified in the strategy and will form a key bridge between the Strategy and its implementation arrangement. The detailed programme of activities being undertaken to deliver the energy plan will be included in the Climate Change Strategy implementation plan"*.

4.4.3 It adds that the GMEP provides a strategic overview of the market, legislative and policy contexts including key drivers and challenges affecting the energy system. It identifies the actions and opportunities already in place within GM to address these and recommends the steps needed to address the gap between targets and actions.

4.4.4 The document explains that the energy efficiency of GM building stock is central to Greater Manchester's energy future and *"essential to the delivery of climate change and energy goals"*.

- 4.4.5 Reference is made to the GM commitment to achieve a 48% reduction in the carbon dioxide emissions between 2011 and 2020. The plan contains detailed analysis in terms of the understanding of energy use in Manchester and sets out various future energy mix scenarios.
- 4.4.6 Section 2.5 of the document specifically addresses heat and sets out an overview in terms of overall UK targets and notes that the UK Renewable Energy Strategy (2009) included a target to increase renewable heat as a proportion of total heat supplied from 1% - 12% between 2011 and 2020 and to over 30% by 2030.
- 4.4.7 The plan explains that reliance on a single technology, such a domestic gas boiler to provide heat and hot water supplies is now expected to be phased out over the next 30 years, to be replaced by a diverse mix of technologies suited to particular locations and the types of buildings that need to be heated.
- 4.4.8 Section 2.5.2 of the plan provides a helpful summary of domestic and commercial heat technologies including:
- Heat pumps;
 - Water source heat pumps;
 - Air source heat pumps;
 - Solar thermal;
 - Biomass and waste derived fuels;
 - Combined heat and power;
 - Geothermal; and
 - Excess heat capture.
- 4.4.9 Section 2.5.3 of the document refers to heat networks and provides a summary of various projects including those in Manchester, Stockport, Bolton, Bury and Oldham.
- 4.4.10 Section 3.2 of the document refers to 'Greater Manchester's Role' and highlights that energy is a critical infrastructure for GM's economy and society. It adds that although there are a few regulatory levers which can be exerted over the mid-term, GM could have a significant influence over its energy system in a number of ways. There is reference to procurement, generation, estates and assets etc. but there is also a specific reference to planning. In this regard, it sets out that:
- "Developing and enforcing local authority plans which provide a clear vision of future energy requirements, are sufficiently explicitly and robust to rapidly secure new low carbon energy generation and enable the deployment of adequate energy infrastructure. These systems should prevent and deter the deployment of generation which would exceed carbon targets, while the development of buildings and infrastructure which would lock in future users to energy intensive behaviours".*
- 4.4.11 The document refers to key actions and states that to capitalise on key strengths in GM it would be important to boost "sector market capacity in terms of conducive planning requirements" (section 4.2).
- 4.4.12 Section 6.5.3 of the plan specifically deals with planning, building and property market regulation. It sets out that *inter alia*:
- The National Planning Policy Framework makes it difficult for local authorities to ensure that properties are built and managed in a way which will achieve carbon reduction, economic productivity and energy security goals; and
 - There is a desire to make the planning process more streamlined which may further inhibit the ability of authorities to ensure that buildings and homes are designed, built and managed in a way that enables occupants to behave in ways aligned with low carbon and economic goals.

4.4.13 On a more positive note, the document does set out that these issues could be addressed by means of the following:-

- Inclusion of an ‘infrastructure adequacy’ analysis for the siting of new developments to ensure that they do not have negative indirect implications for amongst other matters, energy infrastructure;
- A requirement for developers to show that properties will have low occupant energy consumption;
- Better alignment between the national policy statements on energy infrastructure and the NPPF; and
- Better enforcement, checks and balances of the application of existing energy standards for new and existing properties, and much higher minimum standards for properties placed on the rental markets.

4.5 Manchester: A Certain Future - Update of the Climate Change Strategy (2013)

4.5.1 The 2013 Update document, updates the action plan on climate change prepared in 2009 which was entitled ‘Manchester – A Certain Future: Our Collective Action on Climate Change’. It refers to the previous target, namely “*one where we emit 41% less carbon dioxide by 2020 than in 2005...*”.

4.5.2 The document notes structural re-organisation that has taken place, namely the establishment of the GMCA and the creation of the ‘Low Carbon Hub’ as part of the City Deal. Reference is also made to a high level partnership formed to drive the delivery of the GM Climate Change Strategy (2011 – 2020) as referred to above. In this regard the “refresh” is set in the context of the city’s 10 year Climate Change action plan.

4.5.3 The Update seeks to report on progress and it states that in 2009 there was a small number of renewable and low carbon energy schemes in place and the opportunity for increasing this was just being scoped out. It adds that thinking on heat networks was still tied to a small number of unsuccessful schemes dating from the 1980s.

4.5.4 Reference is made to heat networks and in particular, proposals to deliver new heat networks which have been put in place. Reference is also made to energy centres and combined heat and power (CHP) and cross reference is made to the GM Energy Plan. The context of the Update also covers the transport as well as green infrastructure sectors.

4.6 Heat Network Masterplan for Greater Manchester (2014)

4.6.1 This document forms a relatively recent consultant report commissioned by New Economy on behalf of AGMA to develop a ‘district heating energy masterplan’ for the GM area. The work was specifically commissioned under the GM Heat Network Programme led by Manchester City Council on behalf of AGMA. The programme was designed “*to facilitate the efficient, cost effective development and delivery of heat networks across the ten authorities of GM, to support carbon and energy policy commitments both locally and nationally.....*”.

4.6.2 The outcome of the study has been a portfolio of district heating project opportunities which are considered to represent potentially viable schemes. Further aims of the study were to provide knowledge transfer to allow additional data mapping to be carried out.

4.6.3 The Report sets out that the core objective of the study was to identify and map areas of district heating potential, defining demand, constraints and future opportunities “*in order to form a robust evidence base to allow GM to maximise the programme opportunity to build district heating of scale and to future proof network extensions*”.

4.6.4 The methodology followed three broad phases as follows:-

- Phase 1 – heat mapping;
- Phase 2 – screening and ranking of identified project opportunities; and
- Phase 3 – evaluation of the priority pipeline.

- 4.6.5 Importantly, with regard to references to an evidence base, section 1.4 of the Report states that the study builds on an evidence base established in 2010 and makes reference to an earlier report entitled 'AGMA Decentralised and Zero Carbon Energy Study' which sets out a high level understanding of the scale of the opportunity for heat networks across the city region and refers to the commitment set out in the GM Climate Change Strategy, for heat networks to contribute towards the 48% reduction of Greater Manchester's carbon emissions by 2020 from 1990 levels.
- 4.6.6 In terms of data sources, the methodology utilised heat mapping data made available through the DECC National Heat Map. There is also reference to a number of previous studies undertaken by AGMA since 2010. Of note, with regard to having a robust evidence base, section 2.1 of the Report makes it clear that the authors of the heat network masterplan found consistency between the tool prepared and the previous analysis set out in more historic reports.
- 4.6.7 The document presents a shortlist of priority projects in section 3.3 and presents an evaluation of the schemes.
- 4.6.8 Of note with regard to planning policy is the reference to the consideration given in consultation workshops as part of the methodology as to whether local development frameworks incorporated appropriate policies to promote safeguards for district heating networks within appropriate timescales for the given projects being considered.
- 4.6.9 Section 4.2 of the Report sets out that of the 11 potential schemes from the shortlisting process, five were identified to take forward to detailed feasibility stage as follows:-
- Manchester Civic Quarter – Phase 2;
 - Oxford Road Corridor;
 - Bury Town Centre;
 - Media Expansion City, Salford; and
 - Bickershaw, Wigan.

4.7 Wedges Approach to Carbon Emissions Reductions – Greater Manchester (2014)

- 4.7.1 A "Wedges Approach" to carbon emissions reduction was developed by the consultancy URS under the instruction of GMCA in order to support the development of the GM Climate Change Strategy. The report sought to undertake the following aims:
- Set the baseline carbon dioxide emissions within GM;
 - Develop options to reduce these emissions by means of the "wedge approach" from 2015-2020;
 - Appraise the options and make recommendations; and
 - Produce a monitoring framework.
- 4.7.2 The "Wedges Approach" works on the premise that no single activity or approach is able to stabilise or reduce carbon emissions, rather a combined approach is required to aggregate the effect of CO₂ emissions. Each option which is capable of reducing CO₂ emissions on "business as usual" levels is called a "wedge" starting at zero on day zero and increasing as a wedge (as shown on a graph) to the point at which CO₂ emission stabilisation is achieved.
- 4.7.3 The study identified a number of potential wedges which could be progressed in GM including small-scale renewables, energy from waste and heat networks. Each were defined and a metric defined, in the case of heat networks, the positive metrics were kWh (kilowatt hours) of natural gas replaced, tonnes of waste diverted and the negative metrics were tonnes of biomass used and litres of diesel used to transport the biomass.

- 4.7.4 The study assumed that a number of planned heat networks (Civic Quarter Phase 1, Stockport Town Centre, Oldham Town Centre and Civic Quarter Phase 2) were to go ahead/continue which were to save 2,200 tonnes of CO₂ equivalent.
- 4.7.5 The report found that doubling and tripling the roll out of heat networks would save 47,300tCO₂e and 94,700tCO₂e by 2020 respectively.
- 4.7.6 Appendix C of the report assessed each potential measure or strategy on a scale of 1 to 3 against a range of criteria as outlined below:

Appraisal Criteria	Score/Criteria		
	Low (1)	Medium (2)	High (3)
Carbon savings	Less than 1,000tCO ₂ e per annum	Between 1,000 and 10,000tCO ₂ e per annum	Carbon savings
Cost Effectiveness (as compared to relevant benchmarks set out in the Carbon Plan)	Least cost effective: cost per tonne of CO ₂ e saved above £50 i.e. net cost	Average cost effectiveness: cost per tonne of CO ₂ e saved between £50 and -£100 i.e. net cost saving	Most cost effective: cost per tonne of CO ₂ e saved less than -£100 i.e. net cost saving
Level of local influence	Projects derived from national policy	Projects derived from national policy implemented and managed at local level	Projects derived from local policy
Likelihood of success (Must fit at least two sub-criteria to be awarded the score- ignores cost and resources as these are scored separately)	Unlikely: <ul style="list-style-type: none"> • No current examples/uptake in the region or nationally • No interest shown regionally in uptake of measures • Easily identifiable major barriers to realisation • Not embodied in National or Local Policy 	Likely: <ul style="list-style-type: none"> • No current examples/uptake in the region but some nationally • Interest in uptake of measures shown regionally • Some identifiable minor barriers to realisation • Embodied in National or Local Policy 	Very likely: <ul style="list-style-type: none"> • Current examples/uptake in the region • Interest in uptake of measures shown regionally • No identifiable barriers to realisation • Backed by legally binding requirements
Other sustainability impacts: Air quality/ public health and Landscape & biodiversity	Negative Impact (-1)	Neutral (0)	Positive Impact (1)

4.7.7 The results of this assessment are detailed below:

Project	Option	Carbon Savings	Cost Effectiveness	Level of Local Influence	Resource Implications	Practicality/Likelihood of success within GM	Sustainability
Heat Networks	Current Plans	1	2	3	2	2	2
	Double Current Plans	3	2	3	2	2	2
	Treble Current Plans	3	2	3	2	1	2

4.7.8 The table above shows an aggregate score of 12 for the proposed roll out of heat networks, 14 for doubling current plans but 13 for trebling current plans. The increase in score between existing plans and doubling proposed roll-out is a result of increased carbon savings while all other scores remain the same. The drop in score between doubling and trebling the roll-out of heat networks is due to a perceived reduced likelihood or practicality of trebling the proposed roll-out without any additional benefits.

4.8 Greater Manchester Forecasting Model

- 4.8.1 The Greater Manchester Forecasting Model, prepared by Oxford Economics (2015), provides the background evidence to inform the Greater Manchester Spatial Framework's employment and population predictions on which the housing and employment land supply targets are based.
- 4.8.2 The forecasting model predicts an increase in population and employment across Greater Manchester and increase in the rate of employment and population growth providing headline figures of 128,300 population growth and 100,500 growth in jobs over the period 2014-2024. This is contrasted with a 108,700 growth in population and 75,300 growth in jobs over the period 2008-2014. The model also forecasts an increase in productivity in GM in line with national trends, however the productivity gap between GM and London remains.
- 4.8.3 The model forecasts losses in the agricultural, manufacturing and public sector however these losses are offset by significant increases in construction, professional services and admin/support services. The model forecasts a reduction in unemployment across GM and a GVA of c3% going forward.
- 4.8.4 The model also considers the broader North West outlook which is largely positive as employment levels continue to grow particularly in retail, professional services and admin/support services which will offset losses in manufacturing, public sector and education.
- 4.8.5 A key question is whether the documents can now be considered to contain realistic assumptions given the economic consequences as a result of the June 2016 EU Referendum.

5 Key Considerations for ESC with regard to the Evidence Base

5.1 Key Observations on the GMSF Evidence Base Documents

5.1.1 Key observations include:

- The documents reviewed in Chapter 4 above provide a large body of policy objectives for GM which are rooted in independent research. Effort has been put into updating key documents such as the Climate Change Strategy. However, it is essential that the evidence base is *kept* up to date and can fully support the GMSF for the duration of its intended lifespan. By way of example, the Greater Manchester Climate Strategy is designed to cover the period 2011-2020 whereas the GMSF has aspirations extending beyond this date. This is an important evidential gap.
- More recent studies have taken a focus on specific area based opportunities such as the Manchester Heat Network Masterplan (2014).
- The current status of the GMSF presents an opportunity to influence the spatial energy planning topic and emerging draft policy provisions. However, following the London Plan model, if important strategic targets are to be set within the GMSF, each and every such target will need to be justified and supported by a robust evidence base.
- October / November 2016 is the indicated time for consultation to begin on a draft Plan. That date is in the immediate term and there is an urgent need to ensure that its content will be fit for purpose. It would be helpful to have sight of any draft content on this topic.
- Plan objectives and draft policies on climate change / heat infrastructure etc. and spatial energy planning should be reviewed.
- The GMCA should confirm the exact documents that they view as forming the evidence base for the GMSF as a matter of urgency.
- We understand that the ESC is preparing a further document which will be covering the evidence base in GM referring to the existing energy 'landscape', strategic developments (housing, commercial and energy projects) and will examine energy demand and supply matters and associated projections into the future. We have not seen a draft of this document at this stage. Consultation has already been undertaken by the GMSF planning team on some of the evidence base documents. Careful thought will need to be given to consultation requirements for this new document if it is to be used to underpin emerging policy. Careful consideration also has to be given to the need for Strategic Environmental Assessment throughout GMSF development, including formulation of strategic energy policies. At present, no indication of how SEA has been or will be achieved is available.

David C Bell BSc (Hons) DipUD MCIHT MRTPI

Director

JLL

7 Exchange Crescent

Conference Square

Edinburgh EH3 8LL

0131 301 6720

david.bell@eu.jll.com

Mike Hopkins, Dip URP MRTPI

Director

JLL

One Piccadilly Gardens

Manchester

M1 1RG

T: +44 (0)161 238 7411

M: +44 (0)7792 014578

Mike.Hopkins@eu.jll.com

Tom Robinson, BSc MA

Graduate Planner

JLL

One Piccadilly Gardens

Manchester M1 1RG

T: +44 (0)161 828 6437

M: +44 (0)7841 860930

Tom.Robinson@eu.jll.com

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