

MANCHESTER

Advanced Manufacturing Opportunities
in the City of Innovation



CONTENTS

Welcome	2
Why Manchester	3
A Thriving Sector	4
UK Supply Chains	5
World-Class Research Expertise	7
Technology and Innovation	8
Case Studies	9
Your Gateway to the World	10
About MIDAS	12

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“Best UK City to Live”

Economist Intelligence Unit, 2015

“Fastest Growing Economy Outside of London “

Grant Thornton, High Growth Index, 2014

“Best regional city in the UK for global investment”

IBM, Global Locations Trend, 2015

WELCOME



Advanced manufacturing opportunities in the city of innovation – a definitive guide to Manchester’s advanced manufacturing sector

Manchester innovates. It always has. Manchester was the world’s first industrial city, birthplace of the Industrial Revolution, with the first factories and the first industrial estate. Today it is a city of pioneering engineers, attracting curious and ambitious business minds.

The city is where Henry Rolls met Charles Royce; it’s where Henry Ford built his first European cars, where Tom Williams and FC Kilburn built the world’s first modern computer and where the city’s latest Nobel Prize winners isolated the world’s thinnest and most conductive material, graphene.

During the Industrial Revolution growth was initially driven by the textiles industry, however the city rapidly developed to lead the way in all areas of Britain’s global industrial might, with the label ‘Made in Manchester’ being a byword for quality and innovation. Today, the city has reinvented itself; it’s a modern, dynamic business city that has attracted significant investment, new industries and new employment into the city.

As the UK’s second largest economy, Manchester is an important economic engine driving the country’s growth and prosperity and advanced manufacturing is a significant contributor to this. With over 116,000 people employed in the industry and over 14,000 students studying disciplines relevant

to advanced manufacturing and engineering, Manchester has the right expertise to support your operation.

Global export markets are in easy reach too, thanks to Manchester Airport which serves over 200 global destinations and is also the home of the World Freight Terminal which handles daily cargo shipments worldwide. This multi modal network ensures that all logistical needs are met with ease.

As a leading hub for advanced manufacturing, Manchester has the right components to energise your business. It provides a natural base for any business wishing to exploit the significant opportunities presented by both the UK and global markets, making Manchester the **SMART** choice for companies looking to establish or further develop their advanced manufacturing operations.

You don’t need a Nobel Prize to choose Manchester, but if you’re looking for somewhere that can unlock a world of possibilities and where the future is being made today – Manchester is the city for you.

WHY MANCHESTER

Manchester is the **SMART** location of choice for advanced manufacturers looking to leverage the opportunities presented within the UK and global markets.

SKILLS AND ACCESS TO LABOUR

Companies located here have access to some of the best global talent in manufacturing. Over 116,000 people are employed in the sector, with 51,000 people working in advanced manufacturing, providing a large pool of experienced labour.

Manchester is home to one of Europe’s largest student populations with 106,000 students studying at its universities. Over 14,000 of these students are specialising in subjects related to engineering and material sciences, which represents around 65% of the new talent available in the North West of England.

MANUFACTURING EFFICIENCIES

The region has a large concentration of reputable manufacturing businesses providing access to an established supply chain. Manchester provides a cost effective location with operational costs on average 30% less than the South East of England. The city’s international connectivity is ideal for furthering manufacturing functions.

ACCESS TO MARKETS

The city has excellent connectivity by road, air, rail and sea. Home to the largest airport outside of London which serves over 200 destinations worldwide, Manchester Airport gives businesses easy access to the global market. Manchester’s comprehensive motorway infrastructure is perfect for meeting businesses’ logistical needs and the rest of the UK is within easy reach.

RESEARCH AND DEVELOPMENT

Manchester’s four world-class universities have a track record of collaborating with businesses to deliver innovation. The universities are home to some of the world’s leading research institutes including Europe’s largest school of materials, the National Graphene Institute and the world renowned Dalton Nuclear Institute. BP’s International Centre for Advanced Materials, The University of Manchester Aerospace Research Institute and the North West Composite Centre are also key assets to the city.

TECHNOLOGY AND INNOVATION

The region is continuously disrupting technology and finding new ways to work. From the splitting of the atom, the creation of the world’s first programmable computer, to the isolation of graphene, the city continues to pioneer. Today this innovative spirit has led to Manchester being recognised as the European City of Science 2016.

1904 The Year that Rolls Met Royce in Manchester



116,000 Employed in Manufacturing



14,000 Students Studying Subjects Relevant to Advanced Manufacturing & Engineering



£500M Invested in Advanced Materials Centres of Excellence



A THRIVING SECTOR

Manchester's manufacturing expertise means that businesses can access one of the UK's most established and diverse manufacturing and engineering bases.

Manchester's manufacturing sector has evolved considerably over the years and its key strengths are innovation, productivity and high level skills. The region has a large concentration of recognised manufacturing businesses providing access to an established supply chain, and 116,000 people are employed in the sector.

This, coupled with strong leadership, has helped to create significant opportunities for investment, collaborative working and innovation. Global players such as **P&G**, **Unilever**, **Thales**, **Hitachi** and **Kellogg's** have all chosen Manchester, and they operate in a sector worth £2.4 billion a year.

Manchester offers unparalleled access to expertise in:

Aerospace

Manchester is at the heart of the largest aerospace cluster in Europe which employs over 16,000 people across the North West.



Automotive

There are approximately 330 companies in the North West supply chain.



Chemicals

The city has strengths in chemicals and pharmaceutical manufacturing, with expertise in a wide range of areas from speciality chemicals to surfaces and coatings.



Advanced Materials

Manchester has world-class capabilities in:

- Graphene & 2D materials
- Composites
- Surfaces and coatings
- Light alloys
- Technical textiles



Food and Drink

The region has an established food processing cluster, with a varied range of global companies such as **Kellogg's**, **Cargill**, and **Heinz** (whose canning factory is located here - the largest of its type in Europe) who all benefit from the supply chain, skills and talent pool which the city offers.

Textiles

The textile industry was born in Manchester and the city was the powerhouse of the Industrial Revolution. Today, Manchester is actively promoting the re-shoring of the industry in the North West.

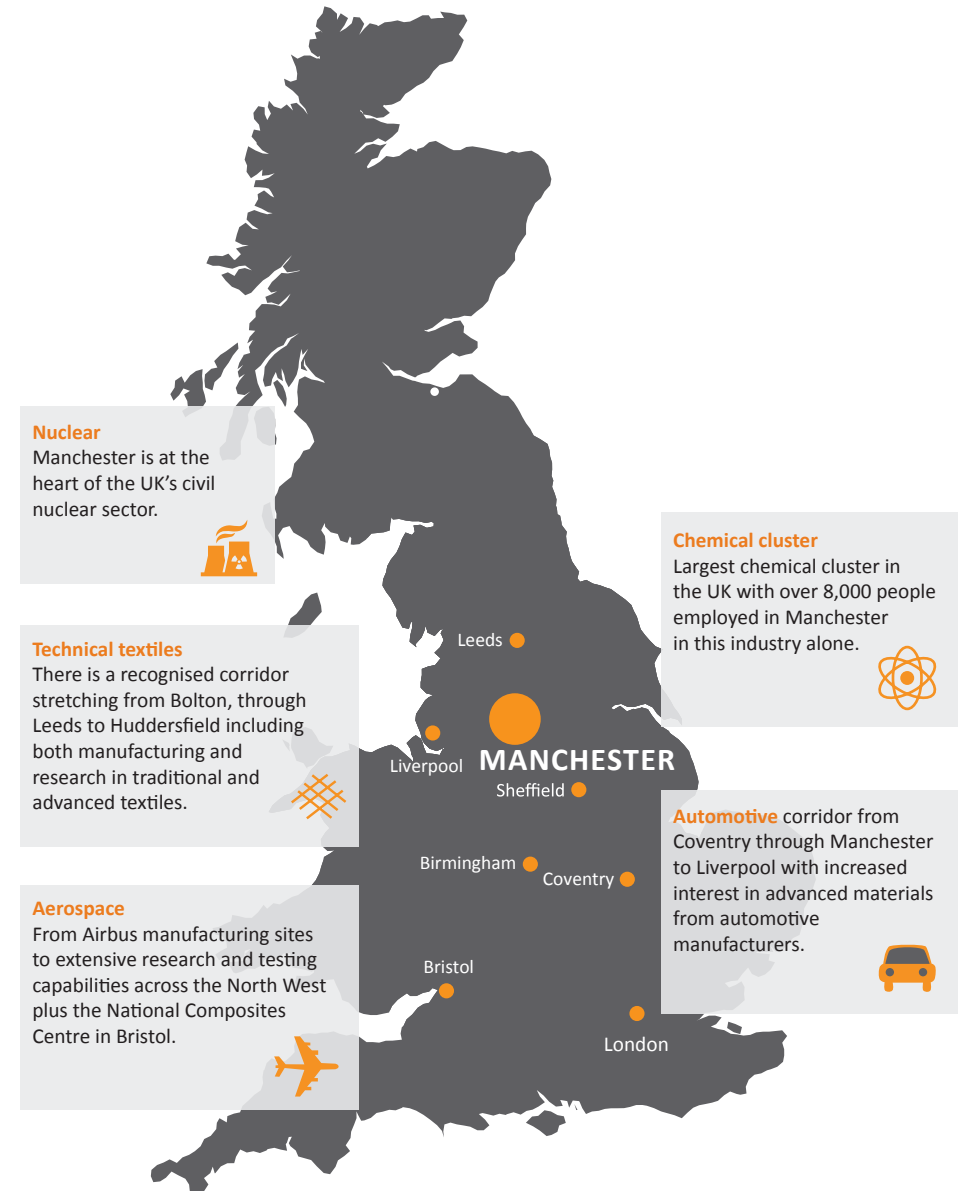


Key Asset - Trafford Park

The region is home to the largest industrial park in Western Europe, Trafford Park. Companies located here include **Kellogg's**, **Kratos Analytical**, **Cargill** and **Proctor & Gamble**, among others.

UK SUPPLY CHAINS

Manchester is at the heart of a range of clusters and corridors of expertise relevant to advanced manufacturing.



Key Advanced Manufacturing Companies in Greater Manchester



WORLD-CLASS RESEARCH EXPERTISE

The region boasts excellent R&D opportunities including The University of Manchester's National Graphene Institute, Manchester Metropolitan University's Dalton Research Institute, applied research at Salford University, and Bolton University's Institute of Materials Research and Innovation.



National Graphene Institute

The University has invested in a £61 million facility, which is the world's leading centre for graphene (the world's thinnest, strongest and most conductive material) research and commercialisation, housing state-of-the-art facilities for use by universities and business around the world.

The University of Manchester Aerospace Research Institute (UMARI)

UMARI plays a vital role in positioning the University of Manchester at the forefront of international aerospace research. The Institute operates on an interdisciplinary basis right across the University, bringing together every aspect of aerospace research which is innovative and united.

North West Composites Centre

Part of a network of five centres across the UK working to bridge the gap between pure academic research and industry by qualifying materials and parts, developing new technologies, supporting the supply chain and training composites engineers.

BP International Centre for Advanced Materials (ICAM)

A 10 year £64 million research collaboration with BP and three other universities with Manchester as the hub. The aim is to stimulate the sector with fundamental research through to application and to lever in other funding. Around 30-40% of activity is focused around corrosion.

Aerospace Research Institute

A multi-disciplinary industry research centre comprising over 100 academics from across the University of Manchester. Recognised as a centre of excellence in aerospace research and innovation and a collaborator of choice within Europe and for the major aerospace companies.

Sir Henry Royce Institute for Advanced Materials

Opening in 2018, this institute will act as a catalyst for research and development of advanced materials and their use. Its research centre will be at The University of Manchester supported by satellite centres at universities across the country.



The Institute of Materials Research and Innovation

Internationally known for its strong applied materials science and engineering applications through the development of new, designer and novel smart and multifunctional materials.



Materials & Physics Research Centre

Ranked 8th in the UK by Research Fortnight and top 5 for industry engagement by the Witty Review (2013).



Dalton Research Institute

The Institute focuses on materials science covering surface engineering, characterisation of surface coatings and organic polymers including fire retardants.

TECHNOLOGY AND INNOVATION

A city with a rich history of innovation that has produced 25 Nobel Laureates, Manchester encompasses a true pioneering spirit, a place of ambition and investment, where the commercial, cultural and creative sectors thrive.

The Industrial Revolution, creation of the first modern computer and the isolation of graphene, these pioneering moments were made in Manchester. Today, Manchester's businesses and universities continue to innovate.

Centre for Autonomous Systems and Robotics

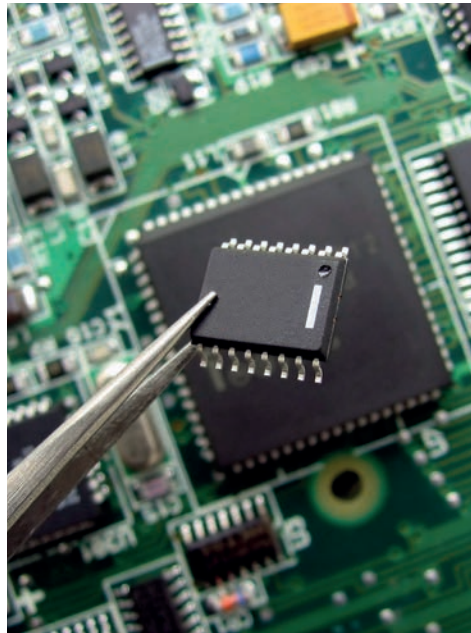
The Centre's activities originated in 1987 when the University of Salford was chosen as the site of the National Advanced Robotics Research Centre. Since then the University's robotics researchers have been at the forefront of strategic national developments collaborating with the government. The Centre has strong national and international links with both industry and other research institutes and projects are closely linked with manufacturing and industrial partners, particularly in the aerospace and food sectors.



City of Innovation

Manchester is the city where the atom was split, where the first programmable computer was developed, where the first test tube baby was conceived, and where graphene was first isolated. The city has a heritage of innovation and it has been awarded the accolade of **Europe's City of Science** for 2016, as a reflection of its commitment to scientific education and research.

This prestigious status will attract some of the world's leading scientists and innovators to Manchester in 2016 and beyond.



CASE STUDIES

Private sector technology and innovation centres:



NXP

NXP semiconductors are a global engineering company with operations in 25 countries, employing nearly 500 staff at its Manchester site. One area of NXP's research is in developing gallium nitride (GaN) power semiconductors as an alternative to conventional silicon electronics. Power semiconductors using gallium nitride are said to have preferential properties in power conversion over silicon, such as greater efficiency. In the future gallium nitride could be used to replace silicon components in integrated circuits for devices such as mobile phones and communications infrastructure.



PZ Cussons

PZ Cussons is the UK's leading personal wash company. The company HQ is in Manchester and in recent years has invested £26 million in a new purpose-built centre in Salford. This created an international centre of excellence at the forefront of innovation in the washing and bathing sector. The company employs 430 people in the North West and houses three departments over two sites. The investment in this manufacturing facility has allowed significant increase in their production capacity and has ensured that PZ Cussons remains the leader in industry.

YOUR GATEWAY TO THE WORLD

Manchester's central location and international connectivity means that business located here can exploit the significant opportunities presented by both UK and global markets.

UK wide and international business can be achieved in a day from Manchester, giving you immediate access to your EU clients and other offices.

Manchester Airport

Businesses benefit from access to the third largest airport in the UK after Heathrow and Gatwick. Manchester Airport offers direct flights to over 200 locations and the airport's network of international destinations continues to grow. Around 100 airlines fly into Manchester Airport from around the world connecting Manchester to the major business hubs in Europe, the US and the Middle East.

Road/Train Network

Greater Manchester's central location puts the area at the heart of the UK's extensive motorway network, ensuring easy road access to all major cities and centres of commerce. With a quarter of the nation's motorway miles, the region has one of the best road networks in the UK. London is within easy reach and straight forward, with 60 fast frequent trains a day, the journey to the capital takes just over two hours.

Local Transport

The excellent local transport system in Manchester enables employees commute to work with ease and due to the extensive infrastructure employees can live outside the city and still have a relatively short commute which contributes to excellent work-life balance. There is a choice of road, rail, tram and bus routes covering the whole of Greater Manchester and providing regular as well as out of hours services.

Logistics

There is continued investment into Manchester's well-established multi-modal logistics, with the region also offering bespoke warehousing through the World Freight Centre which has resulted in improved connectivity and freight provision.

Port Salford

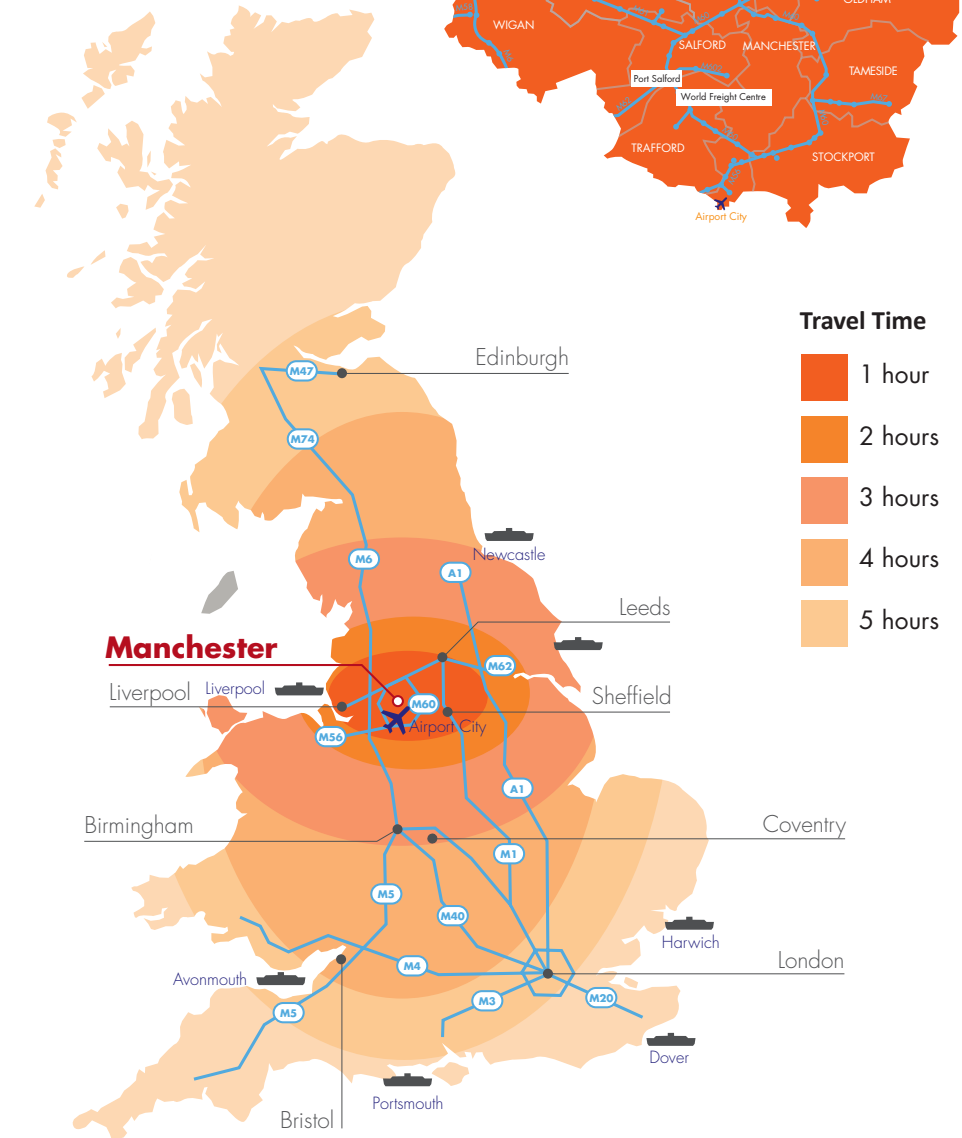
Port Salford is a £138 million project to develop the UK's first tri-modal (served by road, rail and short-sea shipping) inland port facility adjacent to the Manchester Ship Canal. Port Salford will provide a central North West distribution base to improve supply chains for businesses across the region. It will enable direct barge access to the river terminal at the Port of Liverpool and will reduce the environmental impact of the terminal's expansion by reducing freight levels on the road.

Airport City Manchester and Global Logistics

Airport City Manchester and Global Logistics is a £800 million landmark property development, which is set to become a globally connected business destination located at Manchester Airport. Airport City and Global Logistics offers 5 million square feet of accommodation ideal for advanced manufacturing and logistics companies. The site will be complemented by retail and leisure facilities, and companies located here will benefit from simplified planning procedures, superfast broadband and business rate relief worth up to £275,000.

Manchester's multi modal network ensures consumers can access and meet all their logistics needs with ease.

Road Network



ABOUT MIDAS

MIDAS, Manchester's inward investment agency, can help you and your business with relocation and expansion plans. MIDAS has a reputation for understanding diverse business needs and helping to remove any barriers for companies looking to locate or expand into Manchester.


Their specialist business development team can assist you with a range of free, bespoke packages of confidential support that will make your journey as smooth and simple as possible.

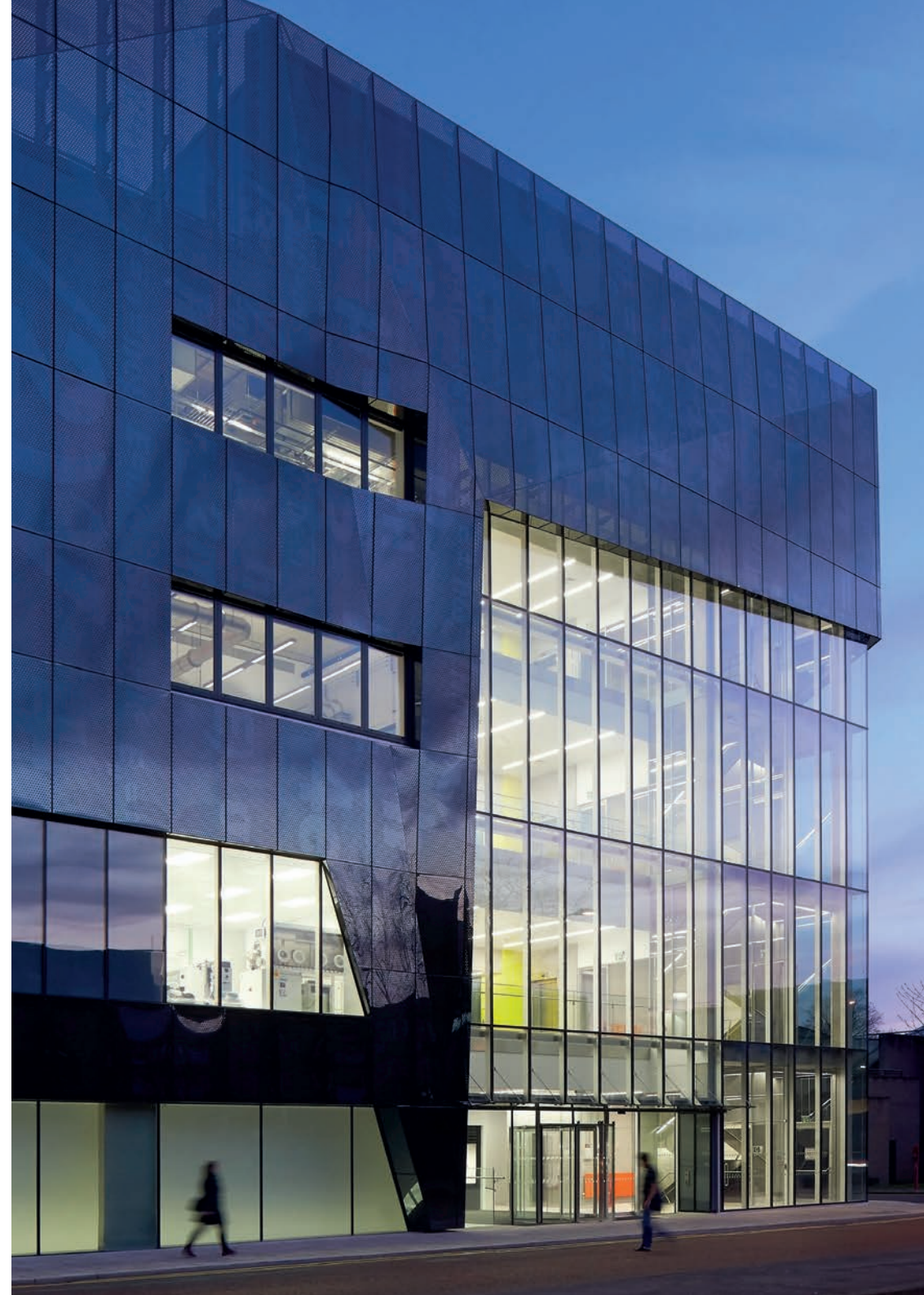
The services provided by the team, which are also available to intermediaries such as location consultants, will save you time, money and effort and will enhance your project with the expert knowledge and local intelligence that results in a faster and more successful move.

MIDAS Services **Free support includes:**

- Research support and business case development
- Introductions to local networks
- Recruitment and training support and advice
- Property solutions
- Relocation advice and assistance
- Post-investment PR support

See how MIDAS can help you make Manchester part of your success story.

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“Most Competitive Business Location in Europe”

KPMG Competitive Alternatives, 2014

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