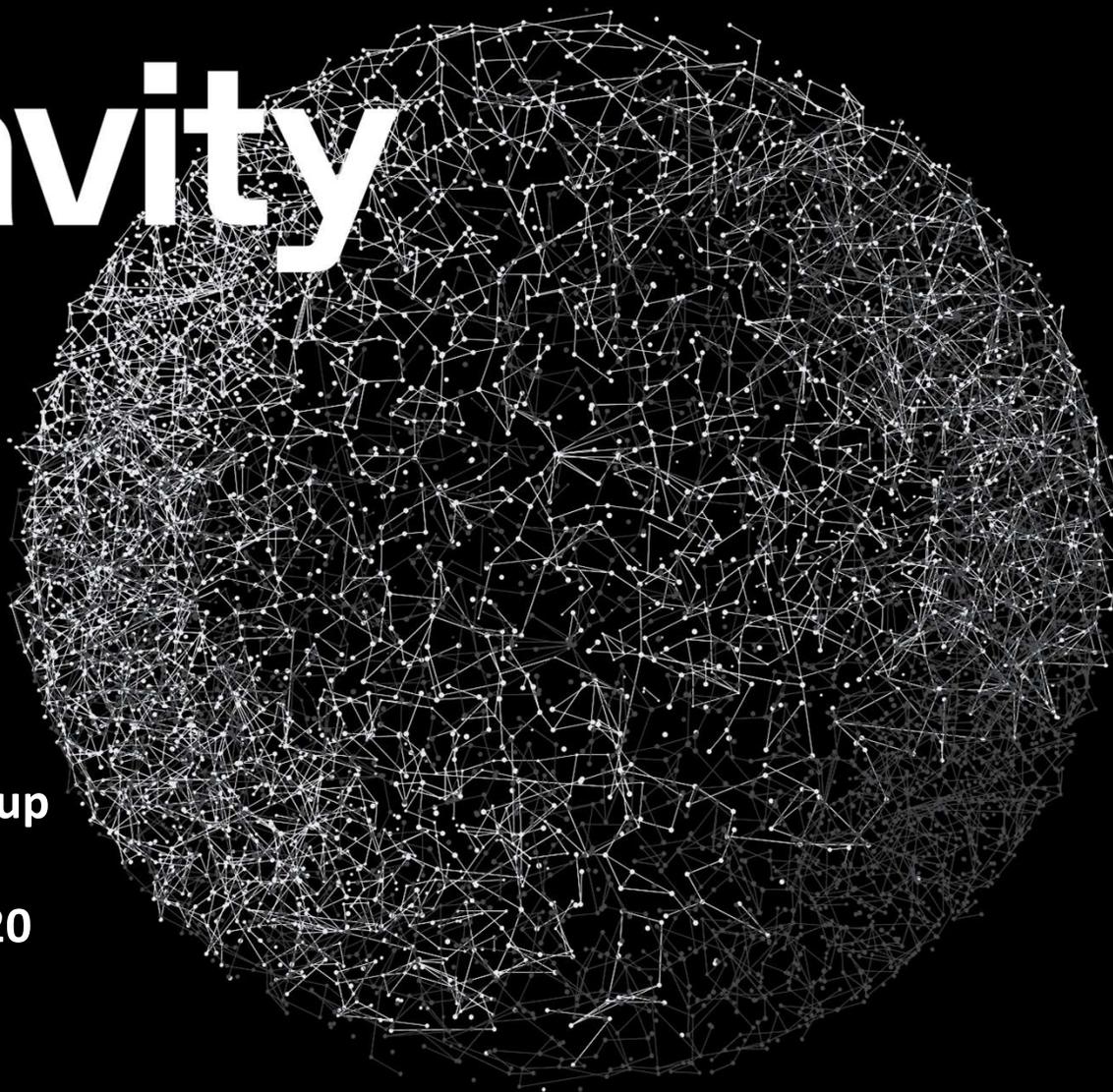


Gravity



LDO Delivery Group
Meeting **Two**
23 November 2020

Gravity

Item	Subject	Timings	Lead
1.	Welcome and Focus of the Meeting	10.00 – 10.10	CP
2.	Minutes of Delivery Group One on 7 October - Project Charter and Memorandum of Understanding	10.10 – 10.20	JT
3.	Current Economic Context	10.20 – 10.35	JG
4.	Clean and Inclusive Growth Strategy	10.35 – 10.45	JR
5.	Introducing <u>E.ON</u>	10.45 – 10.55	MC
6.	Market Update from JLL	10.55 – 11.05	TW
7.	Scoping market needs and floorspace requirements for large-scale advanced manufacturing / commercial uses	11.05 – 11.20	FO / OK
8.	Delivery Group discussion and knowledge sharing: - Understanding market requirements relating to large-scale international investors	11.20 – 11.35	All
9.	Communication and community engagement	11.35 – 11.45	BL
10.	Highlights from Transport <u>Sub Group</u>	11.45 – 11.50	SW
11.	AOB and Next Steps - Delivery Group Meeting Three – 13 January 11.00 – 1.00 - Digital Vision - Approach to Environmental Assessment - Creating Social Value - Legal advice on designing in flexibility	11.50 – 12.00	CP

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Focus of Delivery Group Meeting Two

- Economic and market context
- Large-Scale Advanced Manufacturing
- Engagement



Smart Tech



Community / Local Services



Clean Growth



Future of mobility

Gravity

Minutes of Delivery Group One

- Approval of monthly Delivery Group minutes & Summary for the website
- Signing mechanics:
 - Project Charter
 - Memorandum of Understanding



Current Economic Context

Gravity LDO Delivery Group Meeting

23rd November 2020



Improving
LIVES

Our growing evidence base

The screenshot shows the Somerset Trends website. At the top left is the Somerset County Council logo. The main header reads 'Somerset Trends' and 'Produced by SCC's Economy & Planning Team (Research & Intelligence)'. A navigation bar includes links for Home, About, Summary of Data, Data (with a dropdown arrow), Policy Messages, Reports, and COVID-19 Economic Impacts. The main content area features a large landscape image with the text 'Welcome to Somerset Trends' and 'Here you can view and interrogate data and access reports on the Somerset economy.' Below this, there are three data visualizations: a line graph on the left showing values between 6000 and 12000, a bar chart in the middle with values between 20 and 40, and a donut chart on the right with segments in white, grey, and pink.

<https://www.somersetrends.org.uk/covid-19-economic-impacts>



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Economic activity and output have fallen significantly

- UK GDP grew by a record 15.5% in Q3 (July to September), having fallen by a record 19.8% in Q2. It remains 9.7% lower than at the end of 2019.
- Total weekly hours worked are still low but showing some signs of recovery.
- The number of employees on payroll declined by 2.6% in October compared with the same time last year, a reduction of 763,000 people over a 12-month period.

UK, monthly index, January 2007 until September 2020

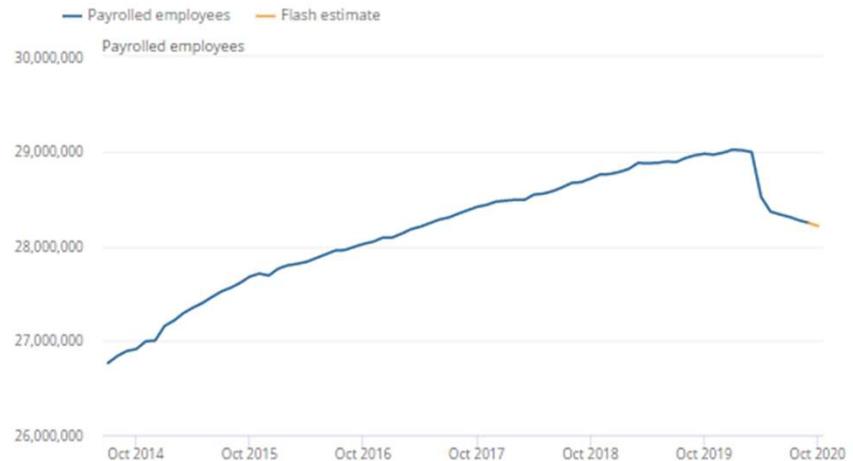


Sources: ONS, [GDP First Quarterly Estimate](#) (Q3), [November Labour Market Update](#)

UK total actual weekly hours worked (people aged 16 years and over), seasonally adjusted, between July to September 2005 and July to September 2020



Payrolled employees, seasonally adjusted, UK, July 2014 to October 2020



Improving
LIVES



National claimant count has risen sharply, whilst job postings have dropped precipitously

- Job postings have fallen dramatically, but are beginning a slow recovery.
- From July to September, the estimated employment rate was 0.6 percentage points down on the quarter, with unemployment hitting 4.8%, 0.7 percentage points higher than the previous quarter.
- Redundancies increased in July to September by a record 181,000 on the quarter, reaching a record high of 314,000.
- Claimant count has increased significantly, reaching 2.6 million in October. but overestimates unemployment, as claimants not necessarily out of/or seeking work.

Employment (all aged 16 to 64)

Quarterly change: -0.6pps ▼
Annual change: -0.8pps ▼

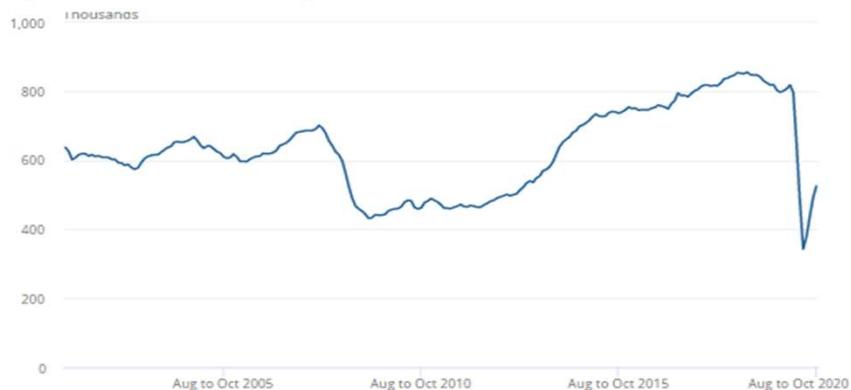


Unemployment (all aged 16+)

Quarterly change: 0.7pps ▲
Annual change: 0.9pps ▲



Number of vacancies in the UK, seasonally adjusted, between August to October 2001 and August to October 2020



UK redundancies, people aged 16 years and over (not seasonally adjusted), between July to September 2005 and July to September 2020



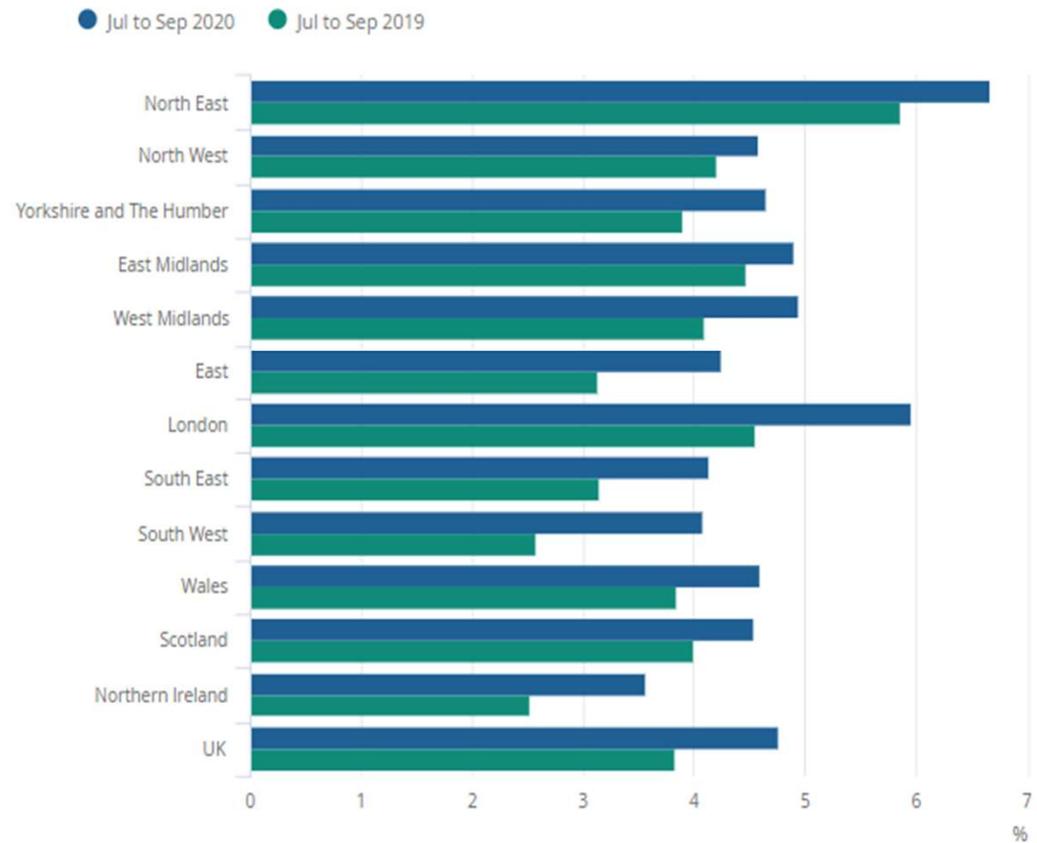
Source: Office for National Statistics – Labour Market Overview

For more info on issues pertaining to unemployment data please refer to our [COVID-19 Info Pack](#)

Labour Market Headline Indicators in the South West – November 2020

- The SW's unemployment rate stood at 4.1%, compared to the 4.8% seen nationally.
- The rise was 0.3 percentage points on the quarter, compared to the rise of 0.7 seen nationally.
- However, the SW has seen the largest increase in its unemployment rate over the last year of any region, at 1.5 percentage points compared to 0.9 nationally.
- In addition, the South West saw the largest increase in the economic inactivity rate compared with the same period last year, seeing an increase of 3.2 percentage points on the year to reach 19.9% overall.

Unemployment rate estimates for people aged 16 years and over who are economically active, by UK region, seasonally adjusted, between July to September 2019 and July to September 2020

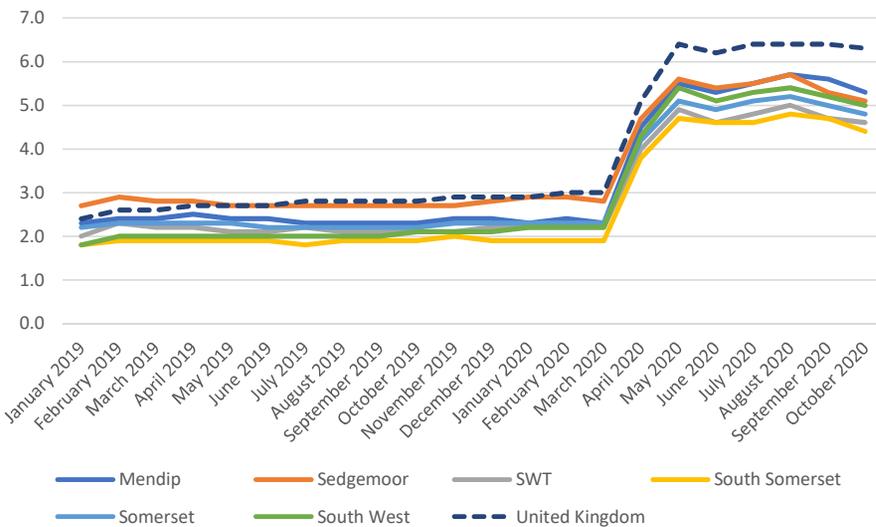


Somerset claimant counts have risen sharply since March

- There has been a steep rise in the claimant count across Somerset since March, with 4.8% of Somerset's working age population claiming out-of-work benefits in October.
- Somerset had consistently lower claimant rates than the national average before the crisis and this remains the case.
- Please Note: Claimant count figures do NOT provide a direct measure of unemployment and claimant conditionalities were relaxed in response to the COVID-19 crisis.



Claimant Count as a Proportion of Residents



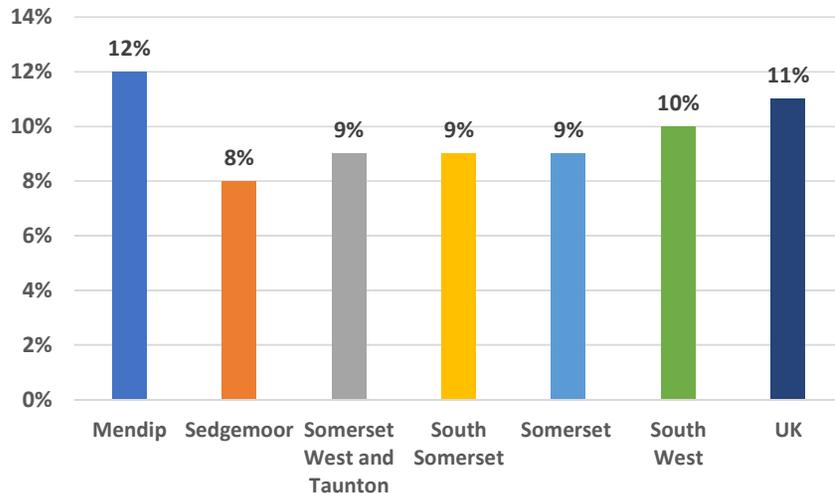
	Mar - 20	April -20	May - 20	June - 20	July - 20	Aug - 20	Sep - 20	Oct - 20	Cumul ative Increa se
Mendip	2.3	4.5	5.6	5.3	5.5	5.7	5.7	5.3	+3.0
Sedgemoor	2.8	4.7	5.6	5.4	5.5	5.7	5.5	5.1	+2.3
Somerset West & Taunton	2.2	4	4.9	4.6	4.8	5.0	4.8	4.6	+2.4
South Somerset	1.9	3.8	4.7	4.6	4.6	4.8	4.8	4.4	+2.5
Somerset	2.3	4.2	5.1	4.9	5.1	5.2	5.1	4.8	+2.5
South West	2.2	4.3	5.4	5.1	5.3	5.4	5.3	5.0	+2.8
United Kingdom	3.0	5.1	6.4	6.2	6.4	6.4	6.5	6.3	+3.3

Source: NOMIS, Claimant Count by Sex and Age (non-seasonally adjusted)

Employment support schemes have largely insulated the labour market until now

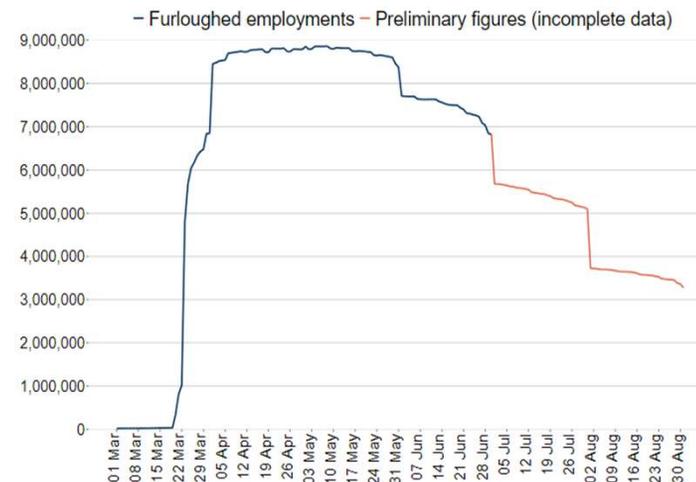
- As of the 31st of August, 23,400 employments had been furloughed in Somerset, a significant drop from the 78,300 employments furloughed at the end of July (a take-up rate of 30%).
- As of 31st July, 25,000 self-employed people in Somerset had claimed income support (73% of those eligible), an increase of 1,900 since the end of May. Second-round figures of the SEISS scheme indicate that 20,600 people in Somerset have made a claim.
- Further extension of the furlough scheme through to March 2021 likely to keep unemployment lower than was anticipated, but it still likely to rise steadily.

Furlough Take-Up Rate (August 31st)



Source: HMRC, Coronavirus Job Retention Scheme Statistics

Figure 1: Total employments furloughed, 1 March 2020 to 31 August 2020



Source: HMRC CJRS data



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Circa 906 reported redundancies as of 23rd October, with many more at risk, in addition to many businesses saying they plan to make more redundancies in 2020

Company	Area	Number of redundancies
Oscar Mayer	Chard (South Somerset)	860 at risk
Mulberry	Chilcompton (Mendip)	265 at risk
Clarks	Street (Mendip)	100
Relyon	Wellington (SWT)	82
Swallowfield (KDC/One)	Wellington (SWT)	40
Food Manufacturer	Mendip	21
Leisure Business	Mendip	25
Honeywell	Yeovil (South Somerset)	77
Leonardo	Yeovil (South Somerset)	150
Longleat Enterprises (Cheddar Gorge)	Mendip	40
Shaul Bakeries LTD	SWT (Taunton/Wellington), Sedgemoor (Bridgwater)	22

Results from our Business COVID-19 Impact Survey reveal 349 additional redundancies have been made since March across respondent businesses, with a further 429 planned this year.

Please Note:

- The above are tentative figures, with some unconfirmed/subject to ongoing consultation.
- Some redundancies were already planned prior to the COVID-19 pandemic.
- Some companies have been anonymised for confidentiality purposes.
- Some businesses will self-report they intend to make redundancies in the future but may not necessarily make them if business conditions change.



Somerset Business Survey – Impacts of COVID-19 (24th July – 21st August)

- Over 1,300 responses were received from businesses of all sizes and industry types across the county.
- Challenges included lack of **cash flow**, adapting/cohering to **social distancing**, and confusion about official **government guidance**.
- Almost 50% of businesses reported achieving less than half of their normal **turnover** since the start of lockdown, with 27% achieving 0%. 44% of businesses achieved 0% of their normal **profits**.
- **Home working** had become far more common, and there was a clear trend to maintaining/increasing this over the next 12 months. Cited positives and negatives of home working, with **digital connectivity**, a lack of **social interaction**, and **equipment costs** as challenges.
- 21.5% of businesses had either already made **redundancies**, or were planning to by the end of 2020. Meanwhile fewer businesses were considering **recruitment** given financial constraints and continued uncertainty.



Forecasts suggest significant loss of output and jobs in 2020, with growth and employment recovery likely to fall between baseline and downside scenarios

Baseline Headline Figures

Oxford Economics baseline forecast:

- An 8% contraction in Somerset's GVA in 2020, along with 10,000 job losses, with unemployment peaking at 5%.

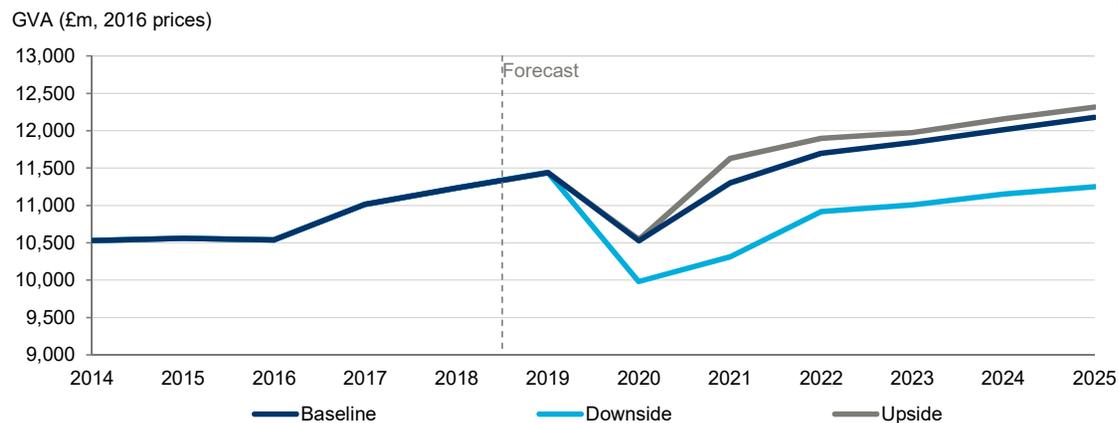
Downside Headline Figures

Oxford Economics downside forecast:

- A 13% contraction in Somerset's GVA in 2020, along with 13,300 job losses, with unemployment peaking at 7.9% in 2021.

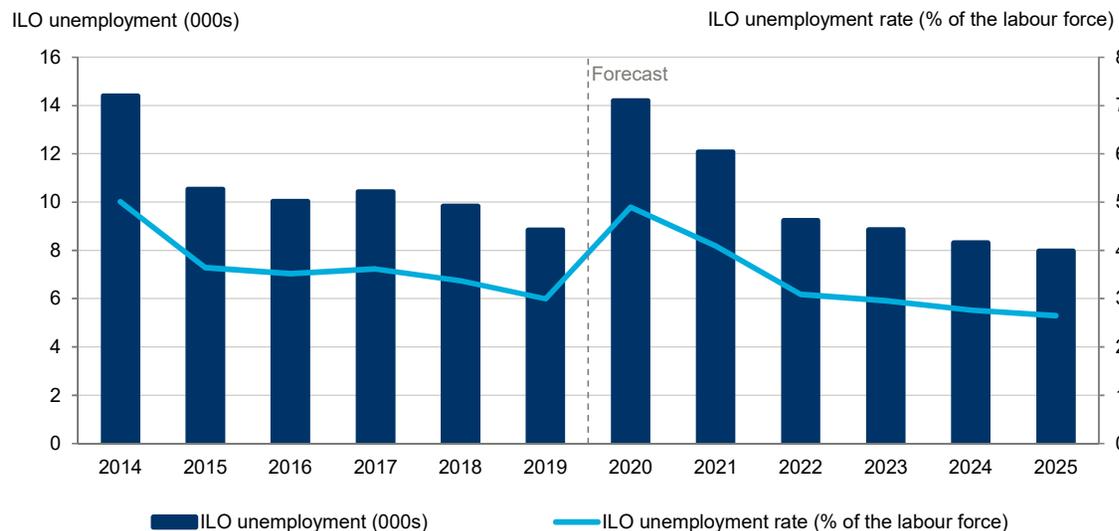
A lot has changed, but to the extent this work is still useful, the 'downside scenario' looks more likely (uncertainty remains over COVID and EU Exit).

Somerset's forecasted GVA, multiple scenarios



Source: ONS, Oxford Economics

Somerset Unemployment, Baseline Forecast



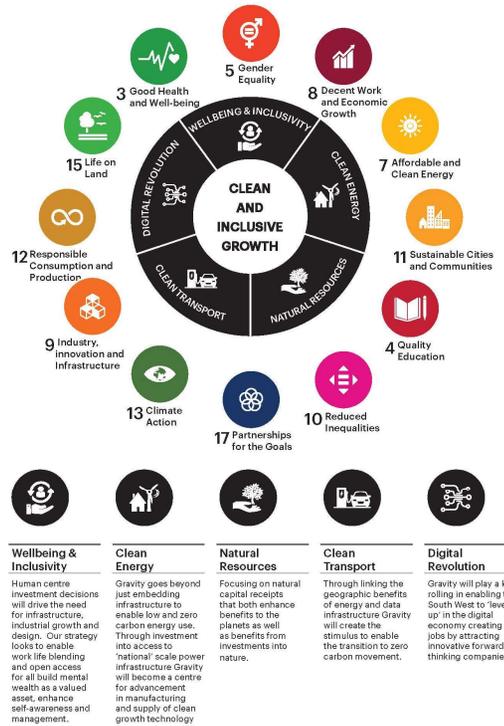
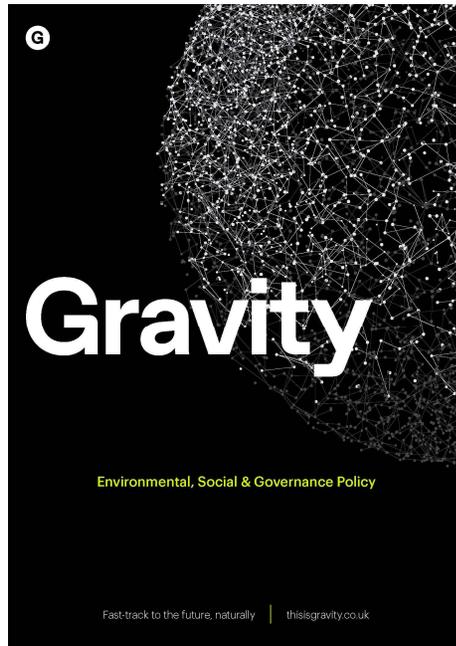
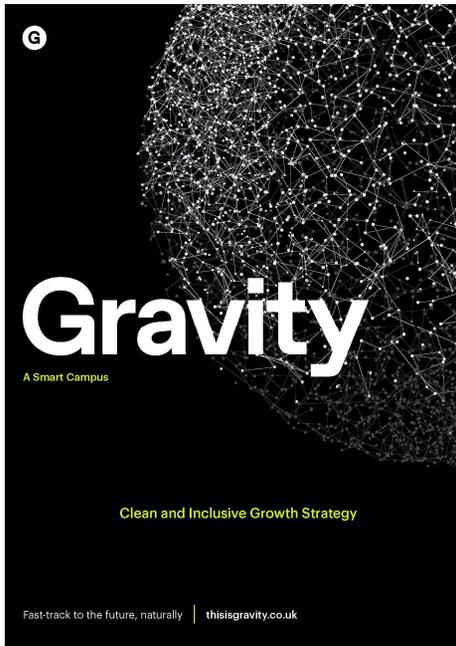
Source: ONS, Oxford Economics



Improving LIVES

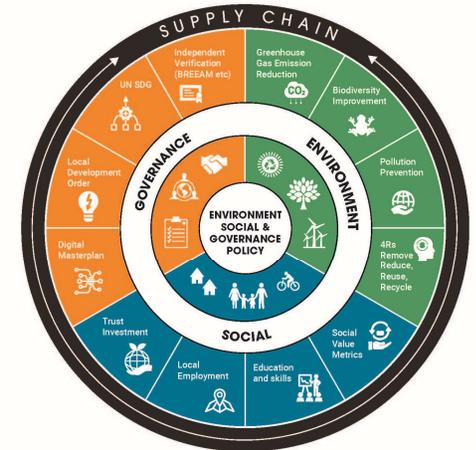
Gravity

Clean and Inclusive Growth Strategy



ESG Policies

Our supply chain is required to have a clear understanding of our ESG policies, and agree through our Supply Chain Charter to measure, monitor and enable verification of our identified metrics.



Governments 10 Point Plan

1. Offshore wind: Producing enough offshore wind to power every home, quadrupling how much we produce to 40GW by 2030, supporting up to 60,000 jobs.
2. Hydrogen: Working with industry aiming to generate 5GW of low carbon hydrogen production capacity by 2030 for industry, transport, power and homes, and aiming to develop the first town heated entirely by hydrogen by the end of the decade.
3. Nuclear: Advancing nuclear as a clean energy source, across large scale nuclear and developing the next generation of small and advanced reactors, which could support 10,000 jobs.
4. Electric vehicles: Backing our world-leading car manufacturing bases including in the West Midlands, North East and North Wales to accelerate the transition to electric vehicles, and transforming our national infrastructure to better support electric vehicles.
5. Public transport, cycling and walking: Making cycling and walking more attractive ways to travel and investing in zero-emission public transport of the future.
6. Jet Zero and greener maritime: Supporting difficult-to-decarbonise industries to become greener through research projects for zero-emission planes and ships.
7. Homes and public buildings: Making our homes, schools and hospitals greener, warmer and more energy efficient, whilst creating 50,000 jobs by 2030, and a target to install 600,000 heat pumps every year by 2028.
8. Carbon capture: Becoming a world-leader in technology to capture and store harmful emissions away from the atmosphere, with a target to remove 10MT of carbon dioxide by 2030, equivalent to all emissions of the industrial Humber today.
9. Nature: Protecting and restoring our natural environment, planting 30,000 hectares of trees every year, whilst creating and retaining thousands of jobs.
10. Innovation and finance: Developing the cutting-edge technologies needed to reach these new energy ambitions and make the City of London the global centre of green finance.

The Gravity 50

15. Maximise renewable energy generation through storage and management on site.
16. Exploring alternative energy technologies including hydrogen manufacturing and hydrogen fuel cells in transport.
37. Enable the supply chain for zero carbon movement and logistics creating scaled hydrogen supply
21. Leverage the geographic benefits of Hinkley Point and its ancillary benefits including energy supply, distribution, storage, workforce transfer, education and supply chains.
23. Provide EV charging solutions site wide, including rapid charging, accessible by the community.
30. De-carbonising transport, enable shifts to EV's and alternative fuels.
41. Incubating zero emission transport and smart mobility SME's
33. Establish a multimodal transport infrastructure combining rail restoration, motorway to micro mobility and autonomous shuttles.
39. Integrate facilities for helipads and enable the UK's first international drone port to connect UK industrial clusters to Europe.
19. Investing in the recycling of heating and cooling from industrial processes, to reduce business energy bills and benefit local communities.
24. Support approaches to greenhouse gas removal technology through our Enterprise Zone Status. This will include providing incubator space for sequestration technology.
25. Invest in a comprehensive Nature Base Solution Strategy for greenhouse gas removal.
20. Using our Enterprise Zone Status we will provide incubation facilities to promote innovative energy technologies

Gravity

Energy for Tomorrow

Mark Cavill
Head of City Energy Solutions
Mark.Cavill@eonenergy.com

e-on

E.ON at a glance

We are the world's largest investor-owned energy company, formed in Germany in 2002

£3.3 billion invested by us in renewable energy in the UK over the last decade

Over 54 million customers across Europe

We operate more than 1.5 million km of energy networks

Over 40,000 employees globally, including over 8,000 in the UK

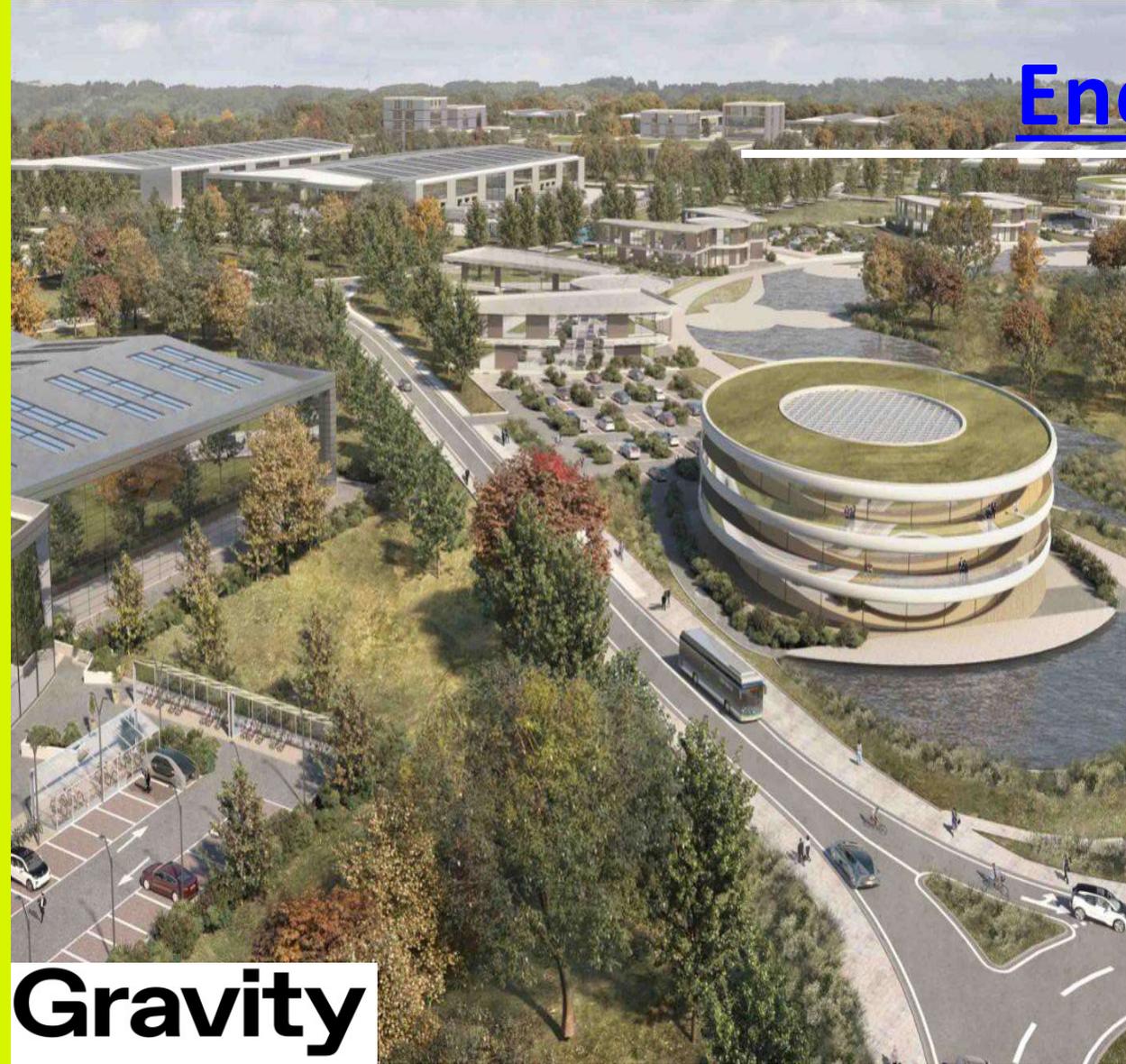
The frontrunner at the heart of the energy revolution

Energy Infrastructure Services

Achieving CO₂-targets and improving air quality together with regions, cities and municipalities and their local communities - from Malmö to Munich to Gravity.

Customer Segments

- Real-estate and property developers
- Housing associations
- Residential customers
- Local Industrial and Commercial
- Public and municipal entities



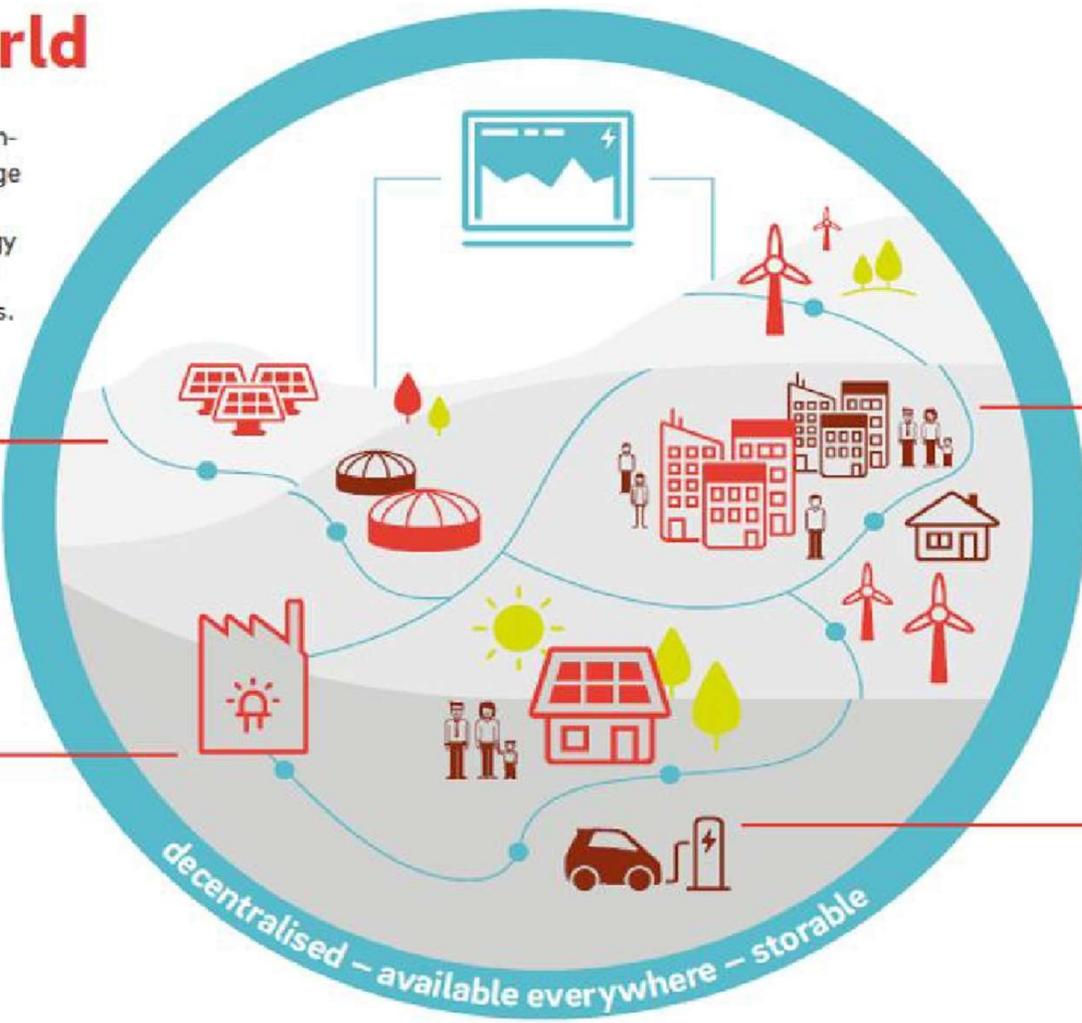
Gravity

The new energy world

Electricity is produced decentrally by many small and large producers we connect with each other. Digitalised energy management increases efficiency and reduces the costs.

740,000 systems that generate electricity from wind, sun and biogas are connected to E.ON networks.

Efficient energy management for around 32,000 industrial sites saves energy and lowers the costs.



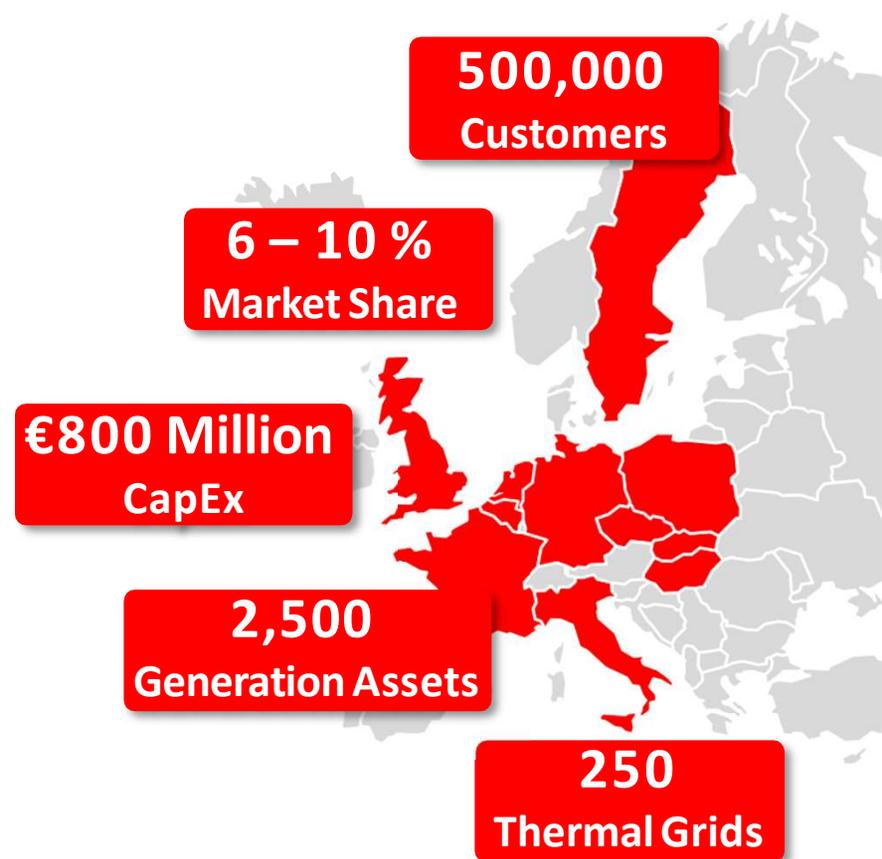
Smart solutions for sustainable urban development from villages to metropolises.

Electric vehicles draw power from the solar roof, serve as storage or feed power back into the grid.

City Energy Solutions in Europe

Our team is dedicated to the growing decentralised heating, cooling and energy service markets, focussing on 3 core sectors:

	City supply	Managing large-scale, demand driven sources for heat, power and cooling.
	Urban quarter solutions	Providing local area solutions for both new build and retrofit: decentralized and balanced thermal grids.
	Single-site solutions	On-site energy supply and other solutions for both the new build and retrofit market.



Showcasing our capabilities across Europe



Werksviertel, Munich

Urban development project.
Intelligent platform of heat, cooling & power networks.
Utilization of CHP waste heat for cooling.



Medicon Village, Sweden

Zero emission energy system.
Innovative solution for maximum waste heat recovery and efficiency.
Low temperature network.



Hyllie, Sweden

Malmö's largest expansion area of the next 2 decades.
>10,000 office workspaces.
100% renewable or reused energy.
Renewable electricity from local sources.
13,500t CO2 savings p.a.



Citigen, UK

Reducing carbon emissions for ambitious sustainability goals.
Efficient and long distance district heating & cooling network.
Control room managing 60 UK district schemes.



Platform Tegel, Berlin

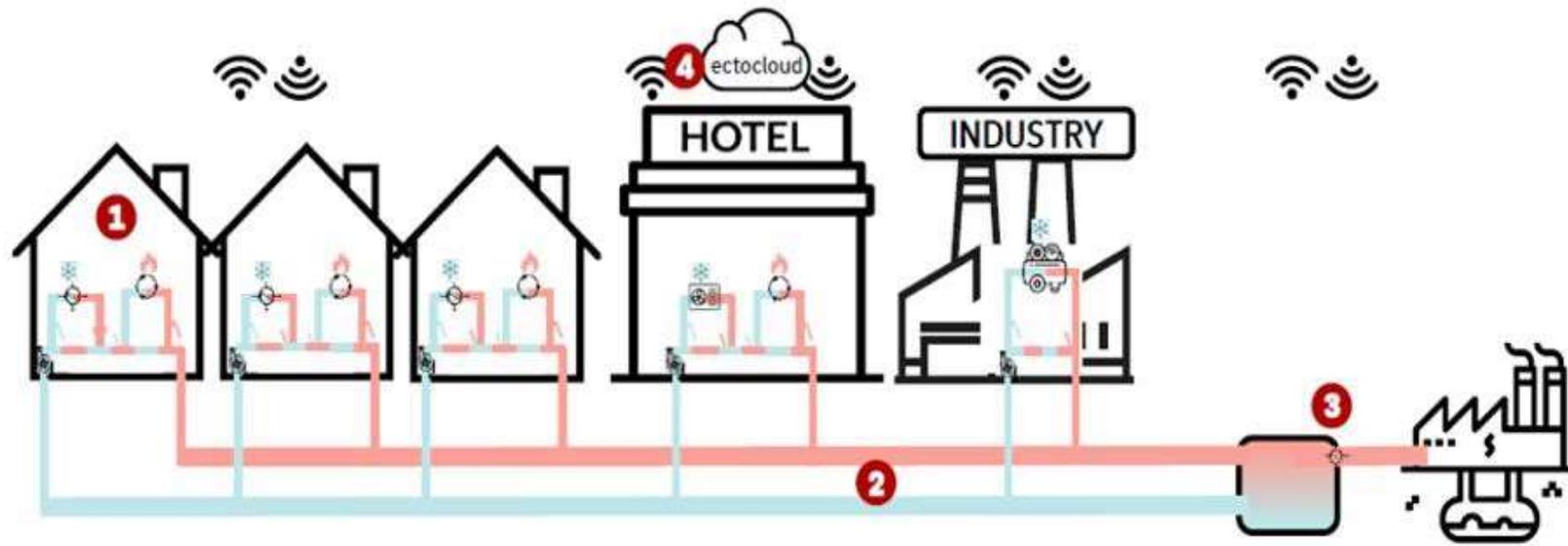
Decentralized generation including solar, geothermal, CHP & waste water heat.
Platform Berlin TXL as a local, cross-media energy hub.



Cranbrook, UK

75 km of heat network.
13,000 CO2 savings per year.
Multiple low carbon & renewable technologies; CHP, solar thermal, solar PVs, heat pumps & biomass.

By bringing ectogrid™ to Gravity it combines the strengths of energy management, heat pumps, and grid-based infrastructure to create a zero carbon solution



Key features and benefits of ectogrid™

- Heating and cooling provided by one lowEx grid; minimise waste heat losses
- Heating and cooling requirements are balanced
- Able to balance Commercial and Residential requirements simultaneously
- Enables decentralised energy generation through heat pump deployment.

Key components

- 1 Integrated equipment
- 2 Distribution
- 3 Balancing Capacity
- 4 Energy management software through ectocloud™

We cannot wait for Gravity to be the exemplar project of not just the South West but the entire UK... lets make it happen.



Any Questions??



Understanding the Market - Future Trends & Covid-19



Building footprints and envelopes are increasing to accommodate a range of occupier uses and requirements:

Advanced manufacturing

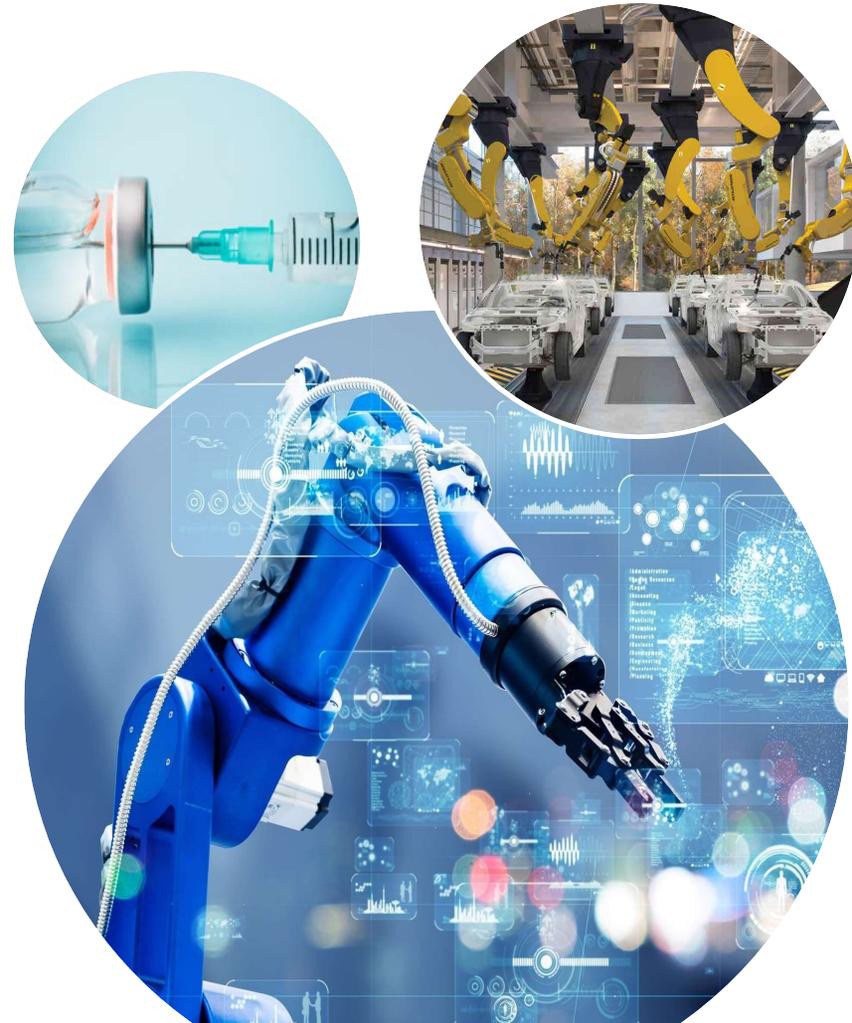
- Global emergence of the EV sector and demand for sustainable battery production
- Modular housing/construction and 3D building printing
- Covid-19 vaccination production & NHS – ‘Centre of Excellence’

Technology & Clean Growth

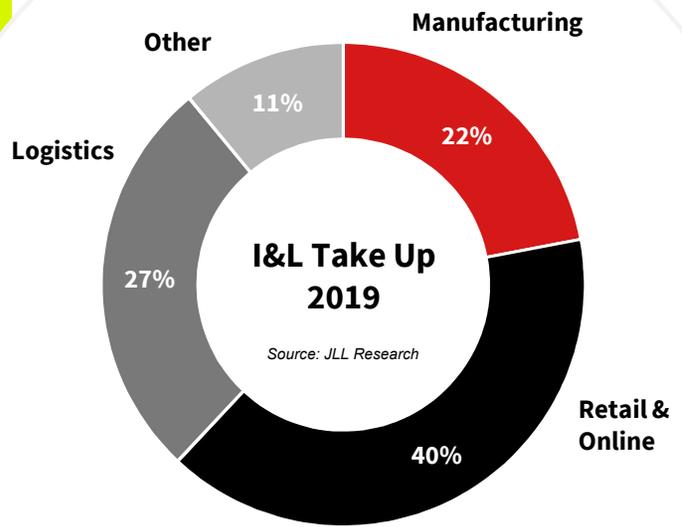
- Data centres; the growth of cloud computing, the ‘Internet of Things’
- Film, media & streaming services
- The UK Green Economy

Logistics

- Structural shift in the retail sector to online, accelerated by the pandemic
- Automated high bay storage and distribution (food & grocery)



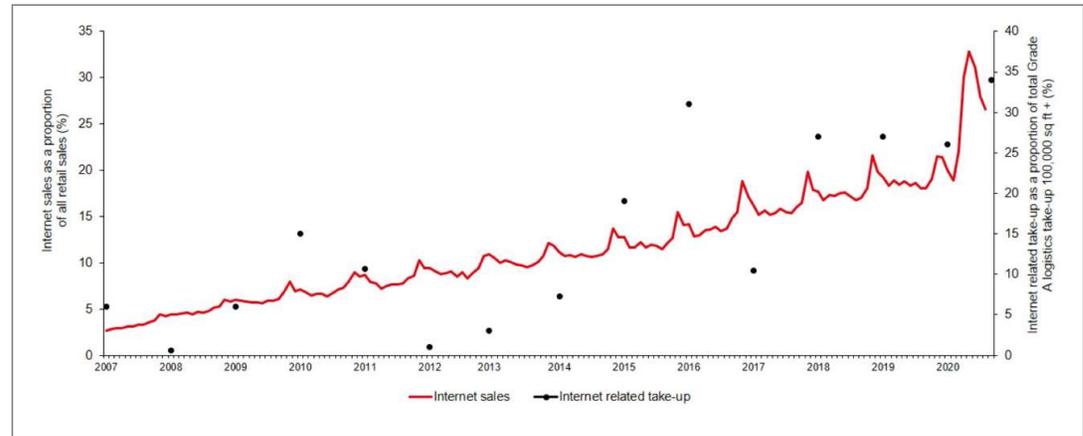
Market Update



Industrial & Logistics



- Global C-19 pandemic has **accelerated** the growing trend of retail spending **online**.



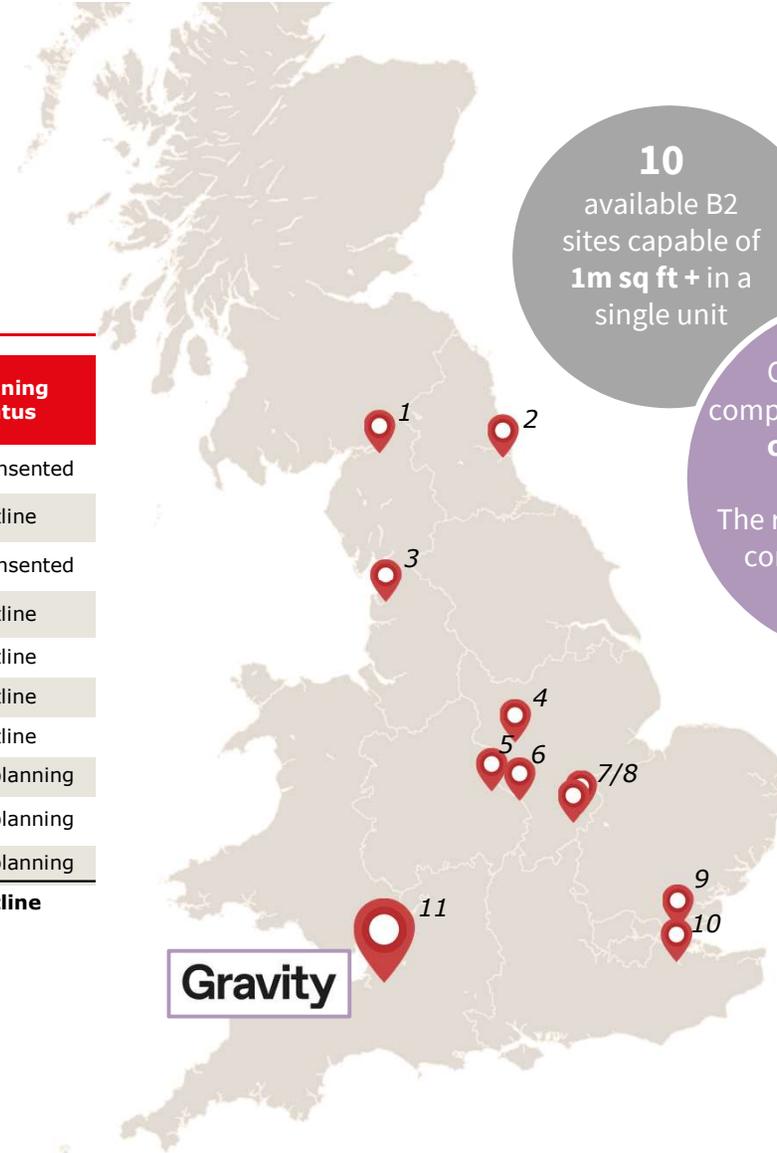
- 2020 expected to post one of the **strongest levels of take-up on record** as take-up in the first nine months of the year has already exceeded last year's annual total and also the five-year annual average of 20 million sq ft.
- Sectors: retail including **online** and **food & grocery** accounted for the largest share of take-up in Q1-Q3 2020 with a 58% share compared with 40% in 2019. This was followed by logistics companies incl. **NHS PPE** supply chain (22%), 'other' companies accounted for 14% of demand so far in 2020.
- Manufacturers have taken 5% of the market so far in 2020 compared with 22% in 2019. The pandemic has impacted this sub sector the hardest due to the UK Government's strict lockdown earlier this year, however JLL see this as only a **temporary set-back**.

Strategic Sites across England



Gravity Competing Availability

No	Town	Scheme Name	Size (acres)	Ownership	Planning Status
1	Carlisle	Kingmoor Park	400	Kingmoor Park Properties	Part consented
2	Sunderland	International Advanced Manufacturing Park (IAMP)	370	HBD / Sunderland City Council	Outline
3	Cleveleys	Thornton Cleveleys	288	NPL / Le Fylde Estates	Part consented
4	Derby	Infinity Park (Advanced Manufacturing Park)	100	Wilson Bowden / Derby CC	Outline
5	Birmingham	Peddimore Park	175	IM Properties	Outline
6	Coventry	Prospero Park, Ansty	196	Manse Opus	Outline
7	Kettering	Symmetry Park Kettering	136	Tritax Symmetry	Outline
8	Kettering	Kettering Energy Park	1,100	First Industrial	In for planning
9	Coryton	Thames Enterprise Park	405	iSec / Brookfield / Greenergy	In for planning
10	Aylesford	Panattoni Park Aylesford	110	Panattoni	In for planning
11	Bridgwater	Gravity	616	This is Gravity	Outline



XXL Take Up



Take up of buildings across the United Kingdom

Date	Occupier	Use	Scheme	Size (sq ft)	Clear internal	Building height
Q3 2020	ALDI	Automation & logistics	Interlink South, Bardon	1,301,658	31m	33m
Q2 2020	Online retailer	Automation & logistics	Panattoni Park Swindon	2,320,000	21m	24.8m
Q2 2020	Online retailer	Automation & logistics	Littlebrook Power Station, Dartford	2,300,000	20m	22.8m
Q3 2019	Jaguar Land Rover	Global parts	Appleby Magna	2,940,000	18m	21m
Q2 2018	La Doria (LDH)	Automation & logistics	Unit A, Spoughton Enterprise Park	260,650	40m	42m
Q1 2018	Cloud HQ	Data Centre	Giant Park, Didcot	650,000	15m	16.4m
Q1 2018	Nestle	Automation & logistics	SEGRO East Midlands Gateway	638,278	16-31.5m	35m
Q1 2011	Morrisons	Automation & logistics	Morrisons RDC Bridgwater	760,000	11.5m	14.2m



United Kingdom

Take up of buildings across the Americas & Asia-Pacific

PC Date	Occupier	Use	Scheme	Size (sq ft)	Clear internal	Building height
Q3 2019	Tesla	Advanced manufacturing	Gigafactory 3, Shanghai, China	4,500,000 (GF) 9,300,000 (Total)	28m	30m
Q4 2016	Tesla / Panasonic	Advanced manufacturing	Gigafactory 2, Buffalo NY, USA	1,200,000	22m	25m
Q3 2016	Tesla / Panasonic	Advanced manufacturing	Gigafactory 1, Nevada, USA	1,900,000 (2016) 13,500,000 (Future?)	21-28m	30m
Q2 2010	Tesla	Advanced manufacturing & Automation	Tesla Factory (former GM site), Fremont, California USA	5,300,000 (2010) 9,900,000 (2017)	Various	21 - 38m



Asia-Pacific

Active Enquiries



Live Market Requirements

Date	Use	Search geography	Size (sq ft)	Size (acres)	Max building height	Comments
May-20	Sui generis / advanced manufacturing	UK	7,500,000	-	30m	New 'Gigafactory'
Aug-20	Sui generis / advanced manufacturing	UK	3,000,000 – 3,500,000	200	20m	New 'Gigafactory'
Apr-20	B2 – advanced manufacturing	South West / Wales	2,000,000 – 3,000,000	150	25m	New 'Gigafactory'
Jan-20	Sui generis	UK	-	50 - 100	30m	Data centre campus
May-20	B2 – advanced manufacturing	UK	1,000,000 – 2,000,000	-	15m	Vaccination centre(s)
Mar-20	B8 – storage & distribution	UK	800,000 – 1,200,000	40 - 60	38m	Automated logistics
Oct-19	B8 – storage & distribution	South West	600,000 – 1,000,000	-	30m	E-commerce facility
Sep-19	B2 - manufacturing	South West	-	37	20m	Film studios & production
Jun-20	Sui generis	South West	-	40	20m	Data Centre
Jun-20	B2 – advanced manufacturing	UK	300,000 – 500,000	20	18m	3D building printing

Occupier Targeting - Who?



Automotive & Aerospace



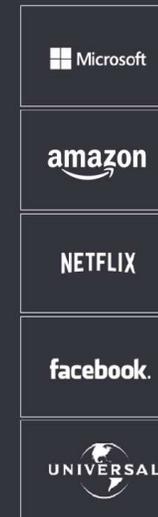
Life Sciences



EV / Battery Manufacturing



Technology & Media

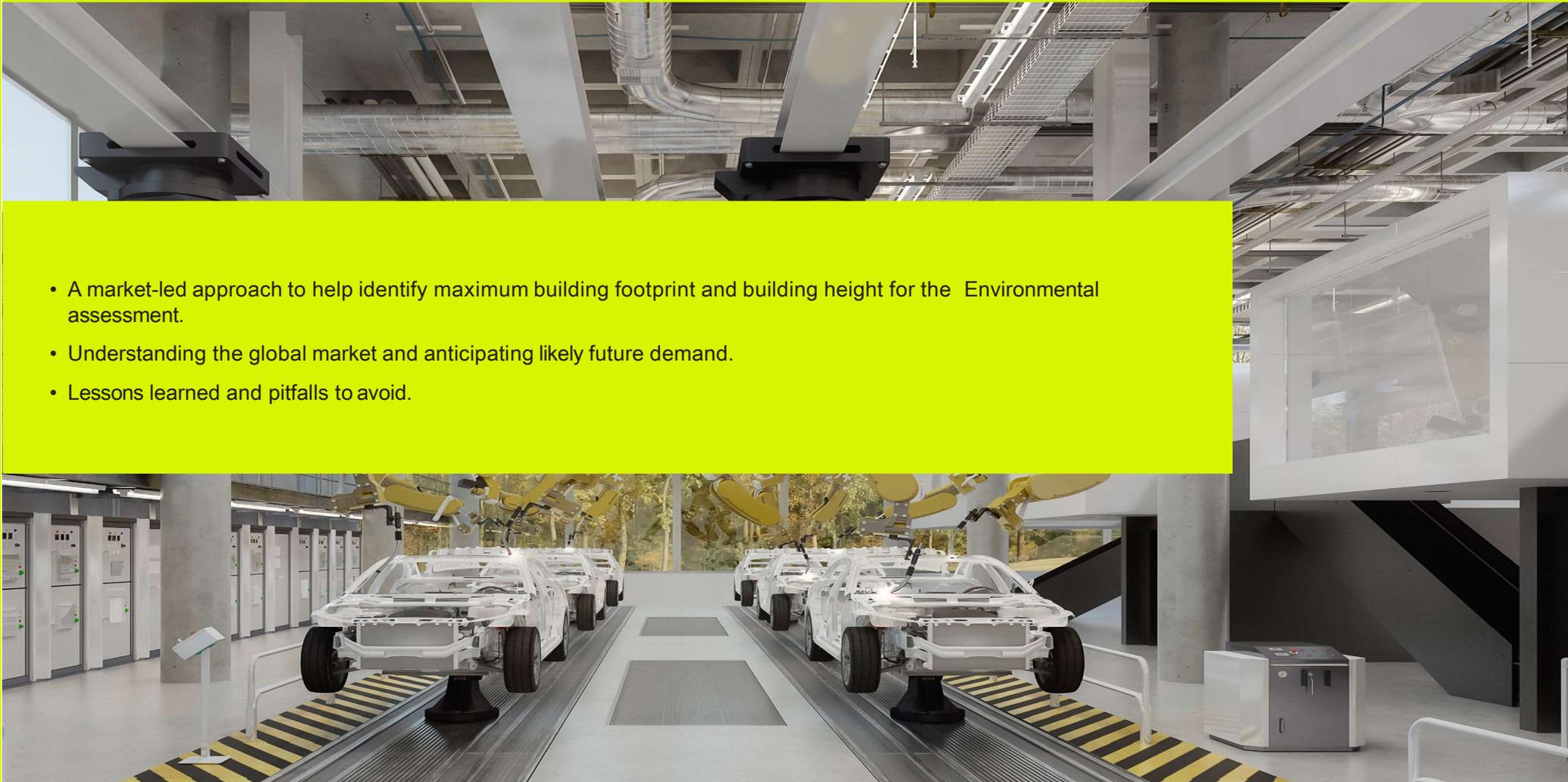


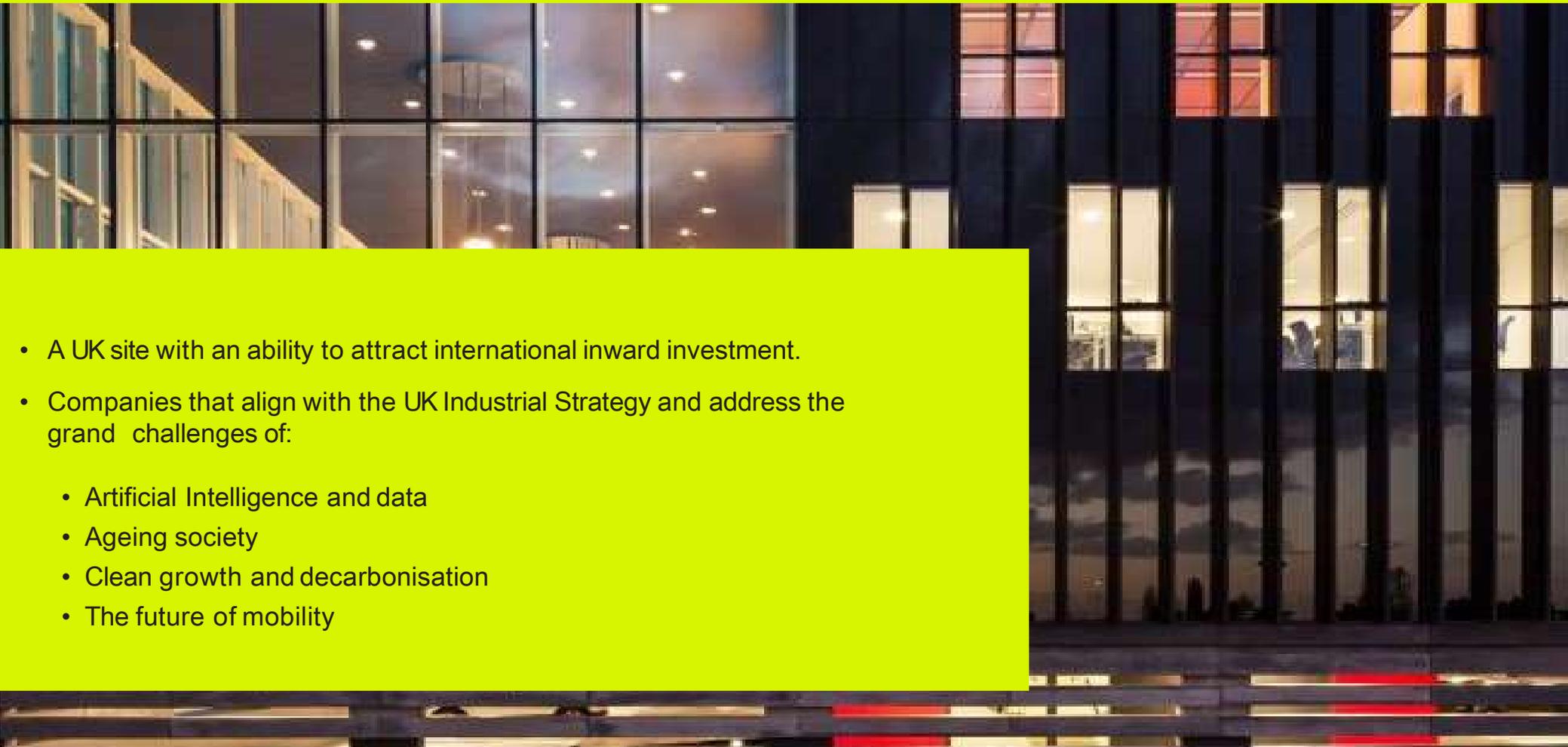
Data Centres



Purpose of the Advanced Manufacturing Study

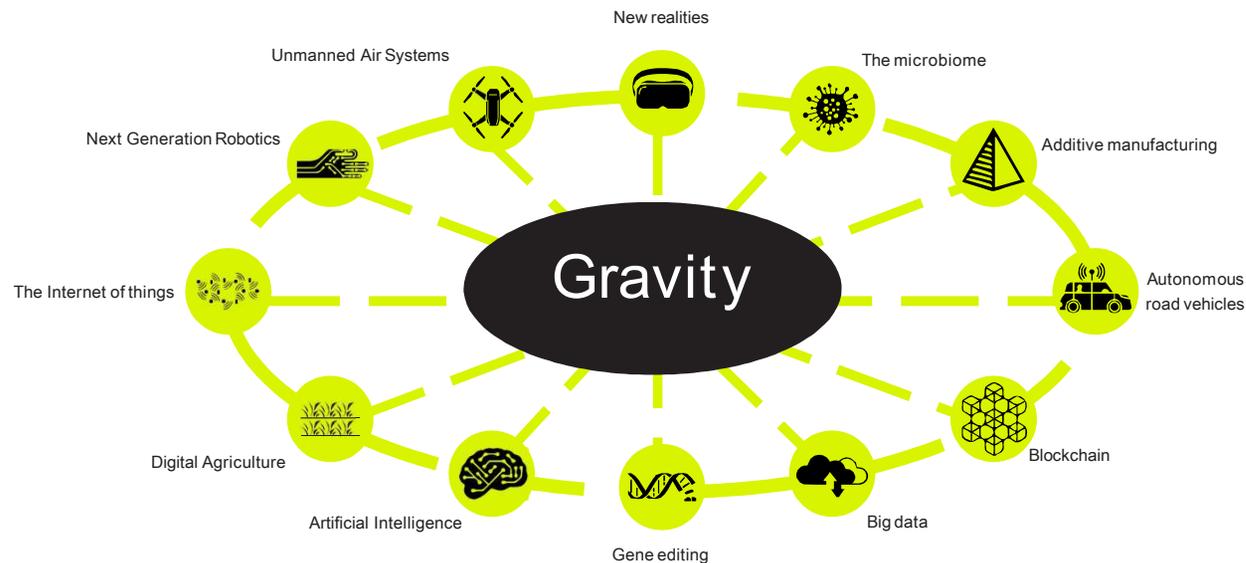
- A market-led approach to help identify maximum building footprint and building height for the Environmental assessment.
- Understanding the global market and anticipating likely future demand.
- Lessons learned and pitfalls to avoid.





- A UK site with an ability to attract international inward investment.
- Companies that align with the UK Industrial Strategy and address the grand challenges of:
 - Artificial Intelligence and data
 - Ageing society
 - Clean growth and decarbonisation
 - The future of mobility

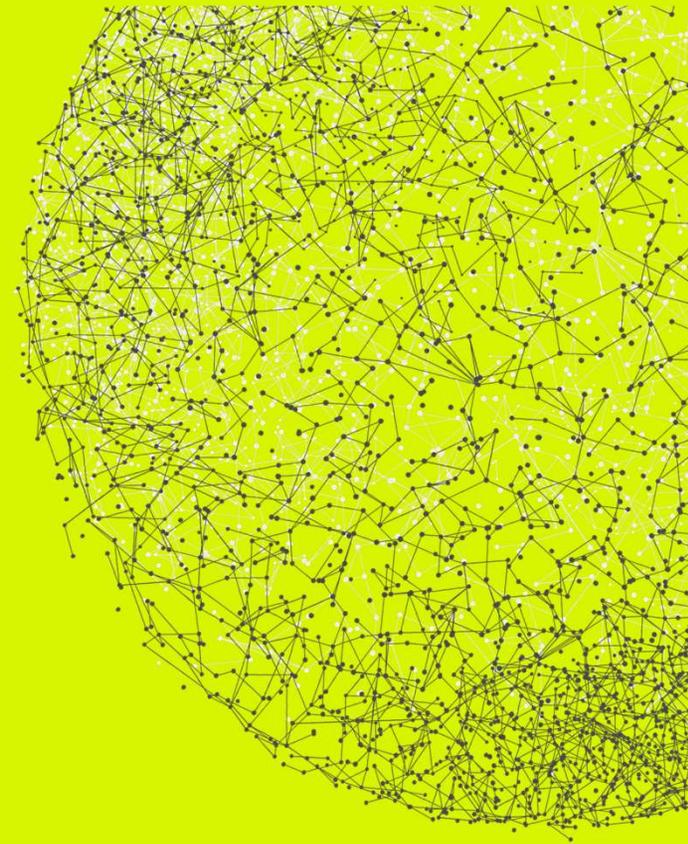
Delivery of future manufacturing



UN SDGS DISRUPTIVE TECHNOLOGIES, PA CONSULTING 2020

- Agility is key to expedite delivery for the Enterprise Zone and take full advantage of emerging market opportunities.
- Disruptive technologies are challenging the status quo and transforming the economy at a rapid rate.
- Advances in AI and automation, the digitisation of assets and processes, and the proliferation of data are playing a crucial role in changing the manufacturing landscape.
- New technologies and paradigms bring new spatial and infrastructure demands.

1



Large scale advanced manufacturing overview

Large Scale Advanced Manufacturing overview

Gigafactory/EV/alternative fuel assembly plants



Additive
manufacturing



Next Generation
Robotics



Artificial
Intelligence



Autonomous
road vehicles

Relative size

XXL

- The battery industry is set to be worth \$5 billion domestically by 2025 and \$133 billion worldwide by 2027.
- By 2030 it is estimated that there will be at least 16 gigafactory plants operating across Europe with a total annual production capacity of 446 GWh.
- There is currently a lack of high volume manufacturing capacity in the UK.
- These comprise the largest single occupier facilities in the world, often in excess of 200 acres and are highly coveted. They require the most flexibility.



- 1 Berlin Gigafactory, Germany
- 2 Northvolt Ett, Sweden
- 3 SKB, Hungary

Additive Manufacturing



Additive
manufacturing



Next Generation
Robotics



Artificial
Intelligence



The Internet of
things

Relative size

XL/L

- Additive Manufacturing was worth \$9 billion in 2019 and is set to be worth more than \$26 billion globally by 2021.
- The Modern Methods of Construction (MMC) sector is set to reach £165bn globally by the middle of the next decade.
- MMC can help address the housing crisis by speeding up the rate of delivery while increasing quality.
- Prefab housing is on the cusp of being mainstreamed in the UK, with Sekisui entering UK market in partnership with Urban Splash and Tophat is also attracting large investment from Goldman Sachs.
- These facilities are typically a minimum of 20 acres.



- 1 Urban Splash Sekisui
- 2 Sekisui factory
- 3 Winsun manufacturing

Agritech/Verticulture/Hydroponics



Digital
Agriculture



Additive
manufacturing

Relative size

L

- £1.72 billion worldwide, with predictions up to £9.84 billion by 2026.
- Potential attractive use due to water availability, and strength of agri sector in region.
- Several startup companies are helping to tackle food security through growing crops vertically without soil. These include Aerofarms (US), Shockingly Fresh (UK), Sky Greens, (Singapore), Plantagon Agritecture (SW), Jones Food Company (UK)
- Currently using existing facilities in retrofitted buildings, height of purpose built new facilities to be defined.
- 25 acres is considered the minimum to achieve economies of scale (<http://www.shockinglyfresh.co.uk/site-development>)



- 1 Plantagon Agritecture, Linköping.
- 2 Duijvestijn, Netherlands
- 3 Aerofarm, Newark, NJ

Data Centers



Big data



Artificial Intelligence



The Internet of things

Relative size

XL/L

- Global cloud market grew 33% in Q3 2020 to \$36.5 billion.
- Data centers were crucial to sustaining business operations during pandemic.
- Closely linked to forthcoming roll out of 5G technology to enable autonomous vehicles, industrial robotics and augmented reality.
- Can be a useful source of heat within a heat network for residential purposes.
- Can vary in size depending on provider-typically 40-100 acres.

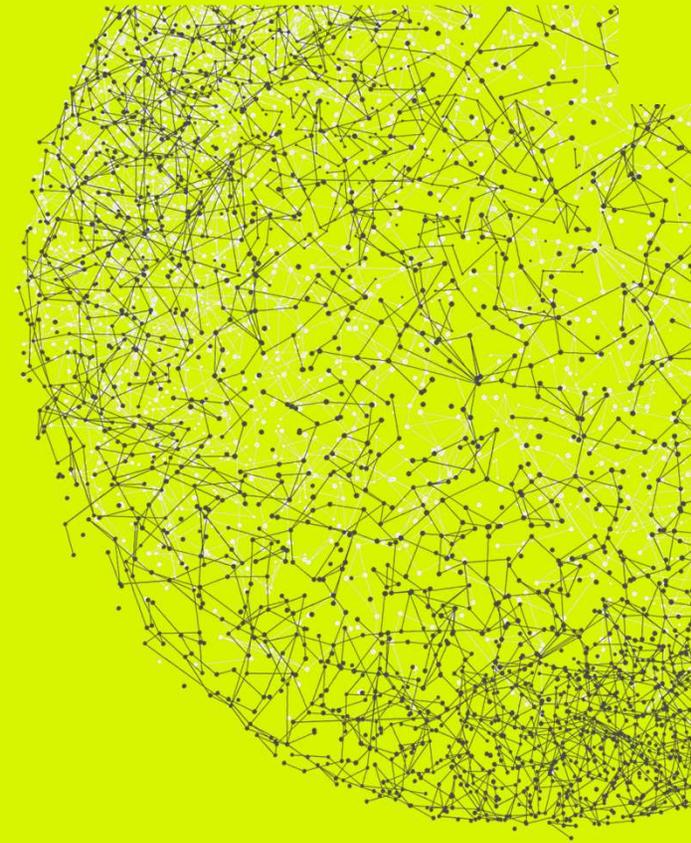


1 Equinix Data Center, Netherlands

2 Bahnhof Modular Data Center, Sweden.



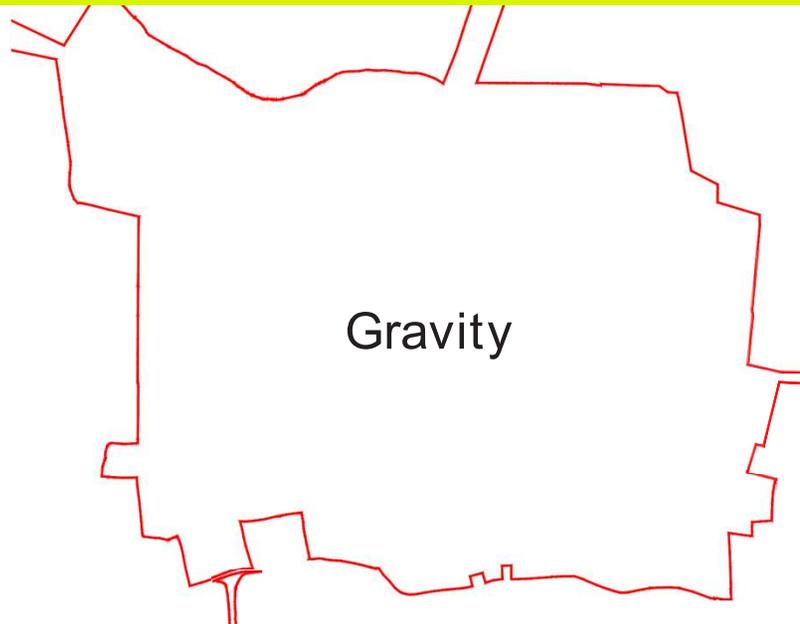
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Global market demands: large scale advanced manufacturing needs

Precedents to help determine the largest plot sizes

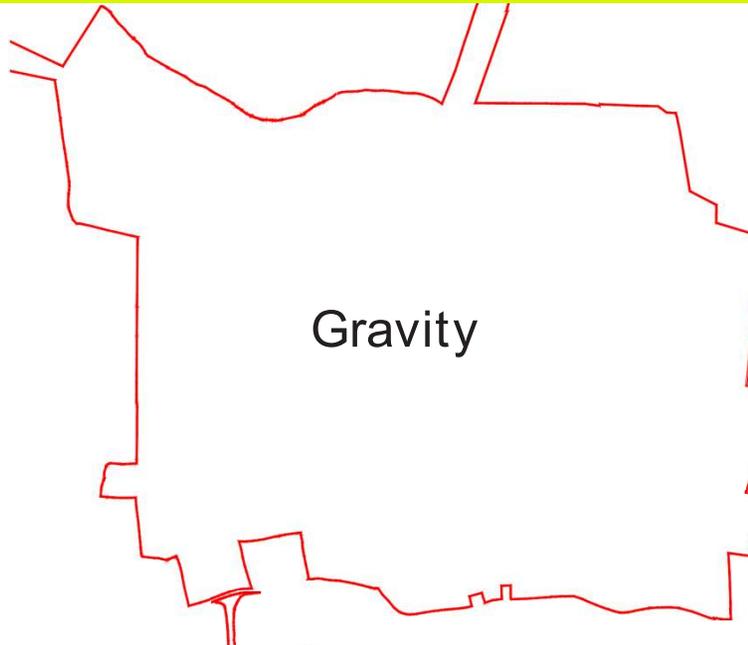
Tesla Gigafactory 3, China (Final form)



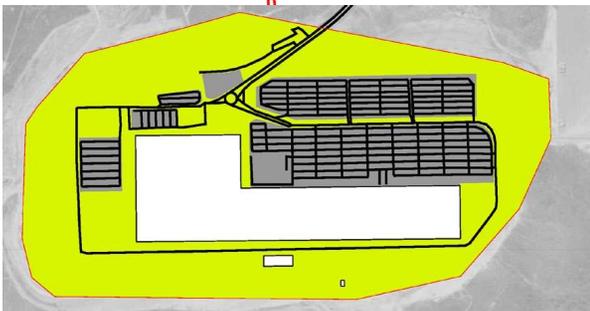
- Built in 2018.
- Tesla Model X and Model 3 assembly.
- Plot equates to 35% of Gravity LDO boundary (231 acres)
- 4.5m sqft building footprint.
- 3 storeys- 30m total height.
- Final form based on released drawings.
- Floor to area ratio of 1.37.
- No rail connection.



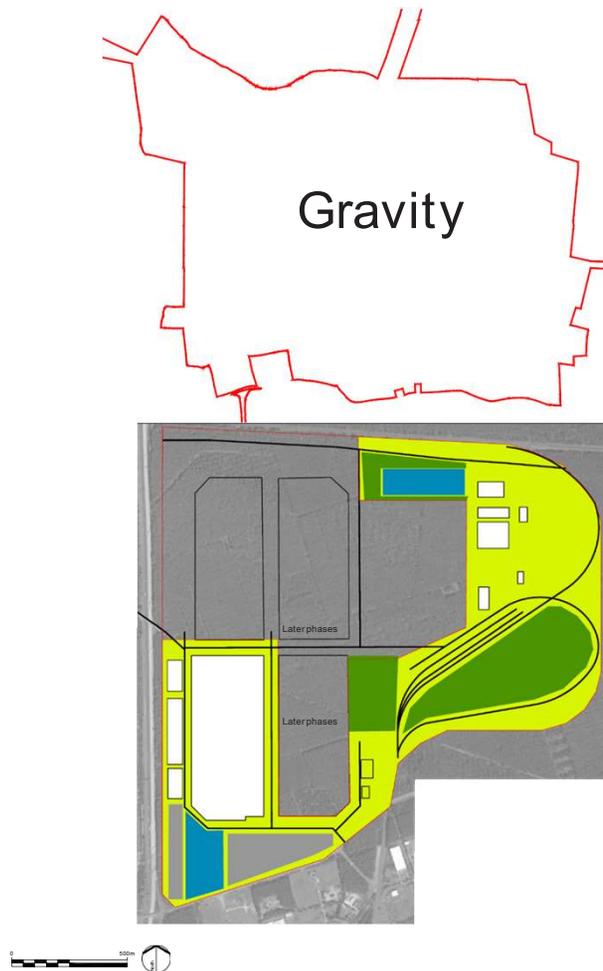
Tesla Gigafactory 1, Nevada (existing)



- Built in 2015.
- Plant for EV parts, including lithium ion batteries.
- Plot equates to 38% of Gravity LDO boundary (133 acres)
- 1.9m sqft building footprint
- 3 storeys-30m total building height.
- No rail connection.
- No on-plot attenuation or open space.
- Large areas around perimeter reduce efficiency of plot.
- Plans to replace building to substantially increase floor area.

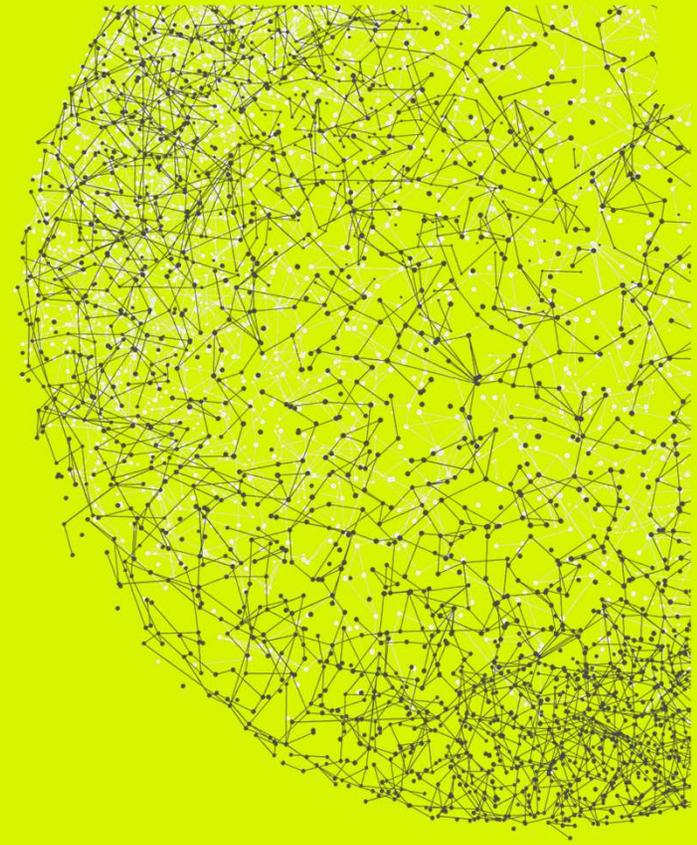


Tesla Gigafactory 4-Berlin (Phase 1)



- Currently under construction.
- Plant for EV parts, including lithium ion batteries.
- Phase 1 area equates to 65% of Gravity LDO boundary (Phase 1-425 acres).
- 3.272m sqft building footprint
- 3 storeys- 24.3m maximum building height (8.1m per floor average)
- Woodland setting on the periphery of Berlin- trees lost by development compensated and replanted locally.
- Facility currently under construction. Phase 1 shown.
- Clear plan for later expansion with clustering of main buildings.
- Rail connection and extensive loading area.

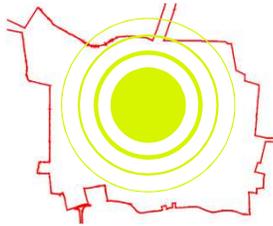
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Lessons learned and spatial implications

Lessons learned and spatial implications

1: Plot size and location



- Informed by precedents, one scenario for the Enterprize Zone site will need to factor in a large scale advanced manufacturing facility to directly target inward investment.
- The scale of the plot has implications on the overall site configuration, with the northern-most part of the site considered the most suitable location which would require the highest level of flexibility within the LDO.
- Implications on drainage will need to be considered as a next step.

2: Building Heights



- Tesla sites are typically 30m tall, often split into 3 10m floor-to-ceiling storeys. A further allowance will need to be factored in for plant above this level.
- Other industries can require up to 40m clearance (excluding eaves heights).
- Emerging industries such as vertical farming require high clearances to take advantage of economies of scale.
- Taller elements may be required within the overall massing for specialist activities/office space as part of a wider advanced manufacturing facility.

3: Maximum building footprint



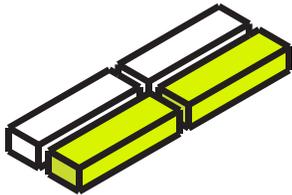
- Building footprint is more important than total floorspace as storeys/mezzanines within the building envelope may need to be added or removed at a later date.
- The simplified planning regime need to afford maximum flexibility within plot in relation to the size and configuration of building footprints.
- Typically, modern facilities are approximately 40% of the total plot area. Consolidated parking and off-plot drainage can help increase the efficiency of the plot further to boost its attractiveness to the market.

4: Job numbers



- Continuing shifts to automation have led to the decoupling of jobs numbers and total floorspace.
- Job numbers vary drastically depending on facility and activity.
- Shift working and 24/7 campus life will help to take burden off peak travel times.

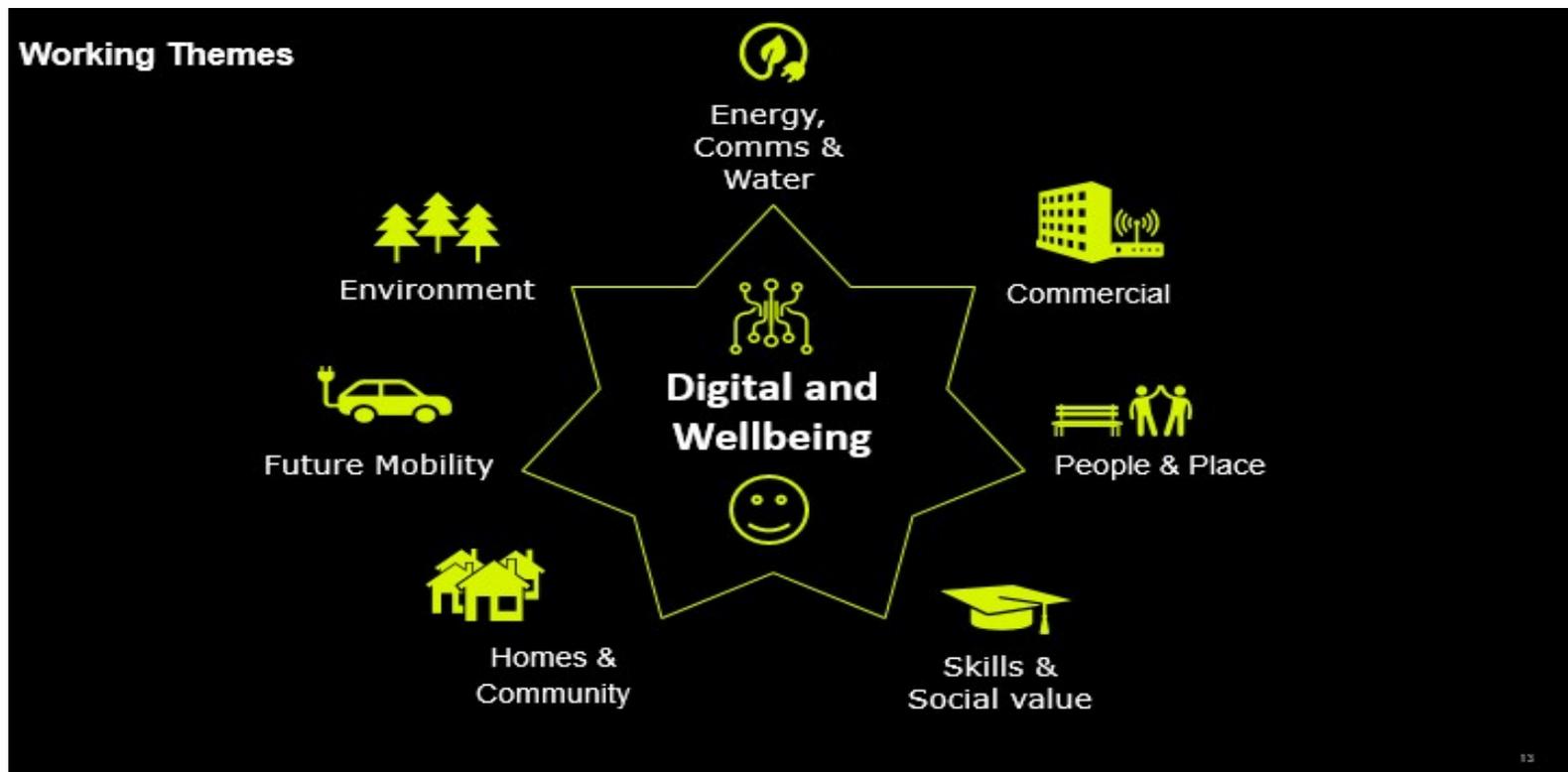
5: Implementation and delivery



- Modularity and expansion are important factors for modern manufacturing.
- The simplified planning regime needs to be agile enough for companies to easily expand while giving a clear direction in terms of acceptable design outcomes.
- The Design Guidance document will function as an important marketing tool. It will contain guidance for dealing with different development scenarios to ensure quality of place is retained throughout.
- Other land uses will be assessed and market tested as part of the work/live/play offer.

Gravity

Delivery Group Discussion and Knowledge Sharing



Communications and engagement strategy headlines

Our objective:

“Achieve a positive outcome on the Local Development Order, through engaging the community and building support, whilst protecting and enhancing your reputation as a trusted, responsible organisation that is committed to delivering positive, sustainable outcomes locally.”

Strategic story-telling:

- Opportunities for the future – job creation
- Part of the solution - championing smart, sustainable working
- The social value / impact of development
- Rich history, bright future – innovation / pioneering
- Strong levels of business and local support
- Everyone has the opportunity to engage

Three key principles, which guide all our communication:



Clear communication:

Supported by five key messages.



Connecting with people:

Online and offline. Early, continuous engagement for a purpose.



Two-way communication:

email, surveys, online forms, community hotline

How we will communicate

Community outreach:

- > Local member and stakeholder briefings
- > Drop in events
- > Newsletter / direct mail
- > Media relations

Digital:

- > Fresh community consultation portal
- > Virtual webinars (early 2021, May and autumn)
- > Monthly email community newsletters
- > Bi-monthly updates to elected members
- > Social media

Contact gravity@social.co.uk

Social
Integrated Agency

Gravity

Transport Sub Group

- Meeting held 11th November 2020
- Sub Group includes representatives of Highways England, Somerset County Council, Sedgemoor District Council, Network Rail and the HoSW LEP
- Background and initial thoughts on approach presented
- 1st Draft Scoping Report Issued 20th Nov 2020 to group for feedback
- Follow up meeting 3rd December 2020 and every 2 weeks thereafter as required



Gravity

Next Steps

Delivery Group Meeting Three – 13 January 11.00 – 1.00. Teams Invitation has been issued.

- Digital Vision
- Approach to Environmental Assessment
- Legal advice on designing in flexibility