

**INVEST**  
STOKE-ON-TRENT



# **Black to Green**

## **Chatterley Whitfield – Powering Digital Growth**



# The Unique Opportunity

Chatterley Whitfield Colliery is a disused coal mine on the outskirts of Chell and Ball Green in Stoke-on-Trent, Staffordshire.

The former colliery site is owned and managed by Stoke-on-Trent City Council, and comprises 10.5 hectares of former mining buildings and structures within a wider setting of a country park which in total amounts to 100 hectares.

Part of the site is designated as a Scheduled Monument, and it features 12 listed buildings incorporating the original mineshafts, 4 remaining headgears and large railway sidings.

The colliery sits on the urban edge of the city, located between residential neighbourhoods and the beautiful rolling countryside of the Staffordshire Moorland.

Though improving, deprivation levels in the surrounding area are above the national average and there is a recognised need to attract investment to support economic growth and drive prosperity.



## Our plan for the site – Black to Green Energy

We are proposing a multi-faceted renewable energy generation scheme, which sits within the wider Digital and Energy Growth zone that Chatterley Whitfield is located in.

As well as being part of the wider Silicon Stoke vision it also aligns with the wider Stoke-on-Trent City Council Corporate Strategy 2024-2028 across its seven priority areas, with specific relevance to a Greener, Cleaner and Skilled City.

The site is a unique place to tell the story of green energy, including through research and exploitation of geothermal heat from the mine water that now fills the deep mine shafts and workings, the potential for energy storage, and utilising its size and National Grid connectivity for solar energy production.

The foundation of the Black to Green Eco Park is twofold. First, the site has substantial

electrical grid headroom for digital developments. The City Council, working with National Grid, have confirmation that the grid has 50MW available quickly with a planned route through 100MW to 150MW being economically deliverable. This would enable rapid data centre rollout aligned to the national UK AI Growth Zone agenda.

The second foundation is the integrated renewable energy scheme at the Chatterley Whitfield site. At its core is the Mine Energy heat project which will recover low-grade heat from former mine workings and upgrade this through the application of heat pump technology to higher-grade heat for use in both the site buildings and through a District Heat Network (DHN) to targeted heat load opportunities that have been identified across the City.

When combined with the aligned data centre offer, there will be an additional waste heat input to the DHN system which will greatly increase its reach and scale of opportunity. The mine workings provide a significant potential to enable direct cooling of data centres sustainably, more cost effectively and requiring less grid energy.

The Mine Energy proposal for Chatterley Whitfield also has the potential to address wider aspirations for improvement of the City's housing stock and a reduction in fuel poverty over time with a cluster of social housing close by the site. Alongside the minewater and data centre heat, part of the site is also in final development of a 10MW solar PV farm and also a 49MW Battery storage system, with a 20MW CHP peaking plant already in operation, all these taking advantage of the opportunity that the flexibility which the electrical grid connection on the site offers.





Map showing Chatterley Whitfield location in Stoke-on-Trent



# Stoke-on-Trent - The Digital City

**Stoke-on-Trent has a highly advanced digital network that will support business and Smart City innovation. The Silicon Stoke Prospectus established the strategic vision and framework for making Stoke-on-Trent the most digitally advanced city in the UK outside London and significant progress has been made over the last few years.**

Our city was once the innovative, creative and cultural home of Josiah Wedgwood, Arnold Bennett and Reginald Mitchell and we are rightly proud of our past. Following the rapid growth of manufacturing industries in the Staffordshire Potteries, the population of Stoke-on-Trent and its six towns increased almost tenfold over just one hundred years to the end of the 19th Century. Since those times, the landscape has changed. Within our dense urban area, you will find advanced specialist steel-making supplying the global aerospace and energy sector, precision micro and nano-ceramics producing component parts for space rockets, bespoke PC design of the highest specification and digital security services used by the world's leading state intelligence bodies, and of course the number one online gambling company in the world.

Manufacturing has not only remained a mainstay of Stoke-on-Trent's economy, but has evolved and diversified to incorporate a strong and growing advanced materials and manufacturing sector which has its creative origins in the ceramics industry. The creativity which characterised Stoke-on-Trent's illustrious past as a global centre for ceramics production is not only powering the

growth of creative and cultural industries and clusters in the city, but is also shaping an emerging digital creative sector which heralds a new era of innovation and opportunity.

## The digital cluster

The ICT and digital sector employs over 3,700 people in 377 companies, with a combined turnover of around £1.1 billion. There is a citywide full fibre network which is a trailblazer with an open access network covering 90% of residents and businesses. In 2022 ICT and digital technologies accounted for 4% of employment and 11.3% of GVA in a rapidly growing sector.

The presence of the City-wide full fibre network covers 90% of businesses and residents and delivers high-speed gigabit plus symmetric services. This high-quality digital infrastructure will help to meet the digital connectivity needs of existing homes and businesses, as well as attracting new employers in the digital and technology sector and laying the foundations for planned advances in digitally-enabled low-carbon energy infrastructure. Our digital economy sector is one of the ten most productive in the UK and, anchored in Stoke-on-Trent,

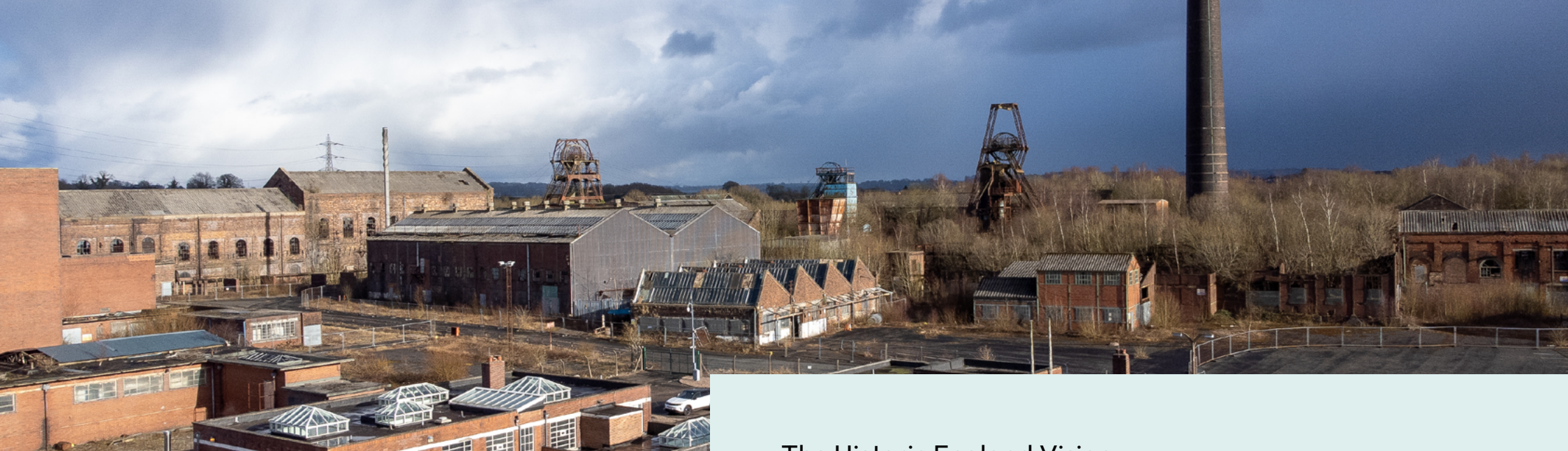


A visualisation of a heritage building in Barcelona to host datacentres innovatively, which could be mirrored in Chatterley Whitfield

we are well-positioned to benefit from the expected focus on digital technology and AI in the government's Industrial Strategy.

As the largest manufacturing cluster across Staffordshire, with particular strengths in advanced manufacturing, we can place ourselves among the leaders of the transformation to a green economy, with the city rolling out one of the UK's largest District Heat Networks now – in the future this will be supplied with ultra-low carbon generated heat from electrical power generation.





## The University competencies

Aligned to this is the Ceramic Valley Enterprise Zone which stretches across to Newcastle Under Lyme and embraces the innovation and technological capabilities of the University of Staffordshire closely involved in the development of the creative cluster of the Spode site in Stoke and across to Newcastle-under-Lyme and Keele University and its innovation district and science park campus.

Keele University has a strong focus on sustainability which has led to the campus wide deployment of innovative smart energy and green technologies, enabling it to be self-sufficient in electrical energy supply on the campus.

The University of Staffordshire has established a notable reputation in digital technologies, particularly in areas such as computer science, games development and esports. It has the largest digital schools in the country with the recently opened Stoke and Staffordshire Institute of Technology adding further to the overall capability of the workforce in this sector. The digital sector in Stoke-on-Trent is growing rapidly, with significant clusters in gaming and cyber security.

## The Historic England Vision

Historic England consider the Chatterley Whitfield site to be the best surviving and most complete example of a large-scale colliery from the late 19th early 20th Century, being the only remaining one of its type. As such, Historic England see the site as a last opportunity to tell the story of this period of the UK's Industrial Revolution in a modern low carbon technology and community Eco Park – bringing the story of Black to Green to life.

- Former coal mine and works
- UK's last surviving example of this type of colliery
- The biggest and most complete site
- First mine to extract 1 million tons of saleable coal
- 4,000 jobs at peak productivity
- Over 30 historic buildings which might benefit from re-purposing
- A Scheduled Monument
- 10.5 hectares – a large brownfield site in a parkland setting





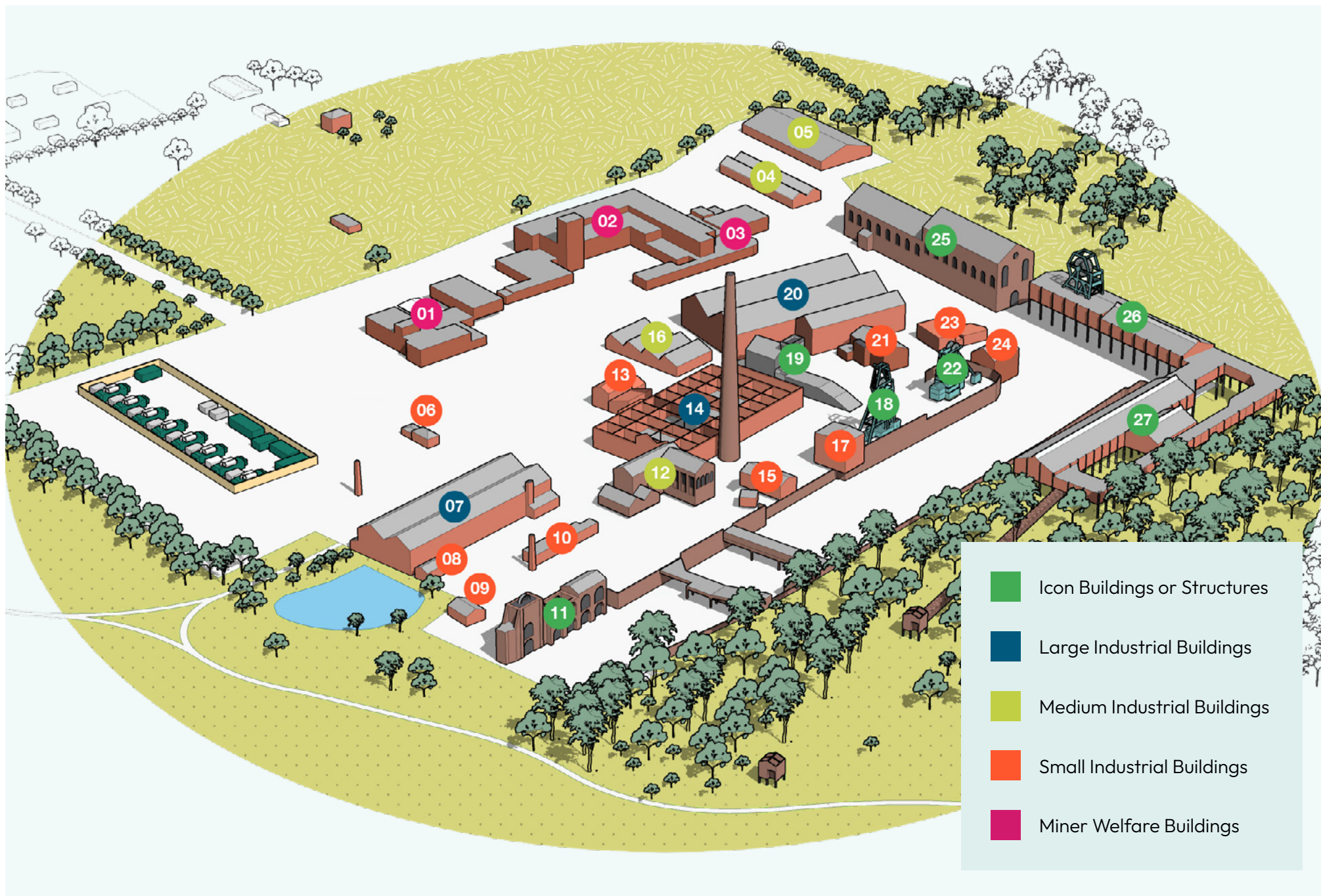
## Existing Buildings with potential for re-use

See Area Schedules below

<b>01</b>	Enterprise Centre (currently in use as offices)	1290 sqm
<b>02</b>	Pit Head Baths	2883 sqm
<b>03</b>	Canteen, Medical Centre & Rescue Station	790 sqm
<b>04</b>	Geology Office	540 sqm
<b>05</b>	Ken Salt Building	1056 sqm
<b>06</b>	Weigh Bridge	53 sqm
<b>07</b>	Area Shaft Building	2538 sqm
<b>08</b>	Small Workshop	65 sqm
<b>09</b>	Pump House	50 sqm
<b>10</b>	Old Methane Store	106 sqm
<b>11</b>	Winstanley Headgear & Heapstead	547 sqm
<b>12</b>	Old Power House	545 sqm
<b>13</b>	Dust Sampling Lab	456 sqm
<b>14</b>	Main Boiler House	2200 sqm

<b>15</b>	Middle Pit Winding House	115 sqm
<b>16</b>	Lamp House	540 sqm
<b>17</b>	Institute Winding House	223 sqm
<b>18</b>	Institute Shaft & Headgear	224 sqm
<b>19</b>	Walker Fan House & Drift	120 sqm
<b>20</b>	Mechanical & Electrical Fitter's Shop	1910 sqm
<b>21</b>	Old Fan House	206 sqm
<b>22</b>	Platt Shaft & Headgear	228 sqm
<b>23</b>	Store Building	150 sqm
<b>24</b>	Platt Winding House	265 sqm
<b>25</b>	Hesketh Winding & Power House	2307 sqm
<b>26</b>	Hesketh Heapstead	1385 sqm
<b>27</b>	Main Tub Hall	5510 sqm
<b>Total</b>		<b>26302 sqm</b>







# Key facts/site checklist

## Site plan

- Core 10 hectares
- 100 hectares site overall
- Further adjacent new residential site in development
- North-East area of City as “Chatterley Whitfield Zone of Influence”

## Heritage

- Iconic location with Vision and key stakeholders buy-in
- Legacy buildings offer transformation and re-use
- Country-park setting

## Grid power availability

- 50 MW of power now with 100 MW potential
- 150 MW can be secured and delivered in time
- 20 MW Peaking plant supporting strategic load balancing now in operation
- 49 MW BESS adjacent to the core site in development
- 10 MW Solar farm adjacent to the core site in development

## Renewable technologies

- Data centre cooling via waste heat injection into Mine system based thermal storage
- Mine water heat to feed into a District Heat Network
- BESS, Battery Energy Storage System, Solar PV in development/delivery for the site

## Digital technologies

- Data Connectivity (Silicon Stoke smart city)
- Keele University innovators in Smart Green Technology, Biochemistry and Pharmacy
- University of Staffordshire digital specialists in Engineering, Computing and Virtual Reality
- Global digital operators based in city and area

## Connectivity and Reach

- Market reach with 20 million people within 75-mile radius of Core Site
- West Coast Main Rail line for national connections
- London 1hr 25mins
- Manchester / Birmingham / Derby / Nottingham conurbations - 50miles
- 4 UK Airports all within 60 miles of Stoke-on-Trent

# INVEST

## STOKE-ON-TRENT

**If you would like to know more, please contact the following below:**

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