



DECARBONISING ARCHAEOLOGICAL EXCAVATIONS

Hinxton excavation

The Wellcome Genome Campus in Hinxton has been the subject of nearly **30 years of archaeological investigation**. In 2022-23, archaeologists from Oxford Archaeology's Cambridge office returned ahead of the proposed expansion of the research campus.

Britain, the excavation will help expand our growing understanding of how people have lived in and travelled through this landscape over thousands of years.

Here we explore the carbon emissions associated with their most recent dig which took place over the course of approximately six months from August 2022 to March 2023.



With evidence for human activity spanning late prehistory to the Roman occupation of

Key Statistics [1]

12.4
Hectares of land excavated

75,000
Tonnes of soil moved

45
Site deliveries

82,600
Litres of fuel used

6
Month duration

Sources of carbon emissions

Emissions often come from a diverse range of sources. Understanding what these are, who influences them and what can be done about them is an important starting point. The diagram below sets out the different typical emissions sources for an archaeological excavation project, using data [1] from the Hinxton excavation August 2022-March 2023. An emissions reduction opportunity for each source is also provided.

94% emissions from site works machinery fuel consumption [2]

↓ Adjust project planning to reduce soil movement, and use electric or more fuel-efficient machinery

3 kgCO₂e
Per tonne soil moved

230 tCO₂e
Total Carbon Emissions

<1% emissions from water use [2]

↓ Use composting toilets and flow-restricting taps where possible

<1% emissions from office waste disposal [2]

↓ Follow waste hierarchy: reduce material use where possible, reuse materials where possible, and use recycled and recyclable materials

<2% emissions from site welfare [2]

↓ Reduce fuel consumption through improved efficiency of and incorporation of solar panels on welfare units

3% emissions from commuting travel [2]

↓ Provide shared transport such as a minibus, and employ local workers and contractors where possible

1% emissions from bulk soil deliveries [2]

↓ Adjust project planning to reduce number of deliveries where possible

References

- Haskins, A. (2023) 'Hinxton excavation data.xlsx.' (Received: 13 February 2024) from Oxford Archeology (<https://www.oxfordarchaeology.com/hinxton-cambridgeshire>)
- Department for Energy Security & Net Zero (DESNZ), Department for Environment Food & Rural Affairs (DEFRA). (2023) 'UK Government GHG Conversion Factors for Company Reporting'. Available at <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023> (Accessed: 1-15 March 2024).