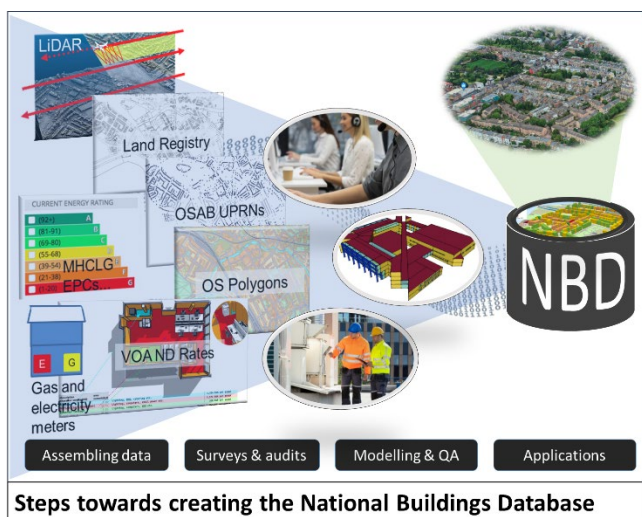


CREATING THE NATIONAL BUILDINGS DATABASE

The National Buildings Database is founded on more than a decade of development of building stock models at the UCL Building Stock Lab. Drawing on the experience of creating the 3DStock model and Phase 1 of the NBD (the Non-Domestic Building Survey) the database will be created by linking over 20 separate datasets to create a geospatial, 3D, digital representation of every building in England, Wales and Scotland (GB). Detailed research will focus on non-domestic buildings which are less well studied but all domestic buildings will be included in the database, not least because they are critical to understanding mixed-use buildings which are prevalent in every urban area.

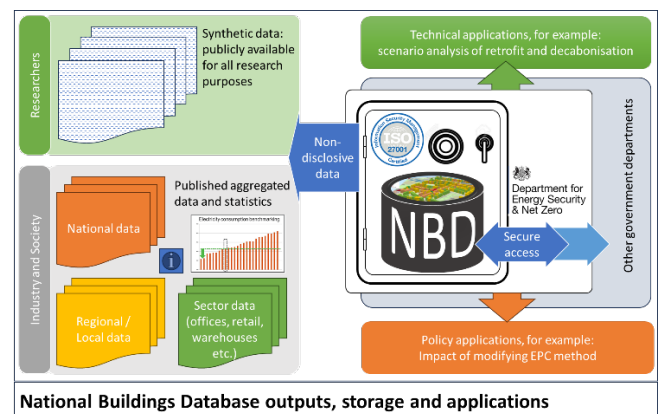
The data contained in the database will be verified and quality-assured through telephone surveys conducted by Winning Moves and site audits conducted by Verco. The telephone surveys will first check the accuracy of the records held in the database for 14 different classes of non-domestic buildings. A second wave of telephone surveys will seek additional information about the way energy is used and the occupancy and operation of buildings in each activity class. The data gathered will be used to understand patterns of energy use and how these are influenced by the characteristics of different activity classes and individual activities.



Site audits will be conducted on a select group of premises and buildings which make up a diverse sample for each activity class. Data gathered in the

audits will be used to produce a standard Energy Performance Certificate (EPC) model using the IES software. The model will provide estimates of how energy use is split between various end uses such as heating, lighting, ventilation, cooling, etc. This same breakdown is available for all buildings that have an EPC in the national register held by the government. To test the validity of the end-use energy breakdown UCL will create a second model using the publicly available Energy Plus dynamic simulation software. This model will utilise information on actual occupancy and operation, and it will be validated against site energy meter data. By comparing the two models, and with reference to evidence from the audit, it will be possible to assess the validity of the energy end use breakdown provided by the EPC process. This evaluation will then be applied to qualify the data held in the national register before this is incorporated into the NBD.

Note: no data from the surveys or the audits will be linked to individual buildings included NBD and no data gathered in the surveys or audits will be passed to the Department for Energy Security and Net Zero or any other department in the UK or the Devolved Administrations.



At the end of the project in March 2025 the NBD will be transferred to the Department for Energy Security and Net Zero and a series of reports, aggregated data and synthetic data will be made publicly available. The NBD will be used by government for technical analysis of the building stock and to examine the impact of building retrofit and decarbonisation scenarios.