Objective
There are multiple phases in the life cycle of a building, from drafting of initial design ideas to their planning, construction and operation, until disposal and/or recycling. Each one of these phases involves its own set of requirements, including different professionals, models and data. A range of platforms enable streamlining communication to support collaborative processes ideally resulting in time and resources saving. Despite broad recognition of its value as a tool to inform decision-making and the availability of specialised models, the utilisation beyond the design phase of the buildings has not yet been widely adopted. This is partly due to technical restrictions that limit the incorporation of the different phases of a building, including data exchange mechanisms and model integration requirements. In this sense, this project aims to create a web application that can facilitate the following two key transformations: (i) from running uncoordinated data collection and exchange efforts within siloes towards launching a cohesive data network organized around building’s life cycle phases, and (ii) from applying individual modelling tools in a piecemeal manner towards deploying a streamlined workflow for modelling and validation.

Project Details
This project includes 3 main modules:
- Data integration: The development of automated data exchange mechanisms between IoT platform for sensor data collection and building energy simulation model.
- Visualization component: The integration of building performance evaluation metrics to support decision-making through visualization of predicted and/or metered data on BIM.
- Context-based scenario: The definition of archetypical settings and use scenarios for fast prototyping and testing.
Overall, the project is intended to enable a more comprehensive and streamlined web application that is expected to better reflect real world scenarios and thus support evidence-based decision-making in the different phases of the buildings’ life cycles.

Prerequisites
Computer science or equivalent background, experience in web application development and Python, basic knowledge in AWS IoTs.

Additional Information
applicants may be required to attend an interview.