# Exercise duration: ~20 minutes

# Practice exercise

# Assess impact of a new concept on existing buildings

Use Autodesk Forma to evaluate how a proposed new building massing may affect solar energy potential on a nearby existing structure. Working with real-world geospatial data, you'll import context models and perform an early-stage solar analysis to inform design decisions.

Learning objectives:

* Navigate and set up a real-world project site in Autodesk Forma using geolocation and contextual map data.
* Import OSM (OpenStreetMap) buildings and roads to establish existing site conditions.
* Perform solar energy analysis on an existing context model to determine baseline solar gain.
* Create a basic massing model to represent a conceptual building design.
* Assess the impact of new development on solar energy potential of surrounding buildings.

A 3d model of a city

AI-generated content may be incorrect.

The completed exercise

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| 1. Access your Forma hub. | Figure 1. Forma Hub. |
| 1. Create a new project for this practice exercise. | Figure 2. New project. |
| 1. Enter G4 0BA for the site address and confirm a suitable map area. | *Figure 3. Site address.* |
| 1. Add Open Street Map (OSM) buildings. | Figure 4. OSM buildings. |
| 1. Add Open Street Map (OSM) roads. | *Figure 5. OSM roads.* |
| 1. This is the existing building to be analyzed.   Run a Solar energy analysis on the existing buildings so as to obtain a benchmark of what happens currently. | Figure 6. Existing buildings. |
| 1. Select the existing building. Note the values for Annual solar energy potential. | Figure 7. Existing buildings solar energy results. |
| 1. Create a 40m x 20m building attached to the south of the existing building. It should have 4 floors (stories) each 4m high. | Figure 8. New concept building in position. |
| 1. Run a Solar energy analysis on the site again with the new concept complete. | Figure 9. Solar energy analysis impact of concept on existing building. |
| 1. You should be able to compare the average and total Solar energy values.   How many total solar energy kWh are lost due to the positioning and shape of the new concept.  Answer :  589000 kWh  718000-589000= -**129000 kWh loss** | Figure 10. New building impact on existing solar energy results. |