



Goodmayes Hospital

Laser survey of original hospital buildings and site topography of 10-hectare site in Redbridge, delivered to the client as a LOD3 Revit model and 2D plans.



Survey case study by
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Survey data informing development decisions

Originally constructed in 1898 as an asylum for the mentally ill, the Goodmayes Hospital site in the London Borough of Redbridge, had been earmarked for development. Many of the buildings were disused and stood vacant with only a small number still used by the NHS for outpatient services.

CADS was approached by architects Ingleton Wood to produce a survey and 3D model of the 10-hectare site, which could be used to inform development decisions. These included identifying which existing buildings to retain, as well as understanding the impact that new structures could have on the locally listed façade and aesthetic.

Combination of 2D plans and 3D model

The commission was for 2D plans of the original hospital buildings and site topography. We also produced a 3D model of the entire site including interior modelling of the buildings that were due to be retained.

This meant that interior and exterior models and 2D plans were required of a total of 10 buildings. Exterior models were required of a further 20 buildings, along with an array of link corridors, ancillary areas and adjacent building elevations.

The hospital was originally designed with centrally located support services and detached wards linked via a network of corridors, known as a Compact Arrow layout, or Pavilion System.

Sensitive site requiring both digital and traditional survey techniques

Given the sensitive nature of the site, CADS took a variety of approaches in order to accurately measure and record the required survey information. Externally and internally in a number of vacant buildings, 3D laser scanners were used to measure and photograph the buildings/rooms. This approach was unsuitable where buildings were still occupied, so traditional hand measurements were used to avoid potential disruption to patients and staff.

The survey took a total of two weeks on-site, with up to five surveyors on-site at any one time. Approximately 600 scans were taken in total once a control network was established on-site, which involved taking the coordinates of the natural and artificial targets and linking these with the targets within the scans.



LOD3 model of historic building facade

Once back in the office, the scans were registered to produce a point cloud of the site and buildings. Using this point cloud, the LOD3 3D Revit® model was created of the original historic building facades that were being retained. While internally a LOD2 model was adopted as more extensive development was being undertaken.

Approximately 8 weeks were spent modeling the site, often with multiple surveyors working on the model simultaneously. Along with the model, traditional 2D CAD plans were also produced, constructed from both hand measurements taken on-site, and information extracted from the point cloud.



Simon Jones Head of Estates Strategy & Major Capital Dev, North East London NHS Foundation Trust

“We employed CADS Survey team on this complex and sensitive project because of their technical knowledge and professionalism.

The project required the integration of laser captured point cloud data and hand measured data to create the 3D model and CADS delivered this within the agreed timescale and budget. While we had to allow an additional 30% in the budget for the delivery of the 3D model over the 2D drawings, this has delivered significant value to this project, particularly where we have been

able to make fully informed design decisions not only on the location of buildings but also on the impact on the facade and view.

CADS took a very consultative approach to the project, fine tuning the specification for the model to ensure we were able to swiftly integrate it into our design process once it was released and we have been delighted with the result.”

Ready to get your project started?

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