

Appendix A: Breadth Studies

Breadth Topics:

The following topics are embedded in the analysis topics, but will be researched in more detail. This detailed research will show competency in areas of architectural engineering outside of the construction management option.

Structural Breadth:

Changing from brick masonry to a precast façade will alter the loads on the building's steel structure. This coupled with the addition of a photovoltaic array on the roof of the building will need to be analysed in depth to determine the added loads and stresses. An in depth knowledge of structural design will be displayed through a variety of hand calculations and the development of new structural designs and details.

Sustainable Technologies/Electrical Breadth:

Adding a photovoltaic array to the roof of Westinghouse Building 4 will allow the building to generate some of its own power. Substantial research and calculations will be done to determine the total amount of KWh that the system is able to generate. Alterations will be made to the original contract documents to specify where the electric wiring from the array will tie into the building's power. Constructability reviews will also be conducted to ensure that the current building systems and the PV array systems are both compatible and practical.