

APPENDIX A – Breadth Topics

Breadth Topics

The following topics involve a more detailed analysis in distinct technical disciplines with the major. Each topic contributes to one of the previously mentioned analyses, which are identified accordingly.

Structural Breadth: Contributes to Technical Analysis # 1 and Technical Analysis # 3

The current façade on the humanities portion of the building consists of built up brick veneer. The substitution of the brick veneer walls with a precast panel system will be analyzed to determine the effects on the existing structure. Placing the precast panel system on the structure may impact the loads on connections which would then need to be reconfigured.

The addition of photovoltaic panels on the roof will also require a structural analysis to determine the loading and support requirements.

Any additional support and connections that are determined to be required for the precast panels and the photovoltaic system will be designed and evaluated for cost and schedule impacts.

Electrical Breadth: Contributes to Technical Analysis # 3

The electrical system has 15kv medium voltage feeders that come off of the substations. A unit substation consists of two 15kv, 600 amp switches (incoming); one 15kv, 600 amp switch (outgoing); 2500 KVA transformer; and 3200 Amp, 480Y/277 volt, 3 phase, 4 wire, 60 hertz switchgear. Power will be distributed at 480Y/277 volts and dry type transformers will be provided to supply 208Y/120 volt loads.

Integrating renewable energy from a photovoltaic system into the energy system will be analyzed to determine the electrical equipment and connection requirements and also to calculate how much power will be produced to save energy in the future. The electrical system shown above will be altered to make tie-ins for the renewable energy source. Additionally, a constructability review will be performed to ensure the electrical system is suitable for the requirements of the PV panel system.