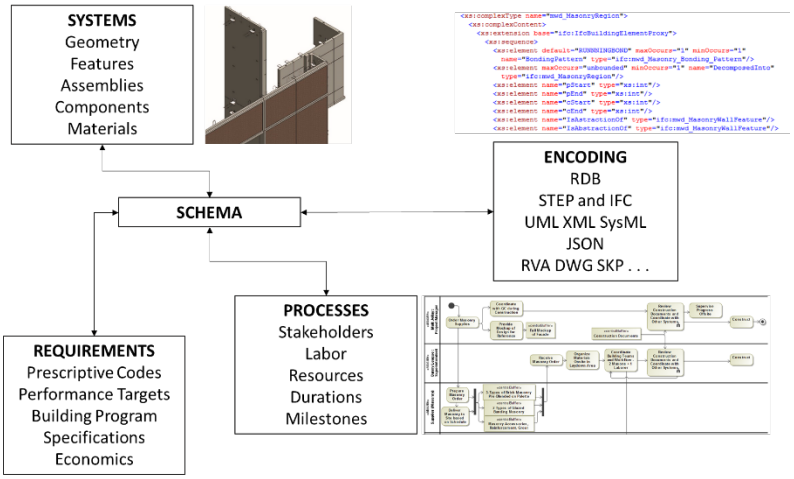
ARCH 8833 GS Building Systems and Data **Fall 2018**
Russell Gentry and Dennis Shelden

Tuesday, Thursday 9.30 a.m. to 11 a.m. (tentative schedule)

Building Systems and Data focuses on the overlay between AEC (Architecture, Engineering, Construction) processes and the building models and data that support them. The course is open to graduate students in architecture, civil engineering and building construction. It is a core class in the MS in Design Computation in the School of Architecture. Other students interested in the class may enroll after discussing their interest with Prof. Gentry.

The course is based on developing theoretical knowledge and practical solutions by asking the following three questions:

1. How are building systems, requirements and processes represented in building models and databases?
2. How can data regarding systems, requirements and processes be linked?
3. How can we use scripting and coding tools to bridge these disparate data sets?



Early in the course each student will use their own perspectives to develop a use case for building models and data that will form their project focus for the entire semester. This use case might involve the tracking of occupied spaces and tenants, the manipulation of fabrication information for wall assembly production, quantity estimation and material procurement in a specific building trade, hazardous material tracking for green building design, etc. Students will develop building models, workflows and specify exchanges that describe the generation, hosting, manipulation and transfer of this information through its life cycle. Though database tools, scripting, plug-ins and API programming students will implement their workflow in BIM and database system. Lectures and exercises will be organized to build capabilities in database design and implementation, scripting, API programming, etc.

Students entering the class are expected to be capable in a BIM or 3D CAD system that supports data extensions. The joint project and examples used in the class will be implemented in Autodesk Revit. Students should have some background in design scripting or programming – but need not be experts in multiple programming languages.