

A Building is Born
An Introduction to the Design and Construction Process

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Educational Goals: Understand Roles in Design and Construction.

Description: To introduce students to the roles played by the many people involved in designing and constructing a building.

Time: 20-30 minutes.

Materials: Color organization chart, poster-size. 8 ½" x 11" of same as handouts. Available as a PowerPoint file from ACE website, which can be plotted/printed any size.

Additional Resources: *A Building is Born .ppt*

Activity: Presentation / Group Activity

The poster shows a traditional (design/bid/build) delivery system for a building project. Preferably, each mentor would represent his/her own discipline.

Topics to Discuss

- The one-of-a-kind custom design of each building (contrast to automobile)
- The need for specialties
- The need for teamwork
- The role of each member
- How members of the team communicate with each other
- The deliverables of the design team
- The deliverables of the construction team
- Contrast to organization chart for other types of projects (e.g., bridge or park)
- Mention other delivery systems (design-build, for example)

Owner: Defines the needs of the project, acquires land, and funds the design and construction.

Construction Manager: Assist owner by providing estimating, scheduling, logistics, selection of contractors.

Architect: Define and design overall shape and bulk of building to meet the owner's needs.

Civil Engineer: Designs site, utilities, transportation to/from and around the site.

Structural Engineer: Designs "skeleton," so that it will stand under reasonably expected loadings.

Mechanical Engineer: Designs the heating, ventilation and cooling system so that occupants are comfortable

Electrical Engineer: Designs electrical distribution system for mechanical systems, lighting, etc

Plumbing Engineer: Designs piping systems for fire protection, water supply, and wastewater.