



Renovating American Spaces: Roles of Designers, Architects, Engineers and Contractors

The Smithsonian team's designs for a renovated or new American Space represent the completion of a critical first stage in making an enhanced Space a reality. They are the results of extensive discussions with staff and users, site surveying (measurements and photographs), design analysis and planning, interior architecture (locations of functional spaces, partitions, services, etc.), and finally selection and placement of furniture, finishes, and graphics. These designs are intended to give staff and users a clear understanding of how the completed Space will look and function.

But to make the design a reality, further documentation, engineering and detailing - performed by architects and engineers familiar with a local jurisdiction's codes, utilities, and construction means and methods - must be undertaken. Therefore, an in-country design team will need to be selected by Post and OBO to prepare the necessary technical documents (construction drawings and specifications) that will use the Smithsonian designs as a starting point.

Here is a brief synopsis of each of the key players and their roles in the process:

- The **Architect** typically leads the design/documentation process and coordinates the work of other professionals, including engineers. Some architectural firms have engineers on staff (known as A/E firms); other architects subcontract with engineering firms.
- The **Structural Engineer** is responsible for the stability and safety of the structure: walls, columns, floors, roofs, and the attachment of other items to the structure. Many interior renovation projects do not require structural changes, but if the design calls for removing or cutting openings into load-bearing walls, installing full-height sliding partitions, or similar interventions, structural engineering will be required.
- The **Electrical Engineer** determines the power, lighting and telecommunications requirements of the project and designs a distribution system to support the project needs. This can be especially challenging in older buildings where it is difficult to run conduit to computers and WiFi devices.
- The **Mechanical Engineer** designs the ventilation, heating and air conditioning system that takes into account the heating and cooling loads in the project area.
- The **Plumbing Engineer** plans water supply and waste water distribution.
- Projects may also require fire protection engineering (sprinkler systems), security engineering, or other specialized services.
- The **General Contractor** (sometimes called the Prime) is the firm responsible for the means and methods of construction performed by its employees and its sub-contractors, such as electricians, plumbers, and cabinetmakers.





A few pointers on selecting and working with an A/E firm:

- First, check with the property owner, who may have a standing agreement with a firm to perform work on the property.
- Look for firms that have done recent projects similar in type, scale, and quality. Ask to see a portfolio of previous work.
- Ask for and check with references. Do not hesitate to ask specific questions about performance, schedule, etc.
- Assign one individual as point of contact and final decision-maker. During the design and engineering process, the lead architect will likely be in frequent contact with Post, discussing options and seeking clarifications. It is important to establish a clear decision-making process with the architect.

Once the documents are complete, Post/OBO will inform local contractors of the project and solicit bids from them to perform the work. Different localities handle the request-for-bid process in different ways; your Architect can advise and can assist in preparing bid documents. Typically a client enters into a contract with one general contractor to perform all aspects of the work. If Post is supplying some items (such as carpet, furniture, equipment) but wants the contractor to transport and install it, this must be made clear in the bid documents.

When selecting a general contractor:

- First, check with the property owner, who may have a standing agreement with a contractor to perform work on the property.
- Look for firms who have done recent projects similar in type, scale, and quality.
- Ask for and check with references. Do not hesitate to ask specific questions about performance, schedule, quality, etc.
- Ensure they have the necessary insurance and bonding in place, and a good reputation for completing work on schedule and within budget.
- Develop a delivery and payment schedule and hold them to it. Do not pay in advance for work not performed. Do not make a final payment until all final details (the “punch list”) are complete.

Many resources from other renovation or redesign projects are available to you as guides and helpful reference materials, including Scope of Work (SOW) documents for soliciting an A/E firm, SOWs for soliciting General Contractors and other useful case studies to help you through this process. These can be found at: <http://iip.r.state.sbu/sites/rca/as/Pages/Home.aspx>.

