

Who Does What: A Guide to Design Professionals in Preservation

by Shari Goldberg

Take this quiz: A congregation has noticed that the slate roof on its historic building has started to leak. The masonry and stained glass windows have deteriorated too. The congregation needs assistance in identifying the most pressing problems and preparing to repair them. Should the congregation call a) an architect b) an engineer c) a building conservator?

Answering a definitive a, b, or c isn't easy. In fact, all three professionals could be called to evaluate an historic building's problems and make plans to solve them. But a congregation shouldn't just choose one randomly. Architects, engineers, and building conservators have distinct ways of approaching buildings which make them appropriate for different types of jobs. Understanding the expertise of each will help a congregation decide which professional will be the most helpful.

First, it is imperative to note that not all architects or engineers are qualified to work on older or historic buildings. This article refers to those professionals with proven records on older structures, preferably older religious buildings. Congregations should always request a list of relevant preservation projects with contact information before hiring any type of consultant.

Second, knowing the qualifications of each professional will only facilitate the process of selecting one if the building's problems have been preliminarily identified. Many congregations do not know what is wrong with their buildings. In that case, it is advisable to call a preservation organization, such as the Sacred Sites Program, for recommendations on how to proceed.

Now, to distinguish among the three: architects, engineers, and building conservators have different techniques of analysis, methods of practice, and educational backgrounds. Architecture schooling involves learning about the components of buildings and the development of designs. According to architect Tim Allanbrook, "The architect helps evaluate the needs of the building as well as the needs of the users and then organizes and specifies the work required." When working on an historic building, architects provide safe and appropriate ways to repair or restore the structure in accordance with the original design.

Engineers are trained in a methodic problem-solving process that allows them to recognize and prioritize the needs of buildings. Engineers specialize in disciplines from chemistry to electricity; two types of engineers who regularly work on buildings are structural engineers and M.E.P. (mechanical, electrical, and plumbing) engineers. Structural engineers specialize in building structures; with older religious buildings, they commonly confront overstressed trusses or damaged foundations. Mechanical, electrical, and plumbing engineers deal with building systems, such as heating, ventilation, air conditioning, power, and fire safety systems.

Finally, building conservators understand historic buildings and the materials that they comprise. Like engineers, building conservators specialize in different areas. Some primarily evaluate and test historic materials; others function as project managers for restoration projects; still others perform a variety of services between testing and managing. Still, all building conservators are focused on older buildings, which is not the case with architects or engineers. Depending on a conservation firm's expertise, a conservator could be called to evaluate a building's existing condition, analyze its history, or recommend repair techniques for broken or deteriorated components.

These basic differences among architects, engineers, and building conservators begin to define the expertise of each. The following pages further outline the backgrounds and usual duties of these professionals. Congregations should keep in mind that costs vary widely, not only among professions but among firms. Because a firm's rate is based on geographic location, firm size, overhead, and experience, budget size shouldn't dictate the choice of one type of consultant over another.

Architect

Training/Licensing: The term “architect” refers to a specific position obtained after completing a 5 year Bachelor of Architecture course and/or a Master’s degree in Architecture, along with an apprenticeship and state exams for licensing. Architectural coursework includes: architectural history and theory, building design, professional practice, different types of mathematics, and physical sciences.

Problem-solving technique:

According to Roz Li of Li/Saltzman Architects in Manhattan, the architect “interprets client’s vision and needs and transforms them into three-dimensional reality.”

Tasks performed: Mr. Allanbrook, Ms. Li, and Marilyn Kaplan of Marilyn Kaplan Preservation Architecture in Valatie, NY helped to compile a list of the basic tasks performed by architects: they create new designs for existing buildings or newly acquired space, evaluate existing conditions, make prioritized recommendations for repair and maintenance, develop master plans, survey historic and cultural resources, prepare contract documents, and perform construction observation to monitor contractor’s compliance with intent of contract documents.

Documents produced: Architects can generate conditions surveys, historic structures reports, master plans, maintenance plans, plans (drawings), and specifications. Licensed architects with insurance may stamp documents which must be presented to the state or municipality in order to obtain a building permit.

Common problems addressed for religious institutions: Preservation architects regularly consult on buildings that have numerous problems requiring identification, prioritization, budgeting, and

proposed solutions. They are also hired when a building’s needs have changed or part of a property requires rebuilding, redesign, or a new addition, such as barrier-free access in compliance with ADA (Americans with Disabilities Act) regulations.

Kinds of projects led: On large-scale or multi-task projects, architects are often the team captain and will retain other consultants, such as engineers and building conservators.

Other consultants an architect works with: Structural engineers; mechanical engineers; cost estimators; consultants for zoning or building codes, or for acoustics, elevators, or landscapes; materials testing consultants, building conservators; and other specialists, depending on project scope and location.

Role during construction: Construction administration is often included in an architect’s proposal, consisting of periodic inspections to determine that the overall intent of the contract documents is being followed. Architects are often hired as project managers as well to closely monitor and/or supervise the specific details of the construction process (see **Project Management**, page 15).

Insurance carried: Architects usually carry professional liability insurance, which insures the architect for errors and omissions in performance of their work. According to Ms. Li, architects often hold general liability insurance, valuable papers insurance, automobile insurance, worker’s comprehensive insurance, and disability insurance as well.



Li/Saltzman Architects, P.C.

Roz Li, principal architect at Li/Saltzman Architects, P.C., measures terra cotta cornice brackets to be restored. Brooklyn, NY.

Engineer

Training/License: To become a Professional Engineer (PE) licensed in at least one state requires a Bachelor of Science degree in engineering, 4 years work experience under supervision of a PE, and the passing of 2 tests, one general and one specific for the chosen field of expertise. Engineering school involves a curriculum of physics, mathematics, mechanics of materials, ethics, chemistry, computer science, measurement, economics, fluid mechanics, dynamics, and statics, among other subjects.

Problem-solving technique:

According to Tim Lynch, PE of Robert Silman Associates, P.C., the engineer possesses the “mind set to be able to systematically derive a scientific solution to a physical problem.”

Tasks performed: In general, engineers study problems to develop feasible solutions according to the client’s priorities and financial resources. Structural engineers perform in-depth studies of the loads, stresses, and tensions on different building elements and create ways to reinforce or replace deteriorated parts. M.E.P. (mechanical, electrical, and plumbing) engineers analyze the various building systems and define methods and time lines for improving them.

Documents produced: Engineers create initial assessments, which set out long term repair goals, as well as interim stabilization plans, which rank and describe repairs to be undertaken. They also produce plans and specifications; licensed engineers with insurance can stamp or seal these documents in order to obtain building permits.

Common problems addressed for religious institutions: Donald Friedman PE, Director of Preservation at LZA Technology in



New York Landmarks Conservancy

“There are two types of engineers that regularly work on buildings: structural and MEP (mechanical, electrical, plumbing),” said Donald Friedman, P.E., Director of Preservation at LZA Technology. “Common structural problems include deteriorating masonry, overstressed roof trusses, water damage to masonry foundations, and poorly braced or supported towers.”

Manhattan, noted that structural engineers are frequently called for deteriorating masonry, overstressed roof trusses, water damage, and poorly braced or supported towers. He said that M.E.P. engineers often deal with inadequate electrical services, lack of proper ventilation, and old or outdated equipment such as air-conditioning and boilers.

Kinds of projects led: Engineers are good team leaders when the primary work is known to be specific to one engineering discipline; for example, when a structural problem must be identified and its repair overseen.

Other consultants an engineer works with: Architects, building conservators, and other types of engineers. Often an engineer will be brought to a project as a sub-consultant by an architect.

Role during construction: When the engineer has been hired by a client to develop plans for a project, s/he will observe performance of the job with periodic surveys. When an architect has

requested the engineer’s plans as part of a larger project, the architect will usually assume project administration duties.

Insurance carried: Mr. Friedman pointed out that engineers are not required to carry any insurance, but that most do. Professional liability insurance (including errors and omissions) is common, protecting them against mistakes or negligence on part of the engineer.

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The following individuals were of great help in compiling information for this article:
Tim Allanbrook, architect in New York, NY; Marilyn Kaplan of Marilyn Kaplan Preservation Architecture in Valatie, NY; Roz Li of Li/Saltzman Architects in New York, NY; Donald Friedman, PE of LZA Technology in New York, NY; Tim Lynch, PE of Robert Silman Associates, P.C. in New York, NY; Joan Berkowitz of Jablonski Berkowitz Conservation, Inc. in New York, NY; and Ed Kamper of Edward Kamper Associates in West Caldwell, NJ.

Building Conservator

Training/License: Unlike the terms “architect” or “engineer,” “conservator” does not assume a kind of basic training or specific set of skills. A wide range of specialists consider themselves building conservators: from those with specific technical training in various materials (for example, masonry and/or paint) to those with backgrounds in construction and historic structures who function as project managers. Accordingly, the educational backgrounds of building conservators vary, from degrees in historic preservation or art history to training as contractors. There is no licensing system for building conservators, although the American Institute for the Conservation of Historic and Artistic Works is discussing a certification program.

Problem-solving technique: A building conservator’s technique will depend upon his/her



Building conservators Joan Berkowitz (center) and Ward Dennis (left) of Jablonski Berkowitz Conservation, Inc., carefully insert metal rods into vandalized gravestones in order to reset them. They later used a sand mixture colored to match the stone and remove signs of breakage. Sandy Ground Cemetery, Staten Island.

expertise. Building conservators who specialize in materials will test samples in laboratories to learn more about them. A building conservation firm such as Jablonski Berkowitz Conservation, Inc., which tests materials but also evaluates building structures holistically, will do a close-up inspection as a first step, then produce a project manual of recommended repairs, which may include technical testing. Project management conservators often focus on prioritization of existing conditions.

Tasks performed: Depending on expertise, a building conservator may: analyze building conditions, evaluate and test historic materials, select appropriate materials for repair or replacement, perform project management, and monitor the work of contractors or even individual workers.

Documents produced: Building conservators may write conditions assessments or surveys, historic structures reports, technical specifications for restoration items, project manuals, and maintenance plans. They may submit lab reports interpreting results from historic materials testing. They may also complete plans and specifications, but they are not licensed to stamp them as required for certain municipal permits.

Common problems addressed for religious institutions:

Materials-based building conservators may deal with replacing mortar, discovering historic layers of paint, or conserving stained glass. Project manager-type conservators approach numerous problems facing a structure.

Kinds of projects led:

Building conservators specializing in materials may be hired as team leaders when

building materials are an important part of the job to be completed; for example, exterior masonry restoration, or repainting to historic color. Building conservators serving as project managers frequently lead multi-phase or long-term repair projects.

Other consultants a conservator works with: Architects, engineers, other conservators with different expertise.

Role during construction: If the conservator does not serve as project manager, s/he may be called in to monitor technique and/or use of materials, as well as completion according to plans.

Insurance carried: Conservators are not required to hold insurance; firms that do frequently carry professional liability, general liability, and errors and omissions insurance.

This basic information can serve as a guide to determining the best professional for a repair project. Before making a decision, the congregation should consider its needs and compare them with each professional’s specialization. The congregation will want to establish its general repair needs as well as the need for project management, plans for future projects, funding available, and the types of professionals working locally. Again, if the needs are unknown, the congregation should call a preservation organization such as the Sacred Sites Program. It is imperative to conduct research on any firm before hiring it: congregations should check to be sure that an architect or engineer has experience with historic buildings, preferably historic religious buildings, and that a building conservator has solved with similar problems for other religious institutions.