

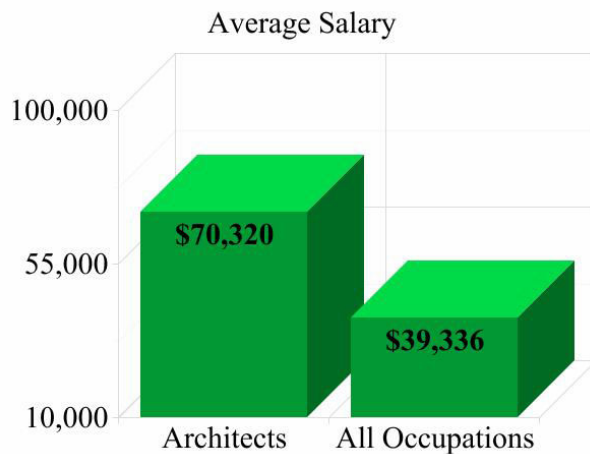
Architects

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WHAT THEY DO

Architects create the overall look of buildings and other structures, but the design of a building involves far more than its appearance. Buildings also must be functional, safe, and economical and must suit the needs of the people who use them. Architects consider all these factors when they design buildings and other structures.

Architects may be involved in all phases of a construction project, from the initial discussion with the client through the final delivery of the completed structure. Their duties require specific skills—designing, engineering, managing, supervising, and communicating with clients and builders. Architects spend a great deal of time explaining their ideas to clients, construction contractors, and others. Successful architects must be able to communicate their unique vision persuasively.



The architect and client discuss the objectives, requirements, and budget of a project. In some cases, architects provide various predesign services: conducting feasibility and environmental impact studies, selecting a site, preparing cost analysis and land-use studies, or specifying the requirements the design must meet.

After discussing and agreeing on the initial proposal, architects develop final construction plans that show the building's appearance and details for its construction. Accompanying these plans are drawings of the structural system; air-conditioning, heating, and ventilating systems; electrical systems; communications systems; plumbing; and, possibly, site and landscape plans. The plans also specify the building materials and, in some cases, the interior furnishings. In developing designs, architects follow building codes, zoning laws, fire regulations, and other ordinances, such as those requiring easy access by people who are disabled. Computer-aided design and drafting (CADD) and building information modeling (BIM) technology has replaced traditional paper and pencil as the most common method for creating design and construction drawings.

EDUCATION REQUIRED

In most States, architects must hold a professional degree in architecture from one of the 117 schools of architecture that have degree programs accredited by the National Architectural Accrediting Board (NAAB). However, State architectural registration boards set their own standards, so graduation from a non-accredited program may meet the educational requirement for licensing in a few States.

Most architects earn their professional degree through a 5-year Bachelor of Architecture degree program, which is intended for students with no previous architectural training. Others earn a master's degree after completing a bachelor's degree in another field or after completing a preprofessional architecture program. A master's degree in architecture can take 1 to 5 years to complete depending on the extent of previous training in architecture.

The choice of degree depends on preference and educational background. Prospective architecture students should consider the options before committing to a program. For example, although the 5-year bachelor of architecture offers the most direct route to the professional degree, courses are specialized, and if the student does not complete the program, transferring to a program in another discipline may be difficult. A typical program includes courses in architectural history and theory, building design with an emphasis on CADD, structures, technology, construction methods, professional practice, math, physical sciences, and liberal arts. Central to most architectural programs is the design studio, where students apply the skills and concepts learned in the classroom and create drawings and three-dimensional models of their designs.

Many schools of architecture also offer postprofessional degrees for those who already have a bachelor's or master's degree in architecture or other areas. Although graduate education beyond the professional degree is not required for practicing architects, it may be useful for research, teaching, and certain specialties.

All State architectural registration boards require architecture graduates to complete a training period—usually at least 3 years—before they may sit for the licensing exam. Every State follows the training standards established by the Intern Development Program, a program of the American Institute of Architects and the National Council of Architectural Registration Boards (NCARB). These standards stipulate broad training under the supervision of a licensed architect. Most new graduates complete their training period by working as interns at architectural firms. Some States allow a portion of the training to occur in the offices of related professionals, such as engineers or general contractors. Architecture students who complete internships while still in school can count some of that time toward the 3-year training period.

Interns in architectural firms may assist in the design of one part of a project, help prepare architectural documents or drawings, build models, or prepare construction drawings on CADD. Interns also may research building codes and materials or write specifications for building materials, installation criteria, the quality of finishes, and other related details.

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OTHER USEFUL SKILLS

Architects must be able to communicate their ideas visually to their clients. Artistic and drawing ability is helpful, but not essential, to such communication. More important are a visual orientation and the ability to understand spatial relationships. Other important qualities for anyone interested in becoming an architect are creativity and the ability to work independently and as part of a team. Computer skills are also required for writing specifications, for 2-dimensional and 3- dimensional drafting using CADD programs, and for financial management.

HOW TO ADVANCE

A growing number of architects voluntarily seek certification by the National Council of Architectural Registration Boards. Certification is awarded after independent verification of the candidate's educational transcripts, employment record, and professional references. Certification can make it easier to become licensed across States. In fact, it is the primary requirement for reciprocity of licensing among State Boards that are NCARB members. In 2009, approximately one-third of all licensed architects had this certification.

After becoming licensed and gaining experience, architects take on increasingly complex assignments, eventually managing entire projects. In large firms, architects may advance to supervisory or managerial positions. Some architects become partners in established firms, while others set up their own practices. Some graduates with degrees in architecture also enter related fields, such as graphic, interior, or industrial design; urban planning; real estate development; civil engineering; and construction management.

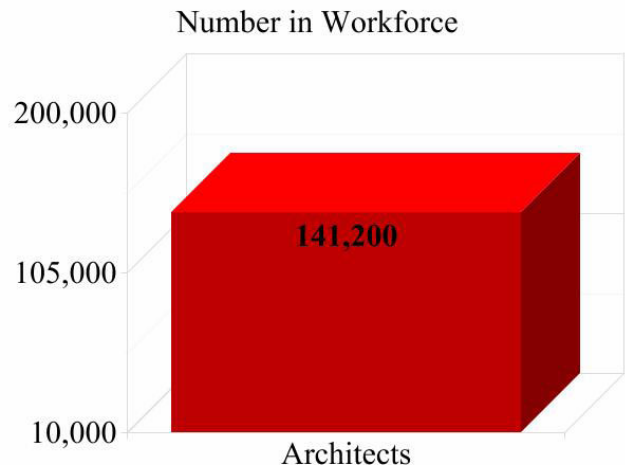
WORK ENVIRONMENT

Usually working in a comfortable environment, architects spend most of their time in offices consulting with clients, developing reports and drawings, and working with other architects and engineers. However, they often visit construction sites to review the progress of projects. In 2008, approximately 1 in 5 architects worked more than 50 hours per week, as long hours and work during nights and weekends is often necessary to meet deadlines.

JOB GROWTH

Besides employment growth, additional job openings will arise from the need to replace architects who transfer to other occupations or stop working for other reasons. A growing number of students are graduating with architectural degrees and some competition for entry-level jobs can be anticipated. Competition will be especially keen for jobs at the most prestigious architectural firms as prospective architects try to build their reputation. Prospective architects who have had internships while in school will have an advantage in obtaining positions after graduation. Opportunities will be best for those architects who are able to distinguish themselves from others with their creativity.

There should be demand for architects with knowledge of "green" design. Green design, also known as sustainable design, emphasizes the efficient use of resources such as energy and water, waste and pollution reduction, conservation, and environmentally friendly design, specifications, and materials. Rising energy costs and increased concern about the environment has led to many new buildings being built green.



Employment of architects is strongly tied to the activity of the construction industry and some types of construction are sensitive to cyclical changes in the economy. For example, during recessions nonresidential construction of office and retail space tends to fall as funding for these projects becomes harder to obtain and the demand for these spaces falls. Firms involved in the design of institutional buildings, such as schools, hospitals, nursing homes, and correctional facilities, will be less affected by fluctuations in the economy. Residential construction makes up a small portion of work for architects, so major changes in the housing market would not be as significant as fluctuations in the nonresidential market.

Opportunities are also geographically sensitive, and some parts of the Nation may have fewer new building projects. Also, many firms specialize in specific buildings, such as hospitals or office towers, and demand for these buildings may vary by region.