



THE AMERICAN  
INSTITUTE  
OF ARCHITECTS

**The** Architecture  
Student's Handbook  
**of** Professional Practice  
**Fifteenth Edition**

WILEY





THE AMERICAN INSTITUTE OF ARCHITECTS

# The Architecture Student's Handbook of Professional Practice

Fifteenth Edition

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# About The Architecture Student's Handbook of Professional Practice

The practice of architecture is complex and its complexity is increasing each year. The knowledge required to plan, design, and administer the construction phase of a new building or major renovation has always required a depth of knowledge but each year new building types, design concepts, materials, systems, digital tools, construction techniques, and many other important areas of technical knowledge have to be mastered by architects. At the same time architects have to be effective managers of both their projects and their practices. Most architectural schools focus almost all their classes on providing their students with an introduction to the design and technical challenges of the profession. The vast body of knowledge required to effectively manage architectural projects and practices is usually compressed into one course—the practice course—for one semester.

In my own practice class, I note that I will be introducing topics that often consume the vast majority of a senior architect's day. It is not possible to cover any of these important topics in any depth in one semester, but it is essential that all architects get an introduction to the most important subjects so that they can gain the skills required to be an effective professional.

This 15th edition of the *Student Handbook* is structured to be a companion textbook for architectural practice classes. It is also intended to be a reference text for young architects at the beginning of their careers while they are learning their profession with the assistance of intern development programs.

## TITLE AND ORGANIZATION OF THE BOOK

As was the prior (14th) edition, this book is not simply an abridged version of *The Architect's Handbook of Professional Practice*, 15th edition. Recognizing its use as required reading in professional practice courses and sometimes as a companion in studio courses—along with the fact that the information needs of architecture students are not the same as those of professionals—this book contains knowledge specific to the needs of students and emerging professionals that has been organized to be approachable for them. To reflect this increased focus on the needs of students and interns, the publisher John Wiley & Sons and the American Institute of Architects (AIA), as author, chose to name this book *The Architecture Student's Handbook of Professional Practice*.

Like *The Architect's Handbook of Professional Practice*, 15th edition, published in 2013, *The Architecture Student's Handbook* is presented in four parts. However, the names of the parts—The Profession, Practice, The Project, and Contracts and Agreements—and the organization of the material within them are different. The progression of material makes the book suitable for use as a professional practice course outline, beginning with consideration of the concepts of professionalism through the construction and closeout of projects, as well as consideration of the legal agreements used for project delivery.

## Content Structure

Content from *The Architect's Handbook* has been either included in *The Architecture Student's Handbook* in its entirety or edited or abridged as appropriate for the student reader. This volume also contains new material prepared specifically for *The Architecture Student's Handbook* that does not appear in *The Architect's Handbook*. This text was written for those beginning to learn about the architecture profession or navigating the beginning of their careers. Conceived as a true handbook, this volume is a resource to be used in the examination of all aspects of architecture practice, including research, programming, professional relationships, the design process, and the intricacies of delivering a project.

In addition, the book contains unique content on changes under way in the design and construction industry that are having a profound impact on the practice of architecture. This material invites readers to explore new possibilities in architecture practice and to redefine both what architects do and how they accomplish their goals. The variety of subject matter makes *The Architecture Student's Handbook* a useful resource for design studios, seminars, and research efforts, in addition to its use as a professional practice textbook and intern development programs.

## A NEW APPROACH TO PRACTICE

A theme running through this edition is the protection of the design integrity of projects, a greater concern as architects increasingly rely on electronic tools. Behaviors and practices necessary to accomplish this goal, which both protects client interests and allows for professional satisfaction and reward, are discussed. In today's design and construction marketplace, architects are called on to consider accepting new risks and responsibilities. Students studying architecture, as well as recent graduates, can use the same creative impulse in use in the studio to design a method of practice that ultimately makes it possible to deliver the projects conceived.

In accepting the 2005 AIA/ACSA Topaz Medallion, Edward Allen, FAIA, spoke to the issue of art versus science in architecture education. He suggested that these two categories have long been inadequate for describing what architecture truly is and offered the following alternate perspective: "Architecture is neither art nor science; it

belongs to a realm of intellectual endeavor called design. Its goal is to produce new products to solve human problems."

It is through practice that design becomes useful. Practice provides a framework that enables the architect to progress confidently from concept to completion. *The Architecture Student's Handbook* introduces the concept of professional practice to students so they will enter the profession with a well-rounded education that has readied them for all aspects of architecture practice.

The editor of *The Architecture Student's Handbook of Professional Practice*, 15th edition, is the founder, Chairman, and CEO of Perkins Eastman Architects, a New York-based practice that has a staff of 1000 and 15 offices around the world. He is on the faculty at Cornell's College of Architecture, Art and Planning, where he teaches the Professional Practice course.

### CAREERS FOR ARCHITECTS

This *Handbook* has been developed primarily for those who choose to follow a traditional professional career path into an architectural practice or into one of the other typical architectural careers in public agencies, architectural education, or construction. Many people who have gone to architectural school, however, have found their education to be a good foundation in a wide variety of other careers. Some have moved into other related arts including animation, environmental graphics, and the traditional fine arts while others have gone on to run major corporations, star in the movies, and serve in Congress.

—Bradford Perkins, FAIA

PART 1

THE PROFESSION

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## CHAPTER 1

# Professional Life

## 1.1 Architecture as a Profession

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Dana Cuff, Ph.D.

*Architecture is in the family of vocations called professions, all of which share certain qualities and collectively occupy a special position in society. Architects' status as professionals provides them with an underlying structure for their everyday activities.*

To be a professional means many things today. One can be a professional athlete, student, or electrician. Each of these occupations uses the term in ways distinct from what we mean by the professional who is a doctor, lawyer, or architect.

Typically, we distinguish professionals who do certain work for a living from amateurs who work without compensation. The term *amateur* connotes a dabbler, or someone having less training and expertise than a professional.

We also differentiate between professions and other occupations. Expertise, training, and skill help define those vocations that “profess” to have a specialized territory of knowledge for practice. While many occupations require expertise, training, and skill, professions are based specifically on fields of higher learning. Such learning takes place primarily in institutions of higher education rather than in vocational schools or on the job. Universities introduce prospective professionals to the body of theory or knowledge in their field. Later, this introduction is augmented by some form of internship in which practical skills and techniques are mastered.

A high level of education is expected of professionals because their judgments benefit—or, if incompetently exercised, endanger—the public good. Thus people who are attracted to the professions usually have altruistic concerns for their society.

---

Dana Cuff is a professor in the Architecture and Urban Design department of the School of the Arts and Architecture at the University of California, Los Angeles.

The status of professions, their internal characteristics, and their relationship to society are constantly, if not always perceptibly, changing. The professions have grown dramatically in recent years, in keeping with the rise of the postindustrial, service economy. Growth in professional employment has accompanied expansion of the service sector of the economy, estimated today to be 78 percent of the labor force. In a service economy, information and knowledge industries become dominant, creating the context in which professions can rise among occupations.

## CHARACTERISTICS OF A PROFESSION

Professions are dynamic entities that reflect our society, our economy, and, generally, our times. There is no widely accepted definition or list of features that covers all professions. Nevertheless, they have some characteristics in common, which have appeared throughout history.

### Lengthy and Arduous Education

Perhaps the most frequently cited characteristic of a profession is a lengthy and sometimes arduous education. A professional must learn a body of technical knowledge and also develop an ability to exercise judgment in the use of that knowledge. Thus, all established professions incorporate long periods of high-level education.

Professional education is also a form of socialization. Like a rite of passage for initiates, architecture, medical, and law schools are places where future practitioners are introduced to the knowledge, values, and skills of their profession. Students undergo tests of their commitment and ability. In architecture schools, a good example is the charrette (often involving all-nighters), during which students concentrate all their efforts to finish a project. These experiences instill tacit beliefs about the significance of architecture, the work effort required to do a good job, and the commitment needed to become an architect. Through selective admissions, carefully designed curricula, and rigorous graduation standards, schools guide the formation of their professional progeny. Professional schools play a key role in developing the shared worldview that characterizes a professional community.

### Expertise and Judgment

Professions traffic in ideas and services rather than in goods or products. Rather than marketing a better widget, professionals sell their expertise. They have knowledge outside the ken of the layperson. Professions are based upon a balance of technical knowledge, reasoned judgment in applying such knowledge, and inexplicable, even mysterious talents that some call artistry. Thus, while doctors need a high degree of scientifically based knowledge, they also need diagnostic ability and a good bedside manner.

Expertise begins with theoretical knowledge taught in universities, but being a competent professional also means knowing how to apply this knowledge. Among practitioners, both expertise and experience contribute to quality performance. While initial skills are taught in school, a large share of professional training comes from the practicum or internship; it then continues in lifelong learning through the gathering of experience and the application of new concepts and technologies.

### Registration

Because professional judgments affect the public good, professionals generally are required to be licensed in order to practice. This serves as a means of protecting the public health, safety, and welfare. Professions require sophisticated relationships with people and information. To become licensed, professionals are usually required to meet education and experience standards and to pass a compulsory comprehensive examination.

## Relative Autonomy

Because professionals exercise considerable judgment and discretion, professional work is intended to be more autonomous and self-determined than work controlled by owner-managers as in the production of goods.

## Other Traits

In addition to these primary characteristics, a number of other traits are typical of professions:

- Because they are well trained to perform complex services, professionals generally command relatively high incomes and high prestige in their communities.
- As a group, professionals attach a large part of their identity to their careers, rarely changing vocations.
- Within each profession, members usually hold a set of common values; they often speak what amounts to a dialect that is not easily understood by outsiders.
- Professionals understand the importance and value of lifetime learning.
- Professions are relatively well organized, and a significant proportion of their members belong to a national professional organization such as the American Medical Association, the American Bar Association, or the American Institute of Architects.

These characteristics are in constant evolution. For example, the prestige of a given profession may suffer under consumer dissatisfaction or be enhanced by significant developments in the field that have positive social repercussions. The professional degree that was once optional becomes a necessity. Professional organizations are periodically strengthened by programs that capture practitioners' attention. Such evolution depends in part upon the participation of professionals themselves—in their schools, professional associations, and communities.

## ARCHITECTURE AMONG THE PROFESSIONS

Many of the trends influencing architectural practice have parallels in other professions. For example, the tensions created by complexity and specialization, consumer influences, and divergence of goals among practices can also be seen in the professions of law and medicine.

These common influences notwithstanding, each profession introduces its own variations and idiosyncrasies. Looking at architecture among the professions, we observe the following features.

### Relationships with the Arts

The qualities that most clearly set architecture apart from other established professions are its close ties to the arts and its similarities to artistic endeavors. Creativity is crucial to all professions, but for the architect it is of the highest priority. Moreover, architects produce objects that are fixed in space, highly public, and generally long-lasting.

### Importance of Design

Although all professions are based on a balance of technical and indeterminate knowledge, some stress one over the other. Architecture emphasizes an artistic, relatively inexplicable domain of expertise—design—as the core of the practitioner's identity. Design requires rational knowledge of how buildings are put together, how they will function, historical models for building types, materials, mechanical systems, structures, and so on. But being a good architect also presumes that the professional possesses something extra—aesthetic sensibility, talent, or creative ability, whatever we choose to call it.

### Place in the Social Structure

According to one study that compared a number of professions on a variety of dimensions, architecture ranked high in terms of prestige but in the middle range in average

years of education, average income, and proportion of members belonging to professional organizations. This suggests that architecture's respected place in the social structure has been granted by society rather than defined through numbers, dollars, or professional control.

The profession's position in the social structure has been changing. Historically, the church, the state, and powerful individuals were the primary patrons for architectural services. Now, industrial and commercial enterprises have become major clients as well. During the 1960s, when community design emerged as a subdiscipline, architects sought and secured a role in housing and neighborhood revitalization; this activity has evolved into a growing presence in community and urban design.

Architectural practice is developing in new ways that allow architects to intermingle with a broader population. One recent study argues that architecture is more closely connected to a large, relatively affluent middle class than to a small group of the very rich. In a similar vein, the composition of the profession is changing, particularly as more women and ethnic minorities become architects.

### Place in the Economic Structure

The well-being of the architectural profession depends upon ties to a healthy building industry. The level of construction activity both nationally and internationally significantly determines the amount and type of services architects will render.

As the United States urbanized and industrialized, the demand for buildings was great and the architectural profession grew rapidly. In more recent times, however, construction has declined proportionately in the national economy. With the evolution from a goods-producing economy to a service economy, there are fewer major new building projects.

At the same time, the demand for architectural services has increased—especially in the predesign and postconstruction phases. This suggests a repositioning of the profession, along with other professions, as part of the service economy. New roles and markets for services have been created. In addition, new roles and specializations mean that more professionals are doing what was once one individual's job.

### Internal Social Structure

Within any profession, there are social divisions that complement and compete with one another. Those who study professions call these divisions “the rank and file,” “the administrators,” and “the intelligentsia.”

In the architectural profession, the rank and file might be considered to include drafters and junior design and production people; the administrators to include principals, senior designers, and project managers; and the intelligentsia to include academicians, critics, practitioner-theorists, and those architects who push the parameters of architecture outward and whose work often establishes precedents for others to follow.

The values and objectives of each group are likely to conflict with those of other groups at times. The first two groups have very different convictions, agendas, and knowledge of the way practice operates. These differences become important in a profession where, even though a majority of architecture firms are small, the provision of architectural services has been heavily influenced by larger firms in which many of the architects are wage-earning employees who work not for clients but for their architect-employers. Data from the 2012 AIA Firm Survey confirm this: Only 1.4 percent of offices have 100 or more employees but these offices employ over 20 percent of the profession. Firms with 50 or more employees earn more than 40 percent of all fees generated.

Initially, an increase in intraprofessional stratification brought a greater need to formalize professional control. Firms created organization charts, personnel policies, and manuals governing project procedures. Many professionals devoted themselves to managing the organization. As firms grew, they dealt with these phenomena in different ways. Compare, for example, the large law firm, which is a collection of relative coequals (the main distinction being seniority among partners), and the hospital, which

has a stricter hierarchy of medical administrators, senior physicians, residents, and interns. In recent years, however, there seems to be a general trend away from stratification in architecture firms—even in large firms. The advent of the second generation of digital technology and the maturing of the architectural profession in its use, along with the increased demand for a growing number of specialized areas of expertise has encouraged firms to be more horizontally organized and much less hierarchical.

## PROFESSIONS AND SOCIETY

Professionals possess knowledge and ability not accessible to the public. As a result, the public establishes a special relationship with professional groups, essentially granting each a monopoly in its area of practice. Society thus grants members of professional groups certain rights and privileges:

- A certain level of prestige and respect
- A certain amount of autonomy and authority
- A relatively high level of compensation
- A standard of reasonable care with which to judge the appropriateness of professional actions

In return for these rights and privileges, society expects a profession to assume certain obligations:

- Establishing and maintaining standards for admission and practice
- Protecting public health, safety, and welfare
- Considering the public good when working for an individual client
- Respecting public welfare over personal gain

Every profession participates in a coordinated body of tasks necessary to fulfill its obligations to the public and to manage the profession. These tasks include establishing a body of professional knowledge, regulating entry to the profession, and maintaining standards for practice. Each profession develops mechanisms for accrediting educational programs, licensing professionals to practice, encouraging continuing education, and regulating professional ethics and conduct.

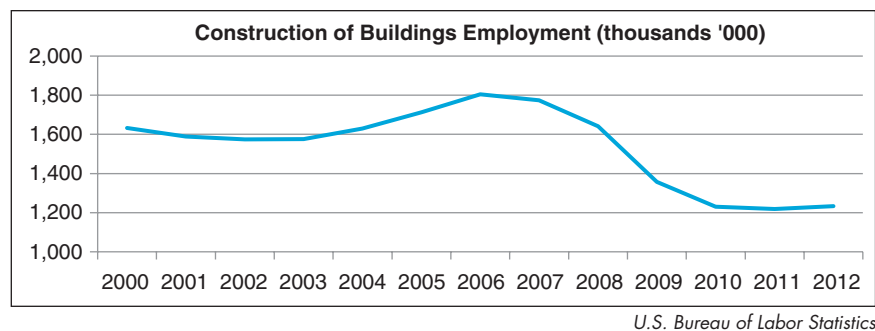
By and large, these mechanisms are designed, staffed, and implemented by professionals. Architects have the major voice in where and how new architects are educated. They sit on registration boards, write and grade the licensing examination, and recommend laws and administrative guidelines for registration. Architects conduct disciplinary hearings and, through the AIA, establish and enforce codes of ethical behavior. Like all professionals, architects have substantial voices in establishing their own destiny.

## 1.2 Demographics of Practice: 2012 AIA Firm Survey

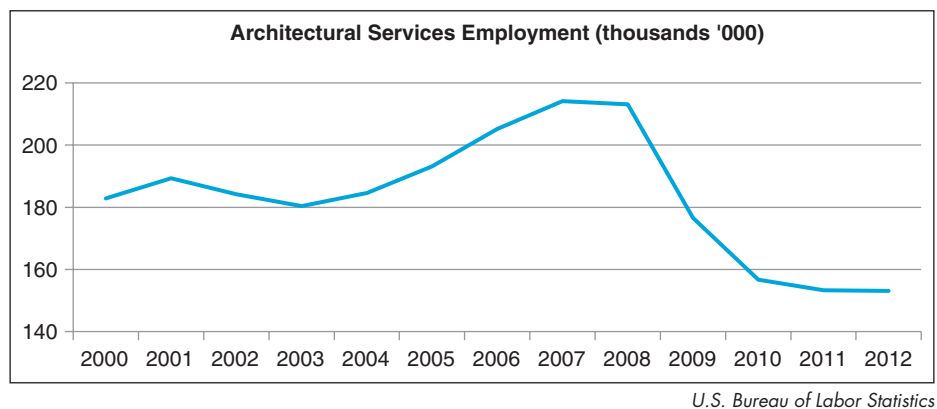
Bradford Perkins, FAIA

**T**he architectural profession is not one of the larger professions. According to the Bureau of Labor Statistics, there were 107,400 architectural jobs in the United States in 2012. In contrast there were 759,800 jobs for lawyers and 691,400 for

**Bradford Perkins, FAIA**, is the founder, chairman, and CEO of Perkins Eastman Architects, a large New York–based international architecture, interior design, and planning firm that has won many design awards. He lectures regularly at architecture schools and other institutions and is on the faculty of Cornell University’s College of Architecture, Art, and Planning. He has published seven books and numerous articles on design and architecture management issues.



**FIGURE 1.1** U.S. Construction of Buildings Employment



**FIGURE 1.2** U.S. Architectural Services Employment

physicians and surgeons. Since architectural firms employ many people who are not trained as architects, total employment in architecture is higher than 107,400, but it still is a relatively small percentage of the total professional employment in the country.

The 2012 AIA Firm Survey was conducted as the traumatic recession that began at the end of 2007 was finally ending for the architectural profession. The sharp impact of the recession on construction and architectural employment is clearly illustrated in Figures 1.1 and 1.2. Since 2012 architectural employment has been rising and is projected to rise 7.3 percent by 2022 according to the U.S. Bureau of Labor Statistics.

This chapter introduces you to a statistical profile of the profession today. As this chapter and the 2012 Survey outlines, most firms (over 80 percent) have fewer than 10 employees, but approximately 65 percent of the profession work in firms with 20 or more employees. More than a quarter of the profession work in the 1 percent of firms that have 100 or more employees.

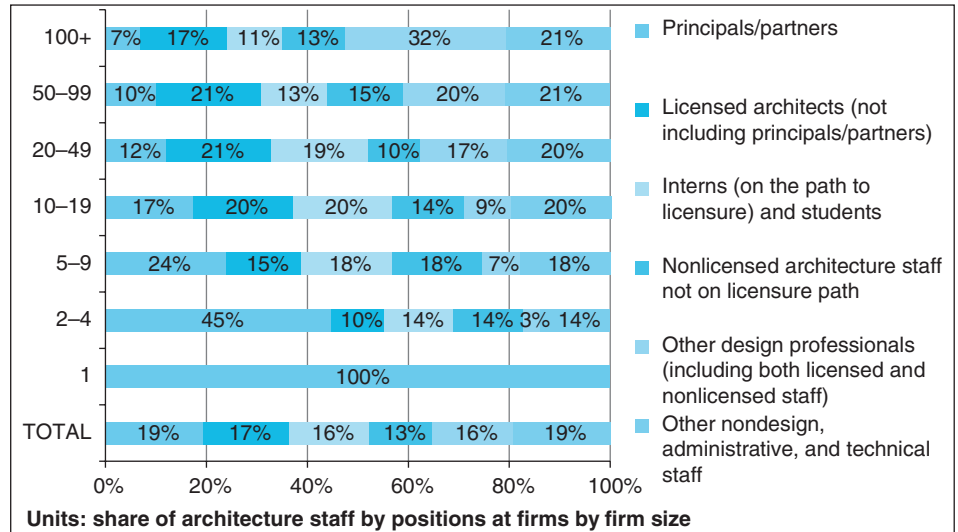
The majority of firms were formed within the last 20 years and a third within the last 10 years, but there are a few of the larger firms that were founded 80 to 100 years ago. In the past the majority of these firms only offered architectural services, but today an increasing number are adding other services, such as interior design, planning, and sustainable design consulting.

## STAFF AT ARCHITECTURE FIRMS

### Nearly 40 Percent of Staff at Firms Are Licensed Architects

Overall, almost two in five employees at architecture firms are licensed architects with another 16 percent of staff comprising interns on the path to licensure (Figure 1.3).

An additional 13 percent of staff is nonlicensed architecture staff that is not on the path to licensure. In general, the share of nonarchitecture staff, which might include engineers, interior designers, and landscape architects, increases with firm size.



*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

**FIGURE 1.3** The Share of Nonarchitect Staff Typically Increases with Firm Size

Finally, approximately 20 percent of workers at firms are nondesign staff, which includes professionals such as accountants, marketers, information technology, and human resources managers.

### Most Firms Use Engineering Consultants

Since the majority of architecture firms are small or midsize businesses, they rely heavily on consultants and part-time staff to provide flexibility.

The 2012 AIA Firm Survey found that 85 percent of firms regularly hired engineers as consultants in the past three years, by far the most hired group of professionals. This is due, in part, to the fact that most owner-architect agreements call for the architect to provide structural, mechanical, electrical, and plumbing engineering. The share of firms that regularly use interior design consultants has increased, on average, 3 percentage points since 2005 and nearly 10 percentage points since 2002.

The types of consultants that firms use also tend to vary by firm specialization. Mechanical, electrical, and plumbing (MEP) engineers are hired as consultants more frequently at firms with commercial/industrial and institutional specializations, whereas residential firms are more likely to use civil and structural (CS) engineers as consultants. Landscape architects are also used by many firms that have an institutional specialization, which may include projects like public buildings, museums, and recreational structures. In general, it is more common for firms with a commercial/industrial or institutional specialization to hire code consultants and other specialty consultants, as there are more features to incorporate into their projects, such as security and communication networks (Table 1.1).

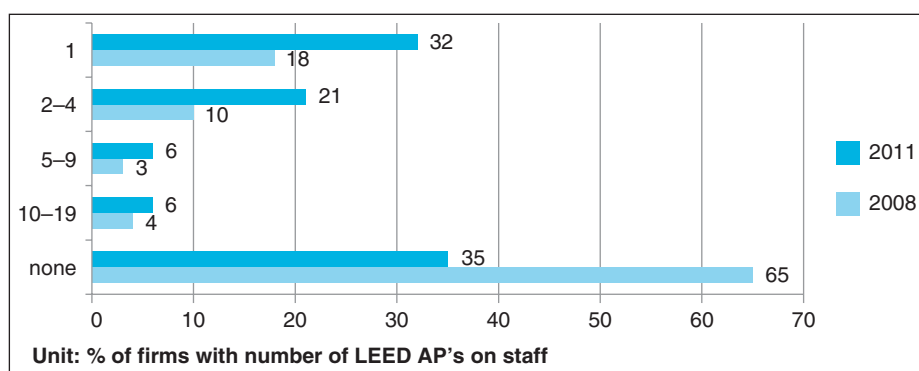
### LEED AP Certified Staff Nearly Doubles in Four Years

Two-thirds of architecture firms now have at least one Leadership in Energy and Environmental Design accredited professional (LEED AP) on staff, versus just one-third in 2008. Ninety percent of firms with 10 or more employees have at least one LEED AP on staff, and more than half of small firms have at least one LEED AP certified staff member, compared to just under one-quarter in 2008 (Figure 1.4).

**TABLE 1.1 The Largest Share of Firms Use MEP and CS Engineers as Outside Consultants**

	Total (%)	Residential (%)	Commercial/Industrial (%)	Institutional (%)
MEP engineers	85	74	93	92
Structural engineers	78	81	76	78
Landscape architects	56	50	52	65
Interior designers	31	35	33	29
Sustainability consultants	20	17	17	24
Spec writers	17	13	19	20
Planners	6	4	4	9
Other specialty consultants	27	18	28	35

Units: Use of outside consultants in last three years, percent of firms by specialization  
*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*



*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

**FIGURE 1.4 The Number of LEED APs on Staff Nearly Doubles in Three Years.**

## FORMATION OF FIRMS

### S Corporation Is Most Widely Employed Business Structure

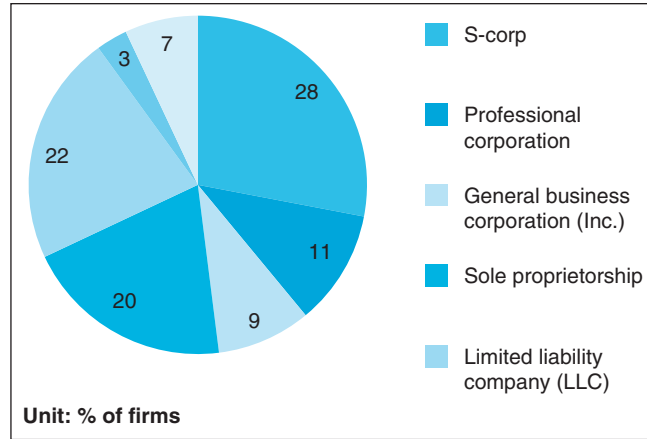
When starting a business, one of the first decisions the owner has to make is the type of business to create. The business type that is best suited for the firm's situation and objectives may vary by firm size or specialization. Liability protection and tax concerns may also play a major role in this decision.

According to the Internal Revenue Service, 70 percent of all businesses start out as sole proprietorships, since they are relatively easy to start and give the owner discretion to make decisions. On the downside, these firms have unlimited liability for all debts against the business, including personal assets.

The share of architecture firms that use the sole proprietorship legal structure has continued to decline in recent years, with a drop of 5 percentage points from 2008 to just one in five firms in 2011 (Figure 1.5). The share of firms using the sole proprietorship legal structure has declined significantly since 1997, when nearly half of all firms were classified as such.

As of 2011, the most common legal structure among all firms, with the exception of sole practitioners, is the S corporation, with more than one-quarter (28 percent) of firms reporting having been formed under this legal business structure. The percentage of firms structured as limited liability companies (LLCs), a legal structure that is now permitted in most states, increased moderately to 22 percent, from 17 percent in 2008.

► See Section 2.2 in Part 2 "Firm Legal Structure," which discusses the most commonly used structures for architecture firms.



*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

**FIGURE 1.5** The S Corporation Is the Most Common Legal Structure, While Sole Proprietorship Continues to Drop.

At firms with 50 or more employees, the General Business Corporation (Inc.), also known as a C corporation, is the second choice. Among the firms with 10 to 49 employees, the Professional Corporation (PC), LLC, and the General Business Corporation are evenly divided, averaging around 16 percent for each of the legal business formations.

### Diversity and Demographics Are Changing

The architectural profession has traditionally not been as diverse as other professions.

#### Most Firms Are Less Than 20 Years Old and Formation of New Firms Grows

The weak economy from 2007-2011 sparked new firm formations. Six percent of existing firms were formed between 2009 and 2011, and almost one-quarter of firms were formed since 2005. More than one-half of firms were formed since 1995.

In comparison, fewer than one-tenth of firms were founded before 1970. However, more than three-quarters of firms with 50 or more employees were established before 1980. Two in five sole practitioners started their firms since 2005. Not surprisingly, firm size is indicative of its longevity, since firms generally need time to grow (Table 1.2).

**TABLE 1.2** Over One-Third of All Firms Formed After 2000

	Number of Employees							
	2011 (%)	1 (%)	2-4 (%)	5-9 (%)	10-19 (%)	20-49 (%)	50-99 (%)	100+ (%)
2010-2012	6	12	6	3	1	0	0	0
2005-2009	17	27	20	9	5	2	0	0
2000-2004	14	17	16	15	9	6	3	0
1990-1999	25	22	25	26	25	23	9	3
1980-1989	19	13	19	25	28	21	18	9
1970-1979	10	6	10	10	17	16	20	20
1960-1969	4	2	2	5	7	12	18	31
1950-1959	2	1	1	3	4	10	8	6
Before 1950	3	0	1	4	4	10	24	31

Units: Percent of firms

*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

**TABLE 1.3 Multiple Offices at the Largest Firms Decrease Considerably**

Number of Offices	All Firms		Number of Employees			
			2011		2008	
			50–99 employees (%)	50–99 employees (%)	100+ employee (%)	100+ employees (%)
5+	2	3	20	18	43	60
4	1	1	16	9	9	7
3	2	2	13	14	20	10
2	7	7	21	26	20	5
1	88	87	30	33	9	18

Units: Percent of firms

The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics

### Number of Offices Decline at Largest Firms

The majority of architecture firms have one office, although just over 10 percent have multiple offices (Table 1.3). Approximately two-thirds of firms with 10 to 49 employees and one-quarter of firms with 50 or more employees have one office.

### South Atlantic Regional Share of Firms Increases While Middle Atlantic Sees Largest Decrease

The 2012 AIA Firm Survey geographical breakout (based on the U.S. Census: [www.census.gov/geo/www/us\\_regdiv.pdf](http://www.census.gov/geo/www/us_regdiv.pdf)) showed the Pacific Southwest and South Atlantic regions continue to have the greatest share of firms, 22 and 18 percent, respectively. The East South Central region has the smallest share of firms, with just 4 percent, followed by West North Central, with 6 percent.

### Nearly Half of All Firms Have Small Business Status

According to the Small Business Administration (SBA), small businesses represent the majority of all employer firms and employ about half of all private sector employees. This is true for the architecture profession as well.

The share of firms that are federally recognized women-owned business enterprises (WBE) is 6 percent, and the share of businesses that are state/local recognized WBEs is 8 percent.

Approximately 4 percent of firms are federally recognized minority-owned businesses enterprises (MBEs), while 3 percent of firms are federally recognized as a Small Disadvantaged Businesses or Disadvantaged Business Enterprises (SDBs or DBEs).

### For More Information

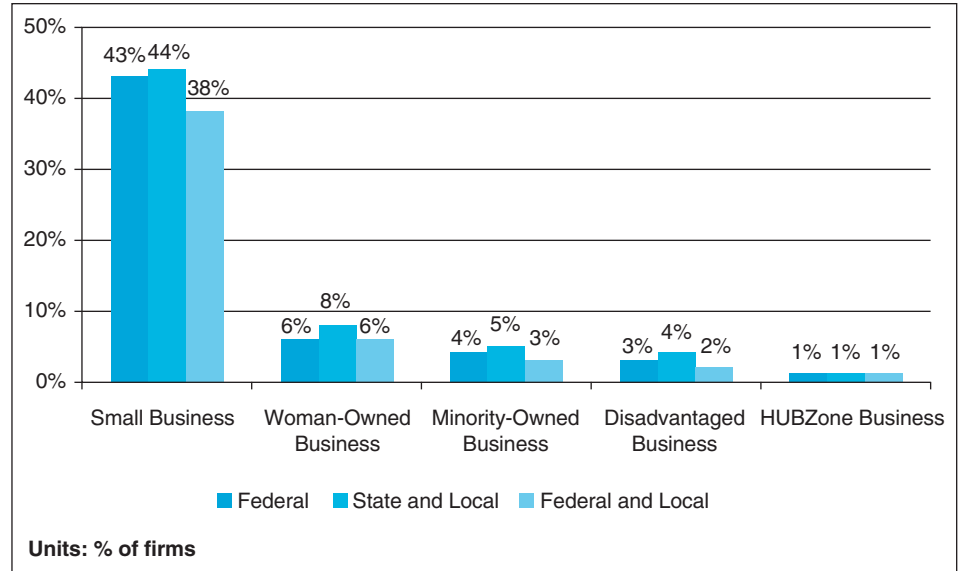
AIA Diversity and Inclusion Initiative: [www.aia.org/about/initiatives/AIAS078656](http://www.aia.org/about/initiatives/AIAS078656)

Beverly Willis Architecture Foundation: <http://bwaf.org/>

National Organization of Minority Architects: [www.noma.net/](http://www.noma.net/)

The following backgrounder adds information and context to the topic of diversity and inclusion:

- *AIA Diversity History Timeline*. Since the early 1990s, the AIA has institutionalized an effort to engage its membership with issues of diversity and inclusion. This brief timeline highlights some of the significant moments in AIA diversity history.
- *Forging a Diverse Culture: The Shepley Bulfinch Experience*. This case study of a diversity-award-winning firm contains practical advice for fostering and implementing a culture of diversity and inclusion.



The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics

**FIGURE 1.6** Nearly Half of All Firms Are Recognized as Small Business Entities

## BACKGROUND

### AIA DIVERSITY HISTORY

#### *Marga Rose Hancock, Hon. AIA*

In 2011, AIA Diversity and Inclusion commissioned the development and online publication of an AIA Diversity History, excerpted here. What follows is a brief history of activities by the AIA directed at study and redress of the underrepresentation of women and racial/ethnic minorities in the profession, with statistical references and participant observations.

Marga Rose Hancock has taken an active role in AIA Diversity initiatives, as a founding member of the AIA Seattle Diversity Roundtable in 1986 and a 1992 appointee to the national Diversity Task Force. In 2011, AIA Diversity and Inclusion commissioned Rose Hancock to develop and publish an online AIA Diversity History.

### DIVERSITY IN PROFESSIONAL PRACTICE

Women and people of color have practiced architecture and taken active roles in the profession, but at a rate substantially below their counterparts in other professions. Concern regarding the underrepresentation of these constituencies has engaged AIA leaders: The U.S. civil rights movement of the mid-1960s saw the initiation of policies and programs seeking to address this concern, as detailed in Table 1.4.

Following the Institute's 1857 establishment, in 1888 Louise Blanchard Bethune, FAIA, became the first woman to

join the AIA, and in 1923 Paul Revere Williams, FAIA, became the first African American member.

According to U.S. Department of Labor/U.S. Bureau of Labor Statistics, compared with law and medicine, architecture lags in the percentage of women and minorities employed in the field (see Table 1.4).

**TABLE 1.4** Comparison of Diversity in Architecture to Medicine and Law (2011)

Occupation	Percentage of total employed			
	Women %	Black/African Americans %	Asian %	Hispanic or Latina %
Architects	20.7	1.6	5.5	4.1
Lawyers	31.9	5.3	4.2	3.2
Physicians	33.8	5.3	16.1	6.6

Diversity is now improving. While 88 percent of the AIA's retired members are classified as Caucasian, the percentage among active members is now 72 percent. Among Associate members it is 58 percent and over 40 percent among students in accredited architecture programs. The same can be seen for women in the profession.

A further comparison: As of May 2012, the BLS also notes, "Fourteen percent of architects and engineers and 34 percent of physicians and surgeons were women, whereas 61 percent of accountants and auditors and 82 percent of elementary and middle school teachers were women."

TABLE 1.5 AIA Diversity Timeline 1968–2011 (excerpted)

1968	In his keynote address to the AIA Convention in Portland, Oregon, Urban League head Whitney M. Young, Jr. challenges the AIA on issues of social responsibility and diversity within the profession: “We are going to have to have people as committed to doing the right thing to inclusiveness as we have in the past to exclusiveness.”
1970	AIA/AAF Minority Disadvantaged Scholarship initiated, supporting an average of 20 students per year.
1971	Establishment of National Organization of Minority Architects at AIA Convention, Detroit.
1972	AIA presents first Whitney M. Young Award, recognizing “architects and organizations that exemplify the profession’s proactive social mandate,” to Robert J. Nash, FAIA.
1974	AIA hires Robert T. Coles, FAIA, as Deputy VP for Minority Affairs, to develop “a master plan for minority awareness,” and, working with Leon Bridges, FAIA, and Marshall Purnell, FAIA, to establish the AIA Commission on Community Services.
1980	Norma Merrick Sklarek, FAIA, the first African American woman licensed as an architect, becomes the first elevated to the AIA College of Fellows.
1982	Women constitute 3.6 percent of AIA membership.
1989	“The number of female architects, less than 1,500 in 1970, now approaches 5,000. The number of black architects has grown from about 1,000 to 2,000, remaining at about 2 percent of the total.” —Robert Coles, FAIA, “Black Architects: An Endangered Species,” <i>Progressive Architecture</i> (July 1989)
1992	First meeting of the AIA President’s “Task Force on Equal Rights and Proactive Action” in Washington, D.C., chaired by then AIA President W. Cecil Steward, FAIA, to develop a comprehensive strategic plan to implement the 1991 civil rights policy, for presentation to the AIA Board. Named the Diversity Task Force, this group developed a vision of the AIA in the year 2000 as a multicultural organization.
1992–93	Susan Maxman, FAIA, serves as the first woman president since AIA’s 1857 founding. L. Jane Hastings, FAIA, serves as the first woman chancellor of the AIA College of Fellows.
1994	Diversity Conference I: “Breaking the ICE” (Washington, D.C.) Keynote: Charlotte, NC, Mayor Harvey Gantt, FAIA. AIA membership includes 7.3 percent “all minorities,” 10.45 percent women, 0.99 percent minority women.
1996–97	Raj Barr-Kumar, FAIA, serves as first AIA president of color.
1996	Diversity Conference III: “Crossing Lines” (Boston, MA). Keynote: Patricia Carbine, co-founder of <i>Ms. Magazine</i> .
1997	Diversity Conference IV: “Beyond the Rainbow” (Seattle, WA), preceded by “Dancing in Design” National Conference for Women in Architecture organized by Seattle Association for Women in Architecture (AWA). Keynotes: Seattle Mayor Norm Rice, Professor Sharon Sutton, FAIA, and AIA President Ronald Altoon, FAIA.
1998	Diversity Conference V: “Opening Doors,” Atlanta, GA. Keynote: Atlanta Mayor Andrew Young.
2001–02	Gordon Chong, FAIA, serves as first Asian American AIA president.
2005	AIA sponsors study of architecture demographics by Holland & Knight: “Of its members, approximately 2% are Hispanic/Latino, 3% are Asian, and 1% are Black. . . . As of December 2004, approximately 12% of all of the AIA’s architect members are female. The AIA does not collect information on disability or sexual orientation.”
2007–08	Marshall Purnell, FAIA, serves as the AIA’s first African American president.
2008	First AIA Diversity Plenary “MultiFORMity” in St. Louis brings together individuals representing architecture, other professions, business, academia, associations, and AIA components to identify best practices for implementation by the AIA and its partners in order to move the profession toward a more diverse and inclusive future by improving the recruitment, retention, and promotion of diverse individuals in architecture. The outcome of the plenary, the “Gateway Commitment,” leads to the development of a multiyear action plan to address these issues, with a mandate to create a diversity toolkit designed to engage firms on the issue of diversity and inclusion. Leers Weinzapfel Associates selected as first woman-owned firm recipient of the AIA Architecture Firm Award. AIA recognizes Norma Merrick Sklarek, FAIA, as the first woman recipient of the Whitney Young Award. “Only 1.5 percent of America’s architects are African American (at a time when the U.S. Census shows that African Americans comprise approximately 12 to 13 percent of the total population).” —Robert Ivy, FAIA, “Room for All Our Talents,” <i>Architectural Record</i> (May 2008)
2009	Inaugural AIA Women’s Leadership Summit, Chicago, IL: “The first national gathering of women who serve as firm principals and in other professional leadership roles drew upon their talents and experiences to describe the issues women face and sought to raise their profile within the profession.” Second AIA Diversity Plenary, “Value: The Difference—a Toolkit for Firms.” San Francisco plenary brings together AIA Board members, collateral organizations, related organizations, firm representatives, interns, and students to identify tools, resources, and approaches to increase diversity and inclusion within architecture firms. Adoption of the “NOMA/AIA Memorandum of Understanding,” and adoption of “AIA Diversity Action Plan, 2009–2013,” with strategies to (1) expand the racial/ethnic, gender, and perspective diversity of the design professions to mirror the society we serve; and (2) nurture emerging professionals and influence a preferred future for the internship process and architecture education. “According to the latest figures from the National Architectural Accrediting Board, architecture schools are still dominated by men, though by a decreasing margin. Of all the enrolled and matriculating students of architecture, 59% are men and 41% are women. The gender gap is much wider among faculty, however, with a split of 74% men, 26% women.” —Lance Hosey, “Women Rule,” <i>Architect</i> (December 2009)

(continued)

TABLE 1.5 (continued)

2010	AIA hosts Women's Leadership Summit, New York. Diversity Best Practice Awards recognize the contribution of individuals, firms, and AIA component programs to the aim of advancing diversity in architecture.
2011	AIA Women's Leadership Summit, Kansas City,
2016	Carole Wedge FAIA elected Chair of the AIA Large Firm Roundtable.

## DIVERSITY WITHIN THE AIA

The United States' tumultuous and turbulent past with regard to racial and gender equality set the stage for consideration of diversity and inclusion in the workplace. According to the 1960 U.S. Census, virtually all doctors, attorneys, architects, engineers, executives, and managers were white men. The civil unrest of the sixties provided a catalyst for change.

In 1964, the Civil Rights Act was passed, which made it illegal for the organizations to engage in employment practices that discriminated against employees on the basis of race, color, religion, gender, national origin, age, and disability. In 1965, Executive Order 11246 was passed, requiring all government contractors to take affirmative actions to overcome past patterns of exclusion and discrimination. While these federal mandates plus several others helped to eliminate formal policies that discriminated against various classes of workers, professions and the organizations that represented them were slow to make changes toward a more diverse membership.

At the 1968 AIA National Convention in Portland, Oregon, Whitney M. Young Jr., civil rights activist and Executive Director of the National Urban League, in his keynote speech challenged the AIA membership on the issues of human/civil rights, diversity, and inclusion.

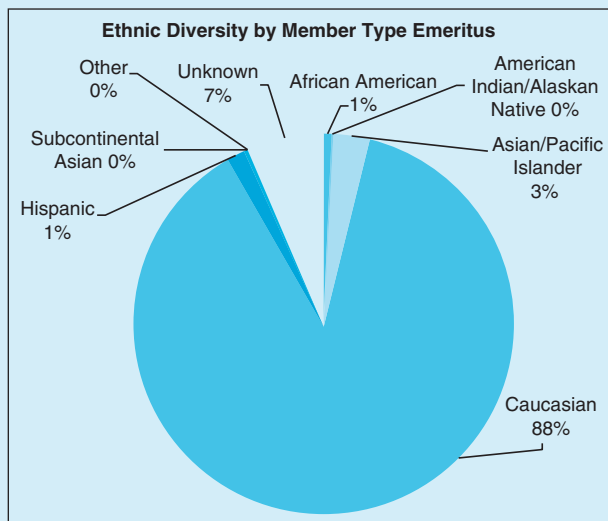
It took a great deal of skill and creativity and imagination to build the kind of situation we have, and it is going to take skill and imagination and creativity to change it. We are going to have to have people as committed to doing the right thing, to inclusiveness, as we have in the past to exclusiveness.

—Whitney M. Young (1968)

In 2012, 44 years later, it is instructive to understand how the situation has changed and has not changed. Unless otherwise noted, the source of demographic information shown is *The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*.

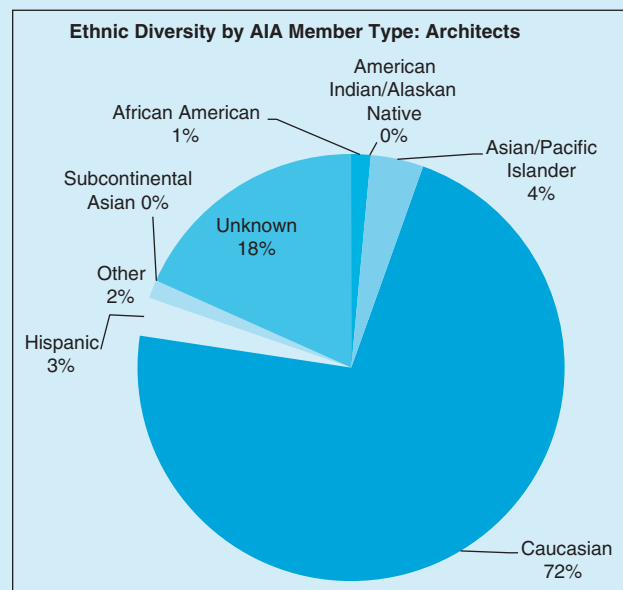
In 2012, current emeritus AIA members embody the ethnic makeup of the profession during the second half of the twentieth century (see Figure 1.7).

The ethnic demographics of AIA member architects in 2012, as shown in Figure 1.8, reflect the status quo in the early twenty-first century. It is worth noting that over the past 20 years, the percentage of African American AIA architect members has remained at only 1 percent.



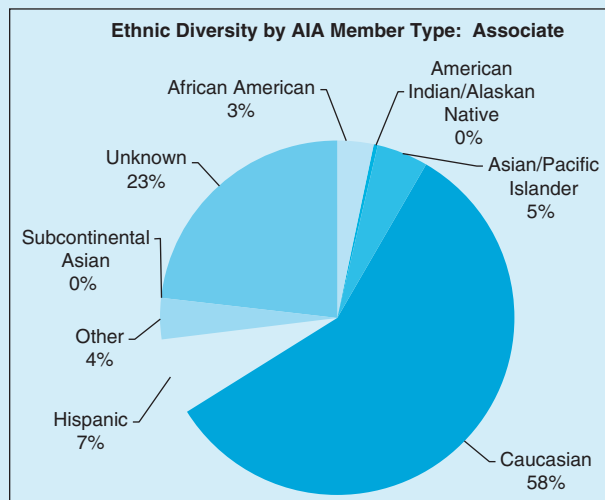
*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

FIGURE 1.7 Ethnic Diversity: AIA Emeritus Members



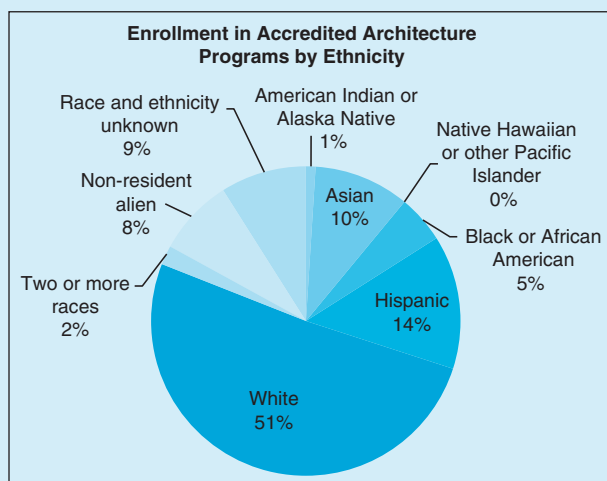
*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

FIGURE 1.8 Ethnic Diversity: AIA Architect Members



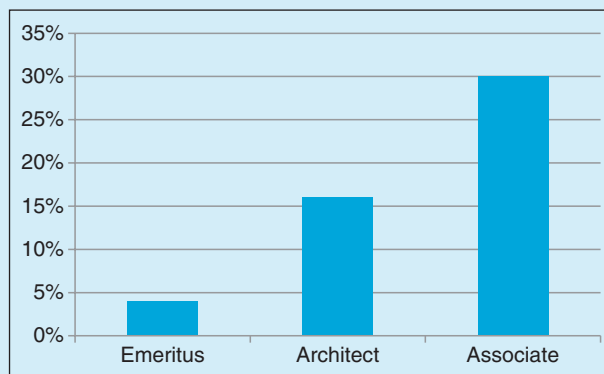
*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

**FIGURE 1.9 Ethnic Diversity: AIA Associate Members**



*The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics*

**FIGURE 1.10 Enrollment in Accredited Architecture Programs by Ethnicity**



*NAAB Accreditation Report, 2011*

**FIGURE 1.11 Percentage of Women in AIA Member Categories**

Nevertheless, the 2012 ethnic makeup of associates (see Figure 1.9) portends a future AIA and architectural profession with more non-Caucasian participants.

For women the trend is similar, as Figure 1.11 shows. Only 4 percent of emeritus members are women, while women make up 16 percent of Architect members, and 30 percent of Associates.

At the university level there appears to be evidence of some change, as shown in Figure 1.10. In many architecture programs, women make up 50 percent or more of the students, with the average being about 40 percent. Although gender balance among architecture students has been in place since the mid-1980s, the number of women architect members of the AIA has remained flat at around 16 percent. Judging by the 2012 percentage of minority AIA associate members (30 percent), minority participation in architecture programs must also be improving. Nevertheless, it clearly still lags behind what is needed to significantly increase ethnic diversity in the profession.

## CONCLUSION

A diverse and inclusive workforce is a reflection of a changing world and marketplace. Diversity among clients, especially in the global marketplace, can in itself be a challenge. Diversity and inclusion at all levels brings high value to organizations and promotes the firm's ability to adapt to any situation. In addition, diversity and inclusion will help a firm attract and retain top candidates that can add capacity and competitiveness in the global marketplace.

## THE PRACTICE

### Most Design Specialty Offerings Increase

Nearly all firms (97 percent) report that they offered architecture services at their firm in 2011, with a significant share also reporting that they offered the design-related disciplines of predesign services (61 percent), space planning (57 percent), interior design (57 percent), and planning (52 percent).

**TABLE 1.6** Despite the Economic Downturn, Share of Firms Offering Most Design-Related Specialties Has Increased

Firm Type	2011 (%)	2008 (%)	2005 (%)
Architecture	97	97	97
Predesign services	61	n/a	n/a
Space planning	57	54	50
Interior design	57	54	49
Planning	52	50	48
Consulting	n/a	42	44
Sustainable/green design	49	50	31
Historic preservation	30	30	29
Design-build	22	21	20
Construction management	18	17	16
Urban design	17	16	15
Landscape architecture	11	11	10
Engineering	8	8	8
Practice-based research	6	n/a	n/a
Other	7	10	8

Unit: Percent of firms

The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics

The share of firms offering the sustainable/green design specialty grew significantly from 2005 to 2008, but changed little from 2008 to 2011, with nearly half of firms offering this specialty in 2011. The share of firms offering the interior design, space planning, and planning design specialties grew modestly in these three years (Table 1.6).

Fewer than half of small firms reported that they offer sustainable design services, while over two-thirds of the midsize firms, and four in five large firms, do so. Of firms with an institutional specialization, 57 percent report offering sustainable design as a specialty in their practice, in contrast with an average of 45 percent of firms with a commercial/industrial or residential specialization.

### Multidisciplinary Firms Continue to Grow

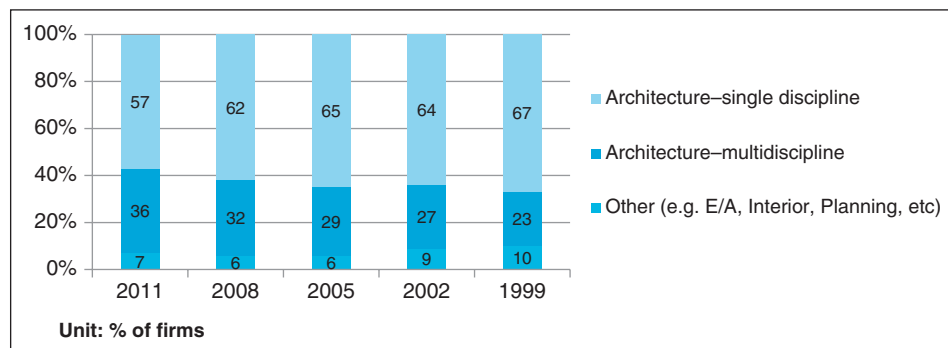
The economy is going through a transformation and so is the architecture industry. The share of architecture firms that describe their practice as single-discipline continued to decline in 2011, falling below 60 percent, as more than one-third of firms report that they are now multidisciplinary (with architecture as the lead discipline) versus just over one-quarter a decade ago (Figure 1.12).

The share of multidisciplinary architecture firms has doubled in the past 15 years. More than four in five firms with 50 or more employees now characterize themselves as multidisciplinary.

In 2011, nearly two-thirds of firms with fewer than 10 employees and one-third of firms with 10 to 49 employees described their practice as single-discipline.

### BIM Software Used by Slightly More than One-Third of Firms

On average, just over one-third of firms were using building information modeling (BIM) software as of 2011. At the same time, 36 percent of firms do not use BIM software and do not plan to use it in the near future. About one-quarter of firms that are not using BIM software are considering the purchase of this tool in the next few years.



The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics

**FIGURE 1.12** The Single-Discipline Architecture Firm Continues to Decline

The majority of firms with 100 or more employees are using BIM software, while three-quarters of firms with a staff size of 20 to 99 employees are doing so.

The firms using BIM software for billable work indicate that they are most likely to use it for design visualization services (91 percent of firms), coordinated construction documents (74 percent), and sharing models with consultants (55 percent). Larger firms also indicate that resolving conflicts with other disciplines (clash detection) and sharing models with constructors/trade contractors are primary uses of BIM software in their office (Table 1.9).

**TABLE 1.7** Multidiscipline Firms Increase Another 10 Percent from Three Years Ago

Firm Type—Architecture	All Firms (%)	Number of Employees						
		1 (%)	2–4 (%)	5–9 (%)	10–19 (%)	20–49 (%)	50–99 (%)	100+ (%)
Single discipline—2011	57	74	63	49	39	20	11	1
Single discipline—2008	62	79	69	59	41	23	9	7
Multidiscipline—2011	36	17	30	46	54	68	79	86
Multidiscipline—2008	32	12	26	37	51	64	79	80
Other discipline—2011	7	9	7	5	7	12	10	13
Other discipline—2008	6	8	5	4	8	13	12	13

Units: Percent of firms

The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics

**TABLE 1.8** Less Than One-Third of Firms Using BIM for Billable Work

	Total (%)	Number of Employees						
		1 (%)	2–4 (%)	5–9 (%)	10–19 (%)	20–49 (%)	50–99 (%)	100+ (%)
Yes, we are using it for billable work	29	16	22	28	54	71	79	100
Yes, but we are not yet using it for billable work	9	9	8	14	10	7	10	0
No, but plan to acquire within the next 12 months	7	7	8	8	8	5	0	0
No, but plan to acquire sometime (not within the next 12 months)	19	17	23	21	13	9	5	0
No, and do not plan to acquire	36	51	39	30	15	8	6	0

Units: Percent of firms

The Business of Architecture: 2012 AIA Survey Report on Firm Characteristics

**TABLE 1.9 Design Visualization and Construction Documents Most Widely Used on BIM Software**

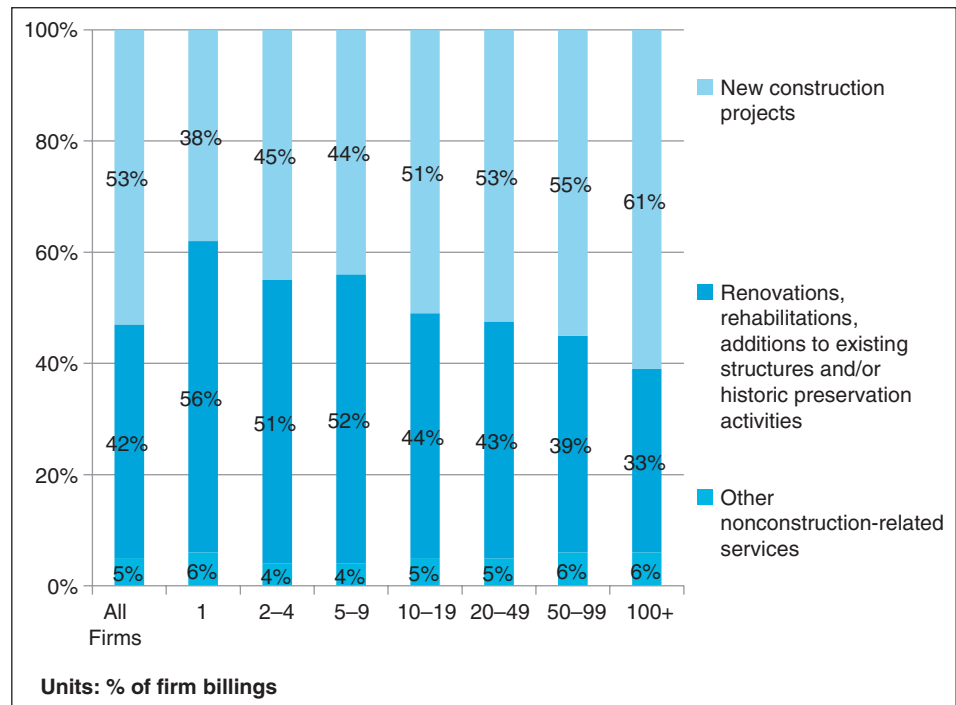
	Total (%)	Number of Employees						
		1 (%)	2-4 (%)	5-9 (%)	10-19 (%)	20-49 (%)	50-99 (%)	100+ (%)
Design visualization	91	92	91	91	89	94	90	94
Coordinated construction documents	74	63	68	67	83	91	92	97
Sharing models with consultants	55	31	44	55	69	79	83	80
Resolving conflicts with other disciplines (clash detection)	46	28	30	43	55	75	87	86
Sharing models with constructors/trade contractors	34	22	28	25	37	55	71	66
Quantity takeoffs/estimating	27	30	27	25	22	26	37	31
Energy/performance analysis	24	19	19	17	25	31	58	51
In the learning phase of the software	2	2	4	1	0	1	0	0
Other	3	4	3	1	3	3	6	0

Units: Percent of firms (those who currently use BIM—multiple selections permitted)  
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## CONSTRUCTION SECTORS SERVED

### Majority of Firm Billings Derived from New Construction Projects

While new projects still constitute the overall majority of firm billings, renovations, rehabilitations, additions, and other construction projects have markedly increased their share, particularly at midsize and larger firms. At firms with fewer than 10 employees, the majority of their firm billings continue to be from renovations, rehabilitations, additions, and historic preservation, as in the past.



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**FIGURE 1.13 New Construction Projects Account for Just Over Half of Firm Billings**

## Institutional Projects Make Up Biggest Share of Firm Billings

When considering the distribution of architecture firm billings by project type, institutional projects continue to account for the largest share of billings at all firms (except for the smallest-sized firms), accounting for an average of 58.2 percent of firm billings (Table 1.10).

### Majority Share of Billings from Repeat Clients

Architecture firms report that nearly two-thirds of their firm billings are from basic design services (an average of 64 percent of billings for all firms). Approximately 10 percent of billings are from planning and predesign services, 9 percent from nonarchitectural design services, and 8 percent from expanded design services.

On average, more than two-thirds of 2011 architecture firm billings (68 percent) were from projects for repeat clients.

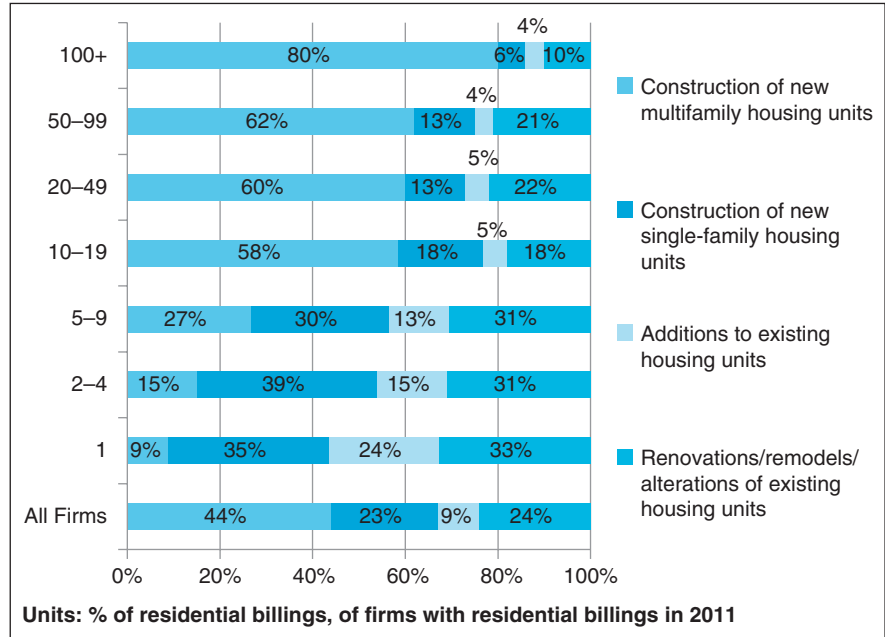
Firms with a commercial/industrial specialization reported the largest share of their firm billings from repeat clients (75 percent), while firms with a residential specialization indicated that nearly half of their billings (45 percent) were from new clients.

### Nearly One-Third of Firm Billings from Government Clients

Clients from state and/or local government entities remain the most common client type for architecture firms of all sizes, accounting for one-quarter of all firm billings in 2011, while at midsize firms they accounted for nearly one-third of their billings (Table 1.13). Small firms reported that nearly half of their billings were from private individuals, but overall private individuals accounted for just 12 percent of billings at all firms.

**TABLE 1.10 Nearly 60 Percent of Firm Billings Are from Institutional Projects**

	2011 (%)	2008 (%)
Single-family residential	6.2	5.5
Multifamily residential	7.5	5.8
<b>Residential Total</b>	<b>13.7</b>	<b>11.3</b>
Office	9.2	11.3
Retail, food services, warehouses, etc.	7.6	8.4
Hospitality	3.7	4.8
Industrial	3.3	3.6
<b>Commercial/Industrial Total</b>	<b>23.8</b>	<b>28.1</b>
Education (K–12)	12.4	9.0
Education (college/university)	12.4	9.0
Health care	17.2	18.2
Justice (e.g., corrections, courthouses)	1.6	2.3
Other government/civic (e.g., Post Office, federal office buildings)	6.4	5.9
Religious	2.0	2.2
Cultural (e.g., museums)	2.0	1.7
Recreational (e.g., sports centers, theme parks)	2.2	2.3
Transportation (e.g., airports, rail, bus, mass transit)	2.2	2.9
<b>Institutional Total</b>	<b>58.4</b>	<b>53.5</b>
Other construction projects	2.3	6.0
Nonconstruction projects	1.8	1.1



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FIGURE 1.14 Two-thirds of Residential Billings Involved New Construction

TABLE 1.11 Majority of Firms Have a Residential or Institutional Specialization

	All Firms 2011 (%)	All Firms 2008 (%)	Number of Employees						
			1 (%)	2-4 (%)	5-9 (%)	10-19 (%)	20-49 (%)	50-99 (%)	100+ (%)
Residential	33.5	35.0	47.2	39.0	26.2	13.6	8.8	5.0	3.0
Commercial/industrial	21.7	21.0	20.6	23.6	20.5	19.3	20.3	23.4	26.4
Institutional	32.9	27.0	18.3	24.2	42.1	59.4	64.8	63.2	64.5
Mixed	11.9	18.0	13.9	13.2	11.2	7.6	6.1	8.3	6.1

Units: Percent of firms with 50 percent or more of 2011 firm billings in given sector  
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TABLE 1.12 Repeat Clients Account for Larger Share of Firm Billings Than in Past

	All Firms 2011 (%)	All Firms 2005 (%)	Residential (%)	Commercial/industrial (%)	Institutional (%)
Repeat clients, noncompetitive selection	43	48	48	55	37
Repeat clients, competitive selection (interview, proposals, etc.)	25	10	8	20	29
New clients, noncompetitive selection	10	26	21	10	7
New clients, competitive selection (interview, proposals, etc.)	23	16	24	15	26

Units: Percent of firm billings  
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