BE A PART OF | Architecture & Construction
ARE YOU FASCINATED BY THE DESIGN OF BUILDINGS AND OUTDOOR LANDSCAPES?
DO YOU ENJOY WORKING WITH YOUR HANDS?

A Career in the Architecture and Construction field might be for you.
Architects and construction professionals are behind every aspect of the structures and landscapes we see in our cities and suburbs, from the initial planning and design to physical construction to maintenance. There are opportunities in architecture and construction available to match a wide variety of personality types and skill sets. A particularly creative individual may want to explore a career as an interior designer. If you’re good with numbers, a math-oriented job such as computer-aided drafting or mechanical engineering might be suitable. Regardless of the type of work or work environment you enjoy, chances are there’s an appropriate career for you in the field of architecture and construction.

Workers are needed in every phase of a construction project and there is plenty of opportunity right now. Businesses are actively seeking individuals that have the desire and interest to work in this field. In the pre-construction stage, professionals such as architects, landscape architects and surveyors are needed to plan the project. Then, the actual construction phase begins, which calls for numerous hands-on workers who can turn the plan into reality, from carpenters to plumbers to electricians. Down the road, maintenance and operations workers are needed to make repairs and updates to a completed project once it’s in use. With a constantly growing population in the U.S. comes a consistent need for new communities and buildings, as well as updates to and maintenance of those communities and buildings. As long as people have a need to live, work and play in the built world, experts in architecture and construction will be in demand.

Ladies! Have you ever considered a career in construction? Now is the time!
If you are looking for a career that you can count on, that pays well and offers you a feeling of accomplishment and pride, then take a chance on the skilled trades. Each year, more women are entering the construction industry. They can handle the same power tools and operate the same machinery as men. Many women love to build things and get a lot of satisfaction from working with their hands – just like men. The Institute for Women’s Policy Research says the women earn 95.2% on the dollar when compared with male counterparts, compared to women earning 79% of what men who have the same jobs in other career fields. The gender achievement gap is closing for women in construction. So why shouldn’t you pursue a career that may match your aptitude and abilities – one that you can be passionate about – regardless of traditional view?
BUILD YOUR SUCCESS – CONSIDER A CAREER IN ARCHITECTURE & CONSTRUCTION

Career clusters are tools that can help you decide which career path to follow and the education and training that are required to reach your chosen career goals. They provide an outline of what you’ll learn in school to prepare for a career in a specific professional field. The Architecture and Construction Cluster is divided into three majors, each encompassing a group of professions that require similar talents, aptitudes and skills. These three majors are Architecture and Pre-Construction, Construction and Maintenance and Operations. Each of these majors involves working with some aspect of a physical structure or outdoor area – be it a church, hospital, office building, golf course, garden or restaurant – but vary greatly in terms of job duties. Some mostly involve physical labor, such as with carpenters, plumbers and electricians.

Others require computer knowledge, artistic talents and/or management skills, such as with architects, landscape architects and construction managers. Some professions in this cluster give workers the choice of being self-employed or working for a firm or company. Required education and training range from a high school diploma and on-the-job training to a master’s degree and specialized licenses. According to the Occupational Information Network (O*NET) there are nearly 100 occupations that fall under the Architecture and Construction Cluster, so students interested in this field have many choices to explore.

THE ARCHITECTURE & CONSTRUCTION CAREER CLUSTER

The Architecture & Construction Career cluster is divided into the following three majors:

» Architecture / Pre-Construction
» Construction
» Maintenance / Operations
LEARNING ARCHITECTURE & CONSTRUCTION IN SOUTH CAROLINA

There are various education resources in South Carolina for those looking to pursue studies and start a career in architecture & construction, including the following:

» Numerous high school programs focus on the architecture and construction industry in many communities often through local Career and Technology Centers

» Sixteen technical colleges operate throughout the state in support of architecture & construction offering related certificate, diploma and associates degrees

» Registered apprenticeship programs offered throughout the state through Apprenticeship Carolina and local business and industry partners

» Universities such as the following offer bachelors, masters and doctoral degrees in various related areas of study:

Clemson University
» Construction Science and Management Department
» Architecture Department

University of South Carolina
» College of Engineering and Computing
» Civil and Environmental Engineering
» Electrical Engineering
» Mechanical Engineering
ARCHITECTURE & PRE CONSTRUCTION: This major involves planning to ensure that buildings and their grounds look attractive, are functional, safe and meet the needs of the people who will spend their time there.

IF YOU CHOOSE ARCHITECTURE & PRE-CONSTRUCTION AS YOUR CAREER MAJOR, YOU MAY BE A PART OF:

- Preparing information about design, structure specifications, materials, color, equipment, estimated costs and construction time
- Calculating dimensions, square footage, profile and component specifications and material quantities using calculators and computers
- Selecting or designing, and purchasing furniture, artwork, and accessories
- Inspecting project sites to monitor progress and to ensure compliance to design specifications and safety or sanitation standards

SAMPLE CAREERS

<table>
<thead>
<tr>
<th>Associate’s Degree or Less</th>
<th>Bachelor’s Degree</th>
<th>Bachelor’s Degree + Graduate Degrees and/or Certifications</th>
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<tbody>
<tr>
<td>Annual Salary Range</td>
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<tr>
<td>$30,000-$50,000</td>
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<tr>
<td>Civil Engineering Technician</td>
<td>Civil Engineer</td>
<td>Urban and Regional Planner</td>
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<td>Architectural Engineering Technician</td>
<td>Interior Designer</td>
<td>CEO</td>
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<td>Building Construction Technician</td>
<td>Landscape Architect</td>
<td>Company Owner</td>
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<td>Geographic Information Systems Technicians</td>
<td>Mechanical Engineer</td>
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<tr>
<td>Architect</td>
<td>Preservationist</td>
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<td>Architect</td>
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Annual Salary Range

- Bachelor’s Degree
  - Civil Engineer
  - Interior Designer
  - Landscape Architect
  - Mechanical Engineer
  - Preservationist
  - Architect

- Bachelor’s Degree + Graduate Degrees and/or Certifications
  - Urban and Regional Planner
  - CEO
  - Company Owner
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<tbody>
<tr>
<td>Architect</td>
<td>Bachelor's Degree</td>
<td>$76,100/year $36.59/hour</td>
<td>7% (Fast as average)</td>
<td>Plan and design houses, factories, office buildings and other structures</td>
<td>• Active listening</td>
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<td>• Writing</td>
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<tr>
<td>Civil Engineering</td>
<td>Associate's Degree</td>
<td>$49,260/year $23.68/hour</td>
<td>5% (Fast as average)</td>
<td>Help Civil Engineers plan, design and build highways, bridges, utilities and other infrastructure projects</td>
<td>• Active listening</td>
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<td>Technician</td>
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<td>Plan, design and build commercial, industrial and residential land development projects</td>
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<td>• Critical thinking</td>
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<td>• Writing</td>
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<tr>
<td>Landscape Architect</td>
<td>Bachelor's Degree</td>
<td>$63,810/year $30.68/hour</td>
<td>5% (Fast as average)</td>
<td>Designs parks and other outdoor spaces of campuses, recreational facilities, private homes and other open areas</td>
<td>• Active listening</td>
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<td>• Writing</td>
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<tr>
<td>Urban and Regional</td>
<td>Master's Degree</td>
<td>$68,220/year $32.80/hour</td>
<td>6% (Fast as average)</td>
<td>Develop land use plans and programs that help create communities accommodate population growth</td>
<td>• Active listening</td>
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<td>Planner</td>
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<td>Revitalize physical features in towns, cities, counties and metropolitan areas</td>
<td>• Coordination</td>
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CONSTRUCTION: Careers in construction involve the hands on work of building the structures we see in our cities and suburbs, from airports to parks, office buildings and hospitals.

IF YOU CHOOSE ARCHITECTURE & PRE-CONSTRUCTION AS YOUR CAREER MAJOR, YOU MAY BE A PART OF:

- Studying specifications in blueprints, sketches or building plans to prepare project layout and determine dimensions and materials required
- Position, join, align and seal structural components such as concrete wall sections and pipes
- Assemble, install, test and maintain electrical or electronic wiring, equipment, appliances, and fixtures, using hand tools and power tools
- Plan, organize and direct activities concerned with the construction and maintenance of structures, facilities and systems

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<tr>
<td>Carpenter</td>
<td>Project manager</td>
<td>CEO</td>
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<tr>
<td>Electrician</td>
<td>Inspector</td>
<td>Company Owner</td>
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<tr>
<td>Roofer</td>
<td>Education and Training Director</td>
<td>General Contractor</td>
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<tr>
<td>Plumber</td>
<td>Project manager</td>
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<tr>
<td>Welder</td>
<td>Project manager</td>
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</tbody>
</table>
| Electrician          | High School Diploma or GED Apprenticeship Associates Degree | $51,880/year $24.94/hour               | 14% (Much faster than average) | • Installation, maintenance and repair of electrical power, communications, lighting and control systems in homes and businesses                                                                                     | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
| Carpenter            | High School Diploma or GED Apprenticeship Associates Degree | $42,090/year $20.24/hour                | 6% (Fast as average)  | • Construct, install and repair building framework and structures such as stairways, doors frames, cabinets, rafters and bridge supports made from wood and other materials  
• May also install cabinets, drywall and siding                                                                                       | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
| Construction Manager | Bachelor's Degree     | $87,400/year $42.02/hour                | 5% (Fast as average)  | • Manage, plan, coordinate, budget and supervise construction projects from start to finish                                                                                                                     | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
| HVAC Technician      | Associates Degree Apprenticeship Certificate or Diploma | $45,110/year $21.69/hour               | 14% (Much faster than average) | • Work on heating, ventilation, cooling and refrigeration systems that control the temperature and air quality in structures                                                                                       | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
MAINTENANCE & OPERATIONS: Maintains the quality of the structures planned, designed and built by workers in the architecture and pre-construction majors.

IF YOU CHOOSE ARCHITECTURE & PRE-CONSTRUCTION AS YOUR CAREER MAJOR, YOU MAY BE A PART OF:

- Examine boilers, pressure vessels, tanks and vats to locate defects such as leaks, weak spots and defective sections so they can be repaired
- Repair or replace defective heating and air conditioning equipment, components or wiring
- Collaborate with environmental scientists, hazardous waste technicians, planners, engineers and other specialists and experts in law and business to address environmental problems
- Dump, spread and tamp asphalt to repair joints and broken pavement on roads

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<td>$100,000+</td>
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<tr>
<td>Boilermaker</td>
<td>Maintenance Planner/Scheduler</td>
<td>Demolition Engineer</td>
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<tr>
<td>HVAC Technician</td>
<td>Heavy Equipment Operator</td>
<td>Environmental Engineer</td>
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<td>Highway Worker</td>
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<td>CEO</td>
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</tbody>
</table>
| Environmental Engineer | Bachelor’s Degree                               | $84,560/year $40.65/hour               | 12% (Faster than average) | • Use the principles of engineering, soil science, biology and chemistry to develop solutions to environmental problems  
• Be involved in efforts to improve recycling, waste disposal, public health and water and air pollution as well as global issues such as unsafe drinking water, climate change and environmental sustainability | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
| HVAC Technician      | Associates Degree Apprenticeship Certificate or Diploma | $45,110/year $21.69/hour               | 14% (Much faster than average) | • Work on heating, ventilation, cooling and refrigeration systems that control the temperature and air quality in structures                                                                                       | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
| Heavy Equipment Operator | High School Diploma or GED/Certificate/On the Job Training | $43,810/year $21.06/hour               | 10% (Faster than average) | • Drive, maintain and control heavy machinery used to construct roads, bridges, building and other structures                                                                                               | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
| Boilermaker          | High School Diploma or GED/Certificate/On the Job Training | $60,120/year $28.90/hour               | 9% (Faster than average) | • Assemble, install and repair boilers, closed vats and other large vessels or containers that hold liquids and gasses                                                                                     | • Active listening  
• Coordination  
• Critical thinking  
• Decision making  
• Judgment  
• Reading comprehension  
• Speaking  
• Writing |
Online Resources

COLLEGES AND UNIVERSITIES

Clemson
School of Architecture
clemson.edu/caah/architecture

Midlands Technical College
Building Construction Technology
midlandstech.edu/cover/constructiontech

USC
Civil and Environmental Engineering
ce.sc.edu

SC State
scsu.edu

EDUCATION DEPARTMENTS, ALLIANCES AND RESOURCES

Alliance of Construction Trades
actaz.net

Career Technical Education (CTE)
careertech.org

Midlands Education and Business Alliance
mebasc.com

National Center for Construction Education and Research
nccer.org

SC State Department of Education
Ed.sc.gov

ARCHITECTURE AND CONSTRUCTION RESOURCES

American Academy of Environmental Engineers and Scientists
aaees.org

American Institute of Constructors and Contractor Certification Commission
professionalconstructor.org

American Society of Civil Engineers
asce.org

American Society of Interior Designers
asid.org

American Society of Landscape Architects
asla.org

Associated Builders and Contractors
abc.org

Associated General Contractors of America
agc.org

Carolinas Associated General Contractors
cagc.org

Building Industry Association of Central South Carolina
biaofcentralsc.com

Maintenance and Construction Technology Alliance
mctasc.com

Mechanical Contractors Association of South Carolina
mcasc.org

Electrical Training Alliance
electricaltrainingalliance.org

National Society of Professional Surveyors
nsps.us.com

O*NET Online
onetonline.org

Skills USA
skillsusa.org

South Carolina Career Information System
sccis.intocareers.org

U.S. Bureau of Labor Statistics
bls.gov

MILITARY

Army Ed Space
armyedspace.com

South Carolina National Guard
scguard.com

Today's Military
todaysmilitary.com

US Air Force
airforce.com

US Air Force Reserve
afreserve.com

US Army
goarmy.com

US Coast Guard
uscg.mil

US Coast Guard Reserve
uscg.mil/reserve

US Marines Corps
marines.com

US Marines Corps Reserve
marforres.marines.mil

US Navy
navy.com

US Navy Reserve
navyreserve.com

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www.youtube.com/mebasc disconnects