

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

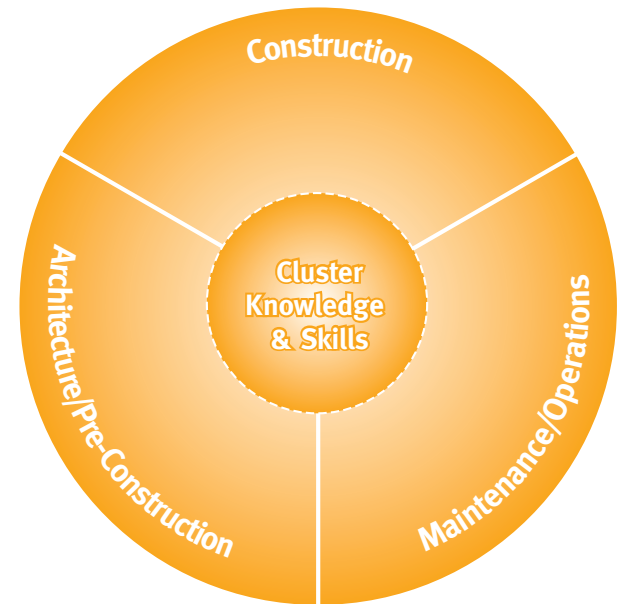
Career clusters are tools that can help you decide which career path to follow and the education and training that are required to reach your chosen career goals. They provide an outline of what you'll learn in school to prepare for a career in a specific professional field. The Architecture and Construction 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

Associate's Degree or Less

**Annual Salary Range
\$30,000-\$50,000**

- Civil Engineering Technician
- Architectural Engineering Technician
- Building Construction Technician
- Geographic Information Systems Technicians

Bachelor's Degree

**Annual Salary Range
\$50,000-\$100,000**

- Civil Engineer
- Interior Designer
- Landscape Architect
- Mechanical Engineer
- Preservationist
- Architect

Bachelor's Degree + Graduate Degrees and/or Certifications

**Annual Salary Range
\$100,000+**

- Urban and Regional Planner
- CEO
- Company Owner

Career	Entry-Level Education	Annual Median Salary & Hourly Pay (2020)	Job Outlook (2020-26)	Responsibilities	Skills
Architect	Bachelor's Degree	\$82,320/year \$39.58/hour	1% (Slow)	<ul style="list-style-type: none"> Plan and design houses, factories, office buildings and other structures 	<ul style="list-style-type: none"> Active listening Coordination Critical thinking Decision making Judgment Reading comprehension Speaking Writing
Civil Engineering Technician	Associate's Degree	\$54,080/year \$26.00/hour	3% (Average)	<ul style="list-style-type: none"> Help Civil Engineers plan, design and build highways, bridges, utilities and other infrastructure projects Plan, design and build commercial, industrial and residential land development projects 	<ul style="list-style-type: none"> Active listening Coordination Critical thinking Decision making Judgment Reading comprehension Speaking Writing
Landscape Architect	Bachelor's Degree	\$70,630/year \$33.96/hour	-2% (Decline)	<ul style="list-style-type: none"> Designs parks and other outdoor spaces of campuses, recreational facilities, private homes and other open areas 	<ul style="list-style-type: none"> Active listening Coordination Critical thinking Decision making Judgment Reading comprehension Speaking Writing
Urban and Regional Planner	Bachelor's Degree	\$75,950/year \$36.52/hour	11% (Fast as average)	<ul style="list-style-type: none"> Develop land use plans and programs that help create communities accommodate population growth Revitalize physical features in towns, cities, counties and metropolitan areas 	<ul style="list-style-type: none"> Active listening Coordination Critical thinking Decision making Judgment Reading comprehension Speaking Writing



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

SAMPLE CAREERS

Associate's Degree or Less

**Annual Salary Range
\$30,000-\$55,000**

- Carpenter
- Roofer
- Welder
- Electrician
- Plumber

Bachelor's Degree

**Annual Salary Range
\$50,000-\$100,000**

- Project manager
- Inspector
- Education and Training Director
- Construction Manager
- Foreman

Bachelor's Degree + Graduate Degrees and/or Certifications

**Annual Salary Range
\$100,000+**

- CEO
- Company Owner
- General Contractor

Career	Entry-Level Education	Annual Median Salary & Hourly Pay (2020)	Job Outlook (2020-26)	Responsibilities	Skills
Electrician	High School Diploma or GED Apprenticeship Associates Degree	\$56,900/year \$27.36/hour	14% (Much faster than average)	<ul style="list-style-type: none"> • Installation, maintenance and repair of electrical power, communications, lighting and control systems in homes and businesses 	<ul style="list-style-type: none"> • Active listening • Coordination • Critical thinking • Decision making • Judgment • Reading comprehension • Speaking • Writing
Carpenter	High School Diploma or GED Apprenticeship Associates Degree	\$49,520/year \$23.81/hour	6% (Fast as average)	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Active listening • Coordination • Critical thinking • Decision making • Judgment • Reading comprehension • Speaking • Writing
Construction Manager	Bachelor's Degree	\$97,180/year \$46.72/hour	8% (Fast as average)	<ul style="list-style-type: none"> • Manage, plan, coordinate, budget and supervise construction projects from start to finish 	<ul style="list-style-type: none"> • Active listening • Coordination • Critical thinking • Decision making • Judgment • Reading comprehension • Speaking • Writing
HVAC Technician	Associates Degree Apprenticeship Certificate or Diploma	\$50,595/year \$24.32/hour	4% (Average)	<ul style="list-style-type: none"> • Work on heating, ventilation, cooling and refrigeration systems that control the temperature and air quality in structures 	<ul style="list-style-type: none"> • 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

SAMPLE CAREERS

Associate's Degree or Less

**Annual Salary Range
\$30,000-\$55,000**

- Heavy Equipment Operator
- Highway Worker
- Boilermaker
- HVAC Technician

Bachelor's Degree

**Annual Salary Range
\$50,000-\$100,000**

- Maintenance Planner/Scheduler
- Specialty Contractor

Bachelor's Degree + Graduate Degrees and/or Certifications

**Annual Salary Range
\$100,000+**

- Demolition Engineer
- Environmental Engineer
- CEO
- Company Owner

Career	Entry-Level Education	Annual Median Salary & Hourly Pay (2020)	Job Outlook (2020-26)	Responsibilities	Skills
Environmental Engineer	Bachelor's Degree	\$91,120/year \$44.29/hour	3% (Average)	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Active listening • Coordination • Critical thinking • Decision making • Judgment • Reading comprehension • Speaking • Writing
HVAC Technician	Associates Degree Apprenticeship Certificate or Diploma	\$50,590/year \$24.32/hour	4% (Average)	<ul style="list-style-type: none"> • Work on heating, ventilation, cooling and refrigeration systems that control the temperature and air quality in structures 	<ul style="list-style-type: none"> • 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	\$49,100/year \$23.61/hour	4% (Average)	<ul style="list-style-type: none"> • Drive, maintain and control heavy machinery used to construct roads, bridges, building and other structures 	<ul style="list-style-type: none"> • Active listening • Coordination • Critical thinking • Decision making • Judgment • Reading comprehension • Speaking • Writing
Boilermaker	High School Diploma or GED/ Certificate/On the Job Training	\$65,360/year \$31.41/hour	1% (Slow)	<ul style="list-style-type: none"> • Assemble, install and repair boilers, closed vats and other large vessels or containers that hold liquids and gasses 	<ul style="list-style-type: none"> • Active listening • Coordination • Critical thinking • Decision making • Judgment • Reading comprehension • Speaking • Writing

Online Resources

COLLEGES AND UNIVERSITIES

Clemson University
School of Architecture www.webster.edu

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

University of South Carolina
Civil and Environmental Engineering
ce.sc.edu

South Carolina State University
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
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

Mechanical Contractors Association
of South Carolina
mcasc.org

Electrical Training Alliance
electricaltrainingalliance.org

National Society of Professional Surveyors
nspc.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.ng.mil

Today's Military
todaysmilitary.com

US Air Force
airforce.com

US Air Force Reserve
afreserve.com

US Army
goarmy.com

US Army Reserve
goarmy.com/reserve

US Coast Guard
gocoastguard.com

US Coast Guard Reserve
uscg.mil/reserve

US Marines Corps
marines.com

US National Guard
nationalguard.com

US Navy
navy.com

US Navy Reserve
navyreserve.com



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