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Architecture

A majority of the following information is in regard to Architects because there is no information on Architectural Technicians available in MOIS, Discover, or the Occupational Outlook Handbook.

It is important to note that enrollment in the Architecture program at OCC has declined 48.8% in the past five years.

Career Path: Architects have several long term career opportunities; they usually start occupations as drafters, then work as architects, then advance to project manager, and finally have opportunities to work as principals (MOIS). Mr. Teevens from Washtenaw Community College indicated that architectural career paths depend upon the individual.

Occupational Growth: Through the year 2005, Michigan employment of Architects should increase faster than the average of all other occupations. In 1994, there were 3675 Architects employed in Michigan. If economic growth is slow, architectural demand decreases, because 3/4 of all architectural business comes from designing commercial buildings and public and institutional facilities. Therefore demand depends on spending and public construction (MOIS).

Salary/Wage: In 1994 in Michigan, architects earned an average annual salary ranging from \$32,532 to \$46,656. In 1996, architects working for governmental agencies in Michigan earned an average salary ranging from \$27,493 to \$73,560 (MOIS). Mr. Teevens from Washtenaw Community College estimated an entry-level wage of \$8.00 to \$13.00 per hour for Architectural Technicians.

Similar Programs (internal): There are no programs at the college which offer the same courses and/or focus of study as Architecture. However, some architects begin their careers as drafters, and OCC has a Drafting Certificate program.

Similar Programs (external): Several community colleges in Michigan offer two-year Associate degree programs in the area of Architectural Technology, and with the CIP Code of 15.0101.

Certification (student): Mr. Teevens from Washtenaw Community College indicated that Architectural Technicians are not required to be certified to work in the field.

Accreditation (program): It is not necessary for the program to be accredited by an external organization other than the NCA; no architectural organizations have to accredit/certify the program.

Transferability: After making calls to other institutions, I was unable to obtain transfer information.

Target Population: Mr. Teevens from Washtenaw Community College indicated that his program is comprised mostly of males, and that there are a few women and minorities; would consider his program to be nearly representative of the county in which it is located.

Architects

(D.O.T 001.061-010 and .167-010)

<*> Nature of the Work

- > Architects design buildings and other structures. The design of a
- > building involves far more than its appearance. Buildings must also
- > be functional, safe, and economical and must suit the needs of the
- > people who use them. Architects take all these things into
- > consideration when they design buildings and other structures.
- >
- >Architects provide a wide variety of professional services to individuals
- > and organizations planning a construction project. They may be
- > involved in all phases of development, from the initial discussion of
- > general ideas with the client through construction. Their duties
- > require a number of skills-design, engineering, managerial,
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- > require a number of skills-design, engineering, managerial,
- > communication, and supervisory.
- >
- >The architect and client first discuss the purposes, requirements, and
- > budget of a project. Based on the discussions, architects may prepare
- > a program-a report specifying the requirements the design must meet.
- > In some cases, the architect assists in conducting feasibility and
- > environmental impact analyses and selecting a site. The architect
- > then prepares drawings and written information presenting ideas for
- > the client to review.
- >
- >After the initial proposals are discussed and accepted, architects develop
- > final construction plans. These plans show the building's appearance
- > and details for its construction. Accompanying these are drawings of
- > the structural system; air-conditioning, heating, and ventilating
- > systems; electrical systems; plumbing; and possibly site and
- > landscape plans. They also specify the building materials and, in
- > some cases, the interior furnishings. In developing designs,
- > architects follow building codes, zoning laws, fire regulations, and
- > other ordinances, such as those that require easy access by disabled

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- > other ordinances, such as those that require easy access by disabled
- > persons. Throughout the planning stage, they make necessary changes.
- > Although they have traditionally used pencil and paper to produce
- > design and construction drawings, architects are increasingly turning
- > to computer-aided design and drafting (CADD) technology for these
- > important tasks.
- >
- > Architects may also assist the client in obtaining construction bids,
- > selecting a contractor, and negotiating the construction contract. As
- > construction proceeds, they may be employed by the client to visit
- > the building site to ensure that the contractor is following the
- > design, meeting the schedule, using the specified materials, and
- > meeting the specified standards for the quality of work. The job is
- > not complete until all construction is finished, required tests are
- > made, and construction costs are paid.
- >
- > Architects design a wide variety of buildings, such as office and apartment
- > buildings, schools, churches, factories, hospitals, houses, and
- > airport terminals. They also design multibuilding complexes such as
- > urban centers, college campuses, industrial parks, and entire

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- > urban centers, college campuses, industrial parks, and entire
- > communities. In addition to designing buildings, they may advise on
- > the selection of building sites, prepare cost analysis and land-use
- > studies, and do long-range planning for land development.
- >
- > Architects sometimes specialize in one phase of work. Some specialize in the
- > design of one type of building-for example, hospitals, schools, or
- > housing. Others specialize in construction management or the
- > management of their firm and do little design work. They often work
- > with engineers, urban planners, interior designers, landscape
- > architects, and others.
- >
- > During a training period leading up to licensure as architects, entry-level
- > workers are called intern-architects. This training period gives them
- > practical work experience while they prepare for the Architect
- > Registration Examination. Typical duties may include preparing
- > construction drawings on CADD, assisting in the design of one part of
- > a project, or managing the production of a small project.

<*> Working Conditions

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<*> Working Conditions

- > Architects generally work in a comfortable environment. Most of their
- > time is spent in offices advising clients, developing reports and
- > drawings, and working with other architects and engineers. However,
- > they also often work at construction sites reviewing the progress of
- > projects.
- >
- >Architects may occasionally be under great stress, working nights and
- > weekends to meet deadlines; a 40-hour workweek, however, is usual.

<*> Employment

- > Architects held about 91,000 jobs in 1994. Most jobs were in
- > architecture firms-the majority of which employ fewer than five
- > workers. Nearly one- third were self-employed architects, practicing
- > as partners in architecture firms or on their own. A few worked for
- > builders, real estate developers, and for government agencies
- > responsible for housing, planning, or community development, such as
- > the U.S. Departments of Defense, Interior, and Housing and Urban

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- > the U.S. Departments of Defense, Interior, and Housing and Urban
- > Development, and the General Services Administration.

<*> Training , Other Qualifications, and Advancement

- > All States and the District of Columbia require individuals to be
- > licensed (registered) before they may call themselves architects or
- > contract to provide architectural services. Many architecture school
- > graduates work in the field even though they are not licensed.
- > However, a licensed architect is required to take legal
- > responsibility for all work. Three requirements generally must be met
- > for licensure: A professional degree in architecture, a period of
- > practical training or internship (usually for 3 years), and passage
- > of all sections of the Architect Registration Examination.
- >
- >In many States, the professional degree in architecture must be from one of
- > the approximately 100 schools of architecture with programs
- > accredited by the National Architectural Accrediting Board (NAAB).
- > However, State architectural registration boards set their own
- > standards, so graduation from a non NAAB-accredited program may meet

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- > standards, so graduation from a non NAAB-accredited program may meet
- > the education requirement for licensure in some States. There are
- > several types of professional degrees in architecture. The majority
- > of all architecture degrees are from 5-year Bachelor of Architecture
- > programs intended for students entering from high school or with no
- > previous architecture training. Some schools offer a 2-year Master of
- > Architecture program for students with a preprofessional
- > undergraduate degree in architecture or a related area, or a 3- or
- > 4-year Master of Architecture program for students with a degree in
- > another discipline. In addition, there are many combinations and
- > variations of these degree programs.

>

- >The choice of degree type depends upon each individual's preference and
- > educational background. Prospective architecture students should
- > carefully consider the available options before committing to a
- > program. For example, although the 5-year Bachelor of Architecture
- > program offers the fastest route to the professional degree, courses
- > are specialized and, if the student does not complete the program,
- > moving to a nonarchitecture program may be difficult. A typical
- > program includes courses in architectural history and theory,

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- > program includes courses in architectural history and theory,
- > building design, including its technical and legal aspects,
- > professional practice, math, physical sciences, and liberal arts.
- > Many architecture schools also offer graduate education for those who
- > already have a bachelor's or master's degree in architecture or other
- > areas. Although graduate education beyond the professional degree is
- > not essential for practicing architects, it is normally required for
- > research, teaching, and certain specialties.

>

- >Architects must be able to visually communicate their ideas to clients.
- > Artistic and drawing ability is very helpful in doing this, but not
- > essential. More important is a visual orientation and the ability to
- > conceptualize and understand spatial relationships. Good
- > communication skills (both written and oral), the ability to work
- > independently or as part of a team, and creativity are important
- > qualities for anyone interested in becoming an architect. Computer
- > literacy is also required as most firms use computers for word
- > processing, specifications writing, two- and three- dimensional
- > drafting, and financial management. A knowledge of computer-aided

> design and drafting (CADD) is helpful and will become more important
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Architects

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> design and drafting (CADD) is helpful and will become more important
> as architecture firms continue to adopt this technology.

>
>New graduates usually begin in architecture firms, where they assist in
> preparing architectural documents or drawings. They also may do
> research on building codes and materials; or write specifications for
> building materials, installation criteria, the quality of finishes,
> and other related details. Graduates with degrees in architecture
> also enter related fields such as graphic, interior, or industrial
> design; urban planning; real estate development; civil engineering;
> or construction management.

>
>In large firms, architects may advance to supervisory or managerial
> positions. Some architects become partners in established firms;
> others set up their own practice.

<*> Job Outlook

> Architects' employment has traditionally been affected by the level
> of local construction, particularly of noninstitutional structures
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> of local construction, particularly of noninstitutional structures
> such as office buildings, shopping centers, schools, and healthcare
> facilities. The boom in construction of commercial office space and
> some other types of non-residential structures during the 1980s means
> there will be less construction of this type between 1994 and 2005.
> Nevertheless, employment growth of architects is expected to increase
> about as fast as the average for all occupations during this period.

>
>The needed renovation and rehabilitation of old buildings, particularly in
> urban areas where space for new buildings is becoming limited, is
> expected to provide jobs for architects and to compensate somewhat
> for any slowdowns in jobs related to new construction. Also, the
> expected expansion of the population under age 15 and over age 65
> should spur the demand for public and private buildings, such as
> schools and healthcare facilities. The need to replace architects who
> retire or leave the labor force for other reasons will provide many
> additional job openings.

>

>Despite expected employment growth and the increased number of openings due
> to replacement needs, prospective architects may face competition,
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- > to replacement needs, prospective architects may face competition,
- > especially if the number of architecture degrees awarded remain at,
- > or above, current levels. Traditionally, many individuals are
- > attracted to this occupation, and there are often numerous applicants
- > for available openings, especially in the most prestigious firms.
- > Because noninstitutional construction is sensitive to cyclical
- > changes in the economy, architects will face particularly strong
- > competition for jobs or clients during recessions, and layoffs may
- > occur. Those involved in the design of institutional buildings such
- > as schools, hospitals, nursing homes, and correctional facilities,
- > will be less affected by fluctuations in the economy.

>Even in times of overall good opportunities, there may be areas of the
> country with poor opportunities. Architects who are licensed to
> practice in one State must meet the licensing requirements of other
> States before practicing elsewhere. These requirements are becoming
> more standardized, however, facilitating movement to other States.

>Because the use of computer-aided design and drafting is becoming more
> prevalent in architecture firms, prospective architects who know CADD
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- > prevalent in architecture firms, prospective architects who know CADD
- > technology may experience better opportunities in the future,
- > particularly in a competitive job market.

<*> Earnings

- > According to The American Institute of Architects, the median salary
- > for intern-architects in architecture firms was \$24,700 in 1993.
- > Licensed architects with 8 to 10 years' experience but who were not
- > managers or principals of a firm earned a median salary of \$38,900 in
- > 1993; and principals or partners of firms earned a median salary of
- > \$50,000 in 1993. Partners in some large practices earned over
- > \$110,000. Most employers of wage and salary architects offer paid
- > vacation and sick leave, and a majority also provide medical and life
- > insurance plans to their employees. Employees of very small
- > architecture firms (fewer than 5 employees) are less likely to

> receive these benefits.

>

>Architects who are partners in well-established architecture firms generally

> earn much more than their salaried employees, but their income may

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Architects

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> earn much more than their salaried employees, but their income may

> fluctuate due to changing business conditions. Some architects may

> have difficulty getting established in their own practices and may go

> through a period when their expenses are greater than their income,

> requiring substantial financial resources.

<*> Related Occupations

> Architects design and construct buildings and related structures.

> Others who engage in similar work are landscape architects , building

> contractors, civil engineers , urban planners , interior designers,

> industrial designers, and graphic designers.

<*> Sources of Additional Information

> Information about education and careers in architecture can be

> obtained from:

> Architecture Fact Book, The American Institute of Architects, 1735

> New York Ave. NW., Washington, DC 20006.

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Architects

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>Society of American Registered Architects, 1245 S. Highland Ave., Lombard,

> IL 60148.

<Image>Occupational Outlook Handbook Home Page

<Image>BLS Home Page

Discover

Date: Wed Oct 16 14:09:14 1996

WORK TASKS

ARCHITECTS use their knowledge of architectural design, theory, and history, construction materials and methods, engineering practices, and social influences to design and oversee the construction of safe, functional, and attractive buildings and spaces which meet client and the public's needs. They discuss the purpose, needs, and budget of a

project with the client. They then prepare drawings and other documents showing details of construction and specifying building materials. They must follow building codes, zoning laws, fire regulations, and other ordinances. As construction proceeds, architects may visit building sites to ensure that specified standards for the quality of work are being met.

Date: Wed Oct 16 14:09:28 1996

WORK SETTING

ARCHITECTS work for:

- architectural firms
- large corporations
- real estate developers
- local, state, and federal agencies
- construction firms
- urban and town planning offices
- colleges and universities
- preservation firms
- engineering firms
- interior design firms

Date: Wed Oct 16 14:09:37 1996

TOOLS AND MATERIALS

ARCHITECTS work with:

- computer-aided design (CAD) equipment
- drafting and sketching tools
- drawings, designs, and models
- building and zoning regulations and ordinances
- building materials and construction methods
- contracts
- a variety of consultants, clients, and other people

Date: Wed Oct 16 14:09:46 1996

RELATED CIVILIAN OCCUPATIONS

Other occupations that are related to an
ARCHITECT:

Landscape Architect
Airport Engineer
Civil Engineer
Structural Engineer
Metrologist
Industrial Engineer
Quality Control Engineer
Graphic Designer
Interior Designer
Furniture Designer

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RELATED MILITARY OCCUPATIONS

Military occupational clusters related to an Architect:

1174 Civil Engineer

Some specific military jobs:

ARMY

Utilities Operation/Maintenance Tech
Engineer, General
Combat Engineer
Facilities/Cntrct Construction Mngt Eng

NAVY

Facilities Engineering Officer
Staff Civil Engineer
Facilities Planning & Programming Off
Facilities Design Officer
Facilities Research Officer
Facilities Construction/Services Off
Public Works Officer
Public Works Operations Officer
Public Works Maintenance Officer
Public Works Utilities Officer
Public Works Planning Officer
Facilities Manager

AIR FORCE

Civil Engineer, Staff
Civil Engineer, Architect/Architecural
Civil Engineer, Readiness Eng, Entry
Civil Engineer, Civil Engineer, Entry
Civil Engineer, Readiness Non-Eng/Entry
Civil Engineer, Electrical Eng, Entry
Civil Engineer, Mechanical Eng, Entry
Civil Engineer, General Engineer, Entry
Civil Eng, Explosive Ordnance Disposal
Civil Engineer, Environmental Engineer
Civil Eng, Explosive Ordnance Disposal

MARINE CORPS

Basic Utilities Officer
Utilities Officer
Basic Engineer/Construction/Equip Off
Engineer Officer
Engineer Equipment Officer
Facilities Management Officer

COAST GUARD

Civil Engineering
End of List

Date: Wed Oct 16 14:10:15 1996

TRAINING FOR ENTRY

In most states, ARCHITECTS must obtain their professional degree in architecture from one of about 100 schools of architecture with programs accredited by the National Architectural Accrediting Board. Most architecture degrees are from 5-year Bachelor of Architecture programs. Although graduate education beyond the professional degree is not essential for practicing architects, it is usually required for research, teaching, and certain specialties.

All U.S. states and territories require architects to be licensed. To become licensed, you must meet the following requirements:

- have a professional degree in architecture that is accredited by the National Architectural Accrediting Board (NAAB)
- serve a three-year internship under the supervision of an architect; in many states, participation in the Intern Development Program (IDP) is required
- pass the four-day Architect Registration Examination (ARE)

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TRAINING FOR ENTRY

Type of training and/or education that could lead to a job as an ARCHITECT:

Type of Education/Training:	Programs of Study:
<input type="checkbox"/> On-the-job training	Architect/Envir Design,Gen
<input type="checkbox"/> Apprenticeship	Architecture (Pre-Archit)
<input type="checkbox"/> Voc/technical school	Architectural Engineering
<input checked="" type="checkbox"/> Two-year college	Architectural Design
<input type="checkbox"/> Four-year college	
<input type="checkbox"/> Graduate school	
<input type="checkbox"/> Military	
<input type="checkbox"/> No formal requirement	

Press F1.

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TRAINING FOR ENTRY

Type of training and/or education that could lead to
a job as an ARCHITECT:

Type of Education/Training:	Programs of Study:
<input type="checkbox"/> On-the-job training	Architect/Envir Design,Gen
<input type="checkbox"/> Apprenticeship	Architecture (Pre-Archit)
<input type="checkbox"/> Voc/technical school	Architectural Engineering
<input checked="" type="checkbox"/> Two-year college	Architectural Design
<input checked="" type="checkbox"/> Four-year college	
<input type="checkbox"/> Graduate school	
<input type="checkbox"/> Military	
<input type="checkbox"/> No formal requirement	

Press F1.

Date: Wed Oct 16 14:10:47 1996

TRAINING FOR ENTRY

Type of training and/or education that could lead to
a job as an ARCHITECT:

Type of Education/Training:	Programs of Study:
<input type="checkbox"/> On-the-job training	Architecture
<input type="checkbox"/> Apprenticeship	Architect/Env Design-Other
<input type="checkbox"/> Voc/technical school	Architect Engr/Design Tech
<input checked="" type="checkbox"/> Two-year college	
<input checked="" type="checkbox"/> Four-year college	
<input checked="" type="checkbox"/> Graduate school	
<input type="checkbox"/> Military	
<input type="checkbox"/> No formal requirement	

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PERSONAL QUALITIES

Helpful qualities for ARCHITECTS include:

- an aptitude for solving technical and organizational problems
- good communication skills
- an ability to visualize objects in three dimensions
- drawing and sketching skills
- creativity
- a concern for accuracy and detail
- organizational and leadership skills
- an ability to get along well with others
- self-discipline
- mathematical ability

Date: Wed Oct 16 14:11:06 1996

CAREER LADDER

In large firms, ARCHITECTS may advance to supervisory or managerial positions. Some may become partners in established firms. For many architects, the ultimate goal is to set up their own firm.

Date: Wed Oct 16 14:11:13 1996

NATIONAL SALARY RANGE

The Economic Research Institute reported that the average starting salary was \$24,000 in 1996 for an ARCHITECT. The average salary was \$46,500 for all workers in this field and \$56,000 for those with experience.

According to the National Association of Colleges and Employers Salary Survey, the average yearly salary offered beginning ARCHITECTS with a bachelor's degree in architectural design was \$23,500 in 1995.

Date: Wed Oct 16 14:11:24 1996

NATIONAL JOB OUTLOOK

The Bureau of Labor Statistics of the federal government provided the following data for Architects, except Landscape and Marine.

SIZE OF CATEGORY: Medium (90,928 Workers)
SIZE WILL: Grow Moderately (17%)

This category is expected to grow by 17% through the year 2005 due to an increase in construction. Competition will continue for jobs in the most prestigious firms, which offer good potential for career advancement. Competition will also increase during recession or slowdowns in building.

Press F1. Press F5 for more information.

Date: Wed Oct 16 14:11:32 1996

STATE-SPECIFIC JOB OUTLOOK

The graph below shows the projected % growth in all occupations compared to the % growth for Architects, except Landscape and Marine.

of workers in 1992: 90,928

Projected # of new job
openings from 1992 to
2005 due to growth: 15,066

25% 17%

= Average growth in all
occupations

= Growth for this occupation
(1992 to 2005)

Press F1.

Date: Wed Oct 16 14:11:43 1996

THE GOOD SIDE AND THE BAD SIDE

Some ARCHITECTS may like:

- the variety of their work
- working with people
- solving problems
- the opportunity to be creative
- creating something that will last

Some ARCHITECTS may dislike:

- working under stress and working nights and weekends to meet deadlines
- a lot of competition for jobs
- comparatively low salaries and few benefits

Date: Wed Oct 16 14:11:52 1996

MORE INFORMATION

You are likely to face the following physical demands as an ARCHITECT:

Lifting:	Light	Hearing:	Frequently
Climbing:	Not Needed	Tasting/	
Balancing:	Not Needed	Smelling:	Not Needed
Stooping:	Not Needed	Close Vision:	Frequently
Kneeling:	Not Needed	Far Vision:	Occasionally
Crouching:	Not Needed	Depth	
Crawling:	Not Needed	Perception:	Frequently
Reaching:	Occasionally	Adjusting	
Handling:	Occasionally	to Darkness:	Occasionally
Fingering:	Occasionally	Color Vision:	Occasionally
Feeling:	Not Needed	Width	
Talking:	Frequently	of Vision:	Not Needed

Press F1.

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MORE INFORMATION

For more information about ARCHITECT, you may write to the following:

American Institute of Architects
1735 New York Avenue, NW
Washington, DC 20006-5292

Association of Collegiate Schools of
Architecture
1735 New York Avenue, NW
3rd Floor
Washington, DC 20006

Press PgDn or press F1.

Date: Wed Oct 16 14:12:11 1996

MORE INFORMATION

Use these reference numbers to find information in books about an ARCHITECT:

Dictionary of Occupational Titles #: 001.061-010
Standard Occupational Classification #: 1610
Guide to Occupational Exploration #: 05.01.07

WORLD-OF-WORK MAP

Cluster: Arts
Region: 10
Family: Applied Arts (Visual)
DISCOVER #: 20

Press F1.