Architectural Technologists and Technician

NOC 2251

Introduction

Architectural technologists and technicians may work independently or provide technical assistance to professional architects and civil design engineers in conducting research, preparing drawings, architectural models, specifications and contracts and in supervising construction projects. Architectural technologists and technicians are employed by architectural and construction firms, and governments.

The most important Essential Skills for Architectural Technologists and Technicians are:

- Document Use
- Numeracy

Document Sections

- Reading Text
- Document Use
- Writing
- Numeracy
- Oral Communication
- Thinking Skills
    - Problem Solving
    - Decision Making
    - Critical Thinking
    - Job Task Planning and Organizing
    - Significant Use of Memory
    - Finding Information
- Working with Others
- Computer Use
- Continuous Learning
- Notes

A. Reading Text

Reading Text

Tasks	Complexity Level	Examples
Typical	1 to 3	Architectural Technologists and Technicians • review short comments written on client requirement forms by members of architectural teams. (1) • read e-mails on a variety of topics from clients, architects, engineers, designers and other technicians and technologists. (2) • read trade publications such as Architectural Record, Canadian Architect, Architecture Québec and Esquisse to stay abreast of trends or learn about award-winning buildings and the architects who designed them. (2) • read user manuals for computers and software. For example, they may refer to software user manuals to review specific functions or steps needed to apply lighting, colours, materials and finish maps to virtual three-dimensional models of architectural designs. (3) • read specification manuals for building projects. For example, they refer to specification manuals for information about tasks, materials, quality concerns, standards and processes to be used. (3)
Most Complex	3	• refer to building codes, zoning regulations, energy consumption regulations, by-laws and other national, provincial and municipal regulations to ensure that architectural designs, procedures and practices are compliant with rules and regulations. For example, they may review heritage by-laws to verify that garages of historical buildings can be converted into living spaces. (3) • refer to best practice guides published by the Canada Mortgage and Housing Corporation. They adapt these design recommendations and standards to their own projects. For example, they may review a guide to wood frame house construction to find guidelines for the design of kitchen cabinets, closets and stairs. (3)

Reading Summary

The symbol √ is explained in the Use of Symbols section.

	Purpose for Reading			
Type of Text	**To scan for specific information/To locate information**	**To skim for overall meaning, to get the 'gist'**	**To read the full text to understand or to learn**	**To read the full text to critique or to evaluate**
Forms	√	√		
Labels	√	√		
Notes, Letters, Memos	√	√	√	
Manuals, Specifications, Regulations	√	√	√	
Reports, Books, Journals	√	√	√	

B. Document Use

Document Use

Tasks	**Complexity Level**	**Examples**
Typical	1 to 4	Architectural Technologists and Technicians • review construction project signage to ensure that hazards are marked properly. (1) • read lists of documents that need to accompany development and building permit applications. (1) • check the labels on materials received from suppliers for technical specifications. (1) • interpret a variety of icons to navigate professional association websites or search suppliers' websites for product information. (2) • refer to tables included in building codes, by-laws and best practice guides to verify structural design requirements. For example, they may refer to a table from a Canada Mortgage and Housing Corporation guide on wood frame house construction to verify the minimum thickness for several types of walls. (2) • read assembly drawings to understand building procedures. For example, they may look at drawings showing the proper way to assemble roofs. (3)

Most Complex	4 to 4	• refer to schematic drawings of mechanical and electrical systems when monitoring and inspecting construction projects in collaboration with engineers or engineering technologists. (3) • interpret graphs showing allowable window coverage under various conditions. For example, they may interpret a graph to determine how big windows should be, considering the wind loading in the area. (3) • read home design forms to review clients' building requirements. They locate information about building types and locations, intended uses, the dimensions and topography of building sites, existing trees, possible views, required parking, anticipated budgets, preferred exterior materials, colours, architectural styles and the required numbers, sizes and locations of rooms. (3) • review architectural drawings submitted by employees or contractors to ensure that design criteria have been satisfied and specifications have been respected. They take measurements from scale drawings to check that all items have been appropriately represented. (4) • complete extensive development and building permit application forms which require combining information from several sources. For example, to fill in an application for a development permit in an established community, an architectural technologist may have to complete or collect certificates of titles, restrictive grade slip forms, site plans, colour photographs, letters of authorization, restrictive covenants and site contamination statements. (4)

Examples

- sketch building footprints to illustrate how buildings must be positioned to conform with building codes and regulations.
- may prepare construction schedules for contracting firms, identifying each construction activity and its target completion date.
- prepare lists of deficiencies discovered when inspecting construction projects.
- create assembly drawings to show special construction procedures to builders. For example, they may create drawings to show details of the continuity of air and vapour barriers at the juncture of wall and roof assemblies.
- may prepare wiring diagrams of proposed electrical layouts for new home designs and renovations, identifying the various circuits, locations of electrical and telecommunication outlets, lighting fixtures and switches.
- prepare project cost estimate tables giving quantities needed and unit costs for all elements of demolition and new construction, including building materials, millwork, architectural specialties, electrical and mechanical components and consulting.
- prepare two-dimensional drawings of architectural designs. For example, they may prepare site plans showing lot sizes and shapes, grading elevations and landscaping, access and parking, positions of structures and the locations of electrical, sewer, gas and water services.

Document Use Summary

- Read signs, labels or lists.
- Complete forms by marking check boxes, recording numerical information or entering words, phrases, sentences or text of a paragraph or more. The list of specific tasks varies depending on what was reported.
- Read completed forms containing check boxes, numerical entries, phrases, addresses, sentences or text of a paragraph or more. The list of specific tasks varies depending on what was reported.
- Read tables, schedules or other table-like text (e.g., read work shift schedules).
- Create tables, schedules or other table-like text.
- Enter information on tables, schedules or other table-like text.
- Obtain specific information from graphs or charts.
- Interpret information on graphs or charts.
- Recognize common angles such as 15, 30, 45 and 90 degrees.
- Draw, sketch or form common shapes such as circles, triangles, spheres, rectangles, squares, etc.
- Interpret scale drawings (e.g. blueprints or maps).
- Take measurements from scale drawings.
- Draw to scale.
- Read assembly drawings (e.g. those found in service and parts manuals).
- Create assembly drawings.
- Read schematic drawings (e.g. electrical schematics).
- Create schematic drawings.
- Make sketches.
- Obtain information from sketches, pictures or icons (e.g., computer toolbars).

C. Writing

Writing

Tasks	Complexity Level	Examples
Typical	1 to 4	Architectural Technologists and Technicians • write short text entries on forms. For example, they may write project descriptions on development and building permit applications. They may also write justifications on zoning variance applications. (1) • write e-mails to co-workers, colleagues and clients to schedule or confirm meetings, ask for information or respond to enquiries. (1) • write letters to invite contractors to submit tenders for construction, expansion, reconstruction and renovation projects. They usually modify project titles and submission deadlines on invitation to tender templates to create new invitations, using standard spelling and grammar. (2)

Most Complex	4	• write minutes of project meetings using established formats. These minutes must be explicit and precise to ensure all team members share a common understanding of issues, timelines and action plans. (3) • write responses to requests for proposals for architectural services work. Each response must address the key components of the request and convey complex concepts in an effective manner. The preparation of these submissions usually involves gathering and selecting technical descriptions from multiple sources and re-writing them for non-technical audiences. In some instances, however, content must be written for the sole purpose of the request. (4) • may prepare comprehensive building specifications for construction entrepreneurs. These specifications comprise detailed descriptions of tasks to be performed, materials, products, accessories, standards and processes to be used, procedures for changes to contract and other contract requirements such as the need to respect architectural plans, codes and regulations and to repair deficiencies.

Writing Summary

The symbol √ is explained in the Use of Symbols section.

	Purpose for Writing						
Length	**To organize/ to remember**	**To keep a record/to document**	**To inform/ to request information**	**To persuade/ to justify a request**	**To present an analysis or comparison**	**To present an evaluation or critique**	**To entertain**
Text requiring less than one paragraph of new text	√	√	√				
Text rarely requiring more than one paragraph			√				
Longer text		√	√	√	√		

D. Numeracy

The symbol √ is explained in the Use of Symbols section.

Numeracy

Tasks	Complexity Level	Examples
√ Money Math	2 to 3	Architectural Technologists and Technicians • total clients' bills. They multiply the numbers of hours worked on projects by hourly rates, add extra charges for courier fees and permits and calculate applicable taxes. (Money Math), (2)
√ Scheduling, Budgeting & Accounting Math	3 to 4	• approve contractors' invoices for work done on construction, expansion, reconstruction and renovation projects. They make sure that suppliers have billed contracted prices for equipment, materials and labour and that the taxes have been calculated correctly. (Money Math), (3)
√ Measurement and Calculation Math	1 to 5	• review tenders for construction work. They perform comparative analyses of data submitted by contractors and determine which bids offer the best prices and most feasible work plans. (Scheduling, Budgeting & Accounting Math), (3)
√ Data Analysis Math	1 to 2	• monitor project schedules and budgets. They ensure that project expenditures are within budgeted amounts and that projects are progressing on schedule. They frequently adjust schedules and change budget line items because of unexpected events and unforeseen problems. (Scheduling, Budgeting & Accounting Math), (4)
		• calculate occupational densities by dividing numbers of residents by living areas in square meters. (Measurement and Calculation Math), (1)
√ Numerical Estimation	1 to 3	• take site measurements to verify the location of immovable items such as street lights and fire hydrants identified in surveyors' reports. (Measurement and Calculation Math), (2)
		• calculate the areas of proposed buildings, rooms, walls and windows. They perform these calculations by adding the areas of component shapes such as rectangles, triangles and circles. (Measurement and Calculation Math), (3)

		• take precise measurements of existing rooms, columns, doors and windows using laser distance meters. (Measurement and Calculation Math), (3) • calculate areas and volumes of complex shapes. For example, a technologist may calculate the area of an oval roof or the volume of kidney-shaped swimming pool. (Measurement and Calculation Math), (4) • use geometry and trigonometry to calculate the angles of intersections and lengths of existing structural elements such as walls and ceilings. (Measurement and Calculation Math), (5) • verify that the window area proposed in architectural plans does not exceed the area allowed in building by-laws. (Data Analysis Math), (1) • verify that the door clearance, placement of mirrors and location of hardware are within acceptable ranges to enable accessibility for users in wheelchairs. (Data Analysis Math), (1) • calculate the average cost of various building materials over several projects. (Data Analysis Math), (2) • estimate the time needed to obtain building or development permits using past experience as a guide. (Numerical Estimation), (1) • estimate the number of project hours which should be assigned for various design tasks. They are guided by past requirements but they must allow time for unexpected difficulties. (Numerical Estimation), (2) • estimate the magnitude of construction budgets taking into consideration the quantities and unit costs of materials and labour. Many factors are involved in the estimates and a fair degree of precision is required to minimize budget overruns. (Numerical Estimation), (3)

Math Skills Summary

a. Mathematical Foundations Used

The symbol √ is explained in the Use of Symbols section.

Mathematical Foundations Used

Code	Tasks	Examples
	Number Concepts	
√	Whole Numbers	Read and write, count, round off, add or subtract, multiply or divide whole numbers. For example, reading or writing numbers of technologists and technicians involved in projects; counting electrical outlets in kitchens; multiplying quantities by prices to calculate material costs.
√	Integers	Read and write, add or subtract, multiply or divide integers. For example, reading the temperatures to be used in calculating the thermal resistance of buildings; monitoring budget deviations.
√	Rational Numbers - Fractions	Read and write, add or subtract fractions, multiply or divide by a fraction, multiply or divide fractions. For example, reading floor plan measurements in fractions of an inch; adding fractional measurements to calculate wall construction thicknesses; multiplying fractions of hours when invoicing clients.
√	Rational Numbers - Decimals	Read and write, round off, add or subtract decimals, multiply or divide by a decimal, multiply or divide decimals. For example, reading and writing site measurements in metres and millimetres; totalling client bills; calculating labour costs for construction projects.
√	Rational Numbers - Percent	Read and write percents, calculate the percent one number is of another, calculate a percent of a number. For example, reading water saturation as percentages; calculating percentages of total wall areas devoted to windows; calculating taxes on contractors' invoices.
√	Equivalent Rational Numbers	Convert between fractions and decimals or percentages. Convert between decimals and percentages. For example, expressing floor spaces as fractions or percentages of total lot sizes; converting percents to decimals to simplify calculations.
√	Other Real Numbers	Use powers and roots, scientific notation, significant digits. For example, using powers to express room areas in square metres and room volumes in cubic metres.

Code	Tasks	Examples
		Patterns and Relations
√	Equations and Formulae	Solve problems by constructing and solving equations with one unknown. Use formulae by inserting quantities for variables and solving. For example, constructing and solving equations to calculate materials needed for new roofline options for flat-topped houses; using formulae to calculate areas and volumes of structures.
√	Use of Rate, Ratio and Proportion	Use a rate showing comparison between two quantities with different units. Use a ratio showing comparison between two quantities with the same units. For example, using specifications such as maximum occupational density in residents per square meter; using rule-of-thumb ratios to calculate quantities of fittings, fasteners, wire and paint; drawing buildings to scale using scaling ratios. Using scale drawings.
		Shape and Spatial Sense
√	Measurement Conversions	Perform measurement conversions. For example, converting survey dimensions between metres and feet.
√	Areas, Perimeters, Volumes	Calculate areas. Calculate perimeters. Calculate volumes. For example, calculating areas and perimeters of proposed buildings; calculating volumes of rooms and excavations.
√	Geometry	Use geometry. For example, using geometry to construct plane figures in architectural drawings.
√	Trigonometry	Use trigonometry. For example, using trigonometry to solve spatial triangulation problems in the analysis of building structures. Recognizing common angles. Drawing, sketching and forming common forms and figures.

Code	Tasks	Examples
		Statistics and Probability
√	Summary Calculations	Calculate averages. Calculate rates other than percentages. Calculate proportions or ratios. For example, calculating the average hourly rate of workers from a given trade; calculating work completion rates; calculating the ratio of architectural technologists and technicians to architects on projects.
√	Statistics and Probability	Use descriptive statistics (e.g. collecting, classifying, analyzing and interpreting data). For example, collecting project data such as materials used, person-days expended and times to completion; summarizing project data by calculating measures such as average wait times, completion rates and costs per square metre. Using tables, schedules or other table-like text. Using graphical presentations.

b. How Calculations are Performed

- In their heads.
- Using a pen and paper.
- Using a calculator.
- Using a computer.

c. Measurement Instruments Used

- Time. For example, using clocks or watches.
- Distance or dimension. For example, using tape measures, laser distance meters and software drawing tools.
- Temperature. For example, using digital thermometers.
- Angles. For example, using protractors and software drawing tools.
- Relative humidity. For example, using humidity sensors.
- Use the SI (metric) measurement system.
- Using the imperial measurement system.

E. Oral Communication

Oral Communication

Tasks	Complexity Level	Examples
Typical	1 to 3	Architectural Technologists and Technicians • ask suppliers for product information and samples. (1) • speak with interior designers, engineering technologists and structural, mechanical, electrical and civil engineers at site meetings to coordinate design and construction processes. (2) • may interact with employees such as other technicians, technologists, surveyors and tradespeople to assign tasks, review completed tasks and enquire about the status of ongoing work activities. (2) • speak with clients to assess their needs during the concept development phases of architectural projects. They question clients to identify their intentions for buildings and interior spaces, their budgets and timeframes and their aesthetic preferences and functional requirements. They let clients express their concerns, discuss potential design options and recommend cost-saving alternatives. (3)
Most Complex	3	• meet with architects to discuss project priorities, timelines, building codes, by-laws and budgetary concerns. They present drawings, models, specifications and cost estimates and obtain guidance, recommendations and approvals. They may also meet to assist architects in the development of architectural designs to address client needs. (3) • participate in regular meetings with other members on the architectural team to discuss current projects, staff workloads, invitations to tender, problems with regulatory officials, layout and design issues, interior detailing and a wide range of other topics. At these meetings, they may be asked to present architectural plans or display models they have prepared. (3)

Modes of Communication Used

- In person. For example, participating in site meetings.
- Using a telephone. For example, exchanging voice messages with engineers and engineering technologists.

Environmental Factors Affecting Communication

Significant environmental factors affecting oral communication were not reported by job incumbents.

Oral Communication Summary

The symbol √ is explained in the Use of Symbols section.

	Purpose for Oral Communication (Part I)					
Type	**To greet**	**To take messages**	**To provide /receive information, explanation, direction**	**To seek, obtain information**	**To co-ordinate work with that of others**	**To reassure, comfort**
Listening (little or no interaction)		√	√			
Speaking (little or no interaction)			√			
Interact with co-workers			√	√	√	
Interact with those you supervise or direct			√	√	√	
Interact with supervisor/ manager			√	√	√	
Interact with peers and colleagues from other organization			√	√	√	
Interact with customers/ clients/ public			√	√		
Interact with suppliers, servicers			√	√		
Participate in group discussion			√	√	√	
Present information to a small group			√			
Present information to a large group			√			

The symbol √ is explained in the Use of Symbols section.

	Purpose for Oral Communication (Part II)					
Type	**To discuss (exchange information, opinions)**	**To persuade**	**To facilitate, animate**	**To instruct, instill understanding, knowledge**	**To negotiate, resolve conflict**	**To entertain**
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers	√			√		
Interact with those you supervise or direct	√			√		
Interact with supervisor/ manager	√			√		
Interact with peers and colleagues from other organization	√			√		
Interact with customers/ clients/ public	√			√		
Interact with suppliers, servicers	√			√		
Participate in group discussion	√			√		
Present information to a small group		√		√		
Present information to a large group				√		

Other Information
In bilingual communities, architectural technologists and technicians may be required to communicate in both official languages.

F. Thinking Skills

1. Problem Solving

Problem Solving

Tasks	Complexity Level	Examples
Typical	1 to 2	Architectural Technologists and Technicians • are sometimes asked to design unfamiliar building elements. In such instances, they consult their co-workers to capitalize on their skills and knowledge or refer to best practice guides. (1) • are informed that underground structures such as septic tanks have been discovered during renovation work. They advise their clients to hire experts to remove the structures and certify the sites as clean before continuing renovation work. (1) • find out that architectural project deadlines have been shortened. If they feel they will not be able to meet the revised deadlines on their own, they meet with their project leaders to outline the problems and discuss whether additional resources should or could be made available. (2) • experience difficulties in getting building or development permits approved. They discuss the difficulties with co-workers and consultants. They review building codes, zoning regulations, by-laws and other relevant documents to ensure that architectural designs are compliant with rules and regulations. They then elaborate new persuasive arguments and present the development proposals to city officials again. (3)
Most Complex	3	

2. Decision Making

Decision Making

Tasks	Complexity Level	Examples
Typical	1 to 3	Architectural Technologists and Technicians • decide when to hold site meetings during the construction phase of projects. They talk to clients, general contractors, engineers, designers and other technicians and technologists to see if they are available. They choose times when all key participants in projects can attend the meetings. (1) • decide how to treat certain building elements during the conceptual design phase of projects. They make their decisions based on cost-effectiveness and product availability. (2)
Most Complex	3	• may choose tasks to assign to other technicians and technologists on the architectural team. They consider each individual's skills, experiences, attitudes and ability to meet deadlines. (2) • decide which contractors to select or recommend for construction work. They review various tenders and determine which contractors offer the best prices and most feasible work plans. Selection errors may have significant cost and time implications. (3)

3. Critical Thinking

Critical Thinking

Tasks	Complexity Level	Examples
Typical	1 to 3	Architectural Technologists and Technicians • evaluate the completeness of information packages submitted with development and building permit applications. They use a checklist to verify that all the required application forms have been completed and all accessory documents are included. (1)
Most Complex	3	• assess the efficiency of various construction procedures. For example, they use specialized computer software to assess the efficiency of procedures to reduce heat loss due to thermal bridging. (2) • assess the importance of deviations from initial schedules and budgets. They compare budgeted amounts to expenditures and completion dates to target dates for each construction activity. They analyze successes and failures and identify lessons learned. (2) • evaluate the quality of construction projects. They verify that required tasks have been performed, specified materials, products, accessories, standards and processes have been used and architectural plans, codes and regulations have been respected. (3) • evaluate the usefulness of architectural renderings in the creation of three-dimensional models. They consider the salient features of the renderings and identify those that can best be adapted to three-dimensional computer-assisted design technology. They evaluate several combinations of perspectives prior to building their models. (3)

4. Job Task Planning and Organizing

Job Task Planning and Organizing

Complexity Level	Description
3	Own job planning and organizing • Architectural technologists and technicians work in a dynamic environment with many conflicting demands on their time. Their work is team-oriented so they must integrate their own tasks with those of a team of experts including architects, interior designers, and structural, mechanical, electrical and civil engineers and engineering technologists. Their ability to work on several projects at the same time and manage priorities is critical to their jobs. Changes in designs, pressures from project leaders or clients, computer breakdowns and other emergencies force them to frequently reorganize job tasks. Planning and organizing for others • Architectural technologists and technicians play central roles in organizing, planning, scheduling and monitoring the activities of their architectural design teams. Senior technologists and technicians are also responsible for scheduling the work of contractors and tradespeople.

5. Significant Use of Memory

Examples

- remember portions of building codes and regulations governing commonly-designed elements such as staircases and parking stalls.
- recall successful strategies used on previous projects to hasten the approval of building and development permit applications.
- remember money-saving building ideas used successfully in the past to provide guidance to architects, developers and clients.
- remember client preferences mentioned during meetings.
- remember procedures to deal with software problems and equipment idiosyncrasies.
- recall the names and duties of their co-workers, colleagues and clients to facilitate communication.

6. Finding Information

Finding Information

Tasks	Complexity Level	Examples
Typical	2 to 4	Architectural Technologists and Technicians • find information about past architectural projects by searching corporate databases. (2) • find information about the various rules and regulations applying to their projects in building codes, zoning regulations, energy consumption regulations, by-laws and other national, provincial and municipal documents. (3) • find solutions for architectural design problems by searching trade publications, best practice guides and the internet. They need to analyze, synthesize and integrate information from a wide range of sources to develop innovative, environmentally sustainable and cost-effective solutions. (4)
More Complex	4	

G. Working with Others

Working with Others

Complexity Level	Description
2	Architectural technologists and technicians perform some tasks independently but usually work with a team of architects, engineers, designers, technicians and technologists. They work closely with architects to assist them in assessing client needs and developing architectural designs to meet these needs. They work independently when searching by-laws and building codes and preparing drawings, specifications, cost estimates, display and virtual models of architectural designs. Senior technologists and technicians supervise other technologists and technicians on the architectural team. They also coordinate their work with that of interior designers, landscape architects, consultants, and structural, mechanical, civil and electrical engineers and engineering technologists to monitor and inspect construction projects.

Participation in Supervisory or Leadership Activities

- Participate in formal discussions about work processes or product improvement.
- Have opportunities to make suggestions on improving work processes.
- Monitor the work performance of others.
- Inform other workers or demonstrate to them how tasks are performed.
- Select contractors and suppliers.
- Assign routine tasks to other workers.

H. Computer Use

Computer Use

Tasks	Complexity Level	Examples
Typical	2 to 4	Architectural Technologists and Technicians • use databases. For example, they may use custom-designed databases to store and retrieve architectural project data. (2) • use communication software. For example, they use communication software to exchange e-mails and attached documents with clients, contractors and members on their design teams. (2) • use the Internet. For example, they perform keyword searches to find the websites of suppliers, professional organizations, other architectural firms and clients. They may also use the Internet to exchange larger files using file transfer protocol software. (2) • use word processing. For example, they create lengthy proposals and contracts using programs such as Word. They supplement text with imported drawings, photographs and spreadsheet tables. They use formatting features such as page numbering, heading levels, footnotes, and columns. (3) • use spreadsheets. For example, they create spreadsheets to track client space and site requirements, analyze data and prepare detailed cost estimates. (3) • use other computer and software applications. For example, they may use photo editing software to develop, enlarge and print photos taken with digital cameras. They may use compact disk creation software to transfer larger files to compact disks for clients. They may also use specialized software to study the thermal resistance of wall assemblies. They may also use project scheduling software to create Gantt charts with assigned resources, milestones and deadlines. (3)

Most Complex	4	• use graphics software. For example, they create slide shows using presentation software such as PowerPoint. In order to develop effective demonstration packages for clients and to illustrate design concepts, they import photographs, scanned images, two-dimensional drawings and three-dimensional virtual models. They apply lighting, colours, material textures and finish maps to models using three-dimensional visualization software. They may also demonstrate the design, aesthetics and functionality of models using three-dimensional animation software. (4) • use computer-assisted design, manufacturing and machining. For example, they use computer-assisted design software to prepare two-dimensional drawings and three-dimensional models of proposed architectural designs. They also use this software to calculate the areas of complex geometrical shapes. (4)

Computer Use Summary

- Use word processing.
- Use graphics software.
- Use a database.
- Use a spreadsheet.
- Use computer-assisted design, manufacture or machining.
- Use communications software.
- Use Internet
- Other

I. Continuous Learning

Continuous Learning

Complexity Level	Description
3	Architectural technologists and technicians must learn continuously to keep abreast of changes in building products, construction methods, design trends, zoning, by-laws, regulations and standards. They need to master new technologies such as computer-assisted design and three-dimensional rendering. On a day-to-day basis, they acquire new learning by reading software user manuals, building codes, best practice guides and trade publications. They attend lectures, courses, conferences, symposia, workshops and seminars. They also tour show homes and discuss architectural designs with architects, engineers, designers and other technologists and technicians. Architectural technologists and technicians may be required to obtain certification through their provincial regulatory bodies to legally use occupational titles.

How Learning Occurs

Learning may be acquired:

- As part of regular work activity.
- From co-workers.
- Through training offered in the workplace.
- Through reading or other forms of self-study
    - at work.
    - on worker's own time.
    - using materials available through work.
    - using materials obtained through a professional association or union.
    - using materials obtained on worker's own initiative.
- Through off-site training
    - during working hours at no cost to the worker.
    - partially subsidized.
    - with costs paid by the worker.

J. Other Information

In addition to collecting information for this Essential Skills Profile, our interviews with job incumbents also asked about the following topics.

Physical Aspects
Architectural technologists and technicians make use of several different body positions in their day-to-day work. They sit to draw, read technical documents and perform computer tasks. They stand to coordinate activities with the architectural team. They walk, climb and kneel to inspect construction projects. Architectural technologists and technicians use upper limb coordination and hand-eye coordination to measure, draw, complete forms and to operate computers. Multiple limb coordination is required to move around construction sites using ladders and scaffolding. Limited strength is required to lift equipment and supplies. Architectural technologists and technicians must have fine motor skills and excellent vision to prepare small-scale drawings and display models. A strong spatial sense is also required to look at two-dimensional images and visualize three-dimensionality.

Attitudes
Architectural technologists and technicians must enjoy working with others. They must be open-minded, organized, methodical, thorough, responsible and adaptable. They must be able to maintain a professional manner at all times.

Future Trends Affecting Essential Skills
Architectural drafting is, and will remain, something of an art form. However, architectural technologists and technicians will need to develop high-level computer and continuous learning skills to keep up with the evolution of computer-assisted design technologies. Moreover, as architectural technologists and technicians take a larger role in coordinating design processes, managing contracts and supervising construction projects, they will need enhanced skills in oral communication, working with others, writing and critical thinking.

K. Notes

This profile is based on interviews with job incumbents across Canada and validated through consultation with industry experts across the country.
For information on research, definitions, and scaling processes of Essential Skills Profiles, please consult the Readers' Guide to Essential Skills Profiles
(http://www.hrsdc.gc.ca/eng/jobs/les/profiles/readersguide.shtml).