

Measurable outcomes for newly registered Architect Assumes 6 storey concrete structure			Blooms level of comprehension									Applicable Verbs	
			Education	Registration	No Knowledge	Know	Comprehend	Apply	Analyze	Synthesize	Evaluate		
			0	1	2	3	4	5	6				
1	Programming												
	1.1	Preparation of an architectural programme	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		1.1.1 Components of an architectural programme											
		1.1.2 Processes required to prepare an architectural programme for a client											
	1.2	Analysis of an architectural programme	-	4									Select, Distinguish, Classify, Compare, Prioritize
		1.2.1 Feasibility of the programme with respect to project constraints and opportunities											
		1.2.2 Responsiveness to site components											
		1.2.3 Cost and budget implications of the programme											
		1.2.4 Responsiveness of programme to client objectives											
	1.3	Principles of sustainable development within an architectural programme	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		1.3.1 Principles of sustainable development											
		1.3.2 Optimal site design maximizing existing environmental conditions											
	1.4	Integration/synthesis of programming with all other categories	-	5		-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent

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2	Site and environmental analysis											
	2.1	Principles related to the siting of a building and its environment: land planning, urban design, and environmental evaluation	-	4	-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		2.1.1 Physical, cultural and regulatory factors related to site planning										
		2.1.2 Urban design issues and planning processes that influence the design of a building on a specific site										
		2.1.3 Strategies for dealing with environmental, social, and economic issues in site evaluation										
	2.2	Siting a building in relation to its environment	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
		2.2.1 Grading and storm water management										
		2.2.2 Energy consumption										
		2.2.3 Sustainability										
	2.3	Data and information management	-	4	-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		2.3.1 The effect of data derived from engineering and environmental reports, land surveys, and land title										
	2.4	Integration/synthesis of site and environmental analysis with all other categories	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent

Measurable outcomes for newly registered Architect Assumes 6 storey concrete structure				Education	Registration	No Knowledge 0	Know 1	Comprehend 2	Apply 3	Analyze 4	Synthesize 5	Evaluate 6	Applicable Verbs
3	Schematic Design												
	3.1	Aspects of schematic design		-	5		-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
		3.1.1	Information required for schematic design given specific conditions										
		3.1.2	Impact of factors such as human behaviour, historic precedent and design theory in schematic design										
		3.1.3	Engineering services required for the schematic design of a given project -- programme, clients and										
		3.1.4	Documentation typically prepared for the client's approval of the schematic design										
		3.1.5	Scope of building code analysis in schematic design										
		3.1.6	Impacts of universal accessibility as it applies to site design										
		3.1.7	Impacts of universal accessibility as it applies to schematic design										
		3.1.8	Principles of sustainable design as they relate to schematic design										
		3.1.9	Time scheduling for construction										
	3.2	Implementation of schematic design principles to craft solutions		-	6		-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
		3.2.1	Building codes, specialist codes, zoning and other regulatory requirements to craft a viable set of schematic design solutions										
		3.2.2	Design concepts that integrate programming requirements derived from spacial relationships										
		3.2.3	Building siting solution given a specific site, selected physical factors and design criteria										
		3.2.4	Understanding of site and environmental analysis and schematic design to compare/evaluate the range of design solutions										
		3.2.5	Preparation and presentation of design concepts, drawings and models										
	3.3	Integration/synthesis of schematic design with all other categories		-	5		-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent

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Applicable Verbs

4	Engineering systems coordination -- Structural, Mechanical, Electrical, Civil		-										
	4.1	Main properties of structural systems and their influence on design	-	3		-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply
		4.1.1 General structural principles of building design & construction											
		4.1.2 Codes and regulatory requirements for design of the structure											
		4.1.3 Implications of design decisions on the selection of systems, materials, technology, and construction											
		4.1.4 Influence of site and environmental characteristics on the selection, design, and construction of structural systems											
	4.2	Principles of primary and lateral forces, codes/regulations governing those principles, and their collective influence on design of the structural system	-	3		-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply
		4.2.1 Principles of primary and lateral forces in the design and construction of buildings											
		4.2.2 Building code and other regulatory requirements related to seismic forces											
		4.2.3 Implication of design decisions in the selection of systems, materials, and construction details related to seismic forces											
		4.2.4 Influence of site and environmental characteristics on the selection, design, and construction of building structural systems related to seismic forces											
	4.3	Principles of fire protection, codes/regulations governing those principles, and their collective influence on design of the structural system	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		4.3.1 Effect of relevant codes on requirement for and design of sprinkler systems											
		4.3.2 Impact of sprinkler protection on size and construction of the building											
		4.3.3 Evaluation and selection of fire detection and suppression systems											
	4.4	Mechanical and passive systems and their influence on design	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		4.4.1 Codes relevant to active and passive environmental control systems											
		4.4.2 Sustainability and environmental control systems											
	4.5	Main properties of the electrical system (lighting, electricity supply and distribution, fire alarm systems, security and communication systems) and their influence on sustainability and design	-	3		-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply
		4.5.1 Codes relevant to electrical and fire alarm systems											
		4.5.2 Sustainability and lighting/fire alarm systems											
	4.6	Main properties of the civil engineering system (water management -- supply, drainage, infrastructure) and their influence on sustainability and design	-	3		-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply
		4.6.1 Civil engineering design impact on the building and site											
		4.6.2 Interface with municipal systems and approval processes, service agreements, etc.											
	4.7	Coordination of engineering systems documentation	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		4.7.1 Advantages and limitations of the structural system											
		4.7.2 Advantages and limitation of the mechanical systems											
		4.7.3 Impact of structural, mechanical, and lighting systems on the building and site											
	4.8	Integration/synthesis of engineering systems and all other categories	-	4		-	-	-	-	R	-	-	

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5	Building cost analysis												
	5.1	Factors influencing cost	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		5.1.1 Factors influencing project budget and financing											
		5.1.2 Cost implications of alternative design decisions											
		5.1.3 Time scheduling for construction											
	5.2	Cost planning/cost control	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		5.2.1 Client's budget in conjunction with the program and the conditions for completing the project											
		5.2.2 Recommendations made to a client following a value analysis											
	5.3	Methods of estimating costs	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		5.3.1 Methods of estimating costs at preliminary stages of a project (schematic design)											
		5.3.2 Methods of estimating costs at implementation stages of a project (design development/contract											
	5.4	Estimating methods within the framework of a project	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		5.4.1 Resources available to do a cost estimate											
		5.4.2 Concepts of construction, project and overall costs											
		5.4.3 Preferred methods of estimating costs within given situations											
	5.5	Integration/synthesis of building cost analysis with all other categories	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
6	Code research												
	6.1	National and local building codes	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		6.1.1 Code requirements governing classification of buildings											
		6.1.2 Code requirements governing non-combustible construction											
		6.1.3 Code requirements governing fire separations											
		6.1.4 Code requirements governing fire fighter access											
		6.1.5 Code requirements governing sound separations											
		6.1.6 Code requirements governing safety within floor areas											
		6.1.7 Code requirements governing exits											
		6.1.8 Occupant loads given specific requirements											
		6.1.9 Regulations respecting health requirements											
		6.1.10 Regulatory requirements respecting barrier-free design and universal accessibility											
		6.1.11 Documents and organizations referenced or included in codes											
		6.1.12 Application of relevant code sections to specific building types											
		6.1.13 Measures for high-rise buildings											
		6.1.14 Measures for inter-connected floor space											
	6.2	Integration/synthesis of code research with all other categories	-	4		-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize

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7	Design Development																										
	7.1	Information required for design development given specific conditions	-	6		-	-	-	-	-	-	-	R														Critique, Recommend, Appraise, Judge, Compare, Consider
	7.2	Building construction systems choices made for a particular design	-	5		-	-	-	-	-	-	-	R														Hypothesize, Develop, Design, Plan, Create, Invent
	7.3	Material choices made for a particular design	-	5		-	-	-	-	-	-	-	R														Hypothesize, Develop, Design, Plan, Create, Invent
	7.4	Engineering services required for the design development of a given project (programme, clients, context)	-	5		-	-	-	-	-	-	-	R														Hypothesize, Develop, Design, Plan, Create, Invent
	7.5	Schedules and outline specifications for materials, finishes, fixed equipment, fixtures, construction time and construction costs	-	5		-	-	-	-	-	-	-	R														Hypothesize, Develop, Design, Plan, Create, Invent
	7.6	Documentation typically prepared for the client's approval of design development	-	6		-	-	-	-	-	-	-	R														Critique, Recommend, Appraise, Judge, Compare, Consider
	7.7	Documentation and steps required for approvals from authorities having jurisdiction	-	6		-	-	-	-	-	-	-	R														Critique, Recommend, Appraise, Judge, Compare, Consider
	7.8	Scope of building code analysis in design development	-	4		-	-	-	-	-	-	R															Select, Distinguish, Classify, Compare, Prioritize
	7.9	Impacts of universal accessibility	-	5		-	-	-	-	-	-	-	R														Hypothesize, Develop, Design, Plan, Create, Invent
	7.10	Hazardous material mitigation, indoor air quality, sustainability, energy conservation and alternative systems	-	4		-	-	-	-	-	-	R															Select, Distinguish, Classify, Compare, Prioritize
	7.11	Integration/synthesis of design development with all other categories	-	5		-	-	-	-	-	-	-	R														Hypothesize, Develop, Design, Plan, Create, Invent

**Measurable outcomes for newly registered Architect
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Education	Registration	No Knowledge	Know	Comprehend	Apply	Analyze	Synthesize	Evaluate
		0	1	2	3	4	5	6

Applicable Verbs

8	Construction documents												
8.1	Principles of engineering and their influence on design and documentation	-	3	-	-	-	R	-	-	-			Organize, Sketch, Solve, Prepare, Choose, Apply
	8.1.1 General structural principles												
	8.1.2 General mechanical principles (plumbing, heating, ventilation, air conditioning, fire protection,												
	8.1.3 Principles of soil mechanics												
	8.1.4 Principles of foundations												
	8.1.5 Principles of building envelope and enclosure												
	8.1.6 Principles of acoustic design for a building												
8.2	Construction materials, their properties, and their influence on design and documentation	-	4	-	-	-	-	R	-	-			Select, Distinguish, Classify, Compare, Prioritize
	8.2.1 Appropriate use of materials for a given project												
	8.2.2 Main properties of load-bearing materials (wood, metal, concrete, masonry)												
	8.2.3 Properties of the types of building framework (wood, metal, concrete, masonry)												
	8.2.4 Properties of the main types of insulating materials												
	8.2.5 Properties of the main types of air, vapour, water barriers												
	8.2.6 Properties of the main types of finishing materials												
	8.2.7 Impact of materials and processes on health and the environment												
8.3	Construction processes and their influence on design and documentation	-	4	-	-	-	-	R	-	-			Select, Distinguish, Classify, Compare, Prioritize
	8.3.1 Foundation systems and their relation to soil types and conditions												
	8.3.2 Role of components of a building envelope												
	8.3.3 Appropriate construction methods for given criteria (cost, timing, durability, aesthetics, performance,												
8.4	Material assemblies and their influence on design and documentation	-	4	-	-	-	-	R	-	-			Select, Distinguish, Classify, Compare, Prioritize
	8.4.1 Acoustic assemblies												
	8.4.2 Fire-stop assemblies												
	8.4.3 Materials assembly in relation to thermal resistance												
	8.4.4 Materials assembly in relation to moisture control												
	8.4.5 Materials assembly in relation to air-tightness												
	8.4.6 Wooden-frame structural system from provided data												

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8.5	Components of construction documents		-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
	8.5.1	Contents of the specifications										
	8.5.2	Function of the specifications										
	8.5.3	Function of the working drawings										
	8.5.4	Main components of and the relationships among the various components of construction documents										
8.6	Role of the architect with respect to construction documents		-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
	8.6.1	Conformation of products, materials, and assemblies to standards and codes										
	8.6.2	Coordinate and complete architectural documents										
	8.6.3	Professional responsibilities and liabilities arising from production/issuance of construction documents										
	8.6.4	Professional services and construction contract(s) administration										
	8.6.5	Professional practice issues, including risk management, insurance, and professional/business ethics										
8.7	Principles of writing a technical specification		-	4	-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
	8.7.1	Links between the Master Format and the National Master Specifications (NMS)										
	8.7.2	Divisions of the NMS that are common or specific to each of the disciplines (architecture, structural,										
	8.7.3	Construction elements and the corresponding division of the Master Format										
	8.7.4	Components of a typical Master Format specification section										
	8.7.5	Rules related to writing a good specification										
	8.7.6	General conditions -- bidding requirements, contract forms, contract conditions										
	8.7.7	Addenda and contract modifications										
8.8	Document checking and coordination		-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
8.9	Integration/synthesis of construction documents with all other categories		-	4	-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize

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9	Bidding and contract negotiation											
	9.1	Methods of realizing construction projects/forms of project delivery	-	2	-	-	R	-	-	-	-	Illustrate, Summarize, Explain, Distinguish
		9.1.1 Forms of project delivery										
	9.2	Types, purposes, and obligations arising from different forms of construction contracts	-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
		9.2.1 Different types of construction contracts										
		9.2.2 Purposes of variant CCDC construction documents										
		9.2.3 Responsibilities of parties to or referenced in a construction contract										
	9.3	Methods for awarding construction contracts	-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
		9.3.1 Responsibilities of each party involved in the tendering process										
		9.3.2 Role of local construction associations and bid depositories in the tendering process										
		9.3.3 Methods for awarding a construction contract										
		9.3.4 Stages of a standard tendering process										
		9.3.5 Documentation required for each phase of the tendering process										
		9.3.6 Addenda and clarifications										
	9.4	Bids submitted by contractors	-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
		9.4.1 Architect's responsibility in making recommendations										
		9.4.2 Assess bid submissions										
		9.4.3 Process of evaluating submitted tenders										
		9.4.4 Bid and performance bonds and their role in the tendering process										
	9.5	Integration/synthesis of bidding and contract negotiation with all other categories	-	4	-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize

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Applicable Verbs

10	Construction phase -- office										
10.1	Role of architect and others in administration of the construction contract	-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
10.1.1	Role and responsibilities of the architect in the administration of a given construction contract										
10.1.2	Role and responsibilities of the client (owner) in the administration of a given construction contract										
10.1.3	Role and responsibilities of the contractor in the administration of a given construction contract										
10.1.4	Mechanisms to resolve differences in interpretation, disputes and conflicts arising from the contract										
10.1.5	Mechanisms to assemble evidence in preparation of testimony to be used before an arbitration panel or										
10.2	Office administration tasks related to different stages within the construction contract	-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
10.2.1	Tasks related to the construction phase (from the initial construction meeting, throughout construction and										
10.2.2	Documentation required of the contractor prior to commencement of construction										
10.2.3	Types of documentation required to effect changes to the construction contract										
10.2.4	Tasks involved in processing payment for work										
10.2.5	Tasks involved in review of shop drawings and submittals										
10.2.6	Terms of a contract related to deficiencies, take-over procedures, commissioning, indemnification and										
10.3	Administrative forms appropriate to different aspects of construction	-	6	-	-	-	-	-	-	R	Critique, Recommend, Appraise, Judge, Compare, Consider
10.3.1	Certificate for payment										
10.3.2	Change order										
10.3.3	Other relevant forms or reports (substantial completion, final inspection, field review, etc.)										
10.3.4	Professional obligations relating to the builders lien and other related legislation										

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Applicable Verbs

		Education	Registration	No Knowledge	Know	Comprehend	Apply	Analyze	Synthesize	Evaluate	Applicable Verbs
11	Construction phase -- site										
11.1	Role of architect and others in administration of the construction contract	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
	11.1.1 Role and responsibilities of the architect in the administration of a given construction contract										
	11.1.2 Role and responsibilities of the client (owner) in the administration of a given construction contract										
	11.1.3 Role and responsibilities of the contractor in the administration of a given construction contract										
	11.1.4 Role and responsibilities of the architect with respect to inspection and testing firms										
11.2	Site tasks related to the different stages of a construction contract	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
	11.2.1 Tasks related to the construction phase on site (from the initial construction meeting, throughout										
	11.2.2 Procedures for monitoring construction progress										
	11.2.3 Terms of the construction contract related to field review										
	11.2.4 Terms of the construction contract related to the takeover procedures										
	11.2.5 Terms of the construction contract related to issues of hazardous materials and toxic substances										
11.3	Forms, documentation, processes and legal obligations applicable to or arising from the different aspects	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
	11.3.1 Relevant forms or reports (meeting report, field review, etc.)										
	11.3.2 Contractual and professional obligations related to the observation of construction										
12	Project management										
12.1	Principles of project management and the provision of professional services	-	5	-	-	-	-	-	R	-	
	12.1.1 Project management process										
	12.1.2 Role(s) of the individuals involved in a project (project manager, internal and outside resources)										
	12.1.3 Contents of a project file										
12.2	Work plans	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
	12.2.1 Main components of a work plan										
	12.2.2 Essential elements of effective team management (communications, objectives, etc.)										
	12.2.3 Quality assurance process for a project										
	12.2.4 Professional opinion/advice relative to a work plan for a specific project										

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13	Professionalism and professional practice											
	13.1	Professional practice	-	5	-	-	-	-	-	R	-	Hypothesize, Develop, Design, Plan, Create, Invent
		13.1.1 Management of consultants, personnel and teams										
		13.1.2 Fees										
		13.1.3 Consultant service agreements										
		13.1.4 Contract negotiation and dispute resolution skills										
	13.2	Role of self governing profession in contemporary Canadian society	-	2	-	-	R	-	-	-	-	Illustrate, Summarize, Explain, Distinguish
	13.3	Legal and professional obligations of an architect as a member of a self governing profession	-	3	-	-	-	R	-	-	-	
	13.4	Professional ethics and responsibility	-	3	-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply
	13.5	Personal characteristics of a professional	-	3	-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply
		13.5.1 Integrity										
		13.5.2 Honesty										
		13.5.3 Sensitivity - ethnic, cultural and social diversity (society, workplace, and elsewhere)										
		13.5.4 Empathy and understanding										
	13.6	Professional practice management	-	4	-	-	-	-	R	-	-	Select, Distinguish, Classify, Compare, Prioritize
		13.6.1 Business of architecture in jurisdiction(s) of practice										
		13.6.2 Finance, accounting, and legal requirements of, and for, successful professional practice										
		13.6.3 Financial forecasting and planning for professional firm success										
		13.6.4 Human resource planning and administration										
		13.6.5 Strategic management of information technology										
		13.6.6 Organizational management										
		13.6.7 Office administration										
	13.7	Integration/synthesis of professionalism and professional practice with all other categories	-	3	-	-	-	R	-	-	-	Organize, Sketch, Solve, Prepare, Choose, Apply