

Outcomes-based competencies and indicators for a newly registered/licensed Architect			Blooms level							
			Registration	No Knowledge 0	Remember 1	Understand 2	Apply 3	Analyze 4	Evaluate 5	Create 6
1	Programming									
	1.1	Preparation of an architectural functional program	3	-	-	-	R	-	-	-
	1.1.1	Assemble and organize components and information related to an architectural functional program								
	1.1.2	Apply the components and information required to prepare an architectural functional program for a client								
	1.2	Incorporate principles of sustainable development within an architectural program	3	-	-	-	R	-	-	-
	1.2.1	Identify design issues to maximize the benefits of existing environmental conditions								
	1.2.2	Apply the principles of sustainable development								
	1.3	Evaluate the architectural program	5	-	-	-	-	-	R	-
	1.3.1	Evaluate the feasibility of the program with respect to project constraints and opportunities								
	1.3.2	Evaluate the responsiveness of program to site components								
	1.3.3	Evaluate the cost and budget implications of the program								
	1.3.4	Evaluate the program against stated client objectives								
2	Site and environmental analysis									
	2.1	Propose solutions to the siting of a building in relation to its environment	5	-	-	-	-	-	R	-
	2.1.1	Propose grading and storm water management								
	2.1.2	Evaluate the siting of the building in relation to energy consumption								
	2.1.3	Evaluate the siting of a building in relation to sustainability								
	2.1.4	Propose solutions for the siting of a building in relation to access and circulation								
	2.1.5	Evaluate the siting of the building in relation to the data derived from engineering, geotechnical, and environmental reports, land surveys, and land title searches								

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3	Schematic Design								
	3.1	Define schematic design principles and approaches	2	-	-	R	-	-	-
	3.1.1	Understand the history of architecture globally and locally							
	3.1.2	Understand the theory of architecture - historic and current							
	3.1.3	Understand the evolution of aesthetic design							
	3.1.4	Understand the evolution of environmental theory and practice							
	3.2	Analyze the design principles and solutions in relation to context	4	-	-	-	-	R	-
	3.2.1	Explain social consequences both positive and negative							
	3.2.2	Explain contextual/environmental influences							
	3.3	Evaluate aesthetics of design solutions	5	-	-	-	-	-	R
	3.3.1	Propose massing and form							
	3.3.2	Propose proportions and scale							
	3.3.3	Evaluate materials selection criteria							
	3.3.4	Evaluate aesthetic rigour and coherence							
	3.4	Utilize conceptual and representational skills to imagine and communicate design concepts and solutions	3	-	-	-	R	-	-
	3.4.1	Prepare three-dimensional visualization							
	3.4.2	Prepare graphic representations to illustrate the design concept and solutions							
	3.4.3	Prepare a physical model to validate the design concept and solutions							
	3.5	Assess technical aspects of the schematic design solutions	5	-	-	-	-	-	R
	3.5.1	Assess information required for schematic design given specific conditions							
	3.5.2	Assess the impact of factors such as human behaviour, historic precedent and design theory in schematic design							
	3.5.3	Assess engineering services required for the schematic design of a given project -- program, clients and context							
	3.5.4	Prepare documentation required for the client's approval							
	3.5.5	Evaluate the building code implications for schematic design							
	3.5.6	Assess the impact of universal accessibility as it relates to building and site design							
	3.5.7	Assess the principles of sustainable design as they relate to schematic design							
	3.5.8	Assess the scheduling implications for construction							
	3.6	Produce schematic design solutions for the project	6	-	-	-	-	-	R
	3.6.1	Create a schematic design solution in accordance with building codes, specialist codes, zoning and other regulatory requirements							
	3.6.2	Develop design concepts that integrate programming requirements derived from spatial relationships							
	3.6.3	Create a schematic design solution that integrates the engineering/consultant inputs							
	3.6.4	Create a range of design solutions in relation to site and environmental analysis							
	3.6.5	Create a building site solution given a specific site, selected physical factors and design criteria							
	3.6.6	Evaluate alternatives							

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4	Engineering systems -- Structural, Mechanical, Electrical, Civil								
	4.1	Describe the structural systems and their influence on design	2	-	-	R	-	-	-
	4.1.1	Explain the general structural principles of the building design approach							
	4.1.2	Outline the code and regulatory requirements related to the structure							
	4.1.3	Illustrate the implications of design decisions on the selection of systems, materials, technology and construction detail							
	4.1.4	Describe the influence of site and environmental characteristics on the selection, design and construction of structural systems							
	4.1.5	Explain the impact of sprinkler systems on structural designs							
	4.1.6	Illustrate the principles of primary and lateral forces and their effect on the building design							
	4.2	Understand the mechanical systems (active and passive) and their influence on sustainability and design	2	-	-	R	-	-	-
	4.2.1	Summarize all factors effecting selection of mechanical systems							
	4.2.2	Explain code requirements relevant to active and passive mechanical systems							
	4.2.3	Describe the environmental characteristics of the selection of mechanical systems							
	4.2.4	Understand the sustainability of the environmental control systems							
	4.2.5	Understand the environmental impact of the mechanical system design							
	4.2.6	Explain the influence of the mechanical system on the overall design							
	4.3	Describe the electrical systems (lighting, electricity supply and distribution, fire alarm systems, security and communication systems) and their influence on sustainability and design	2	-	-	R	-	-	-
	4.3.1	Rationalize the selection of lighting systems and their influence on design							
	4.3.2	Explain the influence of power supply and distribution system on design							
	4.3.3	Explain the influence of fire alarm, security, and communications systems on design							
	4.3.4	Rationalize the selection of power and lighting systems as they relate to sustainable design							
	4.3.5	Describe the impact of the choice of lighting and power systems on the environment							
	4.4	Describe civil engineering systems (water management -- supply, drainage, infrastructure) and their influence on sustainability and design	2	-	-	R	-	-	-
	4.4.1	Explain the impact of the civil engineering system on sustainability and site and building design							
	4.4.2	Explain the interface with municipal systems and approval process, service agreements, etc.							
	4.5	Analyze the choice of engineering system options	4	-	-	-	-	R	-
	4.5.1	Analyze the advantages and limitations of the structural systems							
	4.5.2	Analyze the advantages and limitation of the mechanical systems							
	4.5.3	Analyze the impact of structural, mechanical, and lighting systems on the building and site							

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5	Building cost analysis								
	5.1	Understand factors influencing cost	2	-	-	R	-	-	-
	5.1.1	Understand factors influencing project budget and financing							
	5.1.2	Summarize cost implications of alternative design decisions							
	5.1.3	Illustrate the cost implications of scheduling of construction							
	5.2	Understand methods of estimating costs (range of options)	2	-	-	R	-	-	-
	5.2.1	Understand methods of estimating costs at preliminary stages of a project (schematic design)							
	5.2.2	Understand methods of estimating costs at implementation stages of a project (design development/contract documents)							
	5.3	Apply estimating methods to a project	3	-	-	-	R	-	-
	5.3.1	Organize resources available to do a cost estimate							
	5.3.2	Apply costing to different building types and/or delivery methods							
	5.3.3	Apply preferred methods of cost estimation within given solutions (unit price, life cycle costing, elemental costing, etc.)							
	5.4	Develop cost planning/cost control methodology	6	-	-	-	-	-	R
	5.4.1	Develop client's budget in conjunction with the program and the conditions for completing the project							
	5.4.2	Produce recommendations made for the client following a value analysis							
6	Code research - National and Local Building Codes								
	6.1	Understand the scope and application of national and local building codes to the design construction and occupancy of a building	2	-	-	R	-	-	-
	6.1.1	Understand which parts of the code(s) apply to specific building projects							
	6.1.2	Understand the use of reference standards included within the code							
	6.1.3	Understand the use of Division B Appendices with the code and/or its local equivalent							
	6.2	Apply code requirements to design development documents	3	-	-	-	R	-	-
	6.2.1	Apply building classification and construction requirements for a proposed building							
	6.2.2	Apply building fire safety requirements for a proposed building							
	6.2.3	Apply floor area safety requirements for a proposed building							
	6.2.4	Apply barrier free requirements for a proposed building							
	6.3	Apply code requirements to construction documents	3	-	-	-	R	-	-
	6.3.1	Apply requirements for fire safety							
	6.3.2	Apply requirements for sound separations							
	6.3.3	Apply requirements for safety in floor areas							
	6.3.4	Apply requirements for exits							
	6.3.5	Apply requirements for health							
	6.3.6	Apply requirements for barrier-free design							
	6.4	Demonstrate awareness of alternative solution provisions in national and local building codes	1	-	R	-	-	-	-
	6.4.1	Have awareness of code objectives and their application							
	6.4.2	Have awareness of proper application of an alternative solution in a building design							
	6.4.3	Have awareness of functional statements associated with a code requirement							
	6.4.4	Have awareness of documents and information required to file an alternative design solution							

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7	Design Development									
	7.1	Assess aspects influencing design development	5	-	-	-	-	-	R	-
	7.1.1	Assess information required for design development given specific conditions								
	7.1.2	Assess building construction system choices made for a particular design								
	7.1.3	Assess material choices made for a particular design								
	7.1.4	Propose engineering services required for the design development of a given project (program, clients, context)								
	7.1.5	Develop schedules and outline specifications for materials, finishes, fixed equipment and fixtures								
	7.1.6	Assess issues related to indoor air quality and energy conservation and compare alternative solutions relating to these issues								
	7.2	Assess engineering systems and regulatory factors	5	-	-	-	-	-	R	-
	7.2.1	Assess the implications of the mechanical, electrical, and structural systems on design								
	7.2.2	Assess the implications of building codes on design								
	7.3	Develop a solution which responds to the aspects influencing the design	6	-	-	-	-	-	-	R
	7.3.1	Develop detailed design solutions in response to project criteria								
	7.4	Evaluate alternatives in finalizing a detailed solution	5	-	-	-	-	-	R	-
	7.4.1	Evaluate aesthetic assumptions at they apply to detailed solutions								
	7.4.2	Evaluate emotional, psychological and spatial implications of the detailed solution								
	7.4.3	Evaluate final form and function								
	7.4.4	Evaluate solutions against contextual, social, environmental and other criteria / constraints								
	7.5	Evaluate detailed solutions with regards to client/user group programme needs	5	-	-	-	-	-	R	-
	7.5.1	Evaluate spatial implications of detailed solutions								
	7.5.2	Evaluate spatial inter-relationships of detailed solutions								
	7.6	Develop design documentation (for review and approval of the proposed solution)	6	-	-	-	-	-	-	R
	7.6.1	Develop appropriate documentation for client approval								
	7.6.2	Develop appropriate documentation for authorities' approvals								
	7.6.3	Produce communication methodology with clients and user groups								
8	Construction documents									
	8.1	Understand components of construction documents	2	-	-	R				
	8.1.1	Explain components of project manual (building requirements, contract forms, contract conditions, and specifications)								
	8.1.2	Explain components of working drawings								
	8.1.3	Explain hierarchy of importance among the various components of construction documents								

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8.2	Analyze engineering systems and their influence on design and documentation	4	-	-	-	-	R	-	-
	8.2.1 Analyze the implications of proposed structural systems								
	8.2.2 Analyze the implications of proposed mechanical systems (plumbing, heating, ventilation, air conditioning, fire protection, conveyance systems)								
	8.2.3 Analyze the soil mechanics and its influence on foundation design								
8.3	Understand construction materials, their properties and their influence on design and documentation	2	-	-	R	-	-	-	-
	8.3.1 Understand appropriate use of materials for a given project								
	8.3.2 Understand structural properties of materials (wood, metal, concrete, masonry)								
	8.3.3 Understand the properties of different types of building framework (wood, metal, concrete, masonry)								
	8.3.4 Understand the properties of the main types of insulating materials								
	8.3.5 Understand the properties of main types of air vapour and water barriers								
	8.3.6 Understand the properties of main types of finishing materials								
	8.3.7 Understand the impact of materials and processes on health and environment								
8.4	Create material assemblies with consideration to their properties and influence on design and documentation	6	-	-	-	-	-	-	R
	8.4.1 Develop acoustic assemblies using acoustic principles								
	8.4.2 Create fire resistant building and fire stop assemblies								
8.5	Create building envelope (design and detailing)	6	-	-	-	-	-	-	R
	8.5.1 Develop the components of a building envelope								
	8.5.2 Design material assembly in relation to thermal resistance, moisture control and air tightness								
	8.5.3 Design glazing systems								
8.6	Apply the principles of technical specifications	3	-	-	-	R	-	-	-
	8.6.1 Understand the relationship between the Master Format and the National Master Specifications (NMS)								
	8.6.2 Select divisions of the NMS that are common or specific to each of the disciplines (architecture, structural, mechanical, electrical, etc.)								
	8.6.3 Classify construction elements and select their corresponding division of the Master Format								
	8.6.4 Select components of a typical Master Format specification section								
	8.6.5 Apply rules related to writing a good specification								
	8.6.6 Select general conditions applicable to the project (bidding requirements, contract forms, contract conditions, etc.)								
8.7	Coordinate construction documents	4	-	-	-	-	R	-	-
	8.7.1 Review, modify and coordinate architectural construction documents (products, materials/assemblies) to standards and codes								
	8.7.2 Review, modify and coordinate architectural construction documents for compliance with project criteria (cost, timing, durability, aesthetics, performance, sustainability and environmental conditions)								
	8.7.3 Coordinate architectural documents with regard to sub-consultant documents (structural, electrical, mechanical, etc.)								

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9	Bidding and contract negotiation									
	9.1	Summarize methods of realizing construction projects / forms of project delivery	2	-	-	R	-	-	-	-
		9.1.1 Summarize common forms of project delivery (construction management, Design-Build, P3, Design-Bid-Build, etc.)								
	9.2	Summarize major types of construction contracts: purposes and obligations	2	-	-	R	-	-	-	-
		9.2.1 Compare different types of construction contracts								
		9.2.2 Explain the purposes of common CCDC contracts as they relate to project delivery methods								
		9.2.3 Describe the responsibilities of parties to or referenced in a construction contract (Owner/Client, Contractor, Consultant, etc.)								
	9.3	Evaluate bids submitted by contractors	5	-	-	-	-	-	R	-
		9.3.1 Clarify the architect's responsibility in making recommendations								
		9.3.2 Evaluate submitted tenders								
		9.3.3 Explain bid and performance bonds and their role in the tendering process								
		9.3.4 Prepare required post tender addenda and contract award documents								
	9.4	Apply methods for awarding construction contracts	3	-	-	-	R	-	-	-
		9.4.1 Compare the responsibilities of each party involved in the tendering process								
		9.4.2 Clarify the role of local construction associations and bid depositories in the tendering process								
		9.4.3 Apply the process for awarding a construction contract								
		9.4.4 Apply the stages of a standard tendering process								
		9.4.5 Prepare documentation required for each phase of the tendering process (addenda, clarifications, etc.)								

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10	Construction phase -- office and site									
	10.1	Analyze the role of architects and others in the administration of the construction contract (office and site)	4	-	-	-	-	R	-	-
		10.1.1 Clarify the roles and responsibilities of the architect and others in the administration (office and site) of the construction contract								
		10.1.2 Select mechanisms to resolve differences in interpretation, disputes and conflicts arising from the contract documents								
		10.1.3 Select mechanisms to assemble evidence in preparation of arbitration or court proceedings								
		10.1.4 Clarify contracts and professional obligations related to the observation of construction								
	10.2	Administer office tasks	4	-	-	-	-	R	-	-
		10.2.1 Administer tasks required in the construction phase (from the initial construction meeting, through construction and close-out, until the end of the warranty period)								
		10.2.2 Administer documentation required of the contractor prior to commencement of construction								
		10.2.3 Select documents required to make changes to the construction contract								
		10.2.4 Administer tasks involved in processing payment for work								
		10.2.5 Administer tasks involved in review of shop drawings and submittals								
		10.2.6 Administer the terms of a contract related to deficiencies, take-over procedures, commissioning, indemnification and warranty								
	10.3	Administer site tasks	6	-	-	-	-	-	-	R
		10.3.1 Administer tasks related to the construction phase on site (from the initial construction meeting, through construction and close-out, until the end of the warranty period)								
		10.3.2 Select procedures for monitoring construction progress								
		10.3.3 Administer tasks related to field review								
		10.3.4 Administer tasks related to takeover procedures								
		10.3.5 Administer tasks related to hazardous materials and toxic substances								
	10.4	Administer appropriate forms and documents	5	-	-	-	-	-	R	-
		10.4.1 Prepare certificates for payment								
		10.4.2 Prepare contemplated/proposed change directives and change orders								
		10.4.3 Prepare other relevant forms or reports (field review, final inspection, etc.)								
		10.4.4 Evaluate claims of substantial performance/completion.								
		10.4.5 Appraise professional obligations relating to builder's lien and other related legislation								

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11	Management of the project									
	11.1	Apply the principles of project management and the provision of professional services	3	-	-	-	R	-	-	-
		11.1.1 Implement a project management process								
		11.1.2 Organize role(s) of the individuals involved in a project								
		11.1.3 Organize the contents of a project file								
	11.2	Develop and implement work plans	6	-	-	-	-	-	-	R
		11.2.1 Create the main components of a work plan								
		11.2.2 Organize essential elements of effective team management (communications, objectives, etc.)								
		11.2.3 Create quality assurance process for a project								
		11.2.4 Implement a work plan for a specific project								
12	Professionalism and professional practice									
	12.1	Consider aspects of professional practice	5	-	-	-	-	-	R	-
		12.1.1 Evaluate management of consultants, personnel and teams								
		12.1.2 Evaluate fees								
		12.1.3 Evaluate consultant service agreements								
		12.1.4 Demonstrate contract negotiation and dispute resolution skills								
	12.2	Understand the role of a self-governing profession in contemporary Canadian society	2	-	-	R	-	-	-	-
		12.2.1 Understand relevant Architects' Act, By-laws, Code of Ethics and related documents								
		12.2.2 Understand the legal and professional obligations of an architect as a member of a self-governing profession such as competency and conduct requirements.								
	12.3	Understand professional practice management	5	-	-	-	-	-	R	-
		12.3.1 Understand the business of architecture in jurisdiction(s) of practice								
		12.3.2 Understand finance, accounting and legal requirements of, and for, successful professional practice								
		12.3.3 Understand financial forecasting and planning for professional firm success								
		12.3.4 Assess risk management, insurance and professional business ethics								
		12.3.5 Analyze human resource and administration plan								
		12.3.6 Apply human resource management – fair workplace, human rights, diversity and equity								
		12.3.7 Apply strategic management of information technology								
		12.3.8 Describe organizational management								
		12.3.9 Describe office administration								