

## What is the Architectural Experience Program?

The Architectural Experience Program™ (AXP™) is an essential step in the path to becoming an architect. Through the AXP, you will learn about the daily realities of architectural practice, acquire comprehensive experience in basic practice areas, explore specialized areas of practice, develop professional judgment, and refine your career goals. The AXP is developed and administered by the National Council of Architectural Registration Boards (NCARB). In most jurisdictions, completion of the AXP is a requirement for initial registration (licensure). The AXP identifies the tasks that are essential for competent practice. The program is structured to prepare you to practice architecture independently upon initial registration.

### Demonstrating Competent Performance

There are two methods of demonstrating competent performance of the AXP tasks. Most licensure candidates will complete the AXP by reporting hours. You will need to document a minimum of **3,740 required hours** under the six experience areas to complete the program. Some tasks may be easier to complete earlier in your career, while others may take more time and experience to complete. You and your supervisor should work together to create a plan that best fits your goals and abilities.

At least half of your experience must be completed under the supervision of a qualified architect; however, there are many ways to complete the remainder of your AXP hours outside the employment of an architect. These opportunities will be covered in the experience settings section.

The second method of demonstrating competent performance of the AXP tasks is through an AXP Portfolio. This new method is intended for experienced design professionals who put their licensure on hold and allows you to demonstrate your experience through the preparation of an online portfolio.



#### SIX EXPERIENCE AREAS

Practice Management

Project Management

Programming & Analysis

Project Planning & Design

Project Development  
& Documentation

Construction & Evaluation

## About NCARB

The National Council of Architectural Registration Boards (NCARB) is a global leader in architectural regulation, dedicated to helping professionals reach their career goals, providing key data about the path to licensure, and protecting the public's health, safety, and welfare.

We are a nonprofit organization made up of the architectural licensing boards of 54 states and territories. While each jurisdiction is responsible for regulating the practice of architecture within its borders, NCARB develops and administers national programs for licensure candidates and architects to ensure they have the mobility to go wherever their career takes them.

To accomplish this, NCARB recommends and encourages national requirements for architectural licensure. We develop and recommend standards for the 54 licensing boards, who then issue licenses to applicants who meet their specific registration requirements.

### NCARB Services

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NCARB exists to help you advance from student to practicing architect, so our services span the many phases of your career—think of us as your professional guide. Whether you're navigating the Architectural Experience Program™ (AXP™), completing the Architect Registration Examination® (ARE®), or earning your NCARB Certificate, NCARB is here to help.

And with our secure digital filing system, we can store all your major milestones, including official transcripts, employment history, examination successes, and more—a safe record of all of your achievements and accomplishments, ready to be transmitted to the jurisdiction of your choice.

### NCARB Mission

NCARB protects the public's health, safety, and welfare by leading the regulation of the practice of architecture through the development and application of standards for licensure and credentialing of architects.

## Project Planning & Design

Project Planning & Design covers the schematic design phase of a project. You'll learn to layout the building design, review building codes and regulations, coordinate schematics with consultants, and communicate design concepts with your client.

### Project Planning & Design Tasks

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Upon finishing the AXP, you should be able to competently perform the following tasks:

- Perform building code analysis
- Develop sustainability goals based on existing environmental conditions
- Prepare code analysis documentation
- Define requirements for site survey based on established project scope
- Select materials, finishes, and systems based on technical properties and aesthetic requirements
- Determine design parameters for building engineering systems
- Prepare design alternatives for client review
- Present design ideas to client orally
- Oversee design integration of building components and systems
- Evaluate results of feasibility studies to determine project's technical viability
- Review local, state, and federal codes for changes that may impact design and construction
- Prepare Cost of Work estimates
- Determine impact of existing utilities infrastructure on site
- Apply principles of historic preservation for projects involving building restoration or renovation
- Understand implications of evolving sustainable design strategies and technologies
- Design landscape elements for site
- Develop mitigation options to address adverse site conditions

## Project Development & Documentation

In Project Development & Documentation, you'll gain experience with projects after the schematic design has been approved—focusing on construction documents and coordinating with regulatory authorities to gain the necessary approvals for construction.

### Project Development & Documentation Tasks

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Upon finishing the AXP, you should be able to competently perform the following tasks:

- Communicate design ideas to the client graphically
- Prepare submittals for regulatory approval
- Communicate design ideas to client with two-dimensional (2-D) computer aided design software
- Select furniture, fixtures, and equipment that meet client's design requirements and needs
- Communicate design ideas to the client using hand drawings
- Communicate design ideas to client with three-dimensional (3-D) computer aided design software
- Update Cost of Work estimates

## Construction & Evaluation

In Construction & Evaluation, you'll get involved with the construction administration and post-construction phases of a project—this includes being out on the job site; meeting with contractors, clients, and building officials; and punching lists, leading to the completion of your project.

### Construction & Evaluation Tasks

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Upon finishing the AXP, you should be able to competently perform the following tasks:

- Review shop drawings and submittals during construction for conformance with design intent
- Respond to Contractor Requests for Information
- Complete field reports to document field observations from construction site visit
- Review results from field reports, third-party inspections, and other test results for conformance with contract documents
- Review Application and Certificate for Payment
- Manage project close-out procedures and documentation

## INTRODUCTION

## What is the ARE?

The Architect Registration Examination® (ARE®) is developed by the National Council of Architectural Registration Boards (NCARB). The ARE is used by U.S. jurisdictions as the registration examination for candidates seeking architectural registration. It is also accepted by select Canadian provincial and territorial architectural associations for registration.

The ARE assesses a candidate's knowledge and skills to provide various services required in the practice of architecture. No single examination can test for competency in all aspects of architectural practice; the ARE is not intended for that purpose. The ARE concentrates on the professional services that affect the public's health, safety, and welfare.

In addition to testing for competence in specific subject areas, NCARB is aware of the responsibilities an architect may have for coordinating the activities of others involved in the design/construction process. The ARE assesses a candidate's qualifications in exercising the skills and judgment of a generalist working with numerous specialists. In short, the objective is to reflect the practice of architecture as an integrated whole.

### DEFINITION OF COMPETENCE AS RELATED TO THE ARE

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To protect the health, safety, and welfare of the public, a newly licensed architect practicing independently must demonstrate the competence to be responsible for a project from its inception through completion. This includes, but is not limited to, the ability to:

- Apply architectural business practices
- Evaluate legal, ethical, and contractual standards
- Establish and coordinate project team activities
- Establish programmatic and regulatory requirements
- Provide design alternatives
- Evaluate and incorporate appropriate materials and building systems
- Provide and coordinate project documentation for a building and site
- Provide construction phase services
- Assess the project during all phases

## INTRODUCTION

## Understanding ARE 5.0

NCARB used the results of the *NCARB 2012 Practice Analysis of Architecture* when developing ARE 5.0 to determine the critical knowledge and skills an architect must perform competently. These knowledge and skills were organized into **six practice-based divisions:**

- PcM** Practice Management
- PjM** Project Management
- PA** Programming & Analysis
- PPD** Project Planning & Design
- PDD** Project Development & Documentation
- CE** Construction & Evaluation

Each division is broken down into multiple sections, and each section has objectives on which candidates will be assessed. All of the questions, or items, on an ARE division are authored to assess candidates based on the objectives in that division.

While preparing for the ARE, it is important to understand the cognitive level at which items are targeted for each objective. The cognitive level guides the authoring of items for the exam so that each item represents the appropriate level of assessment at the point of licensure. Some objectives only require the understanding of a concept, while other objectives require analysis and evaluation.

DIVISION DESCRIPTION

# Project Planning & Design

**DIVISION DETAILS**

ITEMS	TEST DURATION	APPOINTMENT DURATION*
120	4 hr 15 min	5 hr

\*Appointments allow for introductory screens, a break if you choose, and closing screens.

This division will test a candidate’s ability to protect the public’s health, safety, and welfare by:

- Evaluating project design alternatives
- Determining if a design meets project parameters, including those defined by the client, the environment, and society
- Selecting the appropriate building systems and material to meet project goals and regulatory requirements
- Integrating technical knowledge and information to develop a design

The 120 items will assess you on five sections related to Project Planning & Design. The number of items from each section will vary based on the targeted percentage of items within each section.

**SECTION DETAILS**

SECTIONS	EXPECTED NUMBER OF ITEMS	TARGET PERCENTAGE
<b>SECTION 1:</b> Environmental Conditions & Context	12-20	10-16%
<b>SECTION 2:</b> Codes & Regulations	20-27	16-22%
<b>SECTION 3:</b> Building Systems, Materials, & Assemblies	22-30	19-25%
<b>SECTION 4:</b> Project Integration of Program & Systems	38-46	32-38%
<b>SECTION 5:</b> Project Costs & Budgeting	9-17	8-14%

# Building Systems, Materials, & Assemblies

*In this section, you'll focus on other disciplines with which an architect must be familiar, along with the various components that make up the building.*

## OBJECTIVE 3.1

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### **Determine mechanical, electrical, and plumbing systems (A/E)**

*You will need to evaluate mechanical, electrical, and plumbing systems, and select the appropriate system for a building based on function, cost, size, availability, programmatic needs, or other factors.*

## OBJECTIVE 3.2

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### **Determine structural systems (A/E)**

*You will need to evaluate different structural systems and select the appropriate system and layout for a building based on its size, function, and structural loads. System cost and availability must also be considered.*

## OBJECTIVE 3.3

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### **Determine special systems such as acoustics, communications, lighting, security, conveying, and fire suppression (A/E)**

*You will need to evaluate specialty systems and select the appropriate systems for a building based on the building type, function, and programmatic requirements.*

## OBJECTIVE 3.4

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### **Determine materials and assemblies to meet programmatic, budgetary, and regulatory requirements (A/E)**

*You will need to select a building's envelope system, interior materials, and other assemblies based on cost, availability, program requirements, environmental conditions, or other factors.*

# Project Integration of Program & Systems

*In this section, you'll pull together all the decisions from the previous three sections regarding environmental conditions, code, systems, and assemblies. This is the largest section in the Project Planning & Design division.*

## OBJECTIVE 4.1

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### Determine building configuration (A/E)

*As an architect, you will need to resolve the building's configuration based on program and code requirements, selected MEP and structural systems, site conditions, historic precedent, and principles of design logic.*

## OBJECTIVE 4.2

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### Integrate building systems in the project design (A/E)

*Within this division is the beginning of systems coordination. You must consider how the selected systems fit together, both spatially and functionally, and how they are coordinated into the architectural design.*

## OBJECTIVE 4.3

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### Integrate program requirements into a project design (A/E)

*Architects must be able to reconcile the relationships between various program requirements, evaluate the program's impact on cost and building systems, and assess how the program is affected by environmental factors.*

## OBJECTIVE 4.4

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### Integrate environmental and contextual conditions in the project design (A/E)

*You will need to incorporate various design strategies, including those assessed in Section 1, into the project. This may include elements like view corridors, shading elements, building materials, and landscape design.*

# Project Development & Documentation (PDD)

This division will assess objectives related to the integration and documentation of building systems, material selection, and material assemblies into a project. The division will focus on issues related to the development of design concepts, evaluation of materials and technologies, selection of appropriate construction techniques, and appropriate construction documentation. Candidates must demonstrate an understanding of and abilities in integration of civil, structural, mechanical, electrical, plumbing, and specialty systems into overall project design and documentation.

<b>SECTION 1: Integration of Building Materials &amp; Systems</b> .....	<b>105</b>
<b>SECTION 2: Construction Documentation</b> .....	<b>112</b>
<b>SECTION 3: Project Manual &amp; Specifications</b> .....	<b>118</b>
<b>SECTION 4: Codes &amp; Regulations</b> .....	<b>122</b>
<b>SECTION 5: Construction Cost Estimates</b> .....	<b>127</b>
<b>Project Development &amp; Documentation References</b> .....	<b>132</b>

# Integration of Building Materials & Systems

*In this section, you'll focus on resolving and detailing architectural systems and assemblies, building materials, and engineering systems.*

## OBJECTIVE 1.1

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**Analyze the integration of architectural systems and technologies to meet project goals (A/E)**

*As an architect you will first need to be able to resolve and detail roof, curtain wall, cladding, window, floor, and other architectural systems, while also considering the detail requirements and capabilities of individual building materials.*

## OBJECTIVE 1.2

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**Determine the size of mechanical, electrical, and plumbing systems and components to meet project goals (U/A)**

*You must also be aware of related building systems to identify and develop mechanical, electrical, and plumbing systems, including calculating the size of some system components, based on system type, system requirements, programmatic requirements, and other factors.*

## OBJECTIVE 1.3

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**Determine the size of structural systems to meet project goals (U/A)**

*You will need to be able to identify and develop structural systems, including calculating the size of some structural components based on the system type, system requirements, programmatic requirements, and other factors.*

# Codes & Regulations

*Codes and regulations appear in several divisions, but in this division, you'll look at codes and regulations at a detail level and determine how they pertain to project documentation.*

## OBJECTIVE 4.1

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### **Determine adherence to building regulatory requirements (IBC) at detail level (U/A)**

*It is critical to be able to apply the International Building Code to the design and documentation of a project, specifically building use and occupancy, means of egress, heights and areas, fire and smoke protection, MEP systems, and structural systems, as well as material and assembly requirements.*

## OBJECTIVE 4.2

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### **Determine adherence with specialty regulatory requirements at the detail level (U/A)**

*It is also important to be able to apply specialty regulations to the design and documentation of a project. This specifically refers to ADA requirements, energy codes, standards for historic preservation, IGCC, Fair Housing, environmental regulations, and the interpretation of provided local or site specific regulations.*

## CONTINUED

INTRODUCTION

PRACTICE  
MANAGEMENTPROJECT  
MANAGEMENTPROGRAMMING &  
ANALYSISPROJECT  
PLANNING &  
DESIGNPROJECT  
DEVELOPMENT &  
DOCUMENTATIONCONSTRUCTION &  
EVALUATION

CASE STUDIES

ARE 5.0  
REFERENCES**OBJECTIVE 1.4**

**Integrate specialty systems such as acoustics, lighting, fire suppression, conveying, security, and communications to meet project goals (U/A)**

*You will need to be able to identify, develop, and integrate individual specialty system components based on system type, system requirements, programmatic requirements, and other factors.*

**OBJECTIVE 1.5**

**Determine how to detail the integration of multiple building systems and technologies (U/A)**

*You must also be able to detail and resolve the intersection of roof, curtain wall, cladding, window, floor, structural, interior, and other architectural systems as they come together within a building project.*

**OBJECTIVE 1.6**

**Coordinate mechanical, electrical, plumbing, structural, and specialty systems and technologies (U/A)**

*You must identify and resolve conflicts between engineering systems (mechanical, electrical, structural) and other specialty systems as they integrate into the project. This also includes coordinating engineering systems with the architectural design to fulfill programmatic, system, and other project requirements.*

# Construction & Evaluation (CE)

This division will assess objectives related to construction contract administration and post-occupancy evaluation of projects. The division will focus on issues related to bidding and negotiation processes, support of the construction process, and evaluation of completed projects. Candidates must demonstrate an understanding of and abilities in construction contract execution, construction support services (including construction observation and shop drawing or submittal review), payment request processing, and project closeout. In addition, candidates must also demonstrate an understanding and abilities in project evaluation of integrated building systems and their performance.

<b>SECTION 1: Preconstruction Activities</b> .....	<b>136</b>
<b>SECTION 2: Construction Observation</b> .....	<b>140</b>
<b>SECTION 3: Administrative Procedures &amp; Protocols</b> .....	<b>144</b>
<b>SECTION 4: Project Closeout &amp; Evaluation</b> .....	<b>148</b>
<b>Construction &amp; Evaluation References</b> .....	<b>152</b>

# Construction Observation

*This section addresses visiting the job site throughout the course of construction and the architect's roles and responsibilities.*

## OBJECTIVE 2.1

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### Evaluate the architect's role during construction activities (A/E)

*This objective assesses the architect's responsibilities to the owner during construction site visits and subsequent documentation. You must recognize the contractor's responsibilities to the architect, including change orders, applications for payments, shop drawings, and other required submittals. You must also know the difference between the architect's design intent and the contractor's means and methods.*

## OBJECTIVE 2.2

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### Evaluate construction conformance with contract documents, codes, regulations, and sustainability requirements (A/E)

*You will need to be able to analyze the contractor's completed work against the project requirements and identify non-conforming construction on site. This may also require evaluating the impacts of unforeseen conditions and material substitutions against code, quality, and program requirements.*

## OBJECTIVE 2.3

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### Determine construction progress (U/A)

*Construction observation also requires the review of work in place against the contractor's construction schedule and schedule of values, and understanding the impact of delays along the critical path.*