N C A R B

Model Handbook for Building Officials on Architecture and Engineering Registration Laws

S E P T E M B E R 2 0 0 0

MODEL HANDBOOK FOR BUILDING OFFICIALS

RECOMMENDATIONS TO MEMBER BOARDS

NCARB has long recognized that code officials and registration officials are allies in common cause to protect the public health, safety and welfare. The reasons for this are described in the Foreword on page 1. Several member boards, in conjunction with engineering registration boards and building officials in their states, have authored "handbooks" to help building officials understand the laws governing the practice of the professions. Drawing on this experience, NCARB is publishing this *Model Handbook* to provide a generic guideline to assist its member boards. NCARB recommends this only as a guide. Each member board desiring to pursue this kind of effort should consult with its sister engineering registration board and building officials and adapt this "model" to local requirements. By using this *Model Handbook* and, in cooperation with engineering registration boards and building officials, adapting it to the laws and regulations of each state, NCARB believes that the laws against unlicensed practice will be better understood and enforced.

Model Handbook for Building Officials on Architecture and Engineering Registration Laws
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This handbook is dated September 2000 and supersedes all previous editions of *Model Handbook for Building Officials on Architecture and Engineering Registration Laws*.

FOREWORD

This manual has been jointly published by the [name of state architect board] and [name of state engineer board] to aid building officials and registered architects and professional engineers in understanding the laws and statutes governing the practices of architecture and engineering in [name of state].

This manual is a guide intended as a source of basic information and does not attempt to address all of the questions concerning the practices of architecture or engineering. Section IV of this manual addresses the questions most often asked by building officials. If you need further information or assistance concerning requirements of the two state boards, please write, telephone or electronically mail:

[Name of Architect Board administrator]
[Name of Architectural Board]
[Street and Mailing Address]
[City, State and ZIP]
[Area Code and Phone Number]
[FAX Number]
[E-mail address]
or
[Name of Engineer Board administrator]
[Name of Engineering Board]
[Street and Mailing Address]
[City, State and Zip]
[Area Code and Phone Number]
[FAX Number]
[E-mail address]

INTRODUCTION

Building codes and professional registration or licensing laws are meant to work together. Building officials and architectural and engineering registration boards each exist to protect the public against unsafe buildings and structures. Registration officials protect the health, safety and welfare of the general public by ensuring that all registered architects and professional engineers have proper education and training and pass a rigorous examination on technical and practice issues. State, county or local jurisdictions promulgate and building officials enforce building code requirements that are intended to protect the health, safety and welfare of the general public.

While our state has limited exemptions permitting unregistered or unlicensed persons to prepare construction documents for single-family houses, farm buildings and other buildings or structures of limited scope, it is clear public policy in our state, and indeed all states, that buildings and structures of significant size or complexity must be designed by registered architects and professional engineers.

In 1999, the National Council of Architectural Registration Boards (NCARB) sent questionnaires to 9,450 building officials across the nation and received 2,543 responses. The questionnaires focused on the extent to which building officials view architects and engineers as performing critical services in protecting the public safety. Ninety-five percent of the responding building officials agreed that "the expertise of licensed architects and engineers is essential on any substantial building to protect the health, safety and welfare of the public." Eighty-seven percent agreed that the public safety required that architects and engineers "conduct on-site observations of the construction of any substantial building." Finally, 86% of the respondents acknowledged that they rely on the architect or engineer who designed the project to ensure that the performance standards of building codes have been met. The survey confirmed a survey taken 20 years earlier: building officials rely heavily on the competence of registered architects and professional engineers to ensure the protection of the public.

Late in 1999, NCARB organized roundtable discussions with the building officials of New York City, Clark County (Las Vegas), Los Angeles, San Francisco, Portland, Oregon, and Abilene, Texas to learn how registered architects could better fulfill the responsibilities they share with building officials. In the course of those discussions, leaders of major building authorities confirmed the critical role that architects and engineers play in ensuring the public safety. The Buildings Commissioner for the City of New York spoke for most of his colleagues when he observed, "We have put our faith and trust in the licensed [architect and engineer] and they have not let us down."

If building officials require all construction documents for non-exempt buildings and structures to bear the appropriate signature and seal of a registered architect or professional engineer, then the registration system shares with building officials responsibility for protecting the health, safety and welfare of the public. This manual has been prepared in the spirit of service to the public, and to assist building officials and the architectural and engineering professions in better understanding the professional authorship require-

ments of our licensing and registration laws and model building codes.

I. DEFINITION OF ARCHITECTURE AND ENGINEERING

[Name of state statute] defines the practice of architecture and the practice of engineering as follows:

A. Architecture
[Insert "practice of architecture" definition, citing applicable statute.]

B. Engineering
[Insert "practice of engineering" definition, citing applicable statute.]

II. Exempt Structures

The [Architecture Act] provides limited instances where a person who is not registered as an architect may design and supervise the erection or alteration of a building or structures. The following building types are exempt:

[Quote from Architect Act exemptions, (Some states may wish to have a "checklist" of exempt buildings and structures which can be copied by building officials for quick reference.) such as the following:

1. A detached single- or two-family dwelling, and any sheds, storage buildings and garages incidental thereto; or
2. Farm buildings, including barns, silos, sheds or housing for farm equipment and machinery, live stock, poultry or storage.]

Similarly, the [Engineering Act] provides limited instances where an unregistered person may design and supervise the erection or alteration of various buildings or structures. The following are exempt:

[Quote from Engineering Act exemption; some states may wish to have a "checklist" of exempt buildings and structures which can be copied by building officials for quick reference.]

III. SEALING PROFESSIONAL WORK

Registered architects and professional engineers are, and should be, responsible for their professional services in their respective areas of expertise. The public, as well as building officials, relies on their professional expertise. As a result, professional submissions such as construction documents should clearly show the identity of the registered architect or professional engineer who prepared them by having affixed a seal and signature and otherwise complying with the requirements of state law. Without proper identification, ultimate responsibility for any deficiencies may not be clear.

The law and applicable building codes in this state have requirements that professional submissions must be signed and sealed by the registered architect or professional engineer who prepared them or supervised their preparation. [List law and code seal requirements for code submissions.]

This state has specific laws requiring that construction documents submitted to building authorities bear the signature and seal of a registered architect or professional engineer as appropriate. [List any special requirements of your state.]

[Quote from applicable state building code.] As a general rule, building officials should require that all construction documents have the seal and signature of either a registered architect or professional engineer as appropriate, or, in the absence of such seal and signature, have a notation on the construction documents or building permit application noting the exemption under state law permitting a building official to accept documents without such seal and signature. By documenting the basis for accepting such a submittal at the time, building officials facing litigation or other occurrence of harm affecting the public's health, safety or welfare will not subsequently have to explain why they accepted construction documents from unlicensed individuals.

IV. COMMON QUESTIONS AND ANSWERS

I have a set of construction documents signed and sealed by an architect registered in a state other than this state. Does the construction document submittal meet this state's requirements?

No. Only registered architects and professional engineers currently registered or licensed with the appropriate board have authority to practice in this state. Professionals registered in other states must obtain registration here in order to practice in this state.

Can a local registered architect "overstamp" construction documents prepared and stamped by an unlicensed person (even when the person is registered in another state) for submittal to the building authority?

No. A local registered architect may only prepare,

sign and seal construction documents prepared by him or her or under his or her responsible control.

Can an owner/builder/contractor make changes to a registered architect's or professional engineer's construction documents?

No. When construction documents are prepared by a registered professional, no changes may be made except by that professional (or under certain conditions by another appropriately licensed professional).

May a registered professional engineer prepare, sign and seal architectural construction documents?

No. **[Describe any exceptions in your state for incidental practice.]**

May a registered architect prepare, sign and seal engineering construction documents?

No. **[Describe any exceptions in your state for incidental practice.]**

May anyone other than a registered architect or professional engineer prepare and submit construction documents to building officials?

Yes, in limited instances state law permits unlicensed persons to make limited submissions, but building officials should document for the record at the time a permit is granted based on unsealed and unsigned construction documents the exception in the law that allows the design of the building or structure by an unlicensed person.

Do shop drawings have to be signed and sealed by a registered architect or professional engineer and submitted to the building official for approval?

No, typically shop drawings are intended as contractor or fabricator details. These are not usually part of the filed construction documents.

What are examples of specific component designs (i.e., roof trusses, curtain wall design, sprinkler, pre-manufactured buildings and other pre-manufactured elements) which are required to be signed and sealed by a registered architect or professional engineer when submitted to the building official for approval?

Component, or "manufactured," buildings are treated no differently than other buildings or structures. The construction documents must be prepared, signed and sealed by the appropriate professional registered in this state. Examples of such designs are: prefabricated metal buildings or structures, roof truss systems, post tension or pre-stress designs and precast concrete building components.

Can a contractor sign the cover sheet of a set of construction documents prepared by an out-of-state registered architect or professional engineer and comply with the law?

No.

If an unlicensed person prepares construction documents for a non-exempt building or structure and applies for a building permit, should the building official suggest the designer or owner contact a registered architect or professional engineer, whichever is appropriate, and have the construction documents signed and sealed?

No. Such action on the part of a registered architect or professional engineer would be contrary to law and would put the license of the professional in jeopardy. A registered architect or professional engineer may sign and seal only those construction documents prepared by him or her or under his or her responsible control.

Who may issue change orders and addenda to building permit construction documents, which have been filed for non-exempt buildings or structures?

Change orders, additional construction documents and/or addenda that alter the construction documents and that are required to be filed with the building department for non-exempt buildings or structures must bear the signature and seal of the registered architect or professional engineer responsible for the modifications.

Who can be the applicant for a building permit?

The applicant can be the owner, contractor or the registered architect or professional engineer as appropriate. However, the name of the registered architect or professional engineer shall be listed on the application. All modifications or revisions to the signed and sealed construction documents required by the building official shall be provided to the registered architect or professional engineer by the building official.

[States may well have additional questions and answers of particular interest to building officials and registered architects and professional engineers in their own states.]

V. MINIMUM STANDARDS FOR CODE SUBMISSIONS

Construction documents for most projects consist of drawings, specifications and appropriate calculations. All elements shall complement each other. Completeness and coordination of all necessary information are the responsibility of the registered architect or professional engineer. Construction documents submitted to the building official must be of sufficient nature to clearly show the project in its entirety with emphasis on the following:

1. Life safety
2. Means of egress
3. Barrier free accessibility
4. Structural integrity
5. Building code compliance
6. Definition of scope of work

The required construction documents will depend upon the size, nature and complexity of the project. Following is a suggested standard of the minimum required construction documents for review by building officials. (Additions, alterations and remodeling may not require all of the following for the construction document submittal and review.)

Cover Sheet

1. Project identification
2. Project address and a location map
3. All registered architects and professional engineers identified
4. The registered architect or professional engineer in responsible charge (the professional responsible for project coordination) shall be identified. All communications should be directed through this individual.
5. Design Criteria list:
   i. Occupancy group
   ii. Type Construction classification
   iii. Location of property
   iv. Seismic risk
   v. Design loads
   vi. Structural systems
   vii. Square Footage/Allowable floor area
   viii. Fire sprinkler systems
   ix. Height and number of stories
   x. Occupant load
   xi. Land use zone

Site Plan

Show proposed new building or structure and any existing buildings or structures, all property lines with dimensions, all streets, easements and setbacks. Show all water, sewer, communication services, natural gas, telephone and cable TV. Electrical points of connection, proposed utility service routes and existing utilities on the site. Show all required parking, drainage and grading information. Indicate drainage inflow and outflow locations and specify areas required to be maintained for drainage purposes. When appropriate include a topographical survey. Show north arrow. Show dimensions for the location and size of components delineated on the site plan.

Foundation Plan

Show all foundations and footings. Indicate size, locations, thickness, materials and strengths, and reinforcing. Show all imbedded anchoring such as anchor bolts, hold-downs, post bases, etc. Provide a geotechnical report for the proposed structure at that site. Show dimensions for the location and size of all components delineated on the foundation plan.

Floor Plans

Show all floors including basements. Show all rooms, with their use, overall dimensions and locations of all structural elements and openings. Show all doors and windows. Provide door and window schedules. All fire resistance rated assemblies, areas of refuge, occupancy separations, fire blocking and draft stopping shall be shown. Show dimensions for the size of all rooms and the locations of other components delineated on the floor plans.

Schedules

Room finishes, doors, hardware, windows, plumbing and mechanical, electrical and structural.

Framing Plans and Roof Framing Plans

Show all structural members, their size and methods of attachment, connections and location as well as materials for floors and roofs. Show roof plan. Show dimensions for the location and size of all components delineated on the roof plan.

Exterior Elevations
Show each view. Show vertical dimensions and heights. Show openings and identify materials and show lateral bracing system, where applicable. Show dimensions and schedules.

Building Sections Wall Sections
Show materials of construction, non-rated and fire resistance rated assemblies, and fire resistance rated penetrations. Show dimensions.

Mechanical System
Show the mechanical system. Include all units, their sizes, mounting details, all duct work and duct sizes. Indicate all fire dampers where required. Provide equipment schedules. Submit energy conservation calculations. Show dimensions.

Plumbing System
Show all fixtures, piping, slopes, materials and sizes. Show point of connections to utilities, septic tanks, pre-treatment sewer systems and water wells. Show dimensions.

Electrical System
Show all electrical fixtures (interior, exterior and site), wiring sizes and circuiting, grounding, panel schedules, single line diagrams, load calculations and fixture schedules. Show point of connection to utility. Show dimensions.

Fire Sprinkler System
Show all sprinkler heads, piping valves, alarms, tamper switches, materials and sizes. Show point of connection to the water system and fire alarm system. Show dimensions for the size and location of components delineated on the fire sprinkler system drawings.

Structural Systems
Show foundation, structural members and where required, provide structural calculations for the structural systems of the project. Include calculations indicating compliance with seismic, wind, snow and other design loads.

Specifications
Prepare specifications to further define the construction components, the quality of the materials, delineation of the materials and methods of construction, wall, floor and ceiling finishes, exterior finishes and descriptions of all pertinent equipment. Schedules may be incorporated into the project manual in lieu of being delineated on the construction drawings.

Addenda and Changes
It shall be the responsibility of the individual identified on the cover sheet as the registered architect or professional engineer in responsible charge to notify the building official of any and all changes throughout the project and provide revised construction documents, calculations or other appropriate documentation prior to commencement of that portion of the construction.

Revisions
The party for submitting changes shall be identified at the beginning of the approval process. For clarity, all revisions should be identified and clouded on the construction drawings and appropriately marked in the project manual or resubmitted as a new set of construction documents.

Completeness of Documents
Construction documents for most projects consist of drawings, specifications and appropriate calculations. All elements shall complement each other. Completeness and coordination of all necessary information are the responsibility of the registered design professional.