
***Construction Claims Task Force
Concept Papers***
April 5, 2006

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Concept #1 – Construction Contractors Board Enforcement Powers

I. Issue

The Task Force recommended that staff explore (1) increasing CCB's enforcement powers including terminating a contractor's license if the contractor has a history of problems (2) preventing problem contractors from obtaining a license under a new corporate identity, and (3) prosecuting the most egregious contractors in criminal court.

II. Current Regulation

Generally speaking, the Construction Contractor's Board can revoke, suspend or refuse to issue a license for various wrongful acts, like violating CCB statutes and administrative rules, knowingly supplying false information to CCB, getting a lien put on a structure built by the contractor, and not paying for labor or materials. The administrator of CCB can suspend or refuse to renew a license without a hearing if the administrator shows through specific reasons that the contractor's acts pose a serious danger to the public welfare. The CCB also runs a dispute resolution program that works to make consumers whole without resorting to the courts. The CCB can also ask the Attorney General or a county's district attorney to pursue injunctions stopping wrongful conduct.

III. Alternatives

Option 1A: Increasing CCB's Enforcement Powers Including Terminating a Contractor's License if They Have a History of Problems

One way to strengthen the CCB's enforcement power is to allow the emergency suspension of a contractor's license if the contractor has an unpaid final order, an arbitration award by the CCB or a court judgment against them. Emergency suspension means that the license is immediately suspended, and the CCB will hold a post-suspension hearing so the contractor can contest the suspension.

Increasing the power of the CCB to investigate and prosecute egregious contractors could also be accomplished through greater information access. The CCB could access the Department of Motor Vehicles database of driver's license photographs. This data is not currently accessible to the CCB. Access to this database would make it easier to obtain positive identification of individuals who contract with homeowners.

Option 1B: Prevent Problem Contractors from Obtaining a License Under a New Corporate Identity

The CCB could require that if the license of a contractor is revoked, owners, officers and limited liability company members of that contractor can't own or be associated with a licensed contractor or applicant for a contractor's license for a period of time – e.g., one or more years. This would help get at the issue of preventing problem contractors from obtaining a license under a new corporate identity.

Option 1C: Prosecute the Most Egregious Contractors in Criminal Court

In order to prosecute the most egregious contractors in criminal court, CCB investigators could be empowered through state statute to issue misdemeanor citations to contractors who violate construction laws. California does allow investigators employed by the Contractors' State License Board to directly or indirectly start criminal prosecutions against contractors. Out of the balance of the twenty-five states surveyed by staff, nine consider certain misconduct by a contractor criminal, but do not give specific authorization to an administrative agency to directly issue citations.

IV. Steps to Implement

Statutory changes to CCB enforcement statutes will be necessary to fully implement these options. In terms of granting the CCB expanded criminal authority, the potential impacts on governmental functions and the interaction with other state agencies necessitates more review and discussion before implementation. Staff is unaware of any states that implement the foregoing enforcement models.

Concept #2 – Building Envelope Contractor Licensing

I. Issue

In Oregon, contractors are not required to demonstrate specialized construction knowledge. The Task Force recommended that staff review whether to create specialized competency requirements – licenses, certificates or other documents evidencing competency – for building-envelope contractors (e.g. roofing, siding, windows, etc.).

II. Current Regulation

Oregon regulates general contractors, residential-only contractors, and specialty contractors. Contractor specializations depend on how many trades are needed to complete the contractor's legal obligations, not necessarily specialization in the type of work. To become licensed a contractor must take 16 hours of prerequisite education and pass an exam focused on business practices. By administrative rule, education subjects generally consist of contract law principles, employer/employee relations, building codes, OSHA safety regulations, construction lien law, project management and sound environmental practices.

III. Alternatives

Several states have created specialized contractor licenses that focus on at least a portion of the building envelope, but not the entire system. For example, Florida, Hawaii and Illinois license roofing contractors, and Hawaii licenses siding application contractors. Hawaii requires contractors possess a certain amount of supervisory experience before taking an exam, while Florida allows an applicant to demonstrate experience working on construction sites or education in building sciences (architecture, engineering or building construction) prior to taking an exam. Illinois only requires an examination by the individual that will supervise roofing work for the contractor. Nevada grants carpentry contractor licenses to an applicant or a qualified employee after the successful completion of an exam. Nevada carpentry contractors are licensed to work on framing and siding applications, among other things. None of these states require continuing education related to the specialized type of work they perform.

The closest model to licensing a building envelope contractor comes from the province of British Columbia, Canada. The Homeowner Protection Act requires licenses for new home construction and renovation. Individuals seeking licensure must provide to the provincial government a list of professional courses related to new home construction taken by the builder's officers, directors or partners.

Staff did not locate an American jurisdiction that licenses individual workers to construct building envelopes. Testimony received by the Task Force indicated the presence of national certification programs, manufacturer's certification programs or programs available through an association. In the absence of a recognized model for envelope contractors, staff is providing a framework for the Task Force to consider.

Option 2A: Certify Responsible Managing Individuals in Building Envelope Construction

The responsible managing individual (RMI) for any contracting business doing building envelope work would need to pass and receive a building envelope certification. The certification would need to either be developed by the state, or adopted from another source – such as the manufacturers or associations that currently provide certifications. As part of the certification process, the RMI will need to do the following:

- RMI certifies each employee or worker who works on a building envelope or its components. This model is consistent in other areas of regulation – OSHA requires businesses to be responsible to promote safety training to workers before working in the field.
- RMI maintains necessary records of envelope training given to employees and be able to demonstrate compliance with the requirement.
- RMI completes a checklist that demonstrates the envelope installation occurred according to applicable specialty code, applicable best practices, manufacturers' instructions, certification guidelines or the supplied design drawings. The RMI would present the completed checklist to the local building department prior to receiving a final certificate of occupancy.

IV. Enforcement

Compliance starts with the RMI. If a contractor is not properly certified to perform the work, a local building department may refuse to issue a permit to the contractor¹. If an RMI fails to or does not adequately fill out an installation checklist, then the local building department may refuse to issue a certificate of occupancy for the structure². The state may also need to suspend or revoke a contractor's license, assess civil penalties, deny the right to sue in a court of law to an unlicensed contractor, or deny the issuance of a license to a contractor doing work requiring a certificate. Depending on the level of change proposed, statutes or administrative rules may need changed to accommodate new license types and compliance actions as part of the contractor's licensing obligations.

V. Steps to Implement

Creating new contractor requirements will require changes to statute and administrative rule.

¹ See Concept #8, *Residential Permits*, for requiring contractors to obtain permits.

² See Concept #8, *Residential Permits*, for a discussion on residential certificates of occupancy.

Concept #3 – Recovery Fund

I. Issue

The Construction Contractors Board (CCB) provides dispute resolution services to homeowners and contractors in breach of contract disputes. If the CCB orders a contractor to pay money to a homeowner and the contractor fails to pay, the contractor's CCB bond may be available to pay the unpaid portion of the order. However, the bond may not be sufficient to cover the amount of the claim. The Task Force recommended that staff look into establishing a recovery fund.

II. Current Regulation

Unpaid orders are currently paid from a contractor's surety bond, which a contractor must buy in order to get licensed with the CCB. Bond amounts range from \$5,000 to \$15,000. As noted above, not all losses are covered by payments from contractor's bonds. Oregon had 41,284 licensed contractors as of year-end December 2005. For the fiscal year 2005, CCB records show that 69 contractors had damages awarded on residential structures above their bond limits, leaving a shortfall of \$917,850.

III. Alternatives

Option 3A: Limited Payout to a Certain Class of Owner

One choice could be limiting the recovery fund to complaints stemming from residential construction. In addition to recovery from the surety bond, the recovery fund would allow homeowners to collect from both sources. Commercial owners and non-owner complainants such as material suppliers would be limited to recovery under the surety bond.

Option 3B: Limit Payout to a Certain Amount

The maximum payout from the recovery fund might be limited to a number between \$30,000 and \$100,000. States that establish recovery funds tend to limit payout to a definitive number. This survey was conducted in February 2005. Most of these programs are substitutes for Oregon's surety bond requirement. With two exceptions, maximum per claim payouts vary from \$10,000 to \$30,000. Minnesota allows a \$30,000 payout per claim. North Carolina does not set a limit on payouts, but North Carolina's funding source of \$9 per building permit would not seem to allow for a very large fund.

Option 3C: Schedule Payouts on a Periodic Basis

One way to administer the fund would be to look at all unpaid orders once or twice a year. If the amount available in the recovery fund equaled or exceeded the total of all unpaid orders for the period, those unpaid amounts would be paid out of the fund. If the total unpaid orders exceeded the amount available in the fund, the payments would be prorated. A cap on prorated amounts might be needed.

Option 3D: Exclude Attorney Fees from Payout

In order to ensure that the recovery fund monies are routed appropriately, attorney fees should be excluded from amounts paid out by the recovery fund. Staff is unaware of any similar model currently in practice.

Option 3E: Give Priority over Unpaid Judgments to Owners, Rather than the Recovery Fund

The CCB may use its authority to recover unpaid judgments from contractors. If unpaid amounts are recovered from contractors by the state, funds awarded to the CCB should first go to compensate owners that continue to have outstanding claims. Once homeowners are compensated, then the balance of the funds can go toward replenishing the CCB recovery fund.

IV. Steps to Implement

A recovery fund would need to be set up through statute. A key part of establishing a statutory recovery fund will be finding the requisite resources. Financing for a recovery fund may originate from a mix of sources, such as civil penalties collected by the CCB, interest on funds in the CCB treasury account, an additional surcharge on license fees assessed to contractors, or recovery of funds previously paid out of the recovery fund from the responsible contractor.

The CCB collects approximately \$250,000 per year in civil penalties. The CCB is not certain how many contractors engage in residential construction, but a good assumption is approximately 28,000 licensees. \$560,000 could be raised for the recovery fund if each licensee paid \$20 per year. At this level, these two sources of funding would appear to cover the average annual amount of unpaid orders. Along with an expected small recovery of funds previously paid from contractors, these three funding sources may be sufficient to cover most of the unpaid orders.

Finally, managing a recovery fund would require additional agency resources.

Concept #4 – Contractor Bonding

I. Issue

Bond amounts currently required under Oregon law are not always sufficient to cover judgments awards determined by the Construction Contractors Board (CCB). Consumers may be left with unpaid damages because the amount of protection is insufficient or higher priority claims exhaust the bond. For example, material suppliers can access up to \$3,000 of the proceeds, reducing the bond award available for consumers.

The Task Force asked staff to look into three potential options: increasing the bond amount for all contractors, stratifying the bond further according to the work volume of the contractor, and requiring performance bonds when a contractor has a history of bond claims.

II. Current Regulation

Oregon law requires that a surety license bond be filed with the CCB in order to hold a contractors license. Mandatory bond limits vary by license class, from \$15,000 for general contractors to \$5,000 for limited contractors. Under the terms of the license bond the bonding company is obligated to pay only when an order is issued by the CCB. The contractor has the option of paying the order and not involving the bonding company. If the contractor fails to pay, the bonding company must pay on behalf of the contractor up to the limit of the bond. Initial research shows that Oregon is the only state that requires a bond of all contractors with no other current alternatives for demonstrating financial standing. Existing law permits rulemaking for consideration of letters of credit, but this has not been exercised to date.

Oregon had 41,284 licensed contractors as of year-end December 2005. For the fiscal year 2005, CCB records show that 69 contractors had damages awarded on residential structures above their bond limits on 95 residential claims, leaving consumers with a shortfall of \$917,850.

III. Alternatives

Option 4A: Increase Bond Amount for All Contractors

Twenty-two states require bonds for some contractors as a condition of licensing. Many of them only require the bonds from out of state contractors or for specific classes of contractors such as electrical, alarm, plumbing, commercial projects over a certain completed amount or public works. Each state also provides options to waive the bond requirement by use of some combination of a financial statement demonstrating adequate capital assets, cash deposits or letters of credit.

For example, North Carolina requires bonds in amounts ranging from \$350,000 to \$1.5 million but this mechanism has been used only once. Instead, audited financial statements are presented as an alternative and are subject to extensive review. Nearly all contractors in Utah waive the \$50,000 bond requirement by completing a financial responsibility questionnaire. For the other nineteen states requiring bonds, the bond limits range between \$5-15,000. When the higher limit of \$15,000 is required, it is normally tied to higher value projects.

The impact of a higher bond limit will likely have a disproportionate impact on smaller contractors where any additional expense is a major item. Higher limits may not be readily available for some contractors, as bond underwriting for higher limits would require more stringent credit evaluation.

Option 4B: Create a Stratified Bond According to the Work Volume or Value of Projects

Of the five states that have stratified programs, four require submission of annual financial statements subject to departmental oversight. For example, Nevada determines bond amounts on a case-by-case basis after the application and financial data are presented. Bond amounts vary from \$1,000 to

\$500,000 depending on the type of license, monetary limit, financial responsibility, experience and character of the contractor. Arizona bases their bond amounts on gross volume and allows the contractor to self-select bond levels ranging from \$5,000 on projects of \$150,000 or less to \$90,000 on projects over \$10,000,000.

Stratified bond levels could be based on work volume, job value, gross receipts, value of largest project, and possibly other established guidelines. Any stratified option would probably require extensive regulatory review to monitor compliance on an active basis. Fiscal impact on the agency would be a consideration for developing a program to assess financial status and to monitor bond levels.

Option 4C: Require a Performance Bond When a Contractor Has a History of Claims

A performance bond protects the owner of a project from financial loss if the contractor fails to complete the work in accordance with the terms and conditions of a specific contract. This is unlike a license bond where a third party such as the CCB can act as obligee, adjudicate complaints and enforce damage payments. Typically, performance bonds are written for large commercial or public works projects.

Performance bonds are a guarantee that the job will be done according to the contract. Once the job is completed and accepted by the owner, the bond protection ends. Damages found after the owner accepts the project are not covered under the performance bond because the terms of the contract that the bond guaranteed are considered to have been met.

Performance bonds are strictly underwritten and credit is an integral factor. There must be sufficient assets to cover the bonded amount in the event of default. Experienced bonding sources advise that the majority of small contractors would not be able to obtain a performance bond due to lack of liquid assets and or credit.

No state requires contractors to obtain a performance bond as a condition of licensure. Public projects – federal or state – typically require a performance bond as a part of fulfilling contractual obligations on particular projects. Because the bond is written to the owner of the particular project, they cannot be enforced from project to project.

IV. Enforcement

As stated above, contractors that cannot secure a sufficient surety would not receive a contractor's license. Thus, enforcement of bonding provisions would occur during the licensing application or renewal stage.

V. Steps to Implement

Any one of these proposals would require statutory change.

Concept #5 – Building Code Amendments

I. Issue

The state building code sets minimum standards for residential and commercial structures in Oregon. These minimum standards focus on protecting the occupants of buildings and the general public from fire and life safety hazards. Other aspects of construction, such as reducing water intrusion, are regulated through general code provisions. In terms of inspections, the building code directs jurisdictions to focus on examining work that could pose a fire or life safety hazard. Thus, the code does not specifically call for inspections of the building envelope or the moisture content of the structure.

The Task Force recommended that staff address several areas related to moisture within the state building code (see *Alternatives*, below).

II. Current Regulation

The state adopts two codes to regulate residential and commercial work. The residential specialty code covers one and two family dwellings and certain apartment buildings. On the other hand, the structural specialty code regulates other types of residential construction (such as high-rise residential dwellings) and commercial structures.

In regard to specific code requirements, neither code mandates a cavity behind siding for drainage purposes, unless a brick veneer is applied to the side of a structure. In that case, both codes do require an air space behind the brick layer (i.e., a drainage cavity). In terms of ventilation standards, the residential specialty code allows kitchen ranges to recirculate exhaust air when natural ventilation (i.e., a window) is present. The residential specialty code requires that bathrooms vent outside mechanically even where natural ventilation is installed. For materials, only the structural specialty code requires drying lumber to a certain moisture content before installing it in a structure; the residential specialty code has no such requirement. Both codes generally require the installation of flashing, but do not specify particular shapes or other attributes. Neither code mandates soldered joints in metal flashing.

III. Alternatives

Option 5A: Develop Minimum, Building Envelope Design Standards Including Use of a Drainage Cavity; Explore Rainscreen Technology as a Construction Approach

To implement this approach, the residential specialty code would be amended to consider a performance-based design approach, like the use of a drainage cavity and rainscreen technology, but would also recognize other design methods for ensuring proper drainage. Wood-frame residential structures must be designed to resist water intrusion, given wood's natural vulnerabilities to mold. Where materials are mixed, such as in brick veneers, both codes should address moisture consistent with the attributes of the materials. To help implement these two concepts, the building code could require envelope design details be submitted separately from the construction documents³ needed to secure a building permit. Out of the twenty-five states surveyed by staff, six states amend their building codes specifically in regard to envelope construction.

Option 5B: Require Additional Mechanical Venting of Moisture from Interior Spaces (e.g., Bathrooms and Kitchens)

Natural methods of ventilation (e.g., opening windows) are not always ideal for providing sufficient ventilation, particularly in the winter months. If the Task Force considers mechanical ventilation, then all rooms where higher moisture content should be expected must be vented through mechanical means.

³ See Concept #7, *Quality Control Measures*, for more information.

Mechanical ventilation needs to be powerful enough to move moist air out of a room, but quiet enough for the occupants to bear during use. Mechanical ventilation systems that detect predetermined moisture levels in a room and vent accordingly could be a better option.

In Minnesota, single-family homes built since April 2000 must be constructed with a mechanical ventilation system. The tight sealing and insulation requirements set by the Minnesota state building code require mechanical ventilation. In California, the California Energy Efficiency Standards for Residential Buildings sets criteria for when prescriptive mechanical ventilation requirements are needed, and when performance-based principles can be applied. Washington's administrative code also sets performance and prescriptive mechanical ventilation criteria for Group R occupancies (e.g., residential structures) four stories or less. In Washington state, habitable rooms must have outside air supply; kitchens, bathrooms, and laundry rooms must also be vented mechanically. One municipality of a surveyed state – Las Vegas, Nevada – amends its commercial building code specifically to address mechanical venting.

Option 5C: Require Moisture Content not Exceed a Defined Level Before Closing the Wall Cavity

Damp building materials are another factor contributing to moisture problems. Building materials may be exposed to moisture during transit, while stored at a jobsite, or during the framing of the structure. The residential specialty code would need to be amended to require dry materials be used in construction. Once installed, a cover inspection would not be granted by the local building department unless the materials that make up the frame meet a predefined moisture content (19%).

In Washington state, new condominiums and townhouses built after August 2006 require an independent third-party inspection to ensure compliance with moisture content requirements. As part of this inspection, the third-party inspector individually tests the moisture content of selected building materials. In a related vein, North Carolina prohibits the installation of products sensitive to adverse weather until adequate weather protection is provided. Furthermore, exterior sheathing must be dry before exterior coverings are applied to residential structures.

Option 5D: Adopt Code Changes Related to Type of Flashing Used

In instances where building materials join together on the exterior envelope of the structure, both codes should require a continuous metal watertight joint shaped like a 'z' to help with drainage. Both codes need amended to mandate soldered joints in order to maintain a seal.

Florida makes minor changes related to suitable flashing materials for residential structures, but nothing related to the shape of the material or how the material connects. Georgia gives local jurisdictions the option of adopting Appendix 'M' to Georgia building code; Appendix 'M' deals with exterior insulation finish systems. The specifications in Appendix 'M' call for 'z'-shaped flashings in certain types of installations. However, the appendix does not specify soldering as a means of joining flashing together. The Minnesota building code requires corrosion-resistant flashing be installed in various locations of a residential structure, but does not mandate any particular shape. North Carolina makes minor changes from the base model code to flashing requirements, but also does not specify a particular shape or call for soldered joints. Washington state requires certain flashing contain a protrusion that extends past the side of a foundation for drainage – essentially, a 'z' -shaped flashing.

Option 5E: Adopt Code Changes Related to Concrete and Slab-On-Grade Construction, Including Proper Venting

In implementing this proposal, the residential specialty code would require that wood building elements, or wood construction occurring on a concrete slab-on-grade foundation, should be at least 6 inches from the ground.

IV. Enforcement

The adoption of new building standards will require a host of changes. First, persons working closely with building design and installation standards need training or education. Contractors will need training to be able to build to the higher standards, and inspectors will need trained on the requirements to inspect structures.

Pre-construction requirements, like required construction documents or plan review, need to be altered to meet new requirements. In the preliminary phases of construction, a local jurisdiction may not issue a permit without some demonstration of compliance with these proposed amendments to the building code. This could occur by requiring envelope details on construction plans. There is some precedence for this requirement. In Ohio, building envelope design details are submitted with other construction documents needed to obtain a permit. Washington state statute requires plans drawn up for multi-unit construction include building enclosure design documents. The documents must show how the building is weatherproofed, waterproofed or how it is protected from moisture intrusion.

Inspection requirements must also be considered. In terms of mechanical venting, more inspections will be conducted in order to ensure compliance with the residential specialty code. Similarly, new inspections or other means will be necessary for the installation of the siding and any new components going onto the exterior walls, like the rainscreen or drainage cavity. The moisture content of building materials would need to be certified by the contractor. In Oregon, these inspections currently do not occur. The balance of the twenty-five surveyed states yielded no information on inspections specific to building envelopes conducted by local jurisdictions or state agencies.

Third-party inspectors could be used to examine envelope construction. These third party inspectors might represent independent exterior envelope experts, insurance underwriters, builders self-certifying their own work, or independent warranty providers. Washington state's third-party inspection system requires inspections of the building envelope prior to occupancy. Texas state law allows the state to call on third-party inspectors to examine a residential structure when the contractor and a homeowner are in dispute over construction defects, but not beforehand. Other states allow or require the use of third party inspections – specifically Florida, Georgia, Louisiana, Virginia, New Jersey, New York and Pennsylvania – but not for the express purpose of examining building envelopes.

If inspections are not preferred, the code requirements could be added to the residential and structural specialty codes. These code requirements would not specifically be accompanied by inspection, which is current practice.

V. Steps to Implement

To enact these building code changes, the state will develop code language. No additional statutory authority appears necessary to implement these options, unless the Task Force elects to consider the use of third-party inspectors or some other licensed inspections. In that case, some statutory changes are needed to allow the use of third-party inspectors and create any regulatory structure needed to oversee them.

Concept #6 – Best Practices Guidelines

I. Issue

The Task Force recommended that staff further explore the development of “best practices” and installation guidelines consistent with the state building code and manufacturers’ installation instructions.

II. Current Regulations

The state codes establish the minimum requirements for construction. Code requirements take either a prescriptive approach (construction shall occur via the following process) or a performance-based approach (design must meet these criteria), or both. Best or industry practices typically exceed minimum code requirements. For envelope construction, the residential specialty code instructs users how to meet minimum code requirements through the installation of roofing, siding, ventilation etc. These installation requirements generally speak to the desired outcome, rather than the specific materials or techniques required for installation.

For example, Section R703.1 of the residential specialty code requires that “the exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier.” Section R903.1 of the residential specialty code states that roof decks must be covered with “approved roof coverings” attached to the building in accordance with the code.

When installing products that make up the building envelope, both codes require products to be installed to the manufacturer’s installation instructions. For example, section R903.1 of the residential specialty code requires roof assemblies to be designed and installed in accordance with manufacturer’s installation instructions. At present, there are very few details available to assist designers or contractors with building envelope design and installation. Staff is not aware of a central repository of best practice design and installation standards in Oregon.

III. Alternatives

Option 6A: Develop and Mandate the Use of Best Practices or Guidelines as Part of the Minimum Code Requirements

In implementing this option, the state would develop the requisite standards and installation procedures for roofing, siding, window installation, and the like. Once the state developed mandated guidelines, they essentially become the minimum code standards. Higher minimum code standards require greater investments in construction as well as compliance.

As part of this approach, the Task Force may choose to consider whether to require code training and education for designers and contractors. Under current regulation, Oregon-licensed architects choose from a number of activities that fulfill continuing professional education requirements, but the activities an architect can choose do not specifically mention building code or building envelope requirements. Oregon-licensed engineers must take a certain amount of professional development hours (PDH). As with architects, the activities that go toward meeting PDH quotas do not specifically mention building code or building envelope requirements.

Contractors will also need to be trained to build to the greater standards. Given that contractors do not need to take continuing education related to building sciences, code training for contractors might also be considered⁴.

⁴ See Concept #10, *Training*, for more information.

Option 6B: Develop and Make Available Best Practice Guidelines

Rather than creating mandatory code standards, another option is to foster an effort by the design community to put together the best practices or guidelines for design and installation of building envelopes. The state can adopt standards for optional use by construction professionals that create an alternate path to construction within the building code. If design standards are adopted in this manner, there will be less investment in terms of construction practice, continuing education and compliance. Of course, certain incentives may be necessary to make the use of voluntary standards so that buildings are designed to the greater standards. Nonetheless, building code enforcement remains at the minimum standard.

Staff did not locate any building envelope standards formulated at the national level by code-writing or other bodies on which to model Oregon-specific standards.

Option 6C: Make Training of Best Practices Guidelines Available to Contractors or Designers

Another alternative is to provide greater awareness to the design and construction community. Best practices covering design and installation would be offered through third-party organizations, but not required by law.

The federal government of Canada, through the Canadian Mortgage and Housing Corporation (CMHC), has expended considerable resources developing numerous best practices guidelines and related training aids. Furthermore, British Columbia's Homeowner Protection Office offers voluntary construction training to designers and contractors through the "Build Smart" series of seminars.

IV. Enforcement

If voluntary standards become the preferred alternative for implementation, then no enforcement provisions will be needed. If mandatory training is an option, this particular type of training would need to be a contingent to maintaining a license or certification.

If the best practices become the minimum code standards for envelope construction, then the question becomes one of determining responsibility – whether local building departments add envelope inspections to their duties or whether third-party inspection entities are authorized to conduct the inspections should be addressed.

V. Steps to Implement Concept

No statutory changes appear necessary to implement any of the options. If best practices are mandated for use in the state, changes to applicable specialty code sections would be necessary to implement that option. If the state does adopt best practice design standards, revisions to the architects' and engineers' law will be necessary to make certain the state is not performing the practice of architecture or engineering, which requires a professional license. Mandatory training for designers and contractors, if chosen, will require changes to statute or administrative rules.

Concept #7 – Quality Control Measures

I. Issue

The Task Force recommended that staff examine two concepts: first, involving building-envelope specialists in the development process from the design phase through initial occupancy; and second, increasing oversight on the jobsite by architects, engineers, building envelope specialists, or other certified individuals to review construction practices.

II. Current Regulation

Building envelope provisions of the residential and structural specialty codes are written as rules of general applicability. They do not provide specific guidance when designing and installing envelope elements. Certain structures do not need to be designed by licensed architects or engineers.

The residential specialty code does set certain requirements for what need to appear in construction documents. Section R106.1.1 of the residential specialty code requires drawings that describe the location, nature, and extent of the work proposed, as well as generally demonstrate compliance with applicable law and code sections. Section R106.2 of the residential specialty code requires the submission of a site plan that contains the size and location of the proposed construction project, as well as the size and distance from lot lines.

III. Alternatives

Option 7A: Require Designers to Focus on Resisting Water Intrusion

Generally speaking, local building departments do not require designers – whether architects, engineers, or otherwise – to demonstrate how they intend on maintaining the integrity of the building envelope or its component parts (roof connections, transitions, windows, doors, etc.) when the contractor makes the installations for residential construction.

Under this approach, designers, including licensed architects and engineers must show that their building designs resist water intrusion. Designers can rely on best practice information published by the state to assist them in showing building envelope design details or develop their own methodology⁵. If plans do not include envelope design details, the local building department would not issue a permit. Under this approach, the designer must submit their selected design methodology for informational purposes – the local building department need not approve or reject the design details.

As stated in *Building Code Amendments*, Ohio requires building envelope design details to be submitted with other construction documents. Washington state statute requires plans drawn up for multi-unit construction include building enclosure design documents. The documents must show how the building is weatherproofed, waterproofed or how it is protected from moisture intrusion.

Option 7B: Require On-Site Assurance of Work

There are two ways on-site assurances could be implemented. One way is to require the designer to visit jobsites and examine envelope detail work based on the plans submitted to the local building department. As part of the designers responsibilities, they should make regular visits to projects that integrate their designs into the structure. The jobsite's certificate of occupancy could be made contingent on the designer endorsing the installation as conforming to the chosen design standards. In New Jersey, the party in charge of construction work is required to be on-site on a "regular and periodic" basis to ensure compliance with the code and any special conditions placed on the building permit.

⁵ See Concept #6, *Best Practices*, for a discussion on certificates of occupancy for residential structures.

Option 7C: Require Third-Party Inspections of Building Envelope Methodologies

Another option for implementation is to require a third-party party inspector to look at the work. The inspector could be certified through private means, such as manufacturer programs. The state may also provide a certification process. The third-party inspectors need to understand and be able to inspect the designers' building envelope plans. Under this approach, the inspection could be required in order to fulfill the requirements of a permit, or to obtain a certificate of occupancy⁶.

Some jurisdictions have already implemented systems with elements common to Option #2. For example, in British Columbia inspections of the building envelope design and construction are typically required by a warranty provider as a condition of the warranty agreement. However, some exceptions exist for certain owner-built homes. In Washington state, a certified, third party course-of-construction inspection report is required to obtain a "certificate of occupancy" for multi-family construction projects. Florida, Georgia, Louisiana and Virginia generally permit a licensed architect or engineer to conduct inspections on the jobsite, but do not limit the scope of the inspection to building envelope construction. New Jersey and New York give building departments the option to require a building owner to retain the services of a third party, but not specifically for the inspection of a building envelope. Texas law allows the state to call on the services of a third-party inspector to examine residential structures, but only when there is a disputed construction defect.

IV. Enforcement

Much of the enforcement activity needed for either concept will occur at the local level, where the permits are actually issued. If a residential permit application does not come with envelope design details, a local jurisdiction can simply refuse to issue the permit under Option 7A. If the designer or a third-party inspector do not visit the jobsite to ensure compliance with the approved envelope design, the local jurisdiction could withhold the certificate of occupancy until the envelope elements are reviewed and noted on a checklist or other similar acknowledgment.

V. Steps to Implement Concepts

Designers will need to be required, whether through statute or otherwise, to submit specific envelope details. In turn, specific standards – best practices – could be developed to assist designers in envelope specifications⁷. A certification system will need to be created through the state or adopted from a third-party for persons, if this approach is considered.

Statutory changes are necessary to authorize the creation of a specific certification for third-party envelope inspectors. Regulations governing third-party envelope inspectors may include setting their scope of work, developing an application, setting or adopting testing requirements, and requiring certified individuals to maintain their certification through continuing education. Furthermore, the residential and structural specialty codes would need to be amended to require a certified, third party course-of-construction inspection report. A certificate of occupancy makes certain that the required on-site inspections of the building envelope, whether by the designer or a third-party inspection service, occur and are entered into the inspection record⁸.

⁶ See Concept #8, *Residential Permits*, for a discussion on certificates of occupancy for residential structures.

⁷ See Concept #6, *Best Practices Guidelines*, for more information.

⁸ See Concept #8, *Residential Permits*, for a discussion on certificates of occupancy.

Concept #8 – Residential Permits

I. Issue

Building permits serve as a means of alerting the local building department of construction work being done in the jurisdiction. Currently, a building owner or a contractor may secure a building permit. Homeowners may also choose to secure a permit to act as their own general contractor. The duty to ensure compliance with the state building code – e.g., making required corrections – rests with the person that secured the permit.

The Task Force directed that staff explore whether a contractor doing the work should be required to take out building permits. There are several alternatives that could be considered for implementing this proposal.

II. Current Regulation

Oregon’s state building code directs local building departments to issue permits to an owner or an authorized agent when permit application requirements are met. Excluding electrical and plumbing work, there are no limitations on persons obtaining a permit.

III. Alternatives

Option 8A: Require the Responsible Party (i.e., General Contractor or Designee) to Take Out the Permit

This alternative should apply to businesses constructing single and multi-family residences. Under this approach, contractors licensed by the Construction Contractors Board must obtain the necessary permit. A contractor constructing elements of a building envelope must demonstrate not only that they hold a valid CCB license, but also demonstrate any special certification requirements⁹. Looking to available models, all twenty-five states surveyed allowed either an owner or an authorized agent to obtain building permits. Out of those twenty-five states, seven states – Connecticut, Michigan, New Jersey, Ohio, Utah, Virginia and Washington – placed additional requirements on contractors when they obtained the permits. However, none of those states issued permits solely to contractors.

Option 8B: Require the Permit Holder to Designate the Responsible Person

Another alternative is to require the permit holder to designate the party responsible for construction work. If a licensed contractor does not obtain the permit, then the contractor must ensure that they are listed as the party responsible to ensure corrections are completed. Comparable models include New Jersey, where the permit must name the responsible party in charge of the work and who is responsible to the owner for ensuring that all work conforms to the state building code. Similarly, Michigan requires that building permits contain the names and the addresses of both the owner and the builder if the owner is not doing the work.

Homeowners may continue to secure a permit to do their own construction work or acting as their own general contractor. The local building department could then direct homeowners to web-based educational materials on permits and on acting as their own general contractor.

Option 8C: Issue a “Certificate of Occupancy” for Residential Structures

A companion to these options is requiring a final certificate of occupancy for a residential structure. This alternative applies to all work conducted under the residential specialty code. Currently, twenty-one states or municipalities within surveyed states require the issuance of a certificate of occupancy

⁹ See Concept #2, *Building Envelope Contractor Licensing*, for more information.

before an owner can occupy a residential structure. The certificate of occupancy could act as a “checklist” through which the local building department verifies compliance with the residential specialty code or other building requirements¹⁰. The checklist could verify whether a contractor elected to build to “best practice” guidelines, verify the presence and adequacy of envelope design details, record when the designer or a third-party inspection service examined the installed envelope elements¹¹ or other pertinent information needed to ensure completed work.

During the various stages of construction, a contractor would signify that they met any particular criteria required by the certificate. The building department reviews the work and issues a list of corrections to the permit holder. Upon completion of all work and all required inspections, the building department inspects the structure. Provided all requirements are met, a local jurisdiction issues a certificate of occupancy. Normally, dwelling owners would not be allowed to occupy a structure, although temporary certificates can be issued to meet varying circumstances. The date the certificate of occupancy is issued could act as a “bright line” date of occupancy. A definite starting point could assist other consumer protection processes, such as warranties and the one year period in which a person can file a claim with the Construction Contractors Board. The contractor would need to certify that all work is complete, including any non-regulated procedures (painting, trim, etc.).

IV. Enforcement

Given that a licensed contractor does not need to obtain a permit for residential construction work, CCB statutes and administrative rules will need altered in order to require them to do so. Statutory change is also needed to ensure that the roughly 130 local building departments in the state uniformly require the issuance of a certificate of occupancy for a residential structure. Two states surveyed (Michigan and North Carolina) do require certificates of occupancy by statute.

V. Steps to Implement

As noted above, CCB licensing laws need amended to address permitting. Furthermore, uniformly applying certificate of occupancy requirements to residences at the local level requires statutory change.

¹⁰ See Concept #7, *Quality Control Measures*, for more information.

¹¹ See Concept #6, *Best Practices Guidelines*; Concept #7, *Quality Control Measures*; and Concept #5, *Building Code Amendments*, for more information.

Concept #9 – Consumer Education Related to Maintenance

I. Issue

Owners of newly constructed single-family dwellings, dwellings undergoing major remodels to the building envelope and condominium owners need to conduct ongoing maintenance to maintain the integrity of the building envelope. Owners are often unaware of the maintenance requirements or do not complete maintenance requirements in a timely, systematic manner.

The Task Force asked staff to address whether to provide consumer education to owners and homeowner association boards regarding maintenance plan and maintenance issues.

II. Current Regulation

There is no current regulatory duty to provide maintenance information on a newly constructed home. Condominium owners are allowed to make repairs that do not affect the structural integrity of adjoining units, but are not required to conduct preventative maintenance.

III. Alternatives

Option 9A: Outreach/Model Maintenance Schedule

Under this alternative, the state would provide materials, brochures, and general points of information (e.g., websites) to communicate the importance of maintenance schedules. The key piece consists of making available to consumers a model schedule recommending certain maintenance work. British Columbia's Homeowner Protection Office, in partnership with the federal Canadian Mortgage and Housing Corporation, publishes building envelope maintenance bulletins to provide practical information on maintaining a building's envelope, particularly in multi-family dwellings.

Option 9B: Disclosed Maintenance Schedule

As part of a real estate transaction, the contractor, developer, an owner-builder or some other party connected to the sale would provide maintenance information. The manual would not follow specific state requirements, but would instead be tailored to meet the needs of that particular residence. For condominiums, associations would acknowledge that they will give maintenance information to their customers. In order to ensure compliance, the contractor or developer would be required to disclose the content of the maintenance requirements and to note when the requirements were supplied to the owner. The state could develop or cause to have developed model contractual provisions that require the inclusion of maintenance information.

Option 9C: Contractor-Provided, Standard Maintenance Schedule

A basic checklist provided to the homeowner by the contractor would provide a space to acknowledge scheduled maintenance. The basic requirements would be set by the state, and follow general maintenance procedures common to all residences. Failing to provide a maintenance manual subjects a contractor to administrative penalty under CCB licensing laws.

In a reversal of Option 9C, Minnesota ties preventative maintenance of mechanical ventilation systems to the state's warranty program. Minnesota requires homeowners to correctly run and maintain their mechanical ventilation systems. Failure to run and maintain mechanical ventilation voids legal protection afforded under state law. Warranties do not cover "loss or damage from dampness and condensation due to insufficient ventilation after occupancy."

IV. Enforcement

In terms of public outreach, the programs would exist to provide information for optional use by consumers. No enforcement provisions would be necessary. Option 2 could be enforced through the denial of a certificate of occupancy, the denial of permits and other documents needed to start or continue a project. Option 3 could be enforced through the licensing process – if a contractor fails to provide a maintenance schedule, they could face action against their license.

V. Steps to Implement

General outreach and a model maintenance schedule would not require statutory changes to implement. Requiring disclosure of a tailored maintenance model or the distribution of standardized maintenance models would require changes to state law in order to put into practice.

Concept #10 – Training

I. Issue

The need for building safety and energy performance have increased the complexity of construction techniques. Building materials and design methods have become increasingly complex. The Task Force recommended that staff further review a concept to provide training related to building-science and water-intrusion issues to designers, contractors, inspectors and property managers.

II. Current Regulation

Licensed design professionals – architects and engineers – must take a certain amount of continuing professional education or professional development hours, respectively. Architect and engineers may choose certain general activities that fulfill their professional obligations. Designers not required to be licensed as an architect or an engineer are not compelled to take any continuing education. Contractors also do not take continuing education. Building inspectors are required to take certain numbers of continuing education related to the code they are authorized to enforce.

III. Alternatives

Option 10A: Offer Voluntary Training to Designers and Contractors on Envelope Construction

The design community, as the group first involved in the construction of a building, needs the opportunity to take building envelope training. This approach would rely on voluntary participation to educate designers and contractors. The sources of the training might vary. For instance, in British Columbia, Canada, the province's Homeowner Protection Office offers voluntary "Building Smart" training seminars to educate all building envelope practitioners – including designers – on construction techniques.

Option 10B: Mandate Training by Contractors, Installers, Property Managers on Building Envelopes

If voluntary participation is not preferred, the next option is to mandate building envelope training. Rather than providing or recognizing voluntary training, all designers – licensed as architects, engineers or otherwise – and contractors working on building envelope elements would be required to take training. Designers not otherwise licensed by the state would need to show compliance with training requirements.

Contractor must take a certain amount of training on building envelope construction, in order to carry out the specifications penned by designers. Responsible managing individuals constructing elements of the building envelope would need to take a certain amount of residential or structural specialty code training. The training could cover code standards related to minimum siding, flashing and related areas of construction¹² or possibly best practice guidelines invoked at the option of the contractor¹³.

In terms of models to emulate, British Columbia's Homeowner Protection Act require the renewal of a Residential Builder license (parties licensed to perform new building envelope construction or renovation) show a list of professional courses related to home construction taken by partners, officers and directors of the builder's corporation. These professional courses may include industry accreditation. However, no American jurisdiction requires general or building contractors take continuing education specifically tailored to the type of work performed.

¹² See Concept #5, *Building Code Amendments*, for more information.

¹³ See Concept #6, *Best Practices Guidelines*, for more information.

IV. Steps to Implement

If voluntary training opportunities are determined to be insufficient to meet training needs, then changes to statute and administrative rule may be necessary to require participation by certain classes of Construction Contractor's Board (CCB) licenses. Attending building envelope training would be a condition of maintaining a current CCB license. Consequently, CCB's statutes and administrative rules concerning continuing education requirements for contractors may need altered. CCB would be responsible to compel installer participation in training along with contractors. Administrative rules would need to be adopted to ensure that inspectors acquire the required hours of training, or face sanction.

For designers, architects' and engineers' administrative rules may need changed to require classes pertaining to building envelope design be included in the list of examples available to fulfill continuing professional education and professional development hours. State statute would need amended to require designers not otherwise licensed show proof of required classes.