

Oregon Building Codes Division 2016 Annual Report



State of Oregon

Department of Consumer and Business Services

Welcome

The **Building Codes Division** (BCD) is proud to provide its 2016 Annual Report to our customers, board members, and employees. The report describes Oregon's current construction economy and identifies state initiatives underway to improve building efficiency.

In June 2013, the Oregon Legislature unanimously passed Senate Bill 582 – legislation designed to move construction projects forward more quickly and efficiently by expediting plan reviews; providing consultative services to local government and businesses; providing opportunities for consumers to appeal a local building inspector's decision; and improving state and local building department services, especially in rural communities. The bill required that specific data and information be collected and reported annually. The 2016 Annual Report addresses SB 582 and 2015 legislation approved which enabled BCD to more successfully meet the needs of its customers across the state.

We invite you to download or print an electronic version of the report to share with your staff or clients. It can be accessed from our website at www.oregon.gov/bcd. On behalf of our dedicated employees, I hope our services and this report bring value to the state's construction industry.

Mark Long
Administrator, Oregon Building Codes Division



Mission

The Building Codes Division (BCD) works with Oregonians to ensure safe building construction while promoting a positive business climate within the State of Oregon.

The division is part of the Department of Consumer and Business Services. Our responsibilities include:

Statewide Building Code

- ✓ Code adoption and interpretation
- ✓ Uniform and consistent building standards
- ✓ Single entity to resolve disputes and issues
- ✓ Formal appeal of local building department decisions
- ✓ Regional assistance coordinators

Regulatory relief options

- ✓ Statewide alternate construction appeals
- ✓ Master plan approvals
- ✓ Custom inspection and plan review services
- ✓ Approval of emerging technologies

Licenses and certifications

- ✓ Subcontractor licenses (i.e. electrical, plumbing, boiler)
- ✓ Local building inspector certifications

Inspector training

- ✓ Single provider training model
- ✓ Courses available onsite or online (Web-based)
- ✓ Skills enhancement classes

Value-added services

- ✓ Electronic permitting and plan review
- ✓ Rapid permit approval for essential projects
- ✓ Ready-build plans available online

OREGON'S BUILDING CODE SYSTEM

STATE GOVERNMENT Oregon Building Codes Division

A one-stop resource for:

- ✓ A uniform, statewide building code
- ✓ Consistent code interpretation and application
- ✓ Information regarding new technologies or construction trends
- ✓ Resolution of appeals and disputes between local government and businesses
- ✓ Statewide electronic permitting portal that provides 24/7 online access for jurisdictions, customers
- ✓ Licensing of contractors and tradespersons, and certification of building officials and code inspectors
- ✓ Entry-level and specialized inspector training courses
- ✓ Local building department services either long- or short-term to assist with employee shortages or unique construction projects



Did you know?

On average, the Building Codes Division receives more than 750 inquiries per month from businesses that seek information about the building code, building industry, trade licenses and certifications.

BUILDING OFFICIALS Certified Code Inspectors

- ✓ Apply and implement the state building code (using prescriptive and/or performance-based approaches) at the local jurisdiction level
- ✓ Provide building department services: issue permits, review building plans, and inspect construction to ensure code compliance and occupant safety
- ✓ Address code questions and identify solutions to assist contractors, builders, architects, engineers, and tradespersons



CONSTRUCTION PROFESSIONALS Contractors, builders, architects, engineers, and tradespersons



- ✓ Acquire and maintain necessary licenses to perform work in the state
- ✓ Apply the state building code to new construction at the local level
- ✓ Introduce new technologies to promote discussion and research, resulting in modification or development of new code
- ✓ Purchase permits, submit plans, and request code inspections
- ✓ Seek guidance from local building department regarding code questions
- ✓ Appeal a local building official's code ruling to the state, if necessary

Did you know?

City and county building departments in Oregon reported employing 795 building inspectors and other employees in 2014. Inspectors across the state traveled more than 3 million miles to perform more than 699,000 code inspections in that same year.

A GROWING BUILDING INDUSTRY

Permits and fee revenues

Oregon's building industry – a key sector in determining the overall health of the state's economy – grew at a moderate pace in fiscal year 2016 as measured by the number of building permits issued, fees collected, new building starts, and licensed and employed workers in the construction industry across the state.

The **Building Codes Division** works closely with city and county building officials, contractors, and licensed tradespersons to ensure the State Building Code is applied reasonably, predictably, and uniformly in new construction projects throughout Oregon. This provides continuity and efficiency in the building process; ensures that construction meets specific standards; and provides a consistent regulatory environment for business and labor. It ultimately ensures equal protection of all citizens, regardless of geographical and socio-economic status.

Both the number of building permits processed in Oregon and resulting fee revenue for local building departments trended upward for a

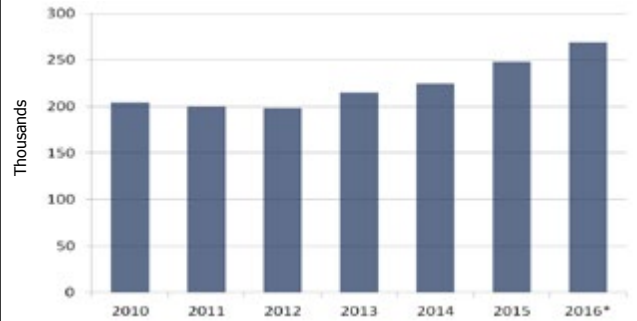
fourth consecutive year in 2016. In addition, a significant need for new housing in the state spurred growth in the number of new single family and

multifamily home starts in 2015. New apartment starts were up significantly in 2014, but leveled off in 2015.

Local jurisdictions in Oregon issued 268,523 **building permits** in FY 2016 – a 35.5 percent increase from the 198,153 permits issued in FY 2012 and a 8.25 percent increase from 248,053 issued in FY 2015.

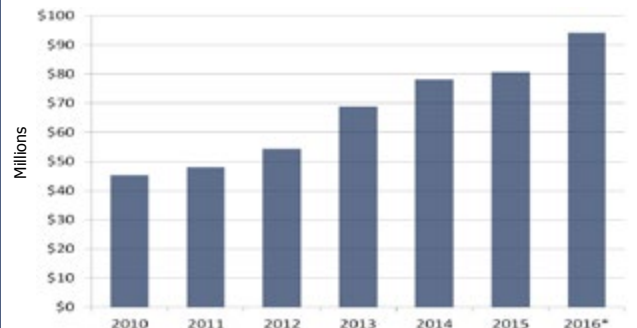
Local jurisdictions reported \$94.1 million in revenue from **building permit fees** in FY 2016, a 73.3 percent increase from \$54.3 million in FY 2012 and a 16.7 percent increase from \$80.6 million in FY 2015.

TABLE 1 - Statewide building permits



Source: Local government surcharge reports, as reported to the state by local jurisdictions, per fiscal year. *2016 fourth quarter numbers estimated.

TABLE 2 - Statewide permit revenue



Source: Local government surcharge reports, as reported to the state by local jurisdictions, per fiscal year. *final 2016 fourth quarter numbers estimated.

Single family construction starts grew 23.8 percent in 2015 (January through June) to a seasonally adjusted \$2.8 billion in Oregon. Multifamily starts grew 22 percent to \$66.6 million in 2015, but apartment starts were down about 27 percent and commercial building starts were down 19.4 percent from 2014.

TABLE 3 - Dollar value: construction starts in Oregon

	2009	2010	2011	2012	2013	2014	2015
Single family housing	1,303,294	1,302,787	1,238,164	1,652,881	2,279,268	2,330,897	2,885,219
<i>% of change</i>		0%	-5%	33.5%	38%	2.3%	23.8%
Multifamily housing	15,816	29,925	23,365	34,098	36,949	54,819	66,668
<i>% of change</i>		89%	-22%	46%	8%	48%	22%
Apartments	143,333	92,092	181,791	460,633	624,867	834,623	634,130
<i>% of change</i>		-36%	97%	153%	34%	36%	-24%
Commercial buildings	1,315,185	1,175,656	1,977,744	860,307	2,062,313	1,617,341	1,546,662
<i>% of change</i>		-11%	68%	-57%	140%	-22%	-4.4%

Source: Dodge Data & Analytics, based on calendar year.

Trade licenses and employment

During the 2007 to 2009 recession, many construction trades workers left the industry via retirement or “retooled” for other careers due to a lack of jobs. Despite this exodus, they opted to retain their trade licenses and/or certifications.

As a result, the number of active Oregon electrical, plumbing, and boiler/pressure vessel licenses has remained steady in past years. Active electrical licenses were down 1.7 percent in 2016 (see Table 5), but active plumbing licenses are up 5.6 percent (see Table 6). The number of boiler/pressure vessel licenses (all types) dropped 22.2 percent from June 2014 to June 2015, but then increased 17.9 percent from June 2015 to June 2016. The number of active inspector certifications in the state – 6,454 in June 2016 – increased 25.5 percent since June 2012 (see Table 7), partially due to the launching of the state’s Inspector Training Program in 2013. The program offers entry-level and specialized inspector courses on a rotating schedule.

Construction employment has grown steadily since 2011 (see Table 4) and some Oregon contractors and municipalities are reporting difficulty in finding sufficient skilled labor for trade positions. Industry is anticipating further short-term growth regarding the need for licensed electricians and plumbers. Regarding inspectors, the state is attempting to generate more interest in code inspection careers. Learn more about our Inspector Training Program on pages 8-9.

The number of active **Oregon electrical licenses** (all types) in June 2016: 23,130. That number has been trending down when compared to 24,013 (3.7 percent decrease) in June 2012 and 23,512 (1.7 percent decrease) in June 2015.

The number of active **Oregon plumbing licenses** (all types) in June 2016: 6,777. That number is trending upward when compared to 6,174 (9.8 percent increase) in June 2012 and 6,417 (5.6 percent increase) in June 2015.

The number of active **inspector certifications** (all types) in Oregon in June 2016: 6,454. That number is trending upward when compared to 5,142 (25.5 percent increase) in June 2012 and 4,578 (34.2 percent increase) in June 2015.

A monthly average of 86,825 **construction workers** were employed in Oregon in fiscal year 2016 - that’s a 28.1 increase from the monthly average of 67,758 reported in 2011 (a low point after the recession) and a 7 percent increase from the monthly average of 81,141 reported in 2015.

TABLE 5 - Active electrical licenses (all types)

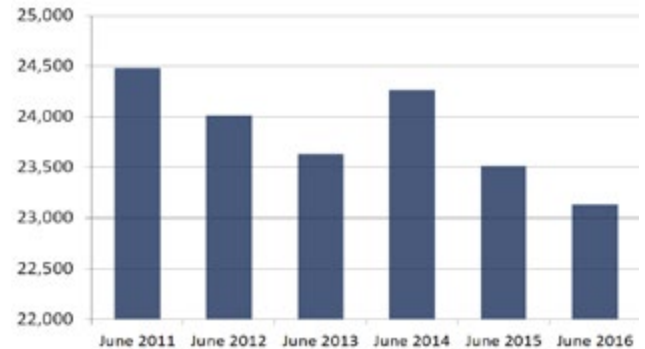


TABLE 6 - Active plumbing licenses (all types)

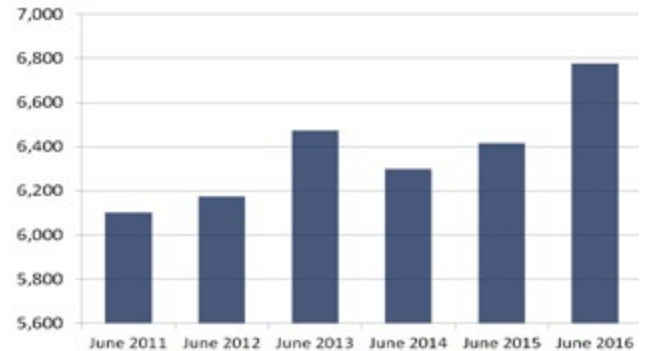


TABLE 7 - Active inspector certifications (all types)

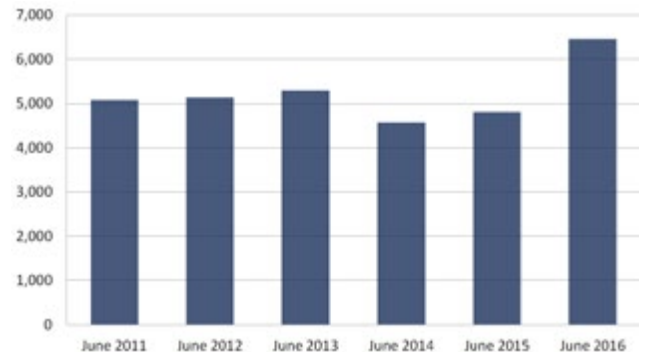
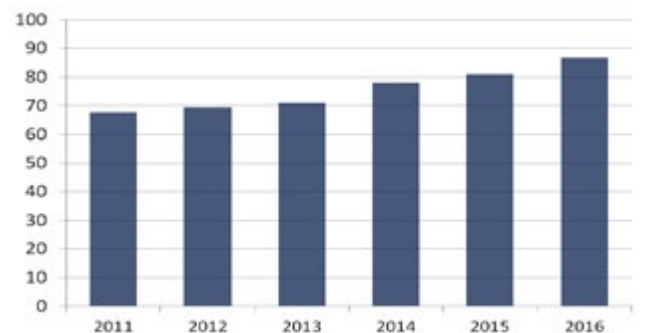


TABLE 4 - Oregon construction employment



Division addresses needs of customers across the state

Each workday brings a new and interesting question regarding the Oregon Building Code to BCD.

The division collaborates with a variety of customers to ensure the code is correctly interpreted and consistently applied across the state. Customers include local government employees such as building officials, code inspectors, fire marshals, city and county policy makers; builders, contractors and tradespersons; architects and developers. The division acts as a single entity to interpret building policy and help resolve issues between business and local government. Finally, quality customer service within the industry is always a high priority.

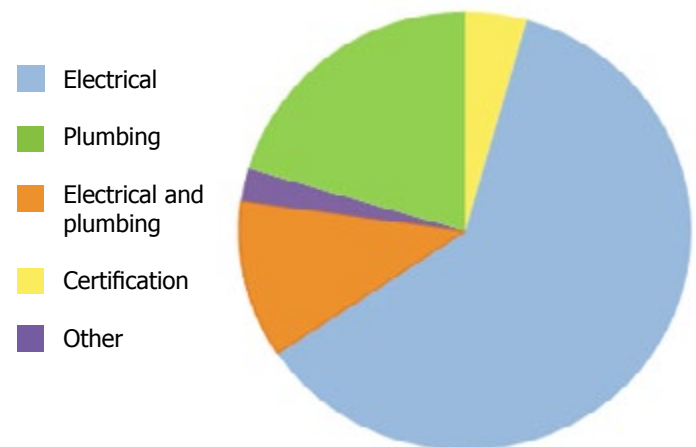
The division provides direct support to local jurisdictions through its regional services program. BCD has assigned staff to regions; each region is represented by a local BCD coordinator who works with customers to address issues that impact building projects and the overall construction economy. Coordinators place significant focus on projects in rural communities where jurisdiction resources are stretched thin.

The division also monitors customer needs by documenting public inquiries and responses. BCD documented 8,656 telephone and email inquiries in 2016. Of those inquiries, 50 percent were from contractors, trades workers, architects, and other individuals in the private sector; 44 percent were from local government in the public sector; and 6 percent were related to licensing, coming from both sectors.

Promoting safety through enforcement of building laws, rules

The division's [enforcement program](#) promotes construction safety by ensuring businesses and individuals that work in the electrical, plumbing, boiler, and elevator trades comply with state laws and administrative rules.

BCD opened 340 enforcement cases in January through December 2016 – that's up from 250 in 2015 and 296 in 2014. Of the cases opened, 60 percent were associated with the electrical trade; 18 percent with plumbing; 11 percent with a combination electrical and plumbing; 4 percent with RVs; and the remaining 7 percent with certification or other program areas (see Graph 8). The most common alleged violations involved failure to ensure proper licensing.



Graph 8: Enforcement cases opened in 2016 by program area

Online permitting, inspection portal continues to expand, add services

As of July 2016, more than 65 city and county building departments across the state are using [ePermitting](#), the state-administered online portal that gives contractors, builders, trades workers, and homeowners direct access to local building department services. The portal allows customers to purchase construction permits, upload building plans for review, and schedule inspections online with participating jurisdictions. A handy mobile app for iOS and android smart phones provides access to “real time” permit information while in the field. Services are accessible online 24 hours a day, seven days a week.

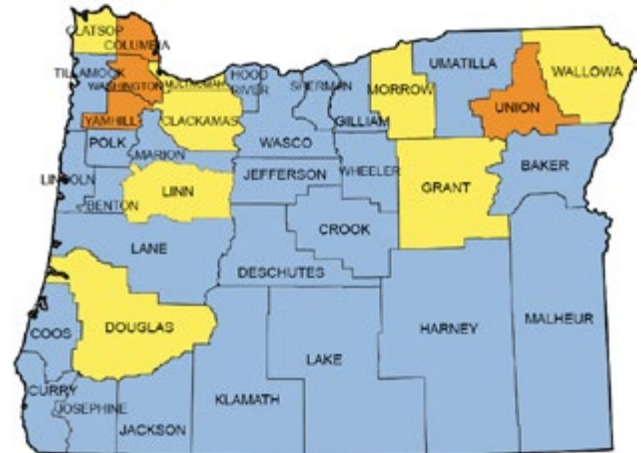
The [ePermitting portal](#) is a “one stop” single-access website that assigns common language and shared functionality to multiple building department processes. Contractors who work with multiple jurisdictions benefit from this approach. The site now serves more than 12,900 registered users. In calendar year 2015, 82,385 permits were processed through ePermitting, about 31 percent of all permits issued statewide in the same period. That’s a 27 percent increase over the 64,639 permits processed in the portal in 2014.

Here are some ePermitting program highlights from this past year:

- Three new full-service jurisdictions were added, with six more in process.
- Nineteen jurisdictions now use the portal’s planning module which streamlines development by enhancing communication between jurisdictions’ planning and building departments.
- Three Oregon Department of Environmental Quality offices that serve 11 counties went live with a new module to provide septic system permits and approvals. Seven additional counties provide septic permits through ePermitting.
- A new help desk ticketing system was implemented to streamline responses to customer queries.
- A new public-facing website design was launched, as well as a significant Accela software upgrade.
- Enhanced project tracking and reporting options to provided to contractors.
- Advanced training sessions were held in each region of the state for participating jurisdictions.

Participating jurisdictions (as of July 2016)

Counties



■ Basic ePermitting
 ■ Full ePermitting
 ■ Nonparticipatory

Cities

■ Basic ePermitting
 ■ Full ePermitting

Ashland	Astoria	Lake Oswego
Beaverton	Aurora	Lebanon
Corvallis	Baker City	Lincoln City
Hillsboro	Central Point	Milwaukie
La Grande	Coburg	Newberg
Medford	Coos Bay	Newport
Oregon City	Cornelius	Philomath
Pendleton	Cottage Grove	Redmond
Salem	Dallas	Sisters
Troutdale	Florence	Springfield
Wilsonville	Forest Grove	Sweet Home
	Happy Valley	Talent
	Hermiston	Veneta
	Hood River	West Linn
	Junction City	

In the queue:

Wallowa County
 Union County
 La Grande (city)
 Columbia County
 Rainier (city)
 Columbia City



INSPECTOR TRAINING

Increasing the workforce to meet state's needs

A 2014 study completed by the International Code Council estimates that more than half of code inspectors in the United States is estimated to be age 55 or older. Twenty-nine percent are age 45 to 54. As a result, a projected 82 percent of inspectors will leave the profession in the next 15 years.

The [Oregon Inspector Training Program](#) added new classes and launched an outreach program to promote code inspection services as a viable career path in 2015-16.

The program added medical gas inspection and building official certification courses to its catalog. The new classes reflect both a need to offer more specialized training as well as meet new state rules that took effect July 1 that require national code certifications to be converted to Oregon code certifications. This conversion will eliminate the need for inspectors that work in the state to maintain national certifications, thus streamlining certification processes and reducing national testing and renewal fees for local government.

Since 2014, more than 730 certifications have been issued to students who have completed courses in the state's training program (as of July 2016; see Table 9). In its early stages, the program generally attracted inspectors that were employed by

a city or county building department, but that has changed. In 2014, 79.2 percent of students worked for a jurisdiction (versus industry), compared to only 45.7 percent of students in 2016.

The training program has focused on cross-training municipality inspectors in electrical, plumbing, structural and mechanical. This helps streamline the local inspection process by reducing the number of inspector visits to job sites. Currently, the program is enrolling more students who do not work for a municipality – and who do not necessarily have a significant construction or trade background – but are interested in a career that has long-term prospects and a good starting wage.

This is good news for both jurisdictions and contractors in Oregon who are reporting challenges in filling vacant inspector positions, especially in areas where construction is thriving and/or in rural communities. A 2014 study completed by the International Code Council estimates that more than half of

TABLE 9: Certifications earned via Oregon Inspector Training Program courses by type and year, 2014-2016. *through July 2016

Course/Class Title	2014		2015		*2016		TOTALS		
	Jurisdiction	Industry	Jurisdiction	Industry	Jurisdiction	Industry	Jurisdiction	Industry	All total
Building Official Certification					25		25		25
Medical Gas Inspector					13	1	13	1	14
Oregon Inspector Certification	43	33	21	105	23	91	87	229	316
Residential Electrical Inspector	52	5	13	16	11	11	76	32	108
Residential Plumbing Inspector	50		24	11	7	9	81	20	101
Residential Structural Inspector					27	26	27	26	53
Specialized Electrical Inspector			35	7	11		46	7	53
Specialized Plumbing Inspector			50	6	8	5	58	11	69
TOTALS	145	38	143	145	125	143	413	326	739

code inspectors in the United States is estimated to be age 55 or older. Twenty-nine percent are age 45 to 54. As a result, a projected 82 percent of inspectors will leave the profession in the next 15 years.

Historically, individuals worked in construction or in the trades for several years prior to becoming a building inspector, but this pathway no longer provides the number of inspectors needed to fill vacant jobs. To connect with entry-level workers, BCD program staff attended local high school technical career fairs during the 2015-2016 academic year to promote code inspection as a career, and identify students who might be interested in taking courses after graduation.

BCD is also connecting with individuals who seek a career change and are unfamiliar with code inspection opportunities. In many cases, these individuals have construction experience, but will need to acquire additional foundation knowledge that traditionally comes from spending time in the construction industry. The state's new certification program allows prospective inspectors to start at a basic level and work their way up to more complex certificates.

Regardless of a student's background, instructors are encouraging all students to take a "lifelong learner" approach to careers in code inspection as the industry will continue to evolve through technology. It's too early to know if these efforts will have significant impact, but the 2016 student numbers are trending upward.

The Oregon Inspector Training Program's interactive classroom in Salem can seat up to 30 students onsite while also connecting to students who attend online (simultaneously) via the Internet. All students have opportunities to interact with electronic building plans, electrical and plumbing components, and other web-based resources.



2016 NEWS & HIGHLIGHTS

Addressing overlapping language in state's building and fire codes

Since the adoption of the 2014 Oregon Residential and Structural Specialty Building Codes, the division has received numerous complaints from contractors and trades workers regarding overlapping – and often confusing – language between Oregon's building and fire codes. To make matters worse, building and fire officials in some local jurisdictions have periodically been at odds when interpreting codes in regard to fire protection features such as alarms, sprinkler systems, fire barriers, and access points.

These conflicts contradict the state's commitment to establish and maintain a building code that provides uniform performance standards that are consistent and predictable for customers. The division has provided some clarification through legislative action and rule changes over the past few years. Example: Triggered by a fire official's determination that a dwelling had inadequate fire truck access or water supply, the division implemented a change in rule in July 2016 that clarified the process that a building official must follow regarding one- or two-family dwellings when allowing one or more of the Uniform Alternate Construction Standards at the time of a building permit application. The modified rule states that the building official – not the fire official – will determine which of the fire suppression or containment mechanisms should apply (as Uniform Alternate Construction Standards) to a dwelling's construction.

The division is working with attorneys from the Oregon Department of Justice to clarify overlapping building and fire code language. The attorney general's office has suggested that specific language in the state's fire code would be more appropriately placed in the state building code, which governs all new construction, reconstruction, alteration, and repair of buildings and other structures, as well as the installation of mechanical devices and equipment. As a result, the division will work with the Building Code Structures Board and impacted stakeholders over the next several months to integrate specific fire code provisions into the Oregon Structural Specialty Code via upcoming code reviews and the rulemaking process.



In the Albina Yard building, cross-laminated timber panels were laid horizontally on beams to construct floors between stories. In this photo, the underside or bottom of the panels are viewable as the ceiling.

Cross-laminated timber takes on new heights in four-story building

The Building Codes Division worked closely in 2015-2016 with the developers and contractors constructing Albina Yard, a unique four-story office building in north Portland. The building incorporates cross-laminated timber (CLT) panels in its construction – CLT is considered an innovative and emerging wood product in the United States but has been used for years in Canada and parts of Europe. The CLT panels used in Albina Yard were fabricated in Oregon. Working with project owners, contractors, and the City of Portland, the state issued the building permits and work authorizations, and performed all code inspections for the building. While the building did not exceed the prescriptive nature of Oregon's code, it provided an opportunity to more thoroughly understand how a performance-based design and review method may be applied to ensure code compliance in future CLT structures (as an experimental and emerging technology). The Albina Yard building was completed in fall 2016.

Adoption of specialty codes underway

The division began the review process in 2016 for the following specialty codes: 2017 Oregon Electrical Specialty Code, 2017 Oregon Plumbing Specialty Code, 2017 Oregon Residential Specialty Code, 2018 Oregon Structural Specialty Code, and 2018 Oregon Mechanical Specialty Code. While these updated codes will not be formally adopted until 2017 and 2018, it requires several months for each code committee to review the prior code, as well as submitted proposals for amending the code. A committee for each code formally recommends amendments to its corresponding executive board; each board then makes amendment recommendations to the division. BCD thoroughly analyzes proposed amendments to ensure its public policy goals are achieved. The public has opportunities to comment on code review and adoption at committee and board meetings, and during the rulemaking stage.

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Department of Consumer and Business Services

BUILDING CODES DIVISION

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