

HOW BUILDING DEPARTMENTS ARE PIVOTING WITH THE COVID-19 CRISIS

...WHILE STILL SUPPORTING BUILDING CODE ENFORCEMENT

THE CRISIS UNFOLDS

What a difference a few months can make for the construction industry. Just this last January the construction industry was operating at full speed, new residential and commercial buildings were popping up, sales of these new properties were strong, and the employment rate was at historic lows.

As the COVID-19 crisis unfolds, building departments and construction industry confront work-from-home challenges, social distancing and how many people can be in a building or an individual floor at a one time, reduced budgets and cash crunches, uncertain code compliance procedures, and state and local government mandates for the workforce. The Southwest states have each considered construction as an essential industry and building projects have continued, albeit at a much slower pace. (One exception: The City of Denver's permit construction activity is exceeding last's years.)

Most building departments and the greater building industry have already been here, to some extent, as the memory of the great recession from 2008 to 2011 is still fresh in their minds. Many have been able to readjust quickly and implement some of the policies from ten years back to adapt to the COVID-19 pandemic, while expanding their use of new remote and virtual inspection techniques.



Temporary office closures and social distancing measures are shaking up how building departments perform their key roles, including permitting, plan review, and inspections. Some key changes may continue even after COVID-19 fades.

UNDERSTANDING TODAY'S CODE COMPLIANCE PRACTICES

SWEEP and its partners across the Southwest educate the building industry and building departments on the details of the International Energy Conservation Code (IECC) and ASHRAE 90.1 standard—including how to document and review energy requirements on building plans and then inspect and verify the energy requirements during construction.

With this in mind, SWEEP reached out to jurisdictions across the Southwest and reviewed practices nationally to understand how building code enforcement is operating under new COVID-related state and local orders. We want to understand and disseminate best practices, as well as advise on how energy code trainings and educational efforts should be modified given the new reality.

At the forefront of all building departments is the importance of safety for residents, building occupants, building department staff, and the building trades. During the COVID-19 outbreak, building departments are limiting access of their staff both in the office and in the field. Some building departments have skeletal staff rotating through the office, while other departments are closed and operating virtually. Here's how they are handling their key functions:

- **PERMITTING:** Many jurisdictions have implemented online permitting portals over the past decade, widely preferred by designers and builders as it translates into a massive time and costs savings for these industries. This translates to “business-as-usual” during the COVID-19 outbreak. Where jurisdictions do not currently offer online permitting, they are supporting the permitting process through email and snail mail.
- **PLAN REVIEW:** The plan review process—where the plan reviewer confirms that the building plans reflect the requirements of the codes—is one of the areas of code compliance where energy savings are realized. Numerous energy code studies have shown if the building plans do not contain energy code requirements, the energy code requirements will not be included in the final construction. For the most part, building departments large and small have been transitioning to electronic plan review over the past decade. Fortunately, this has allowed building department staff to quickly transition from working in the office to working remotely. The software industry that supports electronic plan review is relatively mature with many active vendors.
- **INSPECTIONS:** Here's where we are seeing the big pivot for building departments, and builders. The inspection phase prior to the COVID-19 pandemic had not seen much change since building code compliance began. After plan review, and then during each phase of construction, the building inspector would visit the building site in person and verify compliance with the code. Now, because of the COVID-19 shutdowns and new social distancing protocols, the building departments have had to rapidly change their processes, leading to the introduction and in some cases expansion of virtual inspections.

By and large, onsite inspections are continuing for new construction, since these structures are unoccupied. For occupied structures, we see a mix: some building departments won't allow any physical inspection and have either temporarily ceased these inspections or have transitioned to virtual inspections. Others leave it up to the individual inspector. Where onsite inspections do occur, the building site—or at least the floor being inspected—must be cleared of personnel and anyone on site must be wearing a face mask.

PREDOMINANT VIRTUAL TOOLS IN USE

While virtual are not new, they haven't been utilized by building departments at the level seen today. In 2015, San Bernardino County, CA piloted virtual inspections. Today building departments across the country are deploying this practice to maintain project schedules while saving money. After checking in with building departments in the Southwest and reviewing the national code compliance picture, we found some similar practices being deployed, including:

- **MOBILE DEVICES—THE PREDOMINANT METHOD FOR VISUAL INSPECTIONS.** Apple's Facetime and Google Duo from Google's Android system are the primary tools for building inspectors to view the building components and construction practices. Secondary tools for viewing buildings included Skype® and Microsoft Teams. With this method, the inspector (offsite) directs the builder or contractor (onsite) to show various features of a building.
- **STILL PICTURES EMAILED TO THE BUILDING DEPARTMENT.** This method is the least used, but still available for some departments.
- **CHECKLISTS.** Checklists range from building trades requesting a virtual inspection to participating in the inspection.
- **HAND TOOLS.** Hand tools such as a tape measure, level, electrical tester, ladder and so-forth allow the onsite builder or trade to assist the building inspector in visually inspecting the construction as if they were there using these tools.
- **DRONES.** Drones are an option in some communities for inspecting roofs and vertical wall assemblies. The inspector typically sits in a nearby vehicle operating the drone.
- **ADDITIONAL NON-VIRTUAL TOOLS.** These include leveraging the energy rating workforce and **RESNET's new interim practices** to support social distancing

TYPICAL COMPONENTS AND SYSTEMS ALLOWED UNDER VIRTUAL INSPECTIONS

With many building inspections in existing occupied buildings halted to keep inspectors and occupants safe, changeouts cannot be inspected today in person. This is also where many building departments see an opportunity to replace a physical inspection with a virtual inspection. A typical list of virtual inspected items that yield energy savings include:

- Water heaters
- HVAC systems
- Insulation, windows, doors (residential additions)
- Basement finish – insulation (residential)
- Minor interior alterations
- Residential pools and spas

Southern Nevada, which had thefts of HVAC and kitchen appliances in the great recession of 2008 to 2011, is allowing a final inspection *prior* to the installation of these appliances, so long as the contractor signs an agreement that the installation will meet building code requirements.

INDUSTRY SUPPORT

The International Code Council has dedicated a **new section** of its website to support code enforcement and compliance during the COVID-19 pandemic. The website offers news, resources, webinars, and stories of jurisdictions that are deploying new practices to maintain code compliance. In addition, ASHRAE has established an **Epidemic Task Force** to help deploy ASHRAE's technical resources to confront the challenges of the current pandemic and future events.

MUNICIPAL EXAMPLES

- **Tucson, AZ:** 100% remote virtual inspections.
- **Flagstaff, AZ:** Remote video inspections for change outs and some new projects. Building inspector has discretion to use virtual capabilities.
- **Clark County, NV:** Remote video inspections for change outs and specific new installs.
- **Las Vegas, NV:** Eligible residential video inspections.
- **Fort Collins, CO:** Remote inspections available for unoccupied buildings and only at the inspector's discretion.
- **Thornton, CO:** Preference to leverage video inspections for new construction, but still supports in person inspections.
- **Boulder County, CO:** Offers virtual inspections when deemed eligible by the building inspector.

BENEFITS FOR ENERGY EFFICIENCY?

Are the new practices being deployed, even temporarily, beneficial to the construction of energy-efficient buildings? Will they continue to be used after the pandemic recedes? Only time will tell, but we see benefits to conducting virtual inspections especially for large counties with large distances between projects. Remote inspections can help counties with already overtaxed building departments perform inspections and verify the efficiency requirements in the building codes, saving time and money in the process. Larger urban communities with understaffed building departments especially during periods of high construction activity can also benefit by using these virtual, off-site tools.

Physical building inspections will resume for all types of buildings at some point, but some of the innovations in building inspection and code enforcement brought about by the COVID-19 pandemic are likely to persist, enabling building departments to ensure construction of safe, resilient, and energy-efficient buildings in any type of business environment.

ABOUT THE AUTHOR: Jim Meyers is the Buildings Program Director for the Southwest Energy Efficiency Project (SWEET), where he focuses on building efficiency. He has extensive experience with building energy code development, compliance, and adoption of the International Energy Conservation Code (IECC). Jim is responsible for conducting analysis, preparing case studies, evaluating new and emerging technologies for buildings and promoting the adoption of state-of-the-art building energy codes. He can be reached at jmeyers@swenergy.org.

