Online Electronic Permitting Raising Efficiency

Online or electronic construction permitting is changing the way municipalities throughout the Northeast and Mid-Atlantic are issuing permits and scheduling inspections. For builders, plan reviewers, inspectors, and municipal and state administrators, online permitting, electronic plan review, and virtual inspection requests are streamlining and expediting the construction process while helping municipalities ensure code enforcement and compliance.

Building permits[1] traditionally have been issued by obtaining a permit application at a local or state code office and/or from online download. Currently, the majority of permit applications, along with the printed architectural drawing of a project, are submitted for code review via paper copy to the local or state code inspector's office. The utilization of electronic permitting – an online automated building permitting software system with a public user interface – is gaining traction for the efficiencies and timeliness provided to all who interface with the system. Current health risks and various limitations restricting in-person interactions due to COVID-19 provide a compelling reason for the implementation of electronic permitting. Electronic permitting, combined with virtual inspections, provides a process that is similar to customary permitting and inspections but more accessible, expeditious, and accurate.

An online electronic code compliance system can be designed to manage the permitting process from application to retrocommissioning[2] years after issuance of the original building permits.

Electronic Permitting Capabilities include:

- Plan submittal and review
- Permitting (various building typologies)
- Inspection requests (interim, final, annual, long term retro-commissioning, virtual)
- Scheduling inspections
- Fee calculation and collection
- Project tracking (multiple data points for various programs)
- Workflow administration
- Customer services communication (web-based and telephone voice response)
- Inter- and intra-departmental communication and management.

The consumer benefits of online permitting include:

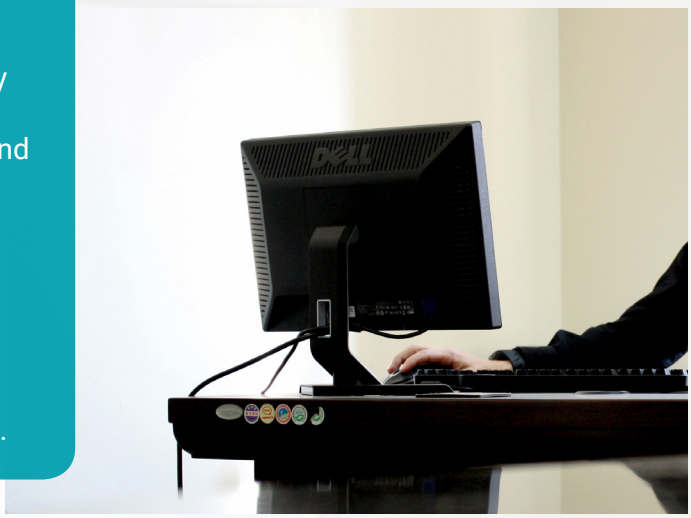
- Reduced permitting time
- Enhanced quality of service
- Coordination with private and public entities that provide constructions services (utilities, alarm services, renewable providers)
- Annual and retro-commissioning commercial building inspection reminders

[1] Building permits are a type of written approval required by municipal or state regulatory bodies before construction of a new or existing building can legally occur. Building permits ensure the safety of the work and the project's compliance with construction, energy, and zoning codes.

[2] Retrocommissioning is the utilization of the commissioning process to existing buildings. Retrocommissioning improves how building equipment and systems function together to optimize building performance.

Building department benefits include:

- Inspection scheduling and multiple stop route planning optimization
- Fee collection
- Improved customer service and staff efficiency
- Operational savings (administrative, travel)
- Inter and Intra Departmental communication and management
- Electronic record-keeping
- Paper reduction
- Transparency
- Enhanced use of online field inspection and virtual compliance software
- Virtual and field access to codebooks, code training manuals, and code compliance guides.



Electronic Permitting and Energy Code Compliance

The energy code is often not considered a life safety code and, therefore, not enforced as regularly or as rigorously as other codes. Designing systems for electronic online permitting provides an opportunity to equalize the use of the energy code and emphasize energy code compliance. For instance, the electronic permitting system can be designed to require an application or answering questions in order to apply for other construction permits. In addition to the benefits described above, electronic permitting provides various data sets (i.e. cost and type of construction, level of energy efficiency, HERS or ERI scores, compliance path utilized) that can be integrated with other state and municipal electronic data management systems. The aggregated data can assist states and municipalities in crafting energy efficiency policies, forecasting construction trends, establishing asset rating and disclosure initiatives, analyzing energy efficiency program performance, and alert program administrators to trends that could trigger the need for new programs. Energy code compliance data from electronic permitting systems can be used to craft targeted training opportunities and educational compliance collateral for inspectors. Ultimately, increased compliance equates to overall building life safety, resiliency, and healthy building.

COVID, Codes & Online Permitting

In the current COVID era, electronic permitting systems can assist states and municipalities in the continued delivery of energy efficiency programs, weatherization inspections and code compliance by integrating with virtual inspection systems (see below).

Electronic permitting can assist in issuing expedited permitting for specific predetermined modification permits needed to reopen or ensure the safety of various building types.

Implementation

To implement an electronic permitting system, each state, municipality, or building department begins by assessing its internal administrative needs, external demands of permit applicants or other government departments, current or desired workflow processes, and the necessary level of customer service. After the assessment, budget, personnel, contract, and other administrative project planning help establish the electronic permitting platform.

Types of Systems

Each state, municipality, and building department has unique situations that will require the customization of the electronic permitting system. Some states create templates for municipalities to utilize, like Rhode Island, New Jersey, and Vermont (see Electronic Permitting Policies below). Many municipalities, particularly larger cities, initiate their own systems in the absence of a statewide system.

Jurisdictions can create the actual software and user interface or purchase one from software providers that can be customized. Particular entities will implement component systems; online portals for specific needs such as obtaining the permit application or making payments. The foundational system can be built upon in consecutive years until a full-service system is possible.

Platforms for electronic permitting can exist both as stand-alone departmental systems or integrated platforms that connect to municipal systems such as tax parcel maps and other geographic information system platforms. Individual building departments or municipal systems can connect to county, state, or regional databases. Integrated systems can also connect to utility request platforms, multiple listing services (MLS), utility company energy efficiency incentive programs, or energy benchmarking and disclosure databases. In coordination with system implementation, plans for training staff and system maintenance should be developed to complement efforts.

Virtual Inspections

Online electronic permitting platforms can be tailored to accommodate virtual inspections. A virtual inspection is an interactive video inspection performed by a home or building contractor, homeowner, system installer or other construction or remolding provider in coordination with a licensed or certified inspector. Using video conferencing technology either through a service or one-to-one application (i.e. Facetime, WhatsApp), the home/building owner will connect with the inspector who will instruct the home/building owner or other individual through the inspection. Virtual inspections may also be conducted by a code official using drones or artificial intelligence technologies. Virtual inspections are not only applicable to new construction but also to assess existing structures for utility energy efficiency or weatherization programs. In some cases geotagged still photos can be utilized for virtual inspections.

Barriers and Costs

Funding for implementation and continued maintenance of electronic permitting platforms is sighted as the primary barrier to implementing these systems. The most common scenario for financing online permitting systems comes directly from building permit fees. Municipalities, notably smaller or rural communities, may choose to pool resources to create a system to accommodate several jurisdictions. Communities may also want to contract with a third-party energy code specialist to review plans for the energy code if in-house staff is not adequately trained or limited in time due to covering other codes for multiple jurisdictions.

Conclusion

Overall, the benefits and potential opportunities afforded by online permitting systems – particularly the potential to ensure energy code compliance, support virtual inspections, and provide expedited permitting – outweigh the cost, training, and system maintenance barriers. As codes evolve to meet climate change challenges through efficiencies in energy usage, it is increasingly essential to correlate the operational efficiency of building departments through online electronic permitting.

Case Study: Electronic Permitting in Lansdowne, PA

Lansdowne, Pennsylvania facilitates a comprehensive electronic permitting process using its Building Permit Application Portal. The online portal allows applicants to apply for new construction or addition permits, as well as other building-related permits like electrical and plumbing. All required paperwork and fees may be submitted digitally. Once the code department has approved the application, applicants are notified via phone, and they may go pick up the approved permits. There is also infrastructure for virtual inspection capabilities. Virtual inspections are conducted using live video applications on a smartphone or tablet and guided by the contractor and inspector who has received all approved drawings and documentation.

Examples of Electronic Permitting Policies

State	Electronic Permitting Program
Connecticut	New Haven East Hartford Bridgeport
Delaware	New Castle County Wilmington
District of Columbia	https://dcra.dc.gov/node/1408621
Maine	Portland York Bridgeton
Maryland	Baltimore City Prince George's County
Massachusetts	State Owned Buildings Cohasset Cambridge
New Hampshire	Derry Hampton
New Jersey	Statewide construction permits
New York	New York City
Pennsylvania	Philadelphia Landsowne
Rhode Island	Statewide e-permitting
Vermont	Statewide Burlington
West Virginia	Morgantown