

# Process for Residential Energy Code Remote Virtual Inspections

The use of Remote Virtual Inspections (RVI) can provide benefits to jurisdictions and customers alike. It will increase the efficiency of the inspection process utilizing modern technology. Depending on the location and complexity of a project, some limitations may impact its use. In cases where the inspector determines an RVI is not suitable or technology fails to provide sufficient visual clarity (e.g., poor/no service or Wi-Fi, poor lighting, etc.) an onsite inspection will be required. The jurisdiction may choose to use an approved third-party inspection agency or utilize staff inspectors.

Where Wi-Fi and cellular reception are poor or not available, some jurisdictions may consider allowing the contractor to video the areas that need an inspection and submit the video for inspection by the assigned inspector, however, protocols need to be in place to ensure the videos are for the permitted project.

Clear understanding of the RVI requirements and communication throughout the process by all parties is paramount to the completion of a successful inspection. The inspector will check all aspects of the permitted construction project to the effective codes and other applicable laws and regulations no differently than if it were an onsite inspection. Clearly identifying the project jobsite location, posted address or Geo-Code, GIS, as well as location within the building will be a critical part of the process.

A useful tool in the process is the *Remote Virtual Inspection Protocols and checklist for Residential Energy Code Inspections*. It provides a comprehensive list of energy inspection items from the 2018 and 2021 editions of the International Energy Conservation Code.

## 6.1 Jurisdiction: Scheduling Remote Inspection

1. Confirm there is an active permit with no outstanding suspensions, fees owed, or stop-work orders in place.
2. Ensure participation/consent agreement form has been signed by customer prior to inspection, if required by AHJ.

3. Schedule inspection time.
  - All remote inspections should be scheduled a minimum of one business day prior to the requested date. However, some exceptions may apply; all remote inspections will be scheduled to provide access to the work by the customer and inspector based on a mutually agreed date and time.
  - It may be necessary to schedule multiple inspections to complete a project.
  - Inspections scheduled either online (preferable) or by telephone.
  - Schedule sufficient time for the type of inspection requested.
  - Send an inspection confirmation email or text to the customer with the date, approximate time of RVI, name of the inspector assigned and any special instructions.
4. Post time slots on the AHJ's website for inspections on the scheduling page:
  - Anticipated length of inspections per type (e.g., water heater installation, HVAC replacement, etc.) needs to be established.
  - Each customer to be given an approximate time window for the inspection (thirty minutes, plus or minus).
5. Post on the AHJ's webpage the earliest available time for remote inspections and the latest time of each day a remote inspection may be scheduled; Monday through Friday or other days selected by jurisdiction. Times can also vary by day depending on office policies.
6. Schedule after hour or emergency inspections on a case-by-case basis (additional fees may be applicable).
7. Determine the types of inspections allowed for remote inspections.
  - Note, any or all inspections may qualify for an RVI, depending on the AHJ's resources and policies.
8. Establish a policy for onsite inspections for quality control of the remote inspection processes. This may be done randomly through the permitting software.
9. Determine and note the video platforms available for use that are compatible with the permitting/inspection software and equipment.
  - For example: FaceTime, Google Duo, Zoom, WhatsApp, Skype, Tango, Webex, Microsoft Teams, GoToMeeting, etc.

## 6.2 Customer: Scheduling Inspection

1. Ensure there is an active permit issued, an application filed, or obtain the appropriate one prior to attempting to schedule an inspection for the project in question.
2. Where required by the AHJ, electronically sign a participation/consent agreement indicating that the permit holder of record or representative: (see sample in Appendix A)
  - Consents to the use of remote inspections and has the consent of the project owner to use remote inspections if they are not the permit holder.
  - Is responsible for their own safety during the remote inspection.
  - Allow the complete use of the videos and photos of the remote inspection by the AHJ.
  - Certifies they are making available the site and inspection items truthfully and to the best of their ability.
  - Is responsible for compliance with all codes and standards applicable to the project.
  - Acknowledges that participation in the remote inspection program is voluntary (if not a mandatory program within the AHJ's jurisdiction).
  - Acknowledges that the decision to perform an RVI is at the sole discretion of the AHJ.
  - Releases liability.
3. Prior to contacting the department to schedule the inspection, confirm that the minimum criteria for remote inspections are met. Check jurisdiction's website for complete list of qualified inspection types.
  - Note: some types of inspections may be too complex or otherwise not compatible for remote inspections.
4. Log on to the jurisdiction's online scheduling portal or call to schedule an appointment for RVI inspection.
5. When scheduling the inspection, provide the address, permit number, type of inspection, and number of requested inspections, if more than one is needed, e.g., frame reinspection and insulation.
  - If a project requires multiple inspections such as a foundation, plumbing, and final, each of these will be identified on the permit(s). Reference all when scheduling the requested inspection.
6. Onsite personnel representing the customer must be at least 18 years old or with an adult to perform the virtual inspection.
7. Reply to the confirmation email from the AHJ to confirm appointment.

### 6.3 Customer: Preparation for Remote Virtual Inspection

1. Prior to the inspection, ensure that:
  - a. The jobsite is safe for the individual(s) using the device during the remote inspection, including health safety.
  - b. The device (smartphone, tablet, \*drone, etc.) is fully charged and has a suitably charged additional power supply (battery pack).
  - c. The jobsite has high speed Wi-Fi connectivity or minimum 4G cellular service with a strong signal.
  - d. A repeater or other device that strengthens the video signal where there are areas within the building or jobsite that Wi-Fi or cell service is weak may be required. If the signal is too weak, the inspection may be stopped by the inspector.
  - e. When recording is required by the jurisdiction ensure the device has sufficient memory for the inspection time and display video at high resolution.
  - f. The necessary tools based on type of inspection are readily available.
    - For example, have a flashlight, tape measure, level, step ladder (for close ups of ceiling), GFCI tester, etc. An extending pole for the video device, such as selfie pole may be very helpful in taking the smart phone or other video device closer to the point of inspection in places such as very high ceilings.
2. Be ready to receive the call at the scheduled time or window provided by the jurisdiction.
3. Have the AHJ's approved stamped set of plans per code, permit card, inspection checklist and other necessary documents available onsite.
4. All features applicable to the required inspection must be visible at the time of the remote inspection. These features must be captured sufficiently and clearly for the inspector to evaluate.
  - Make sure there is good lighting and clear the area of any unnecessary objects that may interfere with the inspector's view. Include a secondary light source in addition to the light from the device.
5. If at any point the inspector believes that the remote inspection process is not allowing them to properly assess compliance, they may require that a building site inspection be conducted at a future date or instruct the customer to make different arrangements.
  - Solely at the inspector's discretion, in areas within the jobsite where there is an insufficient Wi-Fi signal or cell service, contractor may take video and/or photos and later show the inspector for inspection.

6. The remote or onsite inspection may be conducted by a jurisdiction's inspection staff or by an approved third-party inspection agency, if approved by the AHJ.

\* Note: In the U.S., Drones (Unmanned Aircraft Systems) are regulated by the [Department of Transportation, Federal Aviation Administration \(FAA\)](#). For jurisdictions in the United States, check with the FAA on the latest regulations for the operation of small unmanned aircraft systems. For jurisdictions outside the United States, check with governmental agencies that regulate the use of drones within the jurisdiction.

#### **6.4 Customer: Receiving Remote Virtual Inspection Call**

1. Make sure your device (smartphone, tablet, laptop, etc.) is fully charged.
2. Clean your device lens and screens for maximum clarity.
3. Using headphones or earphones is recommended to improve communication.
4. Accept the video call at the scheduled time and respond to instructions from the inspector.
5. Turn off device (phone or tablet, etc.) notifications during the virtual call. Notifications can freeze the video call and will cause delays to the inspection and could require the inspection to be rescheduled.
6. Set device so there is a small screen view of what the inspector is viewing.
7. Allow adequate time for the inspection type as site specifics and inspections vary widely in time to complete.

#### **6.5 Customer: During the Inspection**

1. Ensure device is set so that there is a small screen view of what the inspector sees. Tap the reverse camera icon.
2. Ensure background noise is kept to a minimum so it will not interfere with communications with the inspector.
3. Begin inspection at the street view looking at the structure with the address or other required jobsite identification in the video display.
  - Inspector may also verify location through GPS/Geotagging where the service is available.
4. Follow the directions of the inspector. The inspector will set the pace as needed.
5. Walk the inspection as directed by the inspector.
6. Make note of any items that need to be corrected. The inspector will discuss each of the items, so any necessary corrections are understood.

7. Be prepared to take and send pictures or videos of paperwork from the inspection or other items requested by the inspector.
8. Do not write any comments on the permit card unless instructed otherwise by the inspector. The card will be updated during the next field visit.
9. The inspector will communicate during the virtual call whether the inspection has passed or failed, and which items need correction prior to reinspection. The inspection information will be emailed to the contact information listed in the permit record.
10. Do not cover any work identified by the inspector needing corrections until the corrections are verified by reinspection.
  - Reinspection fees may apply in accordance with jurisdiction policies.

### **6.6 Jurisdiction: Inspection results**

1. Results of the inspection will be entered into the jurisdiction's permit project database after the virtual call is completed. It is important to note that the inspection was completed using the remote virtual inspection process.
2. If the inspection involves electrical or gas service connections and an approval tag for the utility to make a connection is required, jurisdictions should work directly with the utility company to communicate approval to connect.
3. The day following the inspection:
  - a. Inspection comments will be available on the jurisdiction's website indicating passing or failing with the list of corrections when applicable.
  - b. In addition, the inspector may email the inspection information upon request to the customer.
  - c. The inspector will determine whether additional fee(s) for reinspection is required.
4. Scheduling a reinspection or the next progress inspection needed is based on availability of time slots.
5. The inspector may provide an option for the customer to send a video or photos of the corrections made directly to them for inspection and approval.
6. Always provide the contact information, address, and permit number on all communications.

## 7.0 Maintaining Records

### 7.1 Records Management

1. All permit records should be managed and maintained in accordance with the jurisdiction's policies, laws, regulations, and codes.

2. Records may include video recordings or photographs that may be subject to privacy or other laws.

These include but are not limited to the following:

- a. Permit application and related information
- b. Plans and documents
- c. Correction notices and inspection records
- d. Live video recordings (maintained in accordance with policies and procedures)
- e. Videos or photographs provided by customer (maintained in accordance with policies and procedures)
- f. Updated documentation
- g. As-built plans and documentation

Note: Part or all of the jurisdiction's records may be subject to public records disclosure laws.

## 8.0 Training and Communication

Training and effective communication of processes, procedures and requirements are essential and a critical part of the success of any program. This program is no different as it lends itself to new technology, new programs, and methods that are in many cases, new to the building construction and safety industry. Therefore, training of jurisdictional staff as well as the building industry on the various programs and procedures will save time and money and make the administrative and enforcement process a positive experience with minimal confusion. It also lends itself to better communications between a jurisdiction and its customers.

## 8.1 Staff Training

1. Ensure all staff are trained in the appropriate areas of responsibility including use of the relevant software
2. Permit Technicians:
  - a. Permit applications
  - b. Required departmental approvals
  - c. Fee collection process
  - d. Required documents for the project (plans, calculations, etc.)
3. Plan Review Staff
  - a. Plan review software and hardware
  - b. Fee structure
  - c. Plan review procedure
  - d. Plan correction communications with designer
  - e. Plan resubmittal process
4. Inspection Staff:
  - a. Inspection software and hardware
  - b. Remote inspection procedures
  - c. Types of platforms used (Facetime, Skype, Google Duo, etc.)
  - d. Reinspection fee procedures

## 8.2 Customer/Applicant Training

1. Ensure the owner and representative are trained in their areas of responsibility.
2. Permit applicant:
  - a. Knowledge of the jurisdiction's departmental approvals required for the project
  - b. Electronic application process
  - c. Application and electronic plan review software/program required by jurisdiction
  - d. Required plans and documentation for application submittal
  - e. Required fees at time of application submittal
  - f. Required fees at final building permit approval (if required)
3. Owner/designer:



- a. Electronic plan review software
  - b. Electronic plan review procedures
  - c. Corrections and plan resubmittal process
4. Owner/Contractor/subcontractor:
- a. Requesting remote inspection process
  - b. Remote inspections procedures and residential energy checklist
  - c. Platform required (Facetime, Skype, Google Duo, etc.)
  - d. Jobsite communication requirements (Wi-Fi, 4G, etc.)
  - e. Communication skills

## **9.0 Note: Third-Party Inspection Agencies**

Of all the team members involved in the construction process, the building official is the only one with the legal authority to enforce the provisions of the code (see IBC Chapter 1). The employment of a third-party inspector or plan review personnel or agency shall not relieve the building department of responsibility for the reviews or observations as required by the code. Building department review of plans and building inspections meeting the code provisions should not be signed off without the concurrence of the third-party.

## Appendix A

### REMOTE VIRTUAL INSPECTION PROGRAM

#### PARTICIPATION AGREEMENT

IN ORDER TO PARTICIPATE IN THE (Jurisdiction name) \_\_\_\_\_ REMOTE VIRTUAL INSPECTION (RVI) PROGRAM, YOU MUST ACCEPT THE TERMS AND CONDITIONS OF THIS AGREEMENT.

BY AGREEING TO THE TERMS OF THIS RELEASE OF LIABILITY, WAIVER OF CLAIMS, ASSUMPTION OF RISK AND INDEMNITY AGREEMENT, YOU WAIVE CERTAIN LEGAL RIGHTS, INCLUDING THE RIGHT TO SUE. I am the applicant (owner or owner's representative) \_\_\_\_\_ for Permit Number \_\_\_\_\_ at \_\_\_\_\_ (job address) \_\_\_\_\_ and acknowledge the risks and assume responsibility for my participation in the Remote Virtual Inspection (RVI) Program. I hereby hold harmless the (Jurisdiction name) \_\_\_\_\_, its officers, agents, employees, and representatives involved in the facilitation of the virtual inspection (collectively, the "City") and indemnify the City against any or all claims, actions, suits, procedures, costs, expenses (including attorney's fees and expenses), damages and liabilities arising out of, connected with, or resulting from my participation in the RVI Program.

- 1) I hereby release and discharge the City from any and all liability, claims, damages, and demands of whatever kind or nature which in whole or in part result from, arise out of, or are claimed to result from or arise out of my participation in the RVI program.
- 2) I acknowledge and agree that I and anyone participating in the RVI on the project may NOT electronically record or broadcast any portion of the virtual inspection. Unauthorized recording (e.g., audio, video, still photography) of the virtual inspection is strictly prohibited as it may contain confidential information and may violate other agreements.
- 3) I acknowledge and agree that the City may record (e.g., audio, video, still photography) the inspection for purposes of the record for this project.
- 4) I hereby acknowledge that I am responsible for compliance with all applicable codes and standards for the project and I am solely responsible for the jobsite safety myself and any other participants of the RVI.
- 5) I hereby certify that I will make available the project site and inspection items truthfully and to the best of my ability for the RVI.

I HAVE READ AND UNDERSTOOD THIS AGREEMENT, AND I AM AWARE THAT BY MY PARTICIPATION IN THE REMOTE VIRTUAL INSPECTION PROGRAM, I AM INDICATING MY ACCEPTANCE TO THE TERMS OF THIS AGREEMENT.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PRINTED NAME \_\_\_\_\_