

## Meeting Minutes: Building Official Forum 2019

Date: June 21, 2019  
Time: 9:00 am – Noon  
Location: St. James Hotel, Red Wing, MN

### 1. Welcome and Introductions

- Program approved for 3 CE credits for building officials

### 2. Division Updates – see attached presentation

- Scott McLellan – Legislation
- Eileen McNiff
  - Code adoption
  - Municipal Reports
  - Building department grants
- Charlie Durenberger – Licensed building contractor outreach

### 3. Break

### 4. Presentation on using drones in building inspection – Steve Fines, Fines Aerial, LLC

- Building department use of drones is considered commercial.
- Use of airspace is complicated – A permit to fly is required in many areas.
- If you're serious about getting a drone, find a drone without GPS around \$50 – sit in your living room and practice.
- With a more substantial and costly drone, you can get images from a thermal sensor and a camera. A drone of this type costs approximately \$25,000.
- Very small drones, such as those that unfold, come with a nice camera but you can only connect one camera or thermal sensor at a time. A drone of this type costs approximately \$1,000.
- Cold weather is an issue for drones – lithium batteries don't work well unless kept warm – approximately 95 degrees. Batteries only last 20 minutes and need to be used frequently or they will not work. As a minimum you should have at least 3 batteries.
- You can program drones to return “home” in the event of power failures and they will usually fly themselves back home before it runs out of battery life.
- Drones can be used to show where heat is escaping from buildings using thermal imaging.
- On commercial inspections one can quickly spot what windows have lost their seals. New construction often have windows panels not properly sealed.

- Solar panels – if the panel is not working, the energy comes in but shows hot on the infrared. New construction have as much as 25% with wiring errors.
- Roof inspections are performed with infrared cameras. Best done at least one hour after sunset or an hour before sunrise. No solar load needed.
- Can create videos. Most of the videos are shot using a 50-75 mm zoom.
- Zoom cameras are used for buildings/towers where you need to get detailed info and can only be used on larger drones. You can be up to 75-100 feet away.
- When flying a drone with ipad/tablet and the sun is out, use a shade and if necessary, a tunnel shade.
- Steve uses an android tablet to control drones and has no other software loaded, only the app specific to the drone(s).
- In order to see under things such as bridges, there is a camera that goes on top of larger drones.
- Drone cameras can dimension objects by taking thousands of pictures and every pixel becomes a data point of measurement – 3.1 cm per pixel. If you fly lower, you get a higher resolution.
- Volume can be calculated by clicking on the calculate volume button in the software while looking at the video – It turns the video into points of measurement.
- Wind impacts flying at around 15 mph for small, 28 mph for large drones.