Unmanned Aerial Vehicle (UAV) for Construction Projects

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What’s a Drone? Why so popular?

A UAV or Drone is an aircraft piloted by remote control or onboard computers

- The pilot can be several feet, miles, or half a world away from the craft.
- Available for Private and Commercial use.
- Relatively few restrictions when used for private entertainment.
- Commercial Use - Established rules and regulations for Public safety and privacy.
- Popular because they are fun, Technology makes them easy to fly - millions sold annually.
- Exploding Industry – Film makers, First responders, Agriculture, Insurance industry, Parcel Delivery, and Construction.
- Compared to traditional methods Drones can provide rapid data capture, flexibility, efficiency and cost savings.
UAV Benefits and Uses for Multiple Industries

- Multiple Industries and Insurance applications
- Reduce Risk (climbing injuries, equipment damage)
- Verifiable data / evidence preservation
- Visual access and assessments
- Speed, flexibility and cost efficiency
- Public safety
This Presentation Will Cover

• The Legal Requirements to operate Drones for Commercial use.
• Features, Capabilities and Specifications of the Quad Copter Drone.
• UAV Benefits and some Practical Applications for the Construction Industry.
• Questions and answers.
According to a 2016 McKinsey report, unmanned aerial vehicles (UAVs), commonly referred to as drones, will dramatically improve the accuracy and speed at which construction projects are completed in the near future. Like flat screen TV’s, a dramatic decrease in the manufacturing cost of technology has dropped the prices of professional grade drones for construction, complete with mountable, lightweight HD cameras and other survey equipment to as little as $700. This technology investment alone can dramatically improve surveys, site visibility, progress reporting, and inspection processes.

https://connect.bim360.autodesk.com/drones-for-construction-management
UAV Benefits to the Construction Industry

- Improve accuracy and speed of the projects
- Improve surveys, site visibility, progress reporting, feedback and decision making
- Improves safety on the jobsite
- Monitor contractors and inventory or equipment documentation
- Instill Client confidence
Construction

• **Summary** - UAV’s benefits to construction industry

  • Initial Planning
    – Site Survey, Data Analysis

  • Benchmarks and Progress
    – Showing Clients the progress, Monitoring Job sites, real time video feeds
Construction

- Summary- UAV’s benefits to construction industry

- Inspections and Documentation
  - Structure inspections, aesthetics, wear and tear, IR leak detection
Construction

• **Summary** - UAV’s benefits to construction industry

• **Project on track and on Budget**

Compare actual captured Data to design and revisions
Bottom Line UAV May Help To:

- **Win more business.** Drone photography an important sales tool, for surveying, planning sets one company apart from the competition.
- **Improve owner’s visibility.** Helps owners visualize the final project, see progress continually.
- **Iterate faster during the bid phase.** Drone surveys can help you put the virtual design in the context of real conditions and thus better engage the entire team.
- **Instill client confidence.** All of the above benefits help you build client confidence.
- **Improve asset and material management.** Drones equipped with streaming video capability can help you monitor the job site for suspicious activity, and identify theft as it’s happening. Plus, your teams can easily monitor locations and quantities of assets and materials at a glance, to ensure it will be there when you need it.
- **Improve invoicing accuracy.** Monitor work completion more effectively, and bill accordingly.
- **Improve quality.** Drones vastly increase your ability to complete quality inspections in large and hard to reach areas in an efficient manner.
- **Minimize rework.** Increasing the number of inspections you make enables you to catch more mistakes before they become a bigger problem, thus reducing the amount of rework needed.
- **Improve safety.** Inspections in dangerous areas without putting anyone at risk. Identify and mitigate potential hazards before they cause harm.
- **Mitigate litigation.** Increase site documentation to reduce the likelihood of litigation, and increase your defensibility.
Summary

• Use of UAS is a growing industry with great potential in many industry sectors; Construction applications are rapidly growing.

• Compared to other traditional methods Drones can provide: Rapid data capture and options, flexibility, efficiency and cost savings and repeatability.

• Compliance with and adherence to established rules and regulations are a protection to all concerned parties:
  – Privacy
  – Liability Coverage
  – Legally Compliant - FAA Authorized

• Applications to benefit the Construction Industry appear endless – The sky is the limit!