EXPLORING EMERGING TECHNOLOGIES

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Primary topics:

3-D Printing
Going Paperless
Bluebeam Tips
**3-D PRINTING** – “additive manufacturing”

Different processes:
- Stereolithography (SLA)
- Digital Light Processing (DLP)
- Fused Deposition Modeling (FDM)
- Selective Laser Sintering (SLS)
- Other methods, available from services like Xometry and Shapeways
FDM (Fused Deposition Modeling)

“Standard” 3-D Printing

Material can be stored in solid form

Made liquid via melting and deposited in layers

Made solid via time and fan cooling

Can accommodate multiple materials
Four mathematical systems

Cartesian – platform and print head move
Delta – platform stationary, print head moves
Polar – platform moves and rotates, print head stationary
Robotic (variable axis) – Platform stationary, head moves
Materials for Desktop FDM

It's all PLASTIC!

PLA (Polylactic Acid)
ABS (Acrylonitrile Butadiene Styrene)
PETG (Polyethylene terephthalate Glycol-modified)
Nylon (Polyamides)
TPU (Thermoplastic Polyurethane) – Flexible!
PC (Polycarbonate)
Materials with special properties

Multi-color
Luminous (Glow-In-The-Dark)
Color-changing
Wood Composite
Metal Composite
Press Brake
Casting (molds)
Cold Casting
Sintered filaments
Jigs and Fixtures
Examples of jigs and fixtures

- Plastic jaws for vises or clamps
- Center-finder for square and round stock
- Dust collection adapters
- Switch boxes
- Tool holders
- Segmented hoses
- Alignment
- Drill Guides
- Sanding Blocks
- Shims
- Corner Clamps
- Knobs
GOING PAPERLESS

“Electronic record” – document, Document, DOCUMENT!

The process determines the best medium

“Paper is instant-on, has infinite battery life, has non-volatile memory, and is thin and lightweight. The only downside is the low refresh rate.”
Paperless Pro-tips

- Select one process at a time
- Integrate with existing processes
- Choose WORST process first (for morale!)
- Use digital versions of existing paper
- Offer access from multiple platforms
Paperless applications

Safety/Health
Measurement (AR)
Remote Monitoring
Estimating
Drawing/Document Management
Timesheet Entry
Field/Shop/Office Communication
Invoicing/Billing
Mobile Apps

1. Safety/Health
   A. Red Cross First Aid
   B. Fall Safety Pro
   C. Safety-Reports.com
   D. iHandy Translator

2. Measurement
   A. AR measurement apps
   B. MagicPlan
   C. MyMeasures
   D. Leica Disto Sketch
   E. SR Lite
Mobile Apps

1. Remote Monitoring
   A. TrueLook
   B. Reconstruct
   C. ProBuild (all-in-one)

2. Estimating
   A. Jobwalk Construction Tracking
   B. Contractor Tools
   C. ProBuild
   D. Contractor Foreman (all-in-one)
   E. Fulcrum (all-in-one)
   F. Joist
   G. DEWALT Mobile Pro
Mobile Apps

1. Drawing/Document Management
   A. Dropbox
   B. OneDrive
   C. BIM360/AutoCAD
   D. PlanGrid
   E. FieldWire (all-in-one)
   F. Bluebeam

2. Timesheet Entry
   A. Tsheets
   B. Fulcrum
   C. ProBuild
Mobile Apps

1. Field/Shop/Office Communication
   A. Fulcrum
   B. SiteReport Pro
   C. PunchList
   D. Snag List
   E. StructionSite
   F. Solocator

2. Invoicing/Billing
   A. Probuild
   B. Joist
   C. InvoiceSimple
   D. Quickbooks Suite
Bluebeam Vu, Revu, and Studio

1. Vu – The free viewer
   1. In newest release, this became “Revu View Mode”
2. Revu – the paid version
   1. Three Flavors: Standard, CAD, and eXtreme
3. Studio – Free cloud storage, markup
   A. Sessions – for collaborating with PDF’s only
   B. Projects – Any file types
Revu Versions

1. Standard
   1. Markups and annotation
   2. Create Studio Sessions/Projects
   3. Convert common files to PDF

2. CAD
   1. One-click 2D, 3D PDF (AutoCAD, Revit, Solidworks)
   2. Import fonts, Sheet Sets from AutoCAD

3. Extreme
   A. OCR
   B. Form Creation
   C. Links
   D. Scripting
   E. Batch Sign & Seal
1. Creating a PDF with page labels, bookmarks, flags, and links
2. Starting a Studio Session
3. Markups and Alerts
4. Following other users
5. Offline operations and iPad use
Q&A
THANK YOU FOR ATTENDING

Please make sure to complete your session survey.