UNBOUND

Advanced JavaScript Within Revu: Expanding Your Automation Toolkit

Hands-on techniques for complex workflows

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Mitch Youngs
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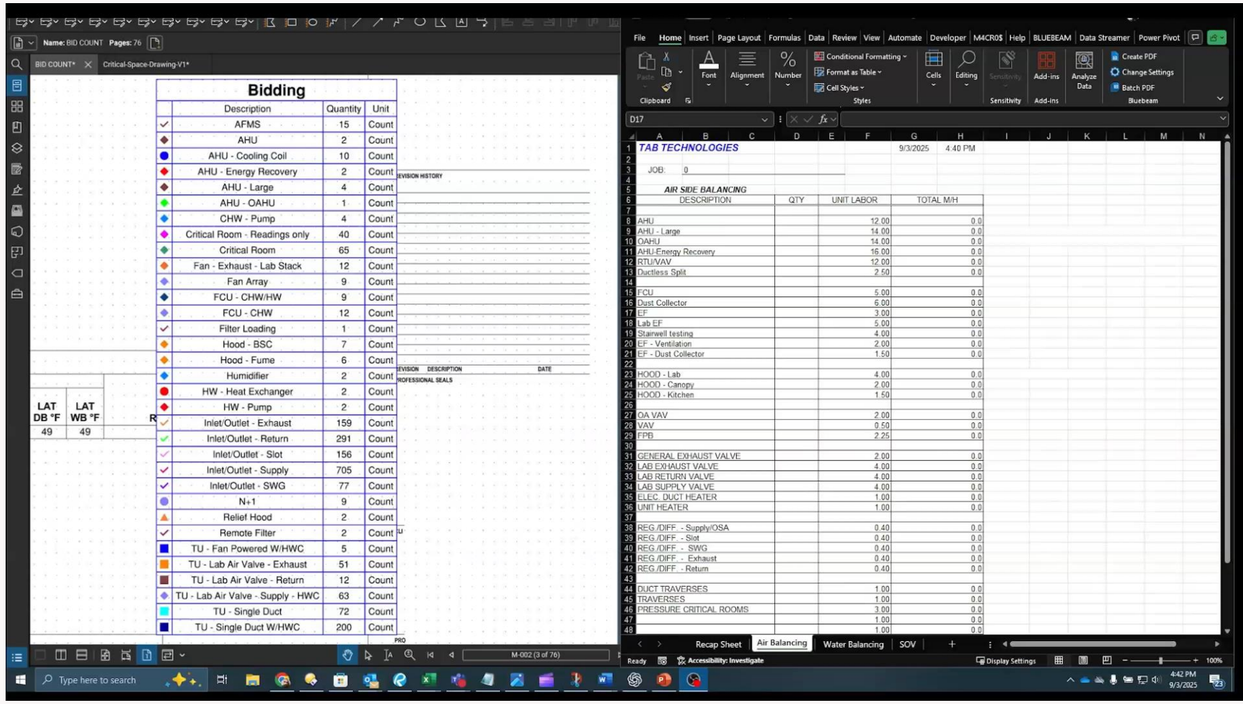
Why Go Advanced?

Manual Entry vs Automated Workflow



Bidding

	Description	Quantity	Unit
✓	AFMS	15	Count
◆	AHU	2	Count
●	AHU - Cooling Coil	10	Count
◆	AHU - Energy Recovery	2	Count
◆	AHU - Large	4	Count
●	AHU - OAHU	1	Count
◆	CHW - Pump	4	Count
◆	Critical Room - Readings only	40	Count
◆	Critical Room	65	Count
◆	Fan - Exhaust - Lab Stack	12	Count
◆	Fan Array	9	Count
◆	FCU - CHW/HW	9	Count
◆	FCU - CHW	12	Count
✓	Filter Loading	1	Count
◆	Hood - BSC	7	Count
◆	Hood - Fume	6	Count
◆	Humidifier	2	Count
●	HW - Heat Exchanger	2	Count
◆	HW - Pump	2	Count
✓	Inlet/Outlet - Exhaust	159	Count
✓	Inlet/Outlet - Return	291	Count
✓	Inlet/Outlet - Slot	156	Count
✓	Inlet/Outlet - Supply	705	Count
✓	Inlet/Outlet - SWG	77	Count
●	N+1	9	Count
▲	Relief Hood	2	Count
✓	Remote Filter	2	Count
■	TU - Fan Powered W/HWC	5	Count
■	TU - Lab Air Valve - Exhaust	51	Count
■	TU - Lab Air Valve - Return	12	Count
◆	TU - Lab Air Valve - Supply - HWC	63	Count
■	TU - Single Duct	72	Count
■	TU - Single Duct W/HWC	200	Count

LAT DB °F	LAT WB °F
49	49

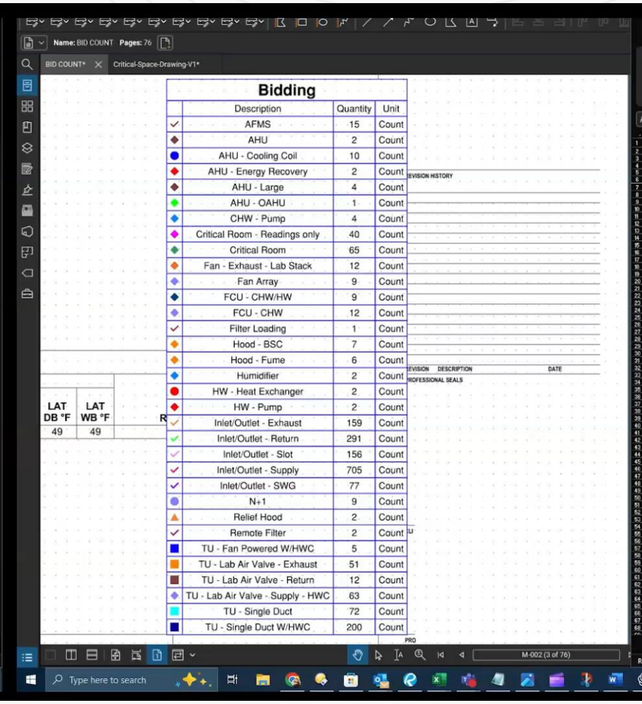
TAB TECHNOLOGIES 9/3/2025 4:40 PM

JOB: 0

AIR SIDE BALANCING

DESCRIPTION	QTY	UNIT LABOR	TOTAL M/H
AHU		12.00	0.0
AHU - Large		14.00	0.0
OAHU		14.00	0.0
AHU-Energy Recovery		16.00	0.0
RTU/VAV		12.00	0.0
Ductless Split		2.50	0.0
FCU		5.00	0.0
Dust Collector		6.00	0.0
EF		3.00	0.0
Lab EF		5.00	0.0
Stairwell testing		4.00	0.0
EF - Ventilation		2.00	0.0
EF - Dust Collector		1.50	0.0
HOOD - Lab		4.00	0.0
HOOD - Canopy		2.00	0.0
HOOD - Kitchen		1.50	0.0
OA VAV		2.00	0.0
VAV		0.50	0.0
FPB		2.25	0.0
GENERAL EXHAUST VALVE		2.00	0.0
LAB EXHAUST VALVE		4.00	0.0
LAB RETURN VALVE		4.00	0.0
LAB SUPPLY VALVE		4.00	0.0
ELEC. DUCT HEATER		1.00	0.0
UNIT HEATER		1.00	0.0
REG./DIFF. - Supply/OSA		0.40	0.0
REG./DIFF. - Slot		0.40	0.0
REG./DIFF. - SWG		0.40	0.0
REG./DIFF. - Exhaust		0.40	0.0
REG./DIFF. - Return		0.40	0.0
DUCT TRAVERSES		1.00	0.0
TRAVERSES		1.00	0.0
PRESSURE CRITICAL ROOMS		3.00	0.0
		1.00	0.0
		1.00	0.0

Recap Sheet | Air Balancing | Water Balancing | SOV



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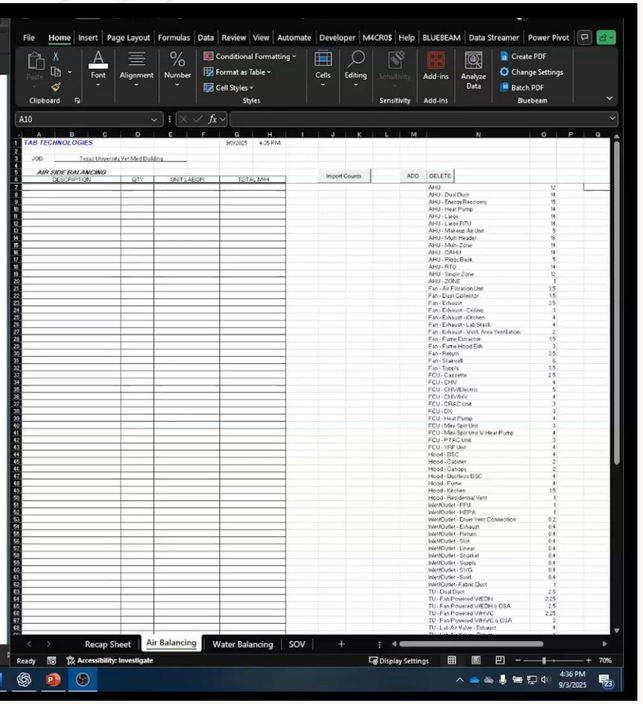

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JOB: Texas University Vet Med Building

AIR SIDE BALANCING

DESCRIPTION	QTY	UNIT LABOR	TOTAL M/H

Import Counts | ADD | DELETE

Recap Sheet | Air Balancing | Water Balancing | SOV

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Session Roadmap

- Reading Text Files in PDF’s
- VBA + Revu
- Complex Form Field Interactivity
- Optimization & Troubleshooting
- Live Workflow
- Wrap-up Q&A

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Reading Text Files in PDFs

External data as plain text

JavaScript can read any text file. CSV, JSON, and TXT are just different ways of structuring text:

- **CSV** → e.g., an address book or spreadsheet export
- **JSON** → e.g., U.S. Geological Survey (USGS) seismic data or web APIs
- **TXT** → e.g., a lookup table, notes, or config values

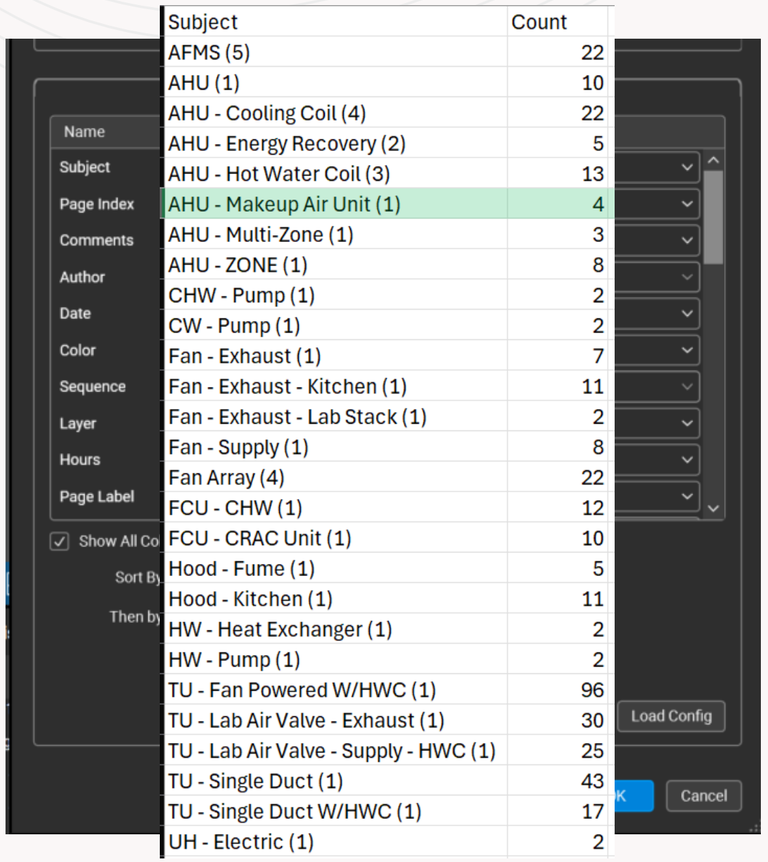
The important part: the file is read in as a text stream, then you decide how to parse it.

```
// Set PDF folder path
var dir = “C:/[username]/DataFiles”;

// Generic function to read a text file
function readTextFile(filename) {
   var stream = util.readFileIntoStream(dir + "/" + filename);
   return util.stringFromStream(stream);
}

// Examples
var csvData = readTextFile("sample.csv"); // parse into rows/columns
var jsonData = readTextFile("sample.json"); // parse with JSON.parse()
var txtData = readTextFile("notes.txt"); // use as raw text
```

QTY/Measurement Data from Bluebeam Revu to Excel

Setting up Export from Bluebeam Revu

- Export as CSV
  - Universal format
  - Stripped excel chart
- Batch Files
  - Vital to ensuring consistency of export
  - Speeds the process
- Subject / Custom Columns
- Bonus: Shared Toolchest
  - Upside: Changes are synced
  - Downside: Changes are synced



Subject	Count
AFMS (5)	22
AHU (1)	10
AHU - Cooling Coil (4)	22
AHU - Energy Recovery (2)	5
AHU - Hot Water Coil (3)	13
AHU - Makeup Air Unit (1)	4
AHU - Multi-Zone (1)	3
AHU - ZONE (1)	8
CHW - Pump (1)	2
CW - Pump (1)	2
Fan - Exhaust (1)	7
Fan - Exhaust - Kitchen (1)	11
Fan - Exhaust - Lab Stack (1)	2
Fan - Supply (1)	8
Fan Array (4)	22
FCU - CHW (1)	12
FCU - CRAC Unit (1)	10
Hood - Fume (1)	5
Hood - Kitchen (1)	11
HW - Heat Exchanger (1)	2
HW - Pump (1)	2
TU - Fan Powered W/HWC (1)	96
TU - Lab Air Valve - Exhaust (1)	30
TU - Lab Air Valve - Supply - HWC (1)	25
TU - Single Duct (1)	43
TU - Single Duct W/HWC (1)	17
UH - Electric (1)	2

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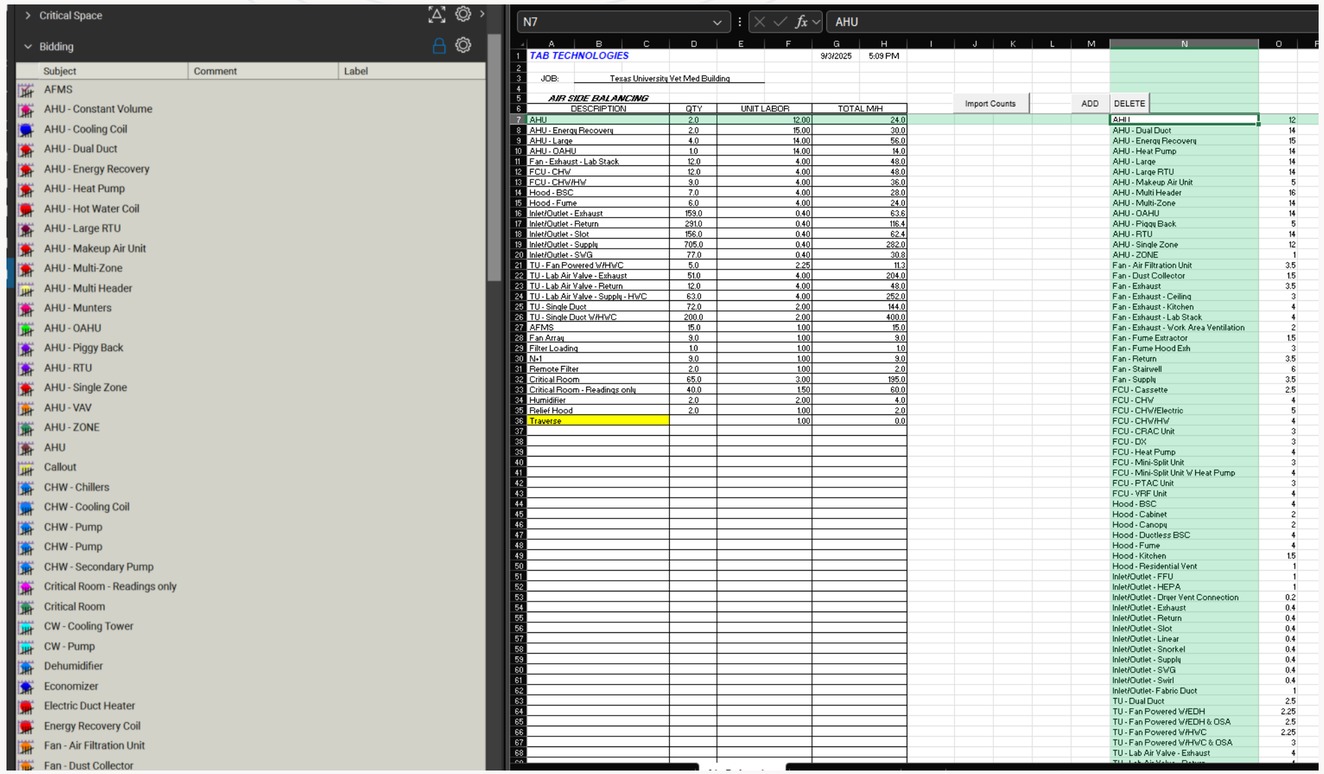
QTY/Measurement Data from Bluebeam Revu to Excel

Continued

Import to Excel

- Lookup Charts / Data Sources
  - New Items / Overall Flexibility
- Error Handling
  - When items don’t match
  - When list is refreshed
    - Refresh or append
  - If items go past expected length
- Bonus: Named Fields
  - Easier to reference
  - Flexible
  - Worksheet vs Workbook



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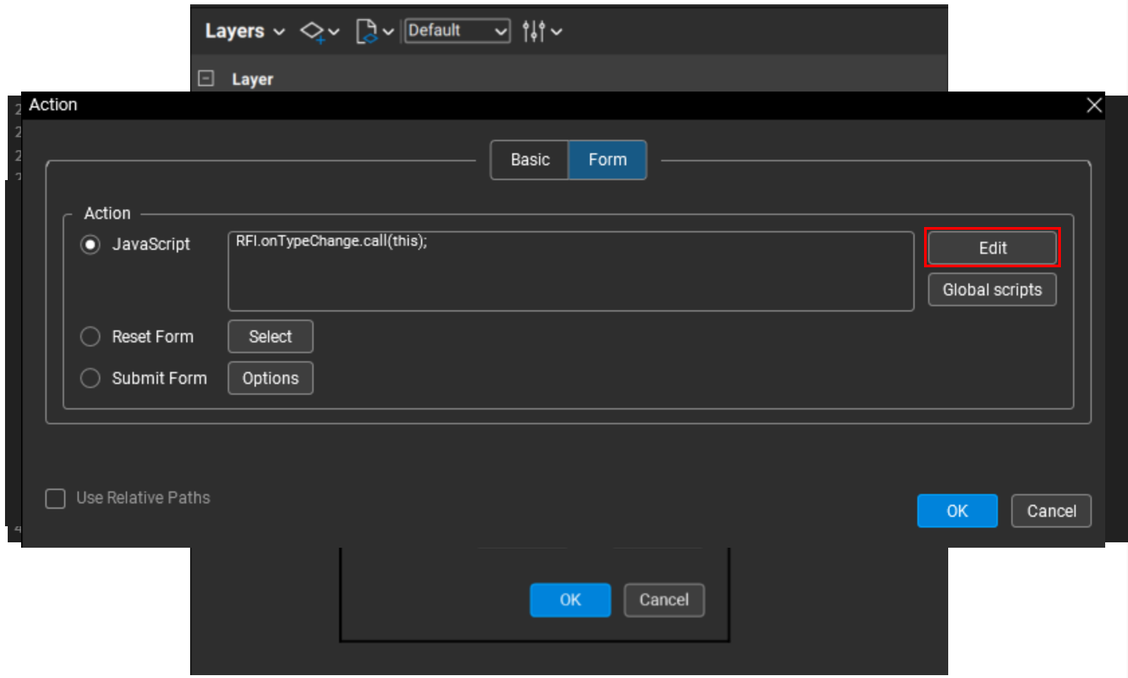
Complex Form Field Interactivity

- Dropdown items and exported values
- Actions Spotlight: “On Blur” vs “Mouse Up”
- Passing arguments to global code
- Layer control
  - State Vs. InitState
  - Single target vs Regex Isolation
  - Templates and issues with layer control
- Calculations, when and how they are calculated
- Pulling data from other forms and creating a pop-up user input form



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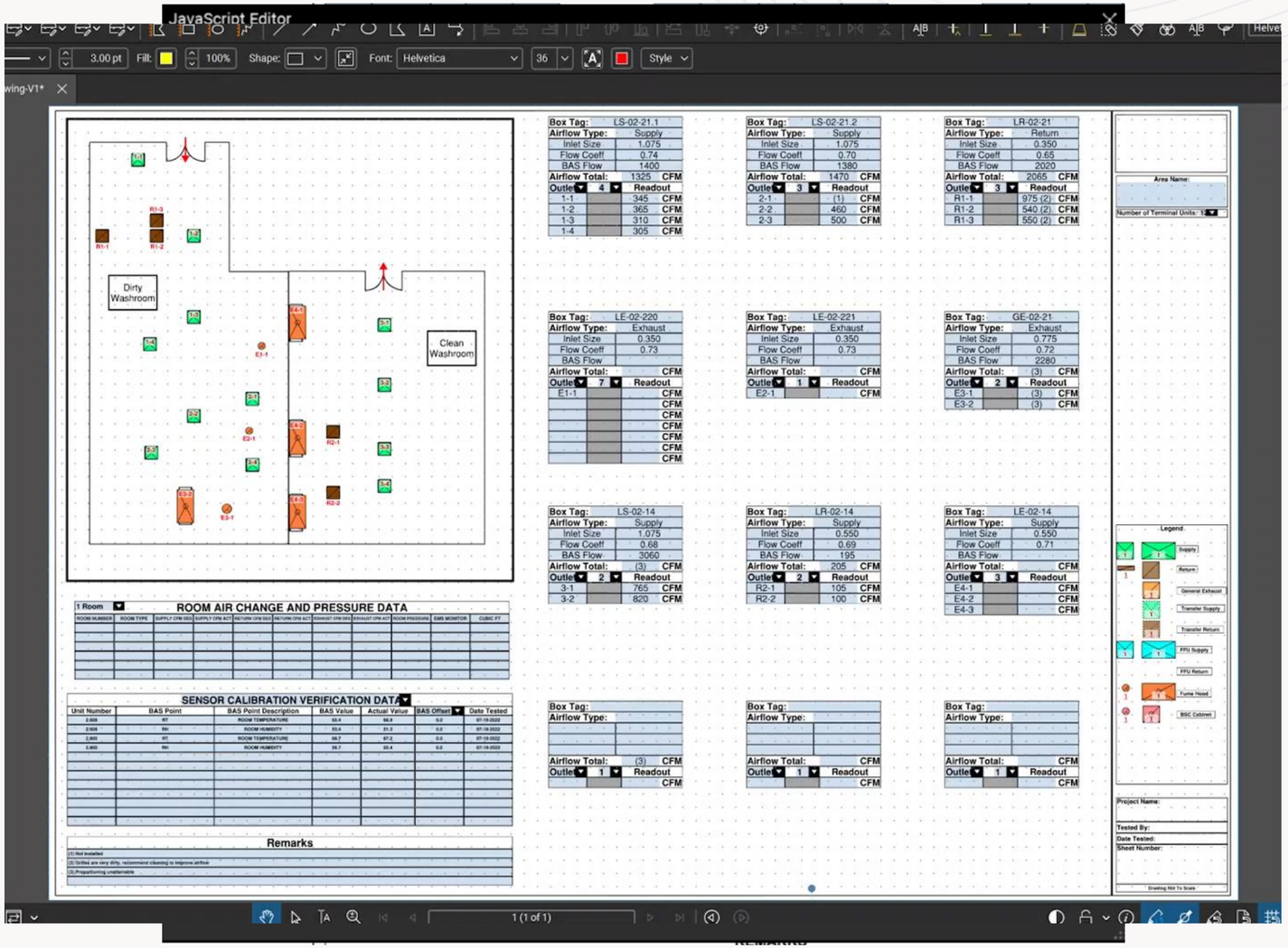
Script Optimization

Cut the fat



Script Optimization

Cut the fat

Regex & Filtering	Depends on logical naming Perfect for applying changes to a set of objects
Arrays	Stores multiple individual values as a single variable that can be called and accessed
Helper Functions / Globalization	Functions that can be used repeatedly in a “shorthand” method. I.e., getting field names in the document, decreasing the amount of code needed and making easier to manage Global code is more efficient, does not have to be loaded into multiple locations
Hidden Fields	Can store information in a pseudo global state, even after the document is saved. Great for keeping track of active fields, save locations, time stamps

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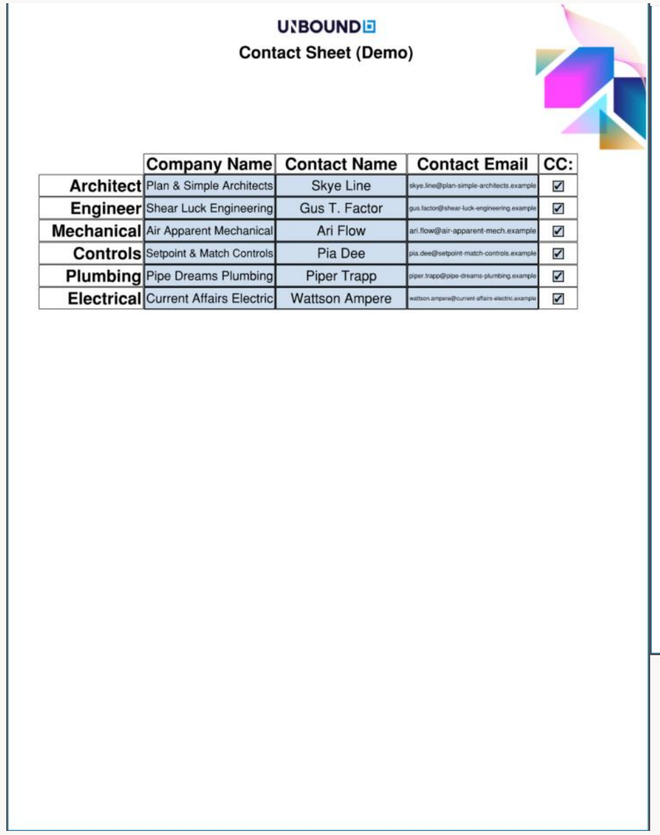
Troubleshooting

Bug Zappers

- Double-check field names.
- Use console output to trace values.
  - consolePrintln
  - app.alert
- Use console to test individual methods and functions
- Keep backup copies of scripts before major edits.
  - If using AI, prompt to create version and updates section
- Notations, notations notations
- Rubber Ducky Method

Live Workflow

DRL to RFI



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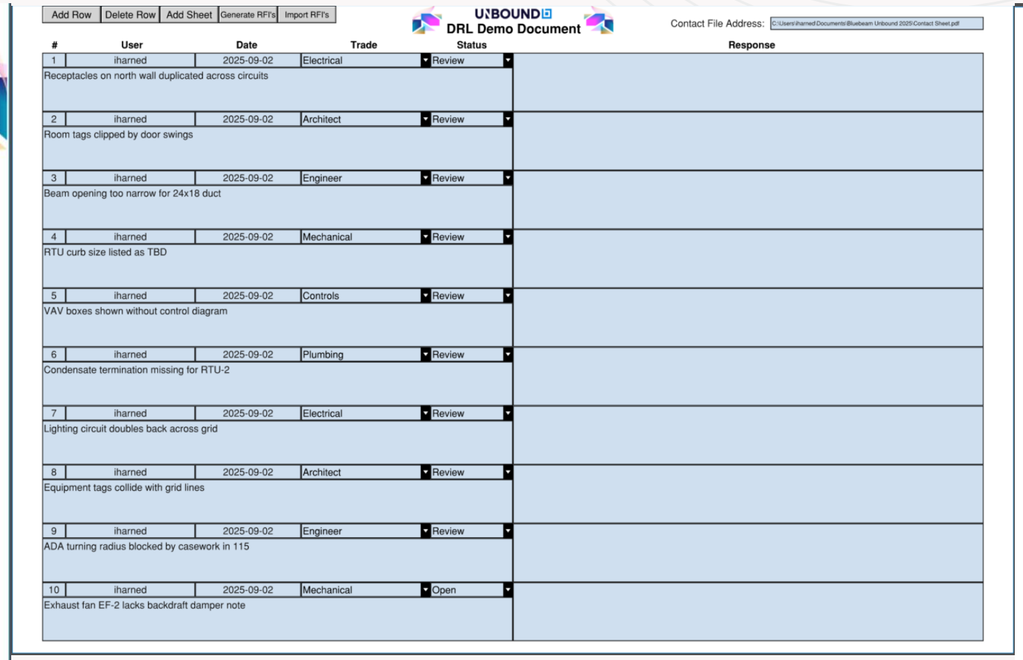
Contact Sheet (Demo)

	Company Name	Contact Name	Contact Email	CC:
Architect	Plan & Simple Architects	Skye Line	skye.line@plan-simple-architects.example	☑
Engineer	Shear Luck Engineering	Gus T. Factor	gus.factor@shear-luck-engineering.example	☑
Mechanical	Air Apparent Mechanical	Ari Flow	ari.flow@air-apparent-mech.example	☑
Controls	Setpoint & Match Controls	Pia Dee	pia.dee@setpoint-match-controls.example	☑
Plumbing	Pipe Dreams Plumbing	Piper Trapp	piper.trapp@pipe-dreams-plumbing.example	☑
Electrical	Current Affairs Electric	Wattson Ampere	wattson.ampere@current-affairs-electric.example	☑



Add Row | Delete Row | Add Sheet | Generate RFI's | Import RFI's

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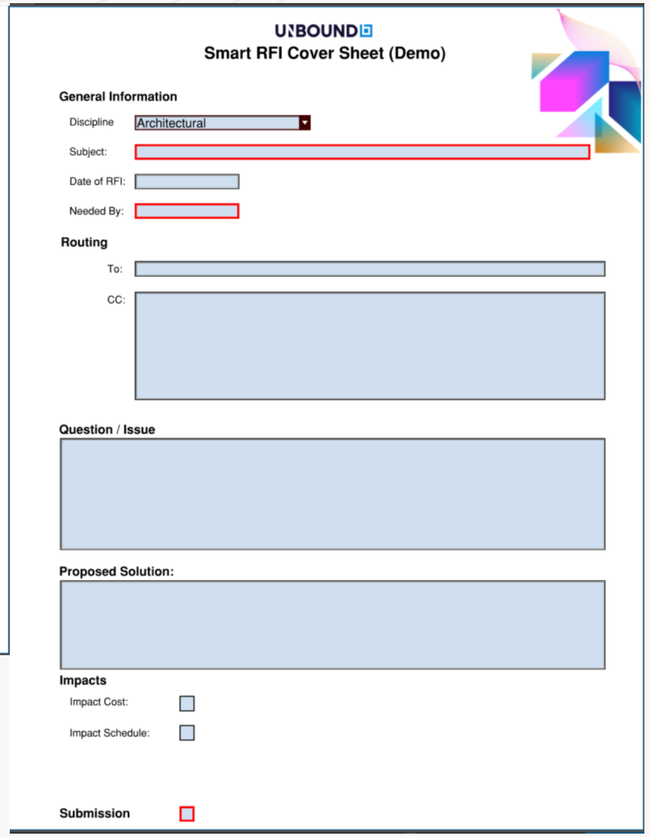
DRL Demo Document

Contact File Address: C:\Users\iharned\Documents\Bluebeam Unbound 2025\Contact Sheet.pdf

#	User	Date	Trade	Status	Response
1	iharned	2025-09-02	Electrical	Review	
Receptacles on north wall duplicated across circuits					
2	iharned	2025-09-02	Architect	Review	
Room tags clipped by door swings					
3	iharned	2025-09-02	Engineer	Review	
Beam opening too narrow for 24x18 duct					
4	iharned	2025-09-02	Mechanical	Review	
RTU curb size listed as TBD					
5	iharned	2025-09-02	Controls	Review	
VAV boxes shown without control diagram					
6	iharned	2025-09-02	Plumbing	Review	
Condensate termination missing for RTU-2					
7	iharned	2025-09-02	Electrical	Review	
Lighting circuit doubles back across grid					
8	iharned	2025-09-02	Architect	Review	
Equipment tags collide with grid lines					
9	iharned	2025-09-02	Engineer	Review	
ADA turning radius blocked by casework in 115					
10	iharned	2025-09-02	Mechanical	Open	
Exhaust fan EF-2 lacks backdraft damper note					



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Smart RFI Cover Sheet (Demo)

General Information

Discipline: Architectural

Subject:

Date of RFI:

Needed By:

Routing

To:

CC:

Question / Issue

Proposed Solution:

Impacts

Impact Cost: ☐

Impact Schedule: ☐

Submission ☐

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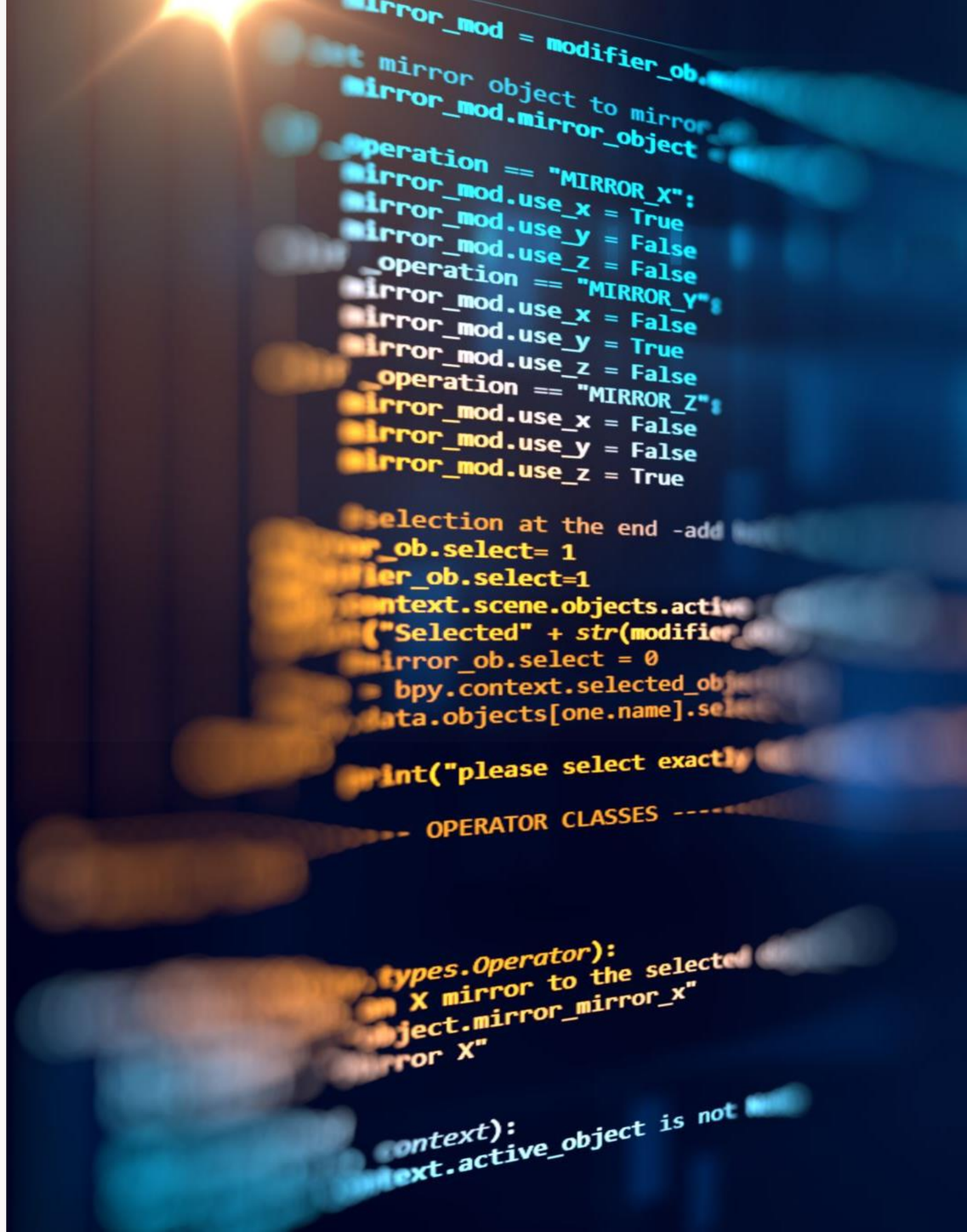
Resources

Important ***FREE*** resources to get you started:

- **Bluebeam JavaScript documentation**
  - https://support.bluebeam.com/developer/javascript/javascript.html
- **PDFscripting.com** – lots of examples, but some of them may be outdated
- **Sublime Text or Notepad++**
  - *Good free text editors that highlight your code to make it easier to read and format*
- **FreeCodeCamp.org** – learn JavaScript
  - **Course name:** *JavaScript Algorithms and Data Structures*
    - Necessary: *Basic JavaScript, Basic Algorithm Scripting*
    - Optional: *Regular Expressions, Intermediate Algorithm Scripting*
- JavaScript Syntax Checker - **jshint.com**
- [*Optional*] Regular expression checker - **regex101.com**
- [*Optional*] JavaScript beautifier - **beautifier.io**




Q&A