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SMACNA ANNUAL CONVENTION

Maui, Hawaii

OCTOBER 26-29



Software Rollouts: Lessons from a Family HVAC Business

Presented by:

Garrett Montrone

Project Manager

Western Sheet Metal – Salt Lake City, UT

<https://westernsheetmetal.net/>



WESTERN SPIRAL PIPE & FITTINGS, INC.



2025 SMACNA ANNUAL CONVENTION

Agenda

Why we changed

- Labor, knowledge drain, and values

How we started

- 10-step gameplan + 90-day gameplan

What broke & what worked

- Pitfalls, personas, backup plan

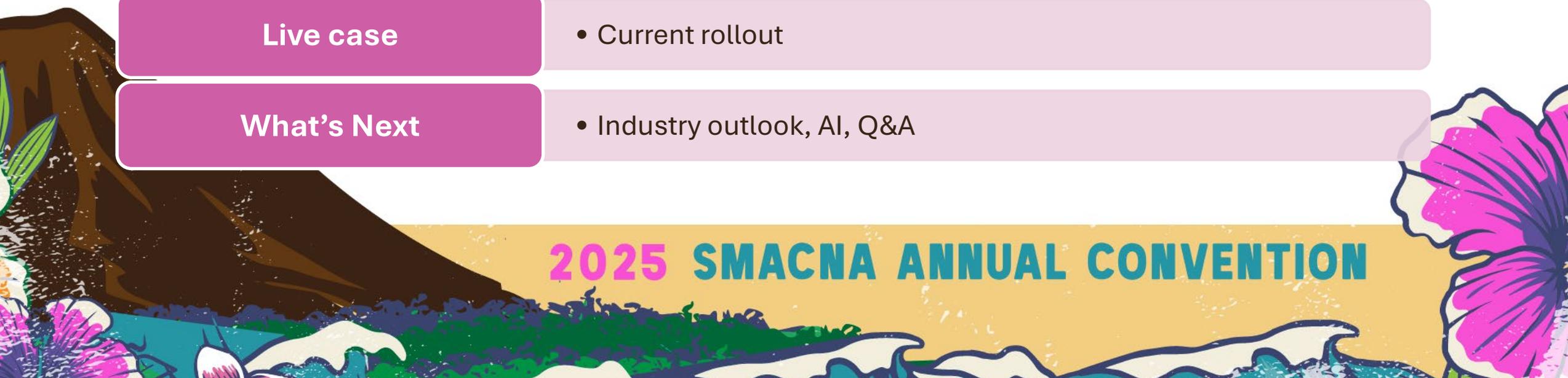
Live case

- Current rollout

What's Next

- Industry outlook, AI, Q&A

2025 SMACNA ANNUAL CONVENTION

The bottom of the slide features a decorative illustration. On the left, there is a dark brown mountain peak. Below it, there are stylized waves in shades of blue and green. On the right side, there is a large, vibrant pink and purple hibiscus flower. The background of the bottom section is a solid yellow color.

DISCLAIMER



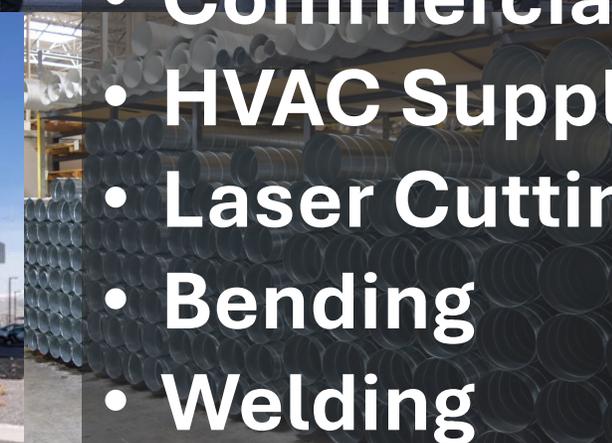
I AM NOT AN EXPERT





- Healthcare
- Cleanroom & Labs
- Government & Municipal
- High Education
- Arts & Entertainment
- Mission Critical
- Office Buildings

- Commercial HVAC
- HVAC Supplier
- Laser Cutting
- Bending
- Welding
- BIM | CAD



Introduction

Garrett Montrone

- Project Manager at Western Shoshone
- Emerging Leader for SMACNA's

Background

- Sheet Metal Journeyman – Local 312
- Bachelors Degree in Management Information Systems – Utah State University
- 10+ years in the sheet metal industry

Previous Experience:

- IT Analyst – Goldman Sachs
- IT Technician – THG / Ingenuity (UK2 Group)

Tech Experience: Software Rollouts | Process Automation | Cloud Collaboration | BIM/VDC Tools | CAD/BIM/CAM | Estimating IT Systems | Cybersecurity | Server Admin | Website Development

Hobbies

- Golf / Fly Fishing



Adoption Experience



CAD/CAM/Estimating



Fiber Laser Machine



Project Management Solution(s)



Field to Shop Scheduling



Total Station (Laser Guided Layout)



Ticket Management System



Knowledgebase (Wiki)



Phone Solution Platform (VOIP)

Microsoft 365 Ecosystem

IT Platform | Support

Website Development

Retrofits

On-Screen Takeoff

Disaster Recovery

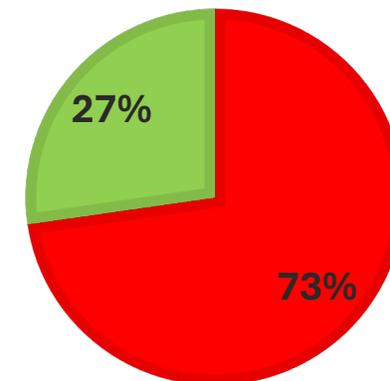
Windows Server | Active Directory

Automations

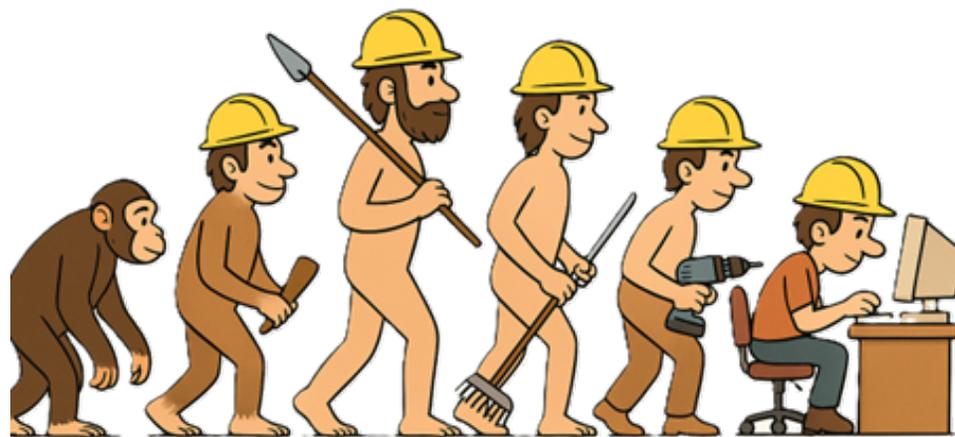
Why it Matters

- **Workforce Crisis**
 - 90% of SMACNA contractors face labor shortages
 - 50% of the current HVAC workforce is over the age of 45
- **New Workers Demand Modern Tools**
 - 70% of workers will require advanced skill in technology by 2030
- **Keep Up or Get Left Behind**
 - 90% of industries have doubled digital investment since 2020 | Construction digitalization score of **1.3/10**
 - 85% of contractors are using some form of prefabrication / modular construction workflows
- **Clients and Regulations Demand It**
- **Artificial Intelligence**
- **The Cost of Waiting Is Catastrophic**

■ Retiring Workers ■ Replacement



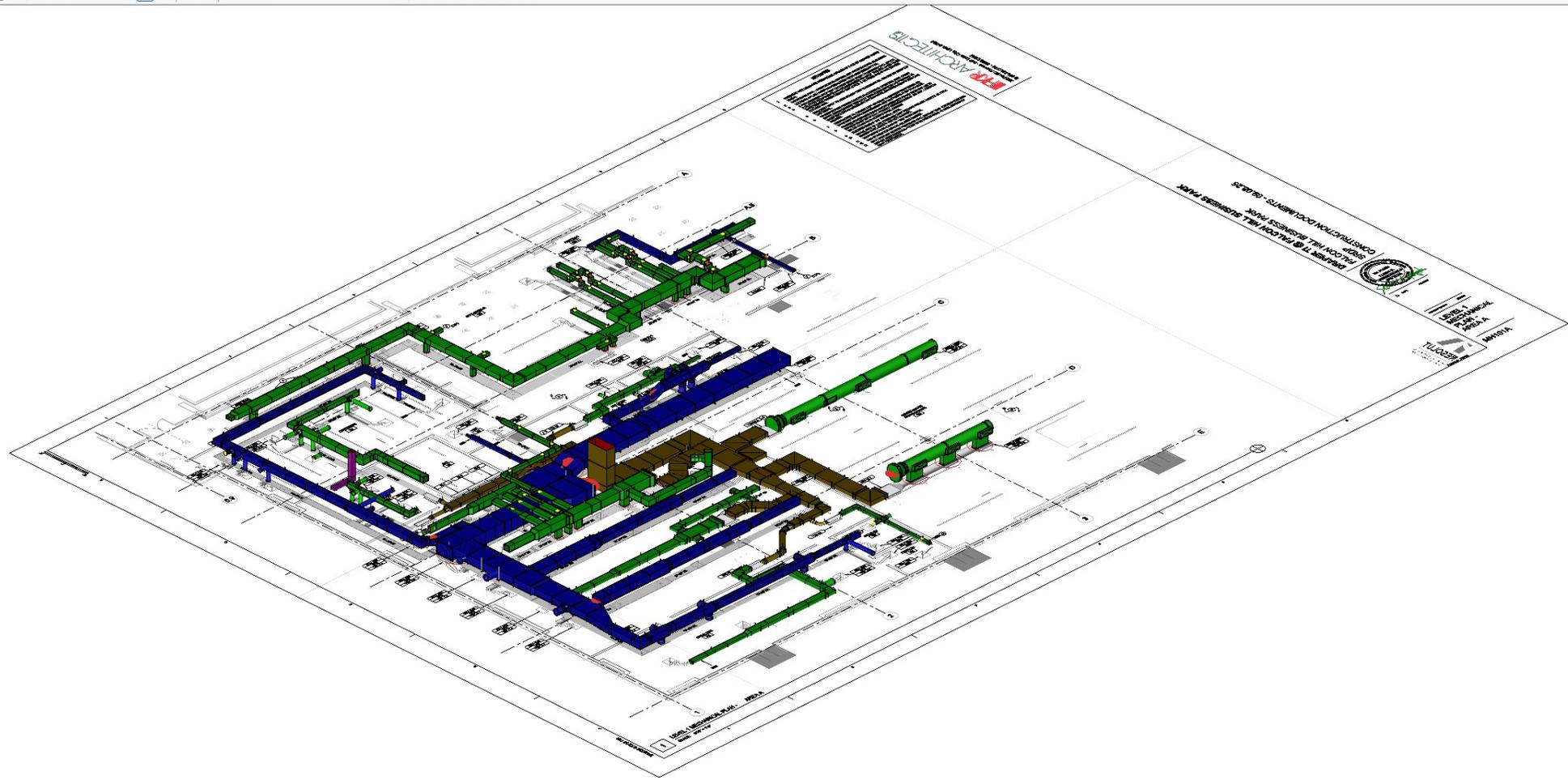
You already have embraced change thus far...



Section All Sections

Items 3D Viewer Item Folders

Service	
Exhaust Air	2.5%
LP Supply Air	0.62%
HP Supply Air	13.5%
Return Air	37.2%
Stainless Steel 304	0.0%

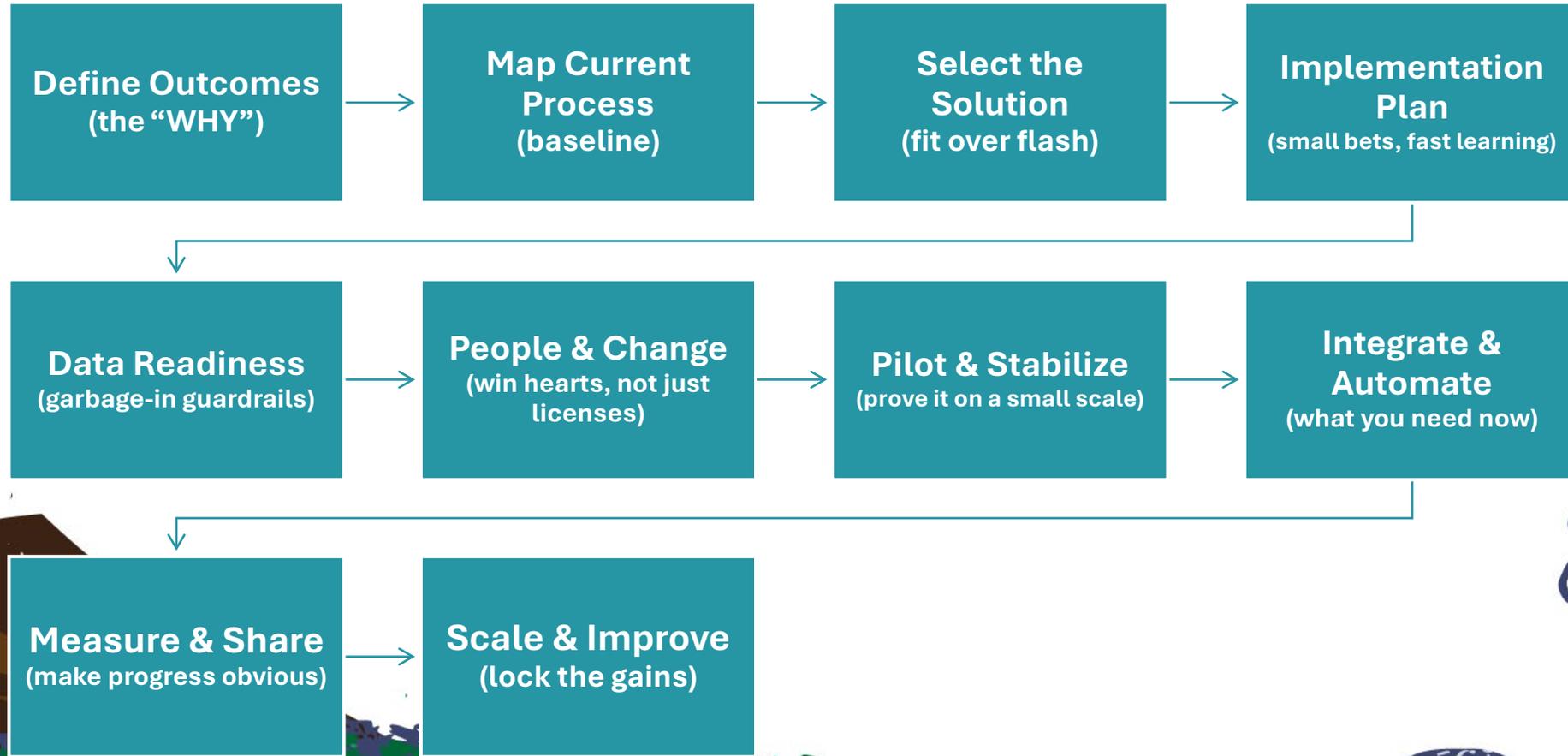


Item	Size	Length
10 x 8	3'3"	
8 x 10	1	
10 x 8	3'	
8 x 10	1	
713 Duct - Rectangular	10 x 8	3'4"
714 End Cap	10 x 8	1

-1' Elev	Drop / Rise	Area	TAP45	E60	E45	E30	GNR	Rd Vane	EF	FSD	SI, Pip	Louver	Sqr LI	Sqr Ha
Elev	Search Replace	Length						ROR	VAV	FD	Splr	Linear	Slot	Rgstr
Save	Copy or Move	Plug List						Rd Rad	RTU	SD		HETO	Security	AD

Rect/Rd Oval Other

Software Adoption Gameplan



90-Day Rollout

Days 0 –15

Frame & Baseline

- Define outcomes, map current state, pick pilot scope, set KPIs, appoint champions, prep fallback.

Days 16 – 45

Configure & Train

- Clean master data, configure forms/workflows, run micro-trainings, dry-run on sample jobs.

Days 46–60

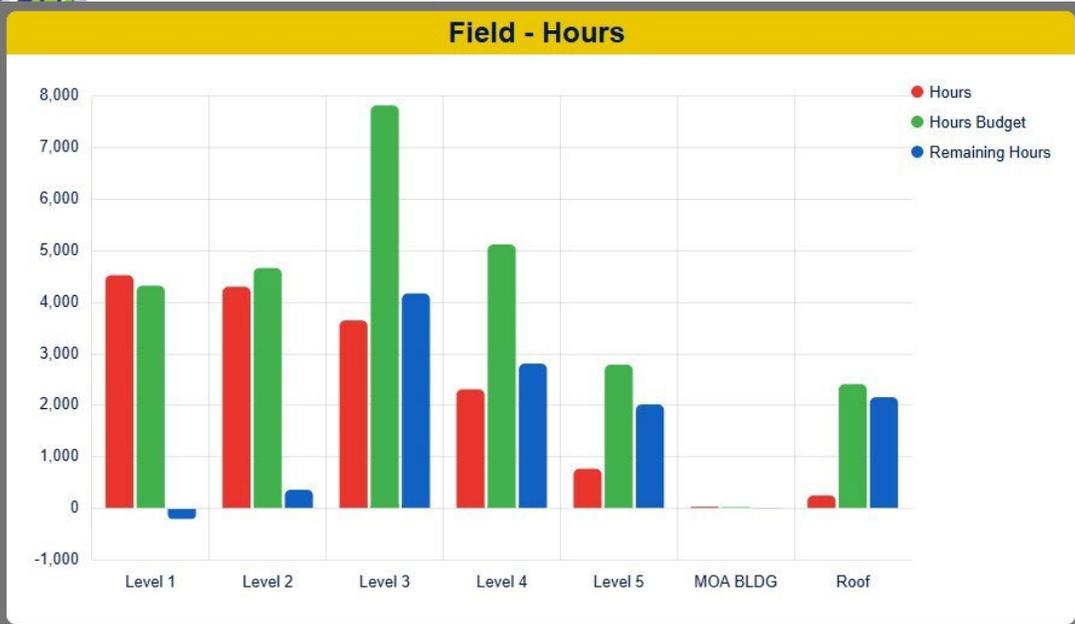
Pilot Live

- Daily stand-ups, fix friction fast, capture & publish quick wins, validate metrics.

Days 61 – 90

Standardize & Scale

- Codify SOPs, expand to one more area, turn on simple automations, retire duplicates, set next-quarter goals.



→ done; on-time completion %

er 100 tasks

; % of work logged digitally

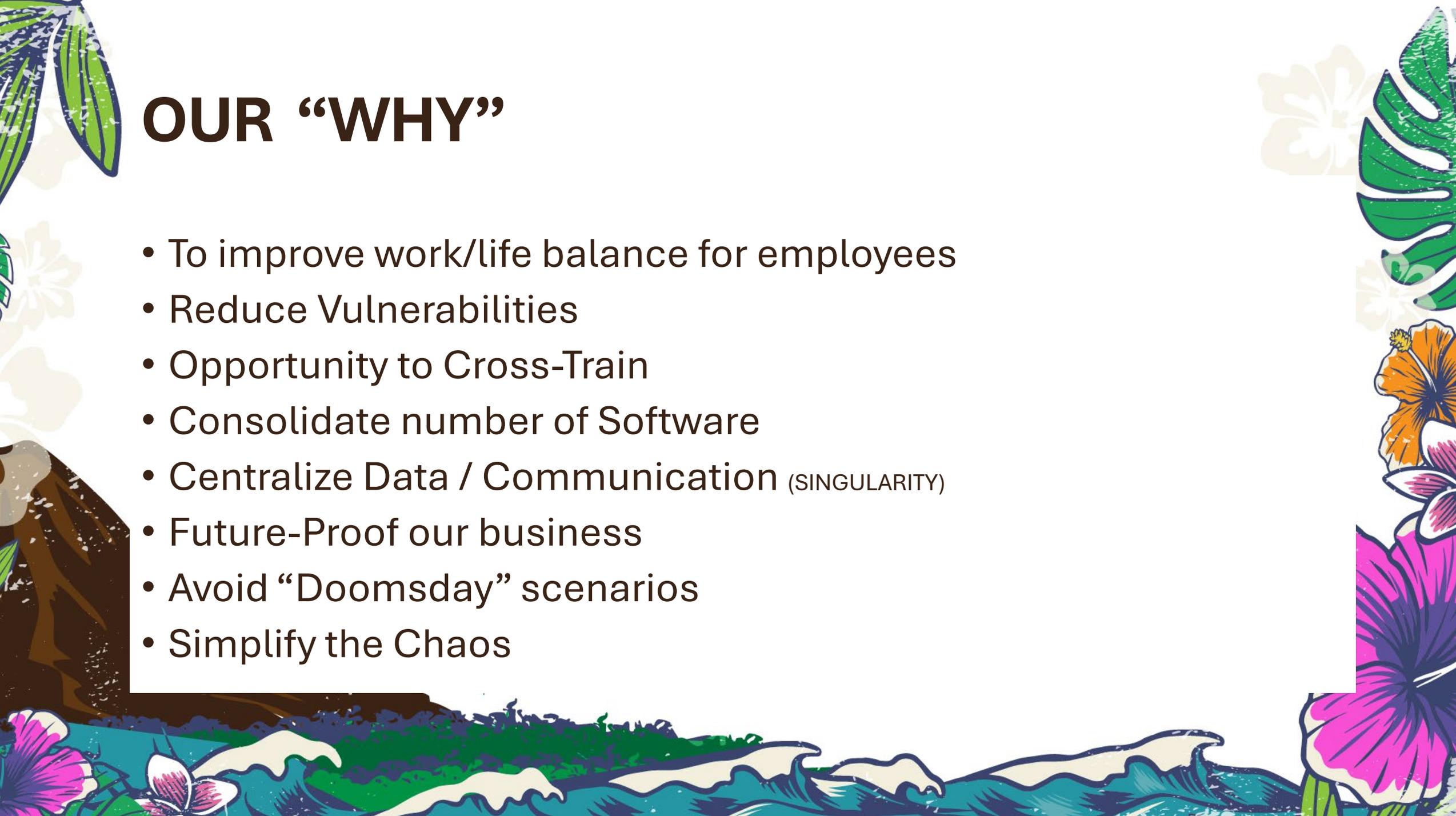
ctual; cost avoided (hours or \$)

ime; satisfaction survey score

Know Your “WHY”

- Stay Competitive
- Empower Your Team
- Boost Efficiency and Profits
- Meet Client and Regulatory Demands
- To make data-informed decisions
- Known problem that needs to be solved



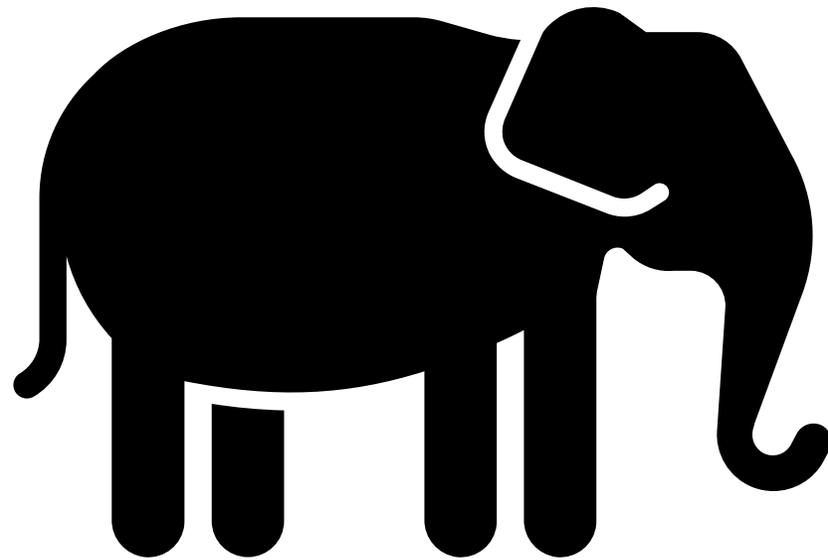


OUR “WHY”

- To improve work/life balance for employees
- Reduce Vulnerabilities
- Opportunity to Cross-Train
- Consolidate number of Software
- Centralize Data / Communication (SINGULARITY)
- Future-Proof our business
- Avoid “Doomsday” scenarios
- Simplify the Chaos



How do you eat an Elephant?



Selecting the Right Software

- Define your “WHY”
- Reputable Vendor
 - Strong Support
 - Industry Presence
 - Continual Improvement
 - Knowledgebase & Community forums
 - Consistency / Uptime
- Cost
- Scalability
- Integrations | API
- Utility / Flexible
- Data – how its stored, who owns it, etc.
- User adoption difficulty
- Value
 - Can ROI be measured?

BACKUP PLAN

BACKUP PLAN

- Maintain Paper & Digital
- Offline Access
- Failovers 🌟
- SOP Binders
- Spreadsheet-Based To
- Designate your “Tec
- Perform Regular Ba
- Hail Mary



Implementation Tips

1

Engage Early:
Involve veteran staff in selection and training.

2

Build Champions:
Use respected team members to lead change. Possibly Discover new champions

3

Phased Rollouts:
Start small, adjust workloads.
- One Department/Tool

4

Prioritize Compatibility:
Choose software with open APIs and integrations with your current system.

5

Focus on Good Data:
Software is not an out-of-the-box solution. It's only as good as its data

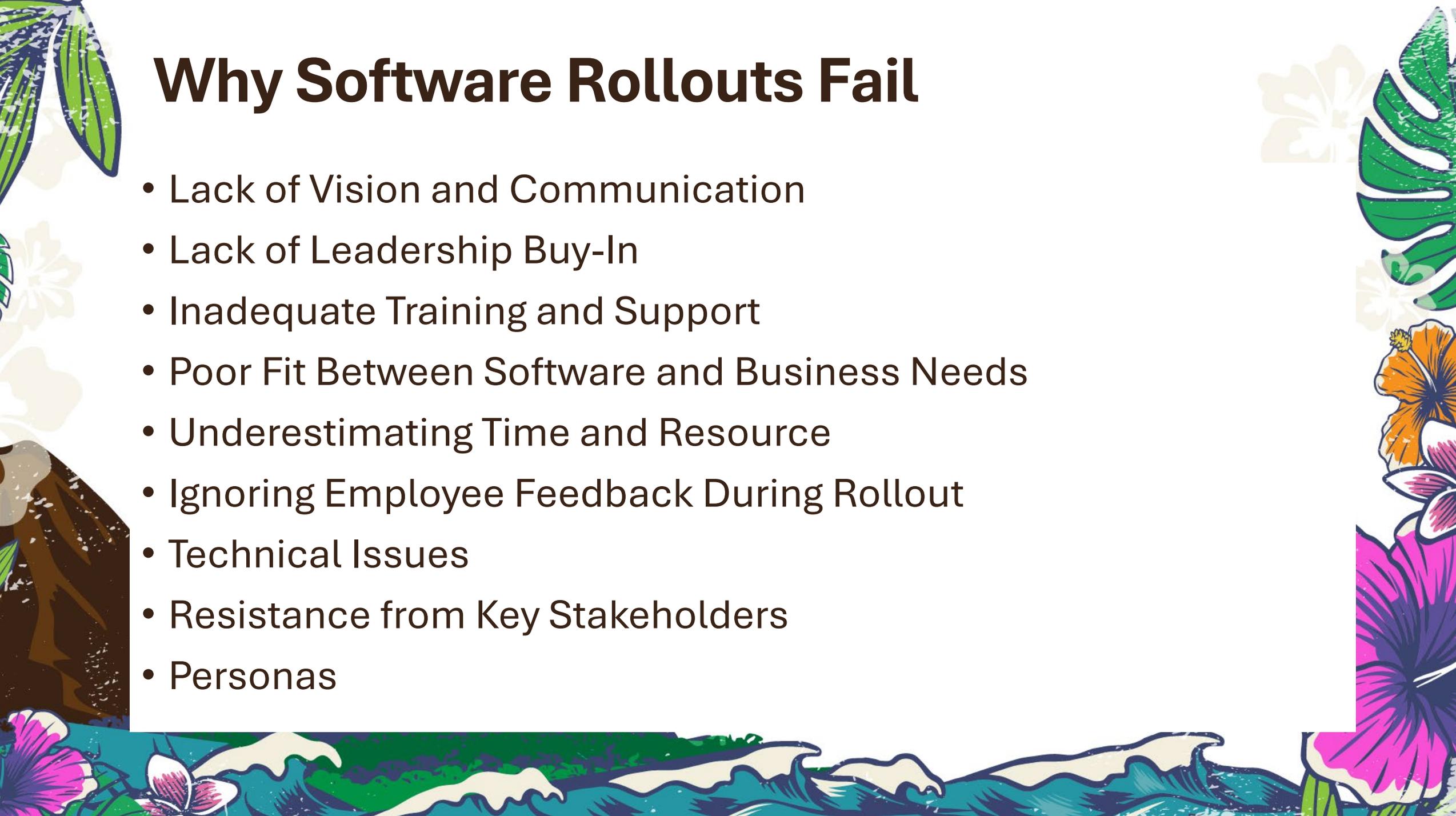
6

Measure & Share Wins:
Track labor savings, reduced errors, and report back. Dashboards

7

Don't Force it



The slide features a tropical theme with decorative elements. On the left, there are green leaves and a brown, textured shape. On the right, there are green monstera leaves and a pink hibiscus flower. At the bottom, there are blue and green waves. The title "Why Software Rollouts Fail" is prominently displayed at the top left in a large, bold, black font.

Why Software Rollouts Fail

- Lack of Vision and Communication
- Lack of Leadership Buy-In
- Inadequate Training and Support
- Poor Fit Between Software and Business Needs
- Underestimating Time and Resource
- Ignoring Employee Feedback During Rollout
- Technical Issues
- Resistance from Key Stakeholders
- Personas

Resistance Personas

The Traditionalist



“We’ve always done it this way,
and it works fine.”

Personality types for Resistance

The Technophobe



Intimidated by technology

Personality types for Resistance

The Skeptic



Questions the necessity or reliability of the new

Personality types for Resistance

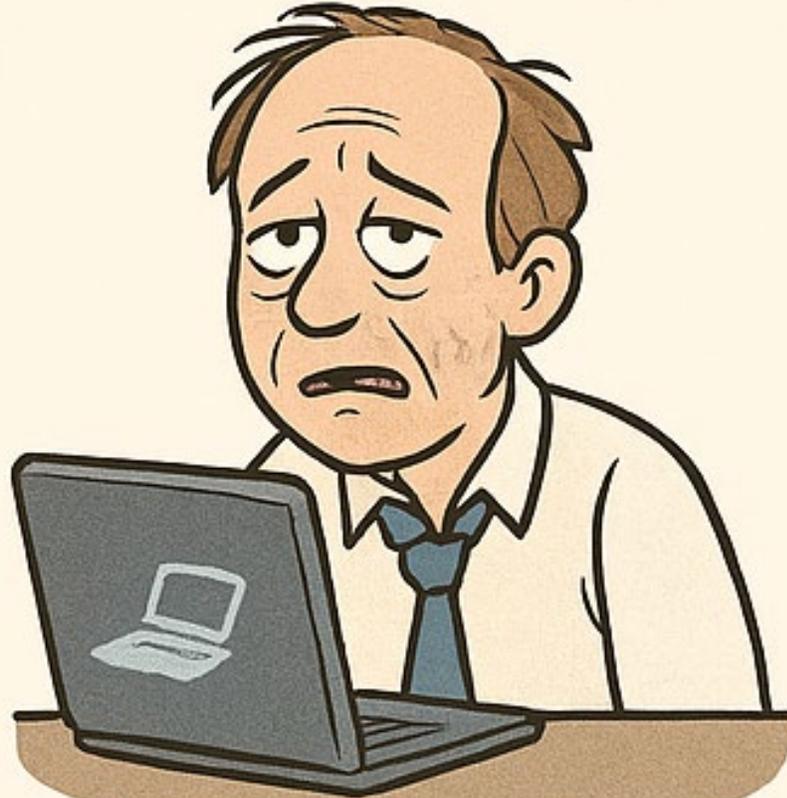
The Gate Keeper



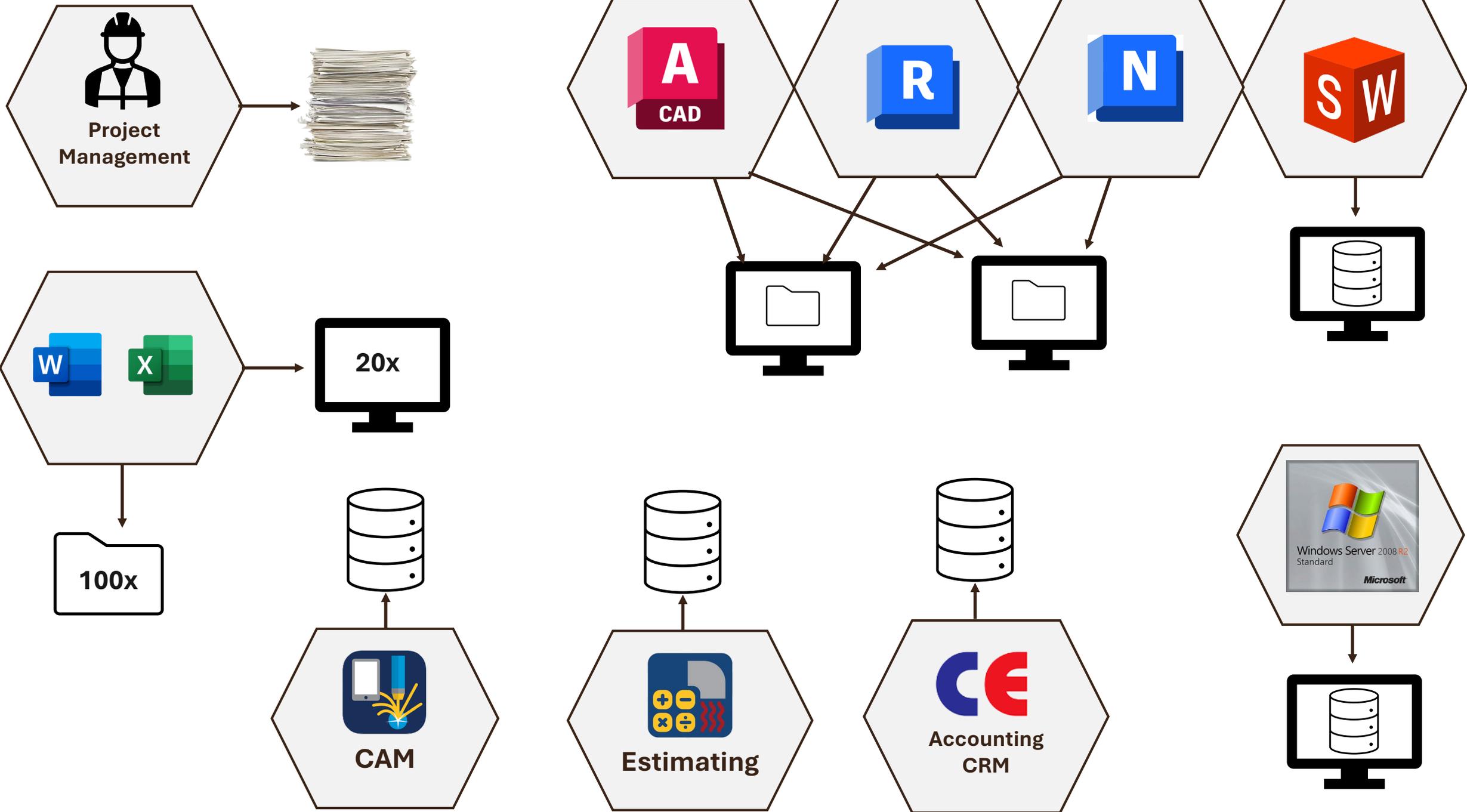
Hoards information
or processes

Personality types for Resistance

The Change Fatigued



“We just got used to the last system.”



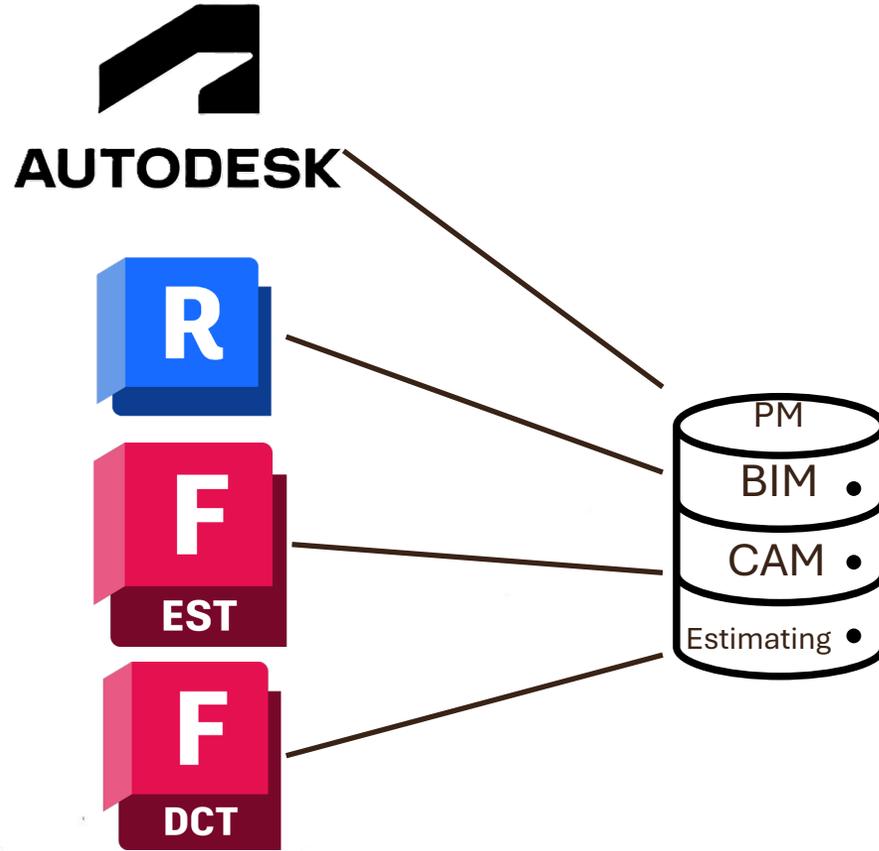
SINGULARITY

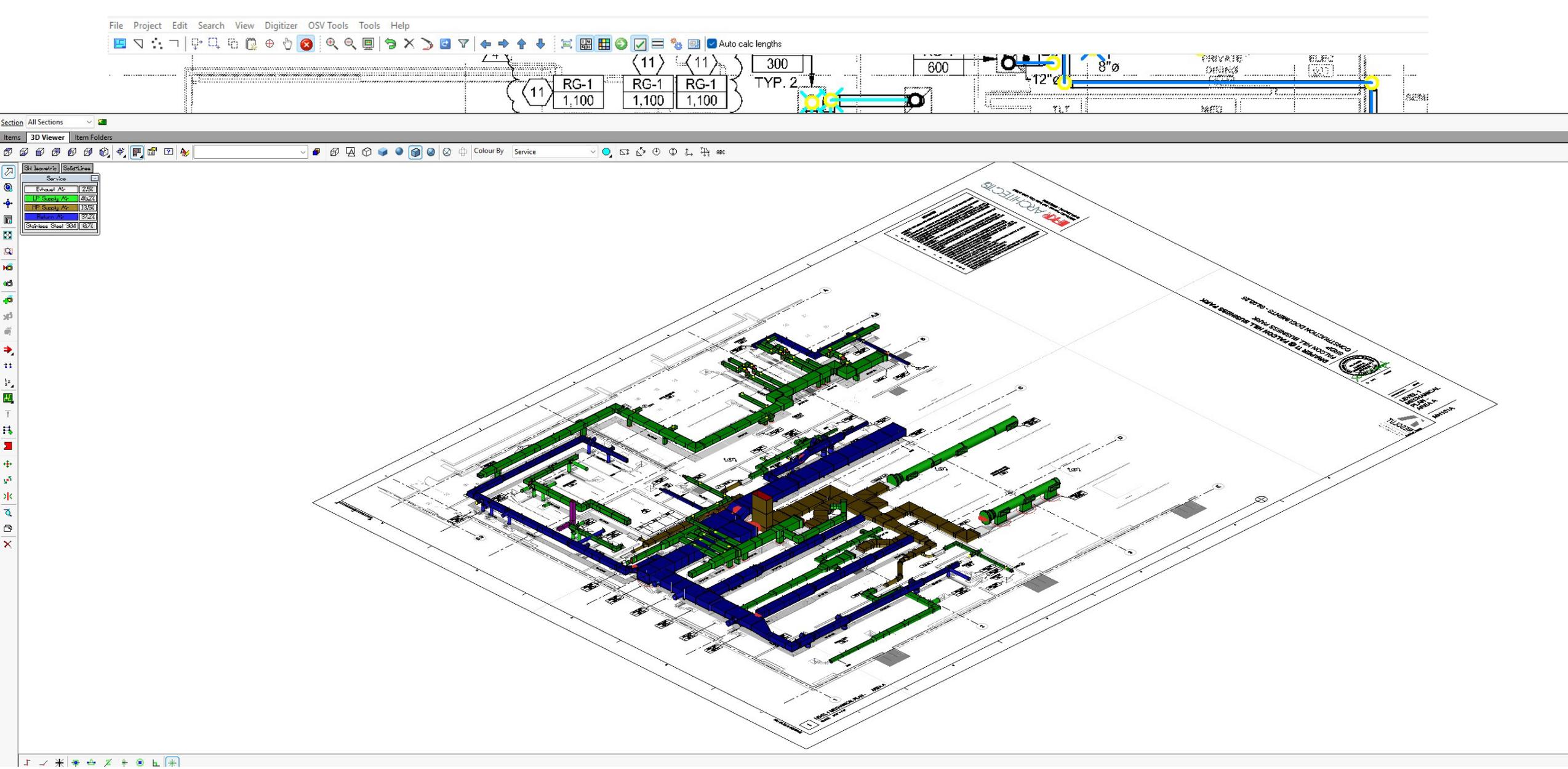


What broke & what worked



What broke & what worked





3D Takeoff



WESTERN SHEET METAL, INC.
 HEATING, AIR CONDITIONING AND PRECISION FABRICATION
 3919 WEST 1820 SOUTH SALT LAKE CITY, UTAH 84104
 PHONE # (801) 973-7072 FAX # (801) 975-9913



HVAC BUDGET PROPOSAL

May 29, 2025

PROJECT:

ADDENDUM:

We propose to furnish and install in accordance with the attached Plans and specifications dated April 2, 2025, Division 230000 as related to Mechanical Sheet Metal, all labor, equipment, material, supervision, and applicable taxes on the above noted project. This proposal is valid for 15 days from the above bid date.

WORK INCLUDED

- Ductwork of metal or other material
- Acoustical duct lining
- Grilles, registers, diffusers
- Exhaust fans
- Lint trap filters
- Intake air hoods
- Boiler flue
- Equipment lead time varying from 10 weeks.
- VAV's
- Louvers (L-E-1&2, L-I-1, L-R-1&2)
- Testing, balancing, I.D, O&M's
- Seismic – our work only
- Refrigeration
- BD, MVDs, FSDs, FD, SD, ATC

WORK NOT INCLUDED

- Piping of any kind: gas piping, condensate, plumbing
- Electrical – line voltage wiring, disconnects, starters
- Field painting
- Temperature controls
- Access panels in building construction
- Motorized control dampers
- Duct wrap, jacketing, weatherproofing, fire wrap
- Air handler & equipment associated, & any equipment not mentioned above.

Base Bid

S SCOPE

If you have any questions, please call.

Sincerely,

 Garrett Montrone
 Western Sheet Metal, Inc.

LOW VALUE

5 AM
ts: 2
usted
ld Hrs
6,341
1,318
4,906
2,566
2,531
2,531
2
2
117
94
211
5,310

WESTERN SHEET METAL PROPOSAL



TO: INTERESTED BIDDERS 10/20/2025

We are pleased to furnish a quotation for the following project: **U of U - City CB Division of Games**

Our scope will include all labor, instrumentation and reports to be provided in accordance with plans dated: **04/21/2025** and specifications: **23 00 00** and addenda: **1**

Scope of work:

Ductwork of metal or other material	HETO's, Flex Duct
Acoustical Duct Liner	Testing, Balancing, I.D. O&M's
Grilles, Registers, Diffusers	Seismic (our work only)
VAV's	Refrigeration Piping
Transfer Fans	Dampers
Fan Coil & Condensing Units	Demolition of existing ductwork

Pricing:

BASE BID	\$	-
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Additive/Deductive Alternates:

		Awarding/Accepting
ADD for Cotrols	\$	- <input type="checkbox"/>
DEDUCT for Condensing Units stands	\$	- <input type="checkbox"/>

Exclusions:
Western Sheet Metal shall not be responsible for the following:
 CONTROLS, ROOF PATCHING/CURBING, PAINTING, CONCRETE CUTTING, CORE DRILLING, ROOF PENTHOUSE, ANGLE RINGS, FLANGES, BRACING, INSULATION, DRYER VENT, STAINLESS STEEL, POLISHED STAINLESS STEEL, DOUBLE WAL, BLACK IRON, ALUMINUM, ROOF EXHAUST STACKS, SECURITY BARS, HETO'S / FASTENERS, PIPING OF ANY KIND, BIM DRAWINGS, ANYTHING NOT SPECIFICALLY STATED IN SCOPE, ETC.

Clarifications:
 All work will be performed during normal working hours prior to occupancy, unless stated otherwise, in accordance with AABC National Standards. This quote requires submission of up-to-date, approved mechanical plans and specifications before our start date. The quote is contingent on the Metal and Metal Products Index (MMPI); we may adjust the quoted price if the MMPI fluctuates by 3% or more from the proposal date to acceptance.

To ensure that you are fully informed and in agreement with our terms when accepting this quote, please review our [General Terms & Conditions](#). By accepting this quote, you acknowledge and agree to comply with the terms outlined in these documents.
 The above scope and price is good for **15 days**. Please contact our office if you have any questions on this quote.

Award/Acceptance:

If you accept this proposal and a dispute arises over payment, the prevailing party in any legal action will be entitled to recover attorneys' fees and costs.

Acceptance of proposal to perform the above referenced work:

Signature: _____ P.O.# _____

Accepted Contract Price \$ _____ Project Start Date: _____

Upon approval, please contact our office to arrange project scheduling.

www.westernsheetmetal.net

TOTAL

\$ 120,902

\$ 21,292

\$ 17,613

TOTAL

\$ 55,000

\$ 34,000

\$ 89,000

\$ 24,000

TOTAL

\$ 202,000

\$ 20,200

\$ 222,200

TOTAL

\$ 150,000

\$ 150,000

\$ 15,000

TOTAL

\$ 165,000

TOTAL

\$ 1,154

\$ 1,035

\$ 2,189

\$ 82,379

\$ 631,575

Total LBs: 36,77

\$ / # \$

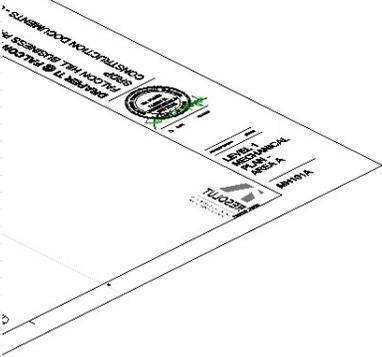
Total LBs: 3676

\$ / # \$ 1

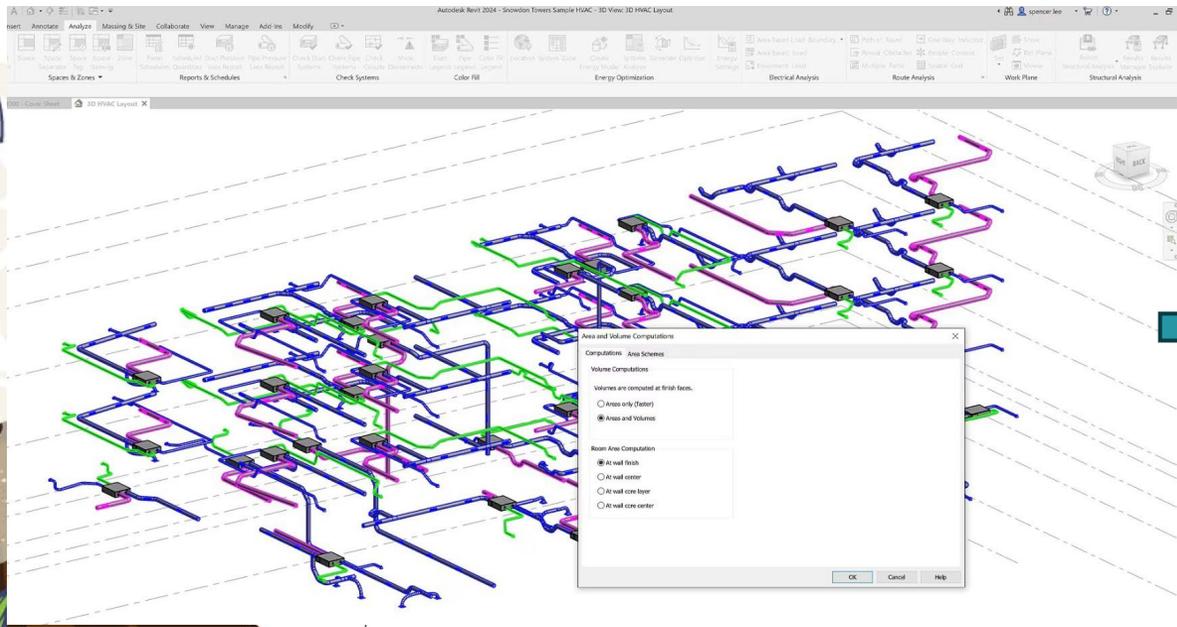
Create PDF
 Change Settings
 Batch PDF
 Bluebeam

Create PDF and Share link
 Share via O
 Adobe Acrobat

T	U	V	W
Area	PriceListCost	MaterialCost	DrawingNumber
1	5.735		13
1	5.735		13
1	5.735		13
1	5.735		13
1	5.735		13
0	1.049	3.12	
0	1.049	3.12	
0	1.049	3.12	
0	1.049	3.12	
0	1.443	4.18	
3	7.803	19.07	
3	7.803	19.07	
3	7.803	19.07	
3	7.803	19.07	
3	7.803	19.07	
3	7.803	19.07	
3	7.803	19.07	
2	10.006	24.45	
2	10.006	24.45	
2	10.006	24.45	
7	18.148	42.72	
8	1.091	3.83	
7	18.148	42.72	
7	18.148	42.72	
7	18.148	42.72	
7	18.148	42.72	
7	18.148	42.72	
7	18.148	42.72	
2	3.949	10.35	
2	8.799	21.41	
9	15.241	36.1	
8	4.737	12.14	
7	18.148	42.72	
7	18.148	42.72	
7	18.148	42.72	
3	6.943	17.17	
4	3.153	8.53	
5	2.683	7.46	
7	9.946	21.02	
9	9.359	138.82	
7	21.481	50.9	
7	21.481	50.9	
7	21.481	50.9	
7	21.481	50.9	
3	3.956	10.67	
8	8.938	22.11	
3	11.181	50.0	



Revit | Design to Fabrication



Section | All Sections

Item No	Name	Size (inch)	Qty	Material	Area	Insulation	Material	Price List	M-Rate	E-Rate	Service	Service Type	Type	F-Table	E-Table	Bought...	Notes	
3399	Adjustable SR Elbow 4...	10.0	1	Galvanized x 22	4.493	Off	None	WSP-Adj Elbows	19.55	24.01	LP Supply Air	Round Duct	Fittings	None	Old of Install - 508	Yes		
3400	End Cap	10	1	Galvanized x 22	0.648	Off	None	WSP-E.Cs	33.28	0.00	LP Supply Air	Round Duct	Fittings	None	None	Yes		
3401	End Cap	10	1	Galvanized x 22	0.648	Off	None	WSP-E.Cs	33.28	0.00	LP Supply Air	Round Duct	Fittings	None	None	Yes		
3402	End Cap	8	1	Galvanized x 22	0.423	Off	None	LP Supply Air	31.06	0.00	LP Supply Air	Round Duct	Fittings	None	None	Yes		
3403	Adjustable SR Elbow 4...	8.0	1	Galvanized x 22	3.286	Off	None	WSP-Adj Elbows	18.20	17.55	LP Supply Air	Round Duct	Fittings	None	Old of Install - 508	Yes		
3404	Adjustable SR Elbow 4...	8.0	1	Galvanized x 22	3.286	Off	None	WSP-Adj Elbows	18.20	17.55	LP Supply Air	Round Duct	Fittings	None	Old of Install - 508	Yes		
3405	End Cap	8	1	Galvanized x 22	0.423	Off	None	WSP-E.Cs	31.06	0.00	LP Supply Air	Round Duct	Fittings	None	None	Yes		
3406	Adjustable SR Elbow 4...	8.0	1	Galvanized x 22	3.286	Off	None	WSP-Adj Elbows	18.20	17.55	LP Supply Air	Round Duct	Fittings	None	Old of Install - 508	Yes		
3407	Adjustable SR Elbow 4...	8.0	1	Galvanized x 22	3.286	Off	None	WSP-Adj Elbows	18.20	17.55	LP Supply Air	Round Duct	Fittings	None	Old of Install - 508	Yes		
3408	Round Strap Hanger	10.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3409	Round Strap Hanger	10.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3410	Round Strap Hanger	10.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3411	Round Strap Hanger	10.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3412	Round Strap Hanger	10.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3413	Round Strap Hanger	8.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3414	Round Strap Hanger	8.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3415	Round Strap Hanger	8.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3416	Round Strap Hanger	8.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3417	Round Strap Hanger	8.0	1	Galvanized	0.000	Off	None	None	48.84	0.00	LP Supply Air	Hanger	Fittings	Hangers	None	No		
3418	Spiral Pipe	10	9,122 (ft)	Galvanized Spiral Coil x 26	8,442	Off	None	WSPpipe1	4.42	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3419	Coupling - Fitting	10	1	Galvanized x 22	1.002	Off	None	*WSP-Coupl...	1.89	0.00	LP Supply Air	Round Duct	Straights	WSP-Fittings	None	None	Yes	
3420	Spiral Pipe	10	3,484 (ft)	Galvanized Spiral Coil x 26	8,442	Off	None	WSPpipe1	4.42	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3421	Coupling - Fitting	10	1	Galvanized x 22	1.002	Off	None	*WSP-Coupl...	1.89	0.00	LP Supply Air	Round Duct	Fittings	WSP-Fittings	None	None	Yes	
3422	Spiral Pipe	10	3,885 (ft)	Galvanized Spiral Coil x 26	8,442	Off	None	WSPpipe1	4.42	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3423	Spiral Pipe	10	4,500 (ft)	Galvanized Spiral Coil x 26	8,442	Off	None	WSPpipe1	4.42	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3424	Spiral Pipe	8	5,400 (ft)	Galvanized Spiral Coil x 26	6,754	Off	None	WSPpipe1	3.53	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3425	Coupling - Fitting	8	1	Galvanized x 22	0.800	Off	None	*WSP-Coupl...	1.51	0.00	LP Supply Air	Round Duct	Fittings	WSP-Fittings	None	None	Yes	
3426	Spiral Pipe	8	4,188 (ft)	Galvanized Spiral Coil x 26	6,754	Off	None	WSPpipe1	3.53	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3427	Spiral Pipe	8	9,779 (ft)	Galvanized Spiral Coil x 26	6,754	Off	None	WSPpipe1	3.53	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3428	Coupling - Fitting	8	1	Galvanized x 22	0.800	Off	None	*WSP-Coupl...	1.51	0.00	LP Supply Air	Round Duct	Fittings	WSP-Fittings	None	None	Yes	
3429	Spiral Pipe	8	0,500 (ft)	Galvanized Spiral Coil x 26	6,754	Off	None	WSPpipe1	3.53	0.00	LP Supply Air	Round Duct	Straights	None	None	No		
3430	Square Bend	50.0 x 20.0	1	Galvanized x 20	39.836	Inside	Liner 1" x 1,000	None	21.62	237.50	Return Air	Rectangular Duct	Fittings (Avg)	Fittings (Avg)	Duct Install	No		
3431	Straight	50.0 x 20.0	4,667 (ft)	Galvanized x 20	12,761	Inside	Liner 1" x 1,000	None	39.64	21.18	Return Air	Rectangular Duct	Straights	Duct	Duct Install	No		
3432	Straight	50.0 x 20.0	4,667 (ft)	Galvanized x 20	12,761	Inside	Liner 1" x 1,000	None	39.64	21.18	Return Air	Rectangular Duct	Straights	Duct	Duct Install	No		
3439	Half Strap Hanger	12.0 x 12.0	1	Stainless - 304	0.000	Off	None	None	21.02	0.00	Stainless Steel 304	Hanger	Fittings	None	*ISMACNA Misc/Hangers	Yes		
3451	SS Straight	12.0 x 12.0	3,184 (ft)	Stainless - 304 x 18	4,076	Off	None	56.63	21.62	65.42	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		
3452	SS Square Bend	12.0 x 12.0	1	Stainless - 304 x 18	8,984	Off	None	153.30	65.42	65.42	Stainless Steel 304	Rectangular Duct	Fittings	*ISMACNA/ISMACNA	Fittings (Avg)	No		
3453	SS Straight	12.0 x 12.0	4,854 (ft)	Stainless - 304 x 18	4,050	Off	None	56.63	21.49	65.42	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		
3454	SS Square Bend	12.0 x 12.0	1	Stainless - 304 x 18	8,984	Off	None	153.30	65.42	65.42	Stainless Steel 304	Rectangular Duct	Fittings	*ISMACNA/ISMACNA	Fittings (Avg)	No		
3455	SS Straight	12.0 x 12.0	4,854 (ft)	Stainless - 304 x 18	4,050	Off	None	56.63	21.49	65.42	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		
3456	SS Straight	12.0 x 12.0	4,854 (ft)	Stainless - 304 x 18	4,050	Off	None	56.63	21.49	65.42	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		
3457	SS Straight	12.0 x 12.0	4,854 (ft)	Stainless - 304 x 18	4,050	Off	None	56.63	21.49	65.42	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		
3458	SS Cap	12.0 x 12.0	1	Stainless - 304 x 18	1,222	Off	None	20.85	8.90	20.85	Stainless Steel 304	Rectangular Duct	Fittings	Fittings (Avg)	Fittings (Avg)	No		
3459	SS Cap	12.0 x 12.0	1	Stainless - 304 x 18	1,222	Off	None	20.85	8.90	20.85	Stainless Steel 304	Rectangular Duct	Fittings	Fittings (Avg)	Fittings (Avg)	No		
3460	SS Square Bend	12.0 x 12.0	1	Stainless - 304 x 18	8,984	Off	None	153.30	65.42	65.42	Stainless Steel 304	Rectangular Duct	Fittings	*ISMACNA/ISMACNA	Fittings (Avg)	No		
3461	SS Cap	12.0 x 12.0	1	Stainless - 304 x 18	1,222	Off	None	20.85	8.90	20.85	Stainless Steel 304	Rectangular Duct	Fittings	Fittings (Avg)	Fittings (Avg)	No		
3462	Half Strap Hanger	12.0 x 12.0	1	Stainless - 304	0.000	Off	None	21.02	0.00	0.00	Stainless Steel 304	Hanger	Fittings	None	*ISMACNA Misc/Hangers	Yes		
3463	Half Strap Hanger	12.0 x 12.0	1	Stainless - 304	0.000	Off	None	21.02	0.00	0.00	Stainless Steel 304	Hanger	Fittings	None	*ISMACNA Misc/Hangers	Yes		
3464	SS Straight	12.0 x 12.0	4,854 (ft)	Stainless - 304 x 18	4,050	Off	None	56.63	21.49	65.42	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		
3465	SS Straight	12.0 x 12.0	1,724 (ft)	Stainless - 304 x 18	4,140	Off	None	63.51	21.97	21.97	Stainless Steel 304	Rectangular Duct	Straights	*ISMACNA/ISMACNA	Duct Install	No		

Example of a “Utility/Flexible” Software



- **Ticket Management System**
- **Project Management Solutions**
- **Field to Shop Scheduling**
- **Templates & Knowledgebase**
- **Bid Management**
- **CRM (basic)**
- **Inventory**
- **Pricing data**
 - Labor rates
 - Press brake pricing
 - Job History Data
 - Project Database

October - November 2025

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
October 5	6	7	8	9	10	11	
	SDC 1 PK	Paradise	BYU LVL	Newtown			
12	13	14	15	16	17	18	
	CFM Map			Clifco PO			
19	20	21	22	23	24	25	
					CFM Map		
26	27	28	29	30	31	Novem	
	CFM Can						
2	3	4	5	6	7	8	

Due in 5 Days

Primary	Job #	Status	Due Date	Received	Programmed
BYU LVL 4 Zone 4A HPS-	14193	Assembling	10/08/25	09/30/25	<input checked="" type="checkbox"/>
BYU LVL 4 Zone 4B HPS-	14193	Assembling	10/08/25	09/30/25	<input checked="" type="checkbox"/>
Wasatch Xfinity	16787	Assembling	10/09/25	09/30/25	<input checked="" type="checkbox"/>
Newtown Hatch Upstairs	16800	Burning	10/09/25	10/08/25	<input checked="" type="checkbox"/>
CFM Maple Mountain 1st Floor	16784	Assembling	10/13/25	09/22/25	<input checked="" type="checkbox"/>

OVERDUE

Primary	Job #	Status	Due Date	Programmed
Total			Count 580	
Status			Count 580	
Assembling				
Innovative Studiores LVL 4	16635	Assembling	09/24/25	<input checked="" type="checkbox"/>
Innovative Studiores LVL 3	16635	Assembling	09/17/25	<input checked="" type="checkbox"/>
Innovative Studiores LVL 2	16635	Assembling	09/10/25	<input checked="" type="checkbox"/>
Innovative Studiores LVL 1	16635	Assembling	09/03/25	<input checked="" type="checkbox"/>
MSS USDC PO#105992	16633	Assembling	08/06/25	<input checked="" type="checkbox"/>

All Tickets (Status)

Submit a New Ticket

WSP/WSM
Who's ticket is this?
 WSM WSP

Tags *

LARGE JOB SMALL JOB

BUDGET Need Pricing

CUT SHEET

Rectangular Duct/Fittings

Spiral Pipe/Fittings Oval Pipe/Fittings

FAB Only Field Install

SHIP K/D Custom Fabrication

Welding Press Break

Laser Cutting Aluminum

Stainless Steel Black Iron

Work for WSP Work for WSM

Website Ticket

Title

Delivering / Customer Pickup *

Delivery Pick Up

Due Date

Notes

File Upload

Regional



TRAINING SIGN-IN SHEET

**ALL TRAINING MUST BE DOCUMENTED.
PLEASE FILL OUT SHEET AND EMAIL TO YOUR PROJECT MANAGER.**



GENERAL INFORMATION

Instructor(s)	Location	Topic	Date	Start Time	Stop Time

PRINT FIRST/LAST NAME	BUSINESS UNIT	PRINT FIRST/LAST NAME	BUSINESS UNIT	PRINT FIRST/LAST NAME	BUSINESS UNIT

Description

Enter a description

Filename

Safety - Training Sign-In Sheet.pdf

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File size

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June 12, 2024

Created by

Garrett Montrone

Share options menu with icons for:

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Shee...

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QUOTE

Q #: 3719

WESTERN SHEET METAL INC.
3919 W 1820 S | SALT LAKE CITY, UTAH 84104
P: 801-973-7072 F: 801-609-5619

TO:
Ludis Benitez Almenares

QUOTE DATE	VALID THRU	FOR
10/01/25	10/15/25	Quote / 139 Mason Ln project

DESCRIPTION	PRICE
(6) 22" x 7" x 5' Duct (6) 15 x 7" x 5' Duct (6) 6" x 6" x 5' Duct *No Delivery figured*	\$1,067.00

SUBTOTAL: \$1,067.00
TAX: 8.45%

TOTAL AMOUNT: \$1,157.16

ATTENTION:
We have now added a payment portal to our website for your convenience. To access the portal, go to www.westernspiralpipe.com and click on "Make a Payment".

This proposal is based on the Metal and Metal Products Index (MMPI). Due to the rapidly fluctuating price of metal, we reserve the right to escalate/reduce the investment figures quoted herein should the MMPI have changed 3% from the date of this proposal to the time of acceptance.

Commercial HVAC Systems Supplier for HVAC Products Custom Fabrication In Shop Welding Services	3919 W. 1820 S. Salt Lake City, UT 84104 United States 1(801) 908 - 0668	Monday - Friday 6:30 am - 3:00 pm Saturday: Closed Sunday: Closed
---------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------	----------------------------------------------------------------------------

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-  Send file...

Description

Enter a description

Filename

3719.pdf

File size

265 KB

Date uploaded

October 1, 2025

Created by

Garrett Montrone

Category	APARTMENT	Avg	\$9.13	Avg	\$26.85
Project Type	Adaptive Reuse	Avg	\$8.82	Avg	\$25.94
1	1221 Broadway Lofts	205,137	\$7.11	\$20.91	Adaptive Reuse

Type "with:" to narrow your search to a person

Chat

Unread Channels Chats

Copilot Discover Mentions Favorites

Garrett Montrone (You)

GM Mail Estimating Shop

Teams and channels

Estimating GM WSM Small Jobs WSM IT Logan Regional Hospital BYU Arts General NORTH CAPITOL BUILDING WSM HUB General Field Office

General Posts Files **TICKETS** To-Do Shop App OneNote Archive SP Work tracker

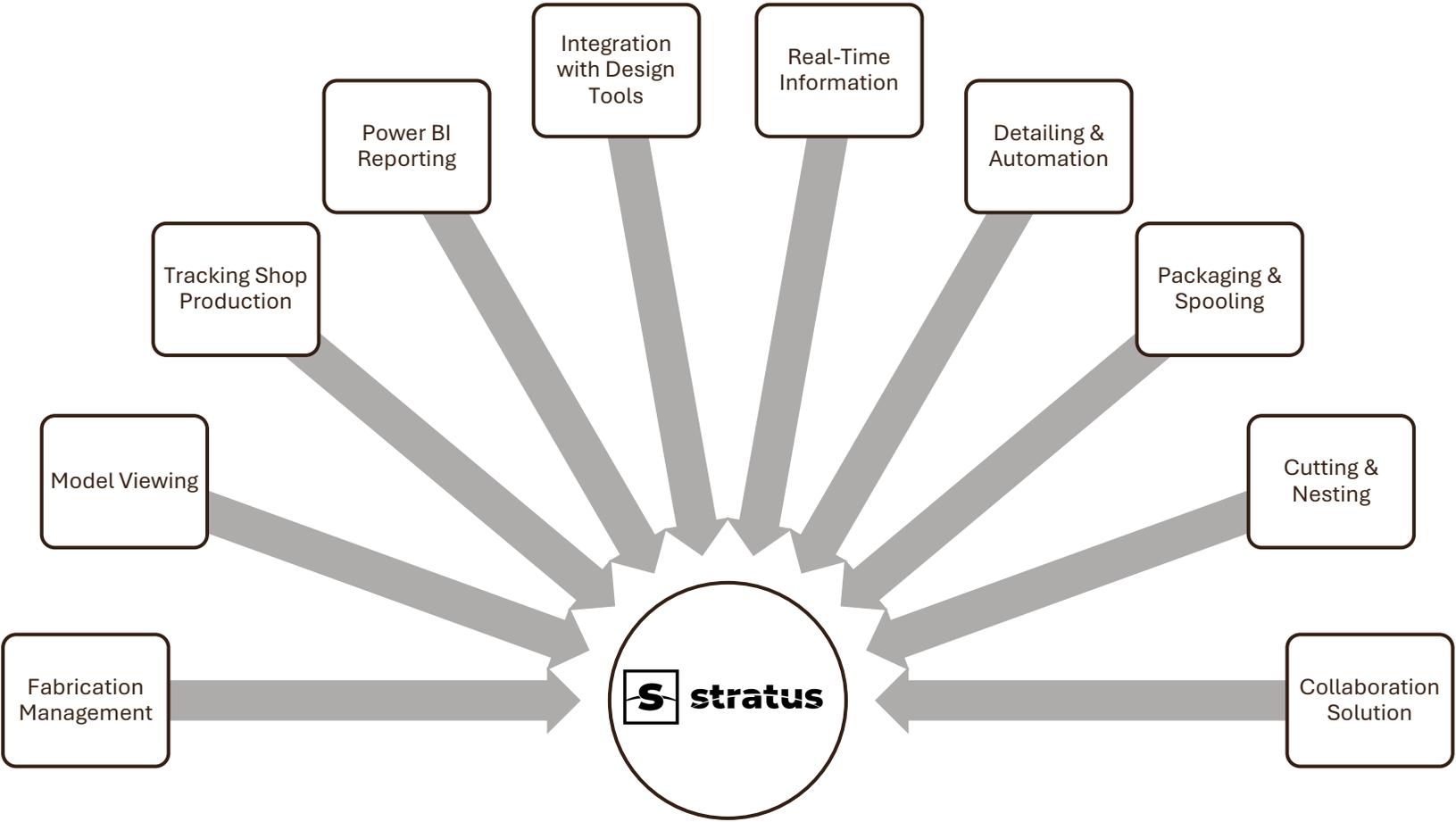
TICKETS : Report Abuse Help

Grid Filter Off Arial 10 B I U

	Cre... date	Ticket #	WSP/...	Project	Job #	Status	Title	Bid Date	Description	Contract Price	Customer	Contact Phone
25	08/11/25	3557	WSM			Estimating	Interior Sill Riser/ Residential Threshold		Hi there, I hope you're doir			
26	08/09/25	3550	WSP			Submitted	Ducting for cabinet shop	08/12/25	I have a quote from US dur		max@euror	
27	08/06/25	3540	WSM			Waiting on Response	Stainless Steel Box - Forbidden Street		304 S.S 3/16 thick. Alex wa			(385)
28	08/01/25	3527	WSM		1528	Start Building	Triad 5 Cut Sheet 8 1 25		Change Order (Added duct		MSS	
29	07/29/25	3495	WSP		16635	Assembling	Innovative Studiores LVL 4					
30	07/29/25	3494	WSP		16635	Assembling	Innovative Studiores LVL 3					
31	07/29/25	3493	WSP		16635	Assembling	Innovative Studiores LVL 2					
32	07/29/25	3492	WSP		16635	Assembling	Innovative Studiores LVL 1					
33	07/29/25	3491	WSM			Estimating	Deer valley Five (5) Star Hotel	07/30/25	Need to furnish seven (7) p			
34	07/28/25	3489	WSP		16333	Assembling	Built Tuff Smits's Toeole #3					
35	07/28/25	3488	WSP		16633	Assembling	MSS USDC PO#105992					
36	07/28/25	3487	WSP		16601	Assembling	Central Utah SM Murray HS ADD					
37	07/28/25	3486	WSP		16594	Assembling	Central Utah SM Bountiful HS CTE MH 103 LVL 3 M					
38	07/28/25	3485	WSP		16594	Assembling	Central Utah SM Bountiful HS CTE MH 102 LVL 2 M					
39	07/28/25	3484	WSP		16354	Assembling	CFM South Weber					
40	07/28/25	3483	WSM	Small Jobs	53116	Delivered	53116 Wasatch Heat.					
41	07/25/25	3482	WSM	BYU Arts	1513	Delivered	1513 7-15-1					
42	07/25/25	3481	WSM			Pending Review	24" & 30" cap					
43	07/25/25	3480	WSM	Small Jobs	814	Delivered	814 Hams 7-25-1					
44	07/25/25	3479	WSM	Small Jobs	1531	Delivered	1531 7-23-2					
45	07/24/25	3478	WSM				Custom Sheet metal pieces		I need custom sheet metal			

23091310100	HVAC	CONTROLS	HVAC CONTROLS	reading gage cock and syphon	EA	\$127.00	\$56.06		\$28.03		\$155.03	\$183.06	
23091310122	HVAC	CONTROLS	HVAC CONTROLS	Control valve, 1", modulating, 2-way	EA	\$1,007.00	\$74.74	1	\$37.37	0.52	\$1,044.37	\$1,081.74	1.62
23091310124	HVAC	CONTROLS	HVAC CONTROLS	Control valve, 1", modulating, 3-way	EA	\$1,140.00	\$112.00	2	\$56.00	0.78	\$1,196.00	\$1,252.00	2.42

Current Adoption Project





Columbus Day

001-26 - HPS-L3C-01

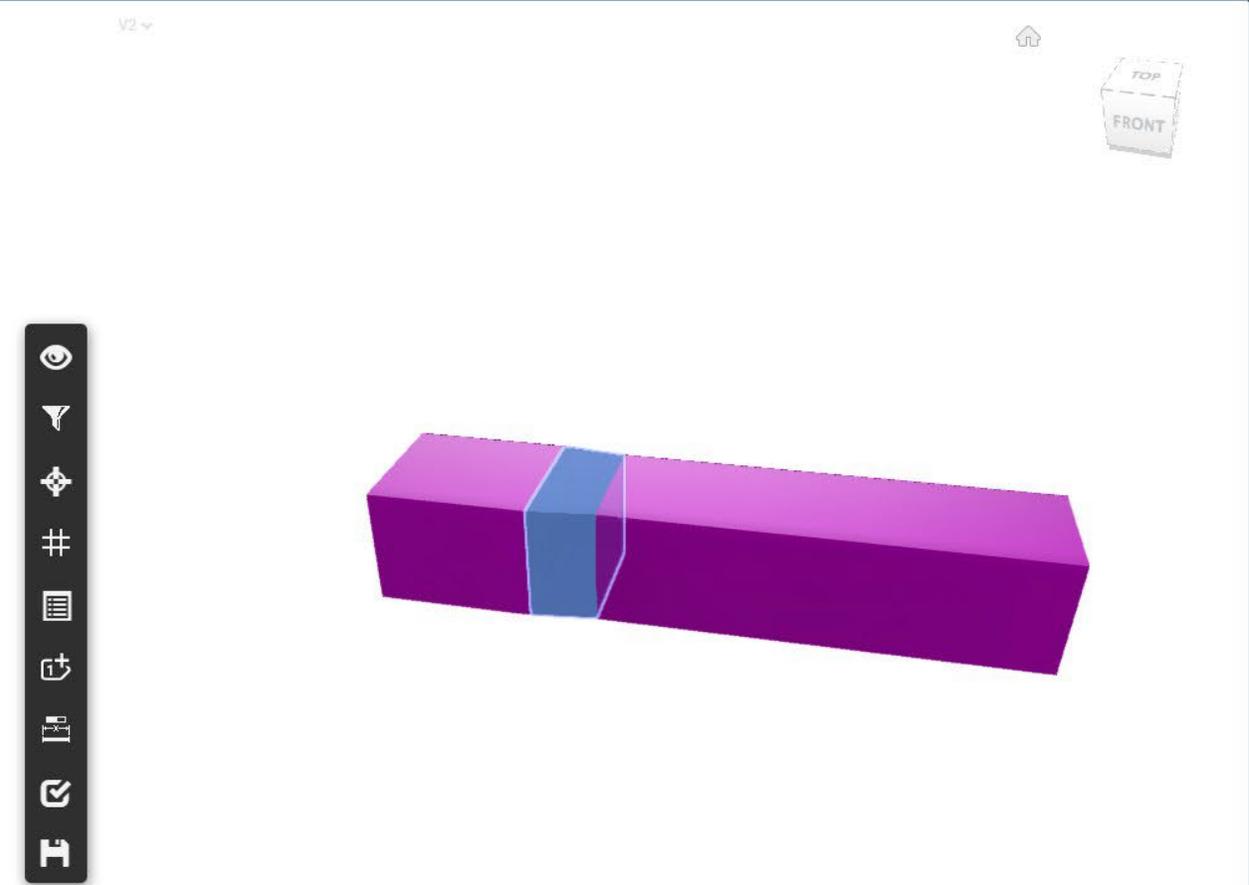
14

Thanksgiving Day



Quantity	Part No.	Size	Description	Connections	Tracking Status	Attachments	Send to Tool
1	4004	20"x16"	Straight	S&D - S&D-N/C	Spoiled		
1	4005	20"x16"-18"x16"	Transition	S&D - S&D	Spoiled		
1	4006	18"x16"	Straight	S&D - S&D-N/C	Spoiled		

Showing items 1 to 3 of 3 entries



Proj.: MGH-4B-TI/SPIRAL

LOT#: (8-MPS2-2_RND)

JOB#: 2200

Qty: 1

Dims

A=6.00
B=27.00

C1 Connected To: 6-45FR

C2 Connected To:

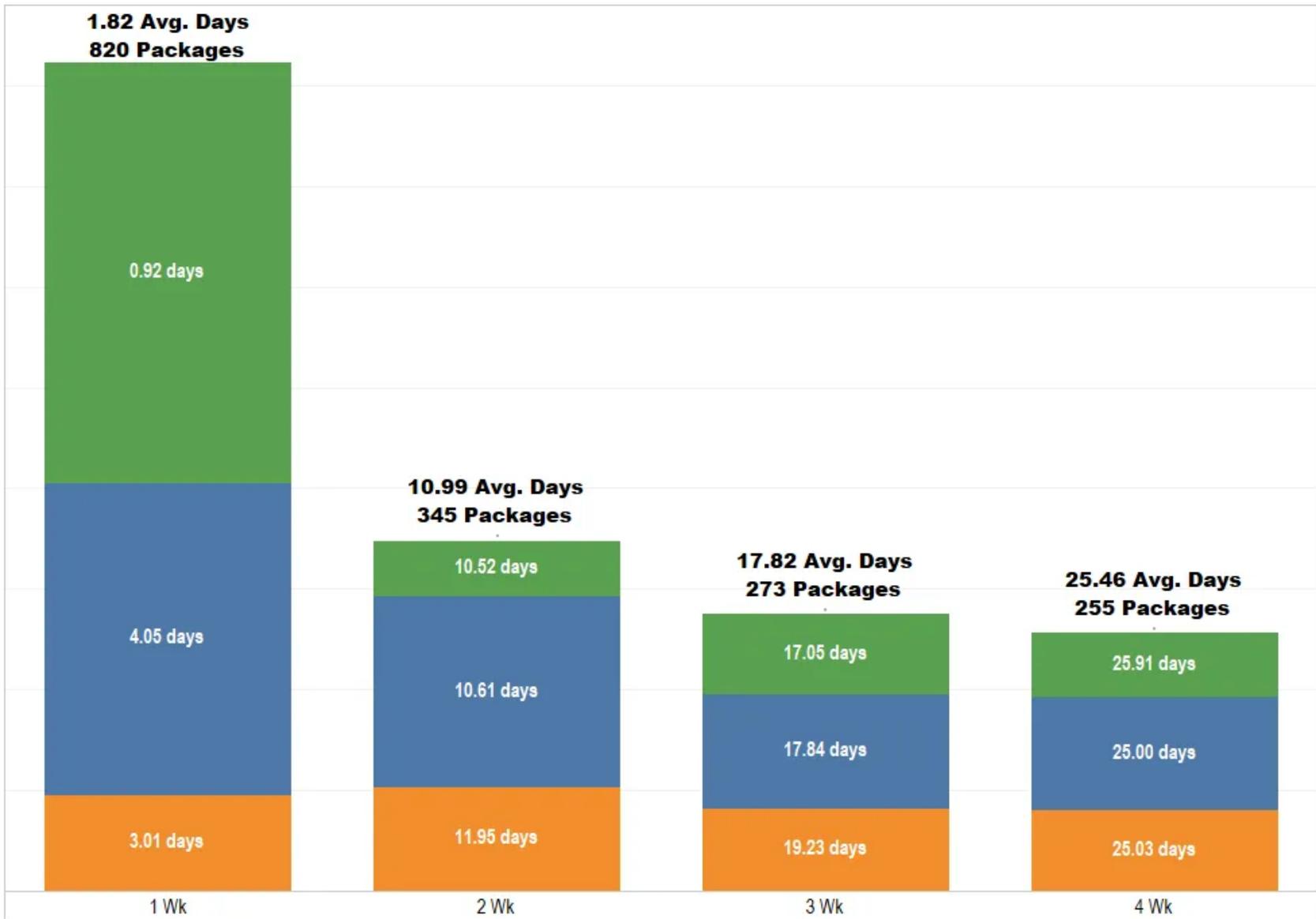
C1 To Assembly:

C2 To Assembly: 2953

6-27"



Package Duration from Published to Spooled (days)



Package Category Name Legend
■ Ductwork ■ Pipe Shop Package ■ Plumbing Shop Package

Analytics Report WSM Power BI

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Onboarding Page 1

Resources

stratus

Projects Models Packages Assemblies Containers Shops Scan Jobsites Admin



Stratus Fundamentals...
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Stratus Innovate 2025

Presentations and Slide Decks



GTP Only

Internal Training

Featured Courses



GEN-101: Stratus 101
Online Course

Completed ✓



FO-451: Field Orderz Admin
Online Course

Enroll +



FO-452: Field Orderz Home
Page
Online Course

Enroll +



FO-453: Field Orderz Pipe
Sketching
Online Course

Enroll +



FO-454: Field Orderz Duct
Takeoff
Online Course

Enroll +



ADM-530: Shift
Online Course

Enroll +



FAB-208: Shift
Online Course

Enroll +

Training Paths - Stratus



Admin

Courses



Publish

Courses



Shop Manager

Courses



Shop Fabricator

Courses



General

Courses



Onboarding Hub

Available to CSG Onboard Enrollees

Training Paths - Stratus Curriculum

New Feature Request

Complete this form to submit new feature requests for STRATUS

Chat Bots



Chat Bots

 New chat



Estimating assistant

This Copilot agent assists with mechanical estimating for HVAC systems. It uses SMACNA standards, RS Means cost data, and company-specific labor units to extract quantities from project documents, apply labor and material rates, and generate detailed cost estimates, bid forms, and value engineering comparisons. It supports digital takeoffs, specification analysis, and proposal preparation.

- Takeoff & Quantity Extraction**
 - "Extract and summarize all ductwork by size and length."
 - "Count all air devices by type and size."
 - "List all mechanical equipment with quantities."
- Estimating & Costing**
 - "Estimate total ductwork cost using my labor and cost data."
 - "Calculate pounds of ductwork per CFM and per square foot."
 - "Apply building type multipliers to my unit costs."
- Specification Analysis**
 - "Summarize ductwork requirements from Section 23 31 00."
 - "List insulation, testing, and commissioning requirements."
- Value Engineering**
 - "Compare cost and weight for duct liner vs. double-wall duct."
 - "Estimate savings for switching"
- Bid & Proposal Support**
 - "Create a scope checklist."
 - "Draft a bid form with scope items and quantities."
 - "List clarifications,"
- Reporting & Visualization**
 - "Generate a summary table of ductwork pounds per floor."
 - "Create a chart showing cost per"

Type your message 

2. Duct Insulation Requirements

3. Insulation Materials Allowed

A. Duct Liners

- Flexible Elastomeric Insulation (e.g., Armacell AP Armaflex)
- Mineral-Fiber Blanket Insulation (e.g., Owens Corning SOFTR All-Service Duct Wrap)
- Mineral-Fiber Board Insulation (e.g., Johns Manville 800 Series Spin-Glas)
- Polyolefin Insulation (e.g., Armacell Tubolit)

All insulation must meet ASTM E84 flame and smoke ratings:

- **Indoors:** Flame spread ≤ 25 , Smoke developed ≤ 50
- **Outdoors:** Flame spread ≤ 75 , Smoke developed ≤ 150

Would you like a breakdown of duct pressure classes and seal/leakage requirements as well? I can also help generate a duct insulation schedule or takeoff if needed.

 **Draper FHBP CD - Specifications**  Ask

https://westernsheetmetal1-my.sharepoint.com/personal/garrettm_westernsheetmetal_n...

Garrett Montrone modified 9 days ago

Sources  >



on type is primarily lined ductwork,

types.  Draper FHBP CD - Spe...

Size	Thickness
	1 inch

beneficial to the space,

FHBP CD - Spe...



Estimating assistant

Based on the contents of the [Equipment Schedule](#), here is a breakdown of the types of mechanical equipment and their quantities, organized by category:  Equipment Schedule

Fans

- **Built-Up Fan Systems:** 4 units (CB-100A, CB-100B, CB-200A, CB-200B)
- **Supply Air Fans:** 2 units (SF-100, SF-200)
- **Snow-Melt Fans:** 4 units (SMF-1 to SMF-4)
- **Relief Air Fans:** 6 units (RAF-1 to RAF-6)
- **Parking Garage Exhaust Fans:** 2 units (PEF-1, PEF-2)
- **In-Line Exhaust Fans:** 2 units (IEF-1, IEF-2)
- **Transfer Air Fans:** 7 units (TAF-1 to TAF-7)
- **Ventilation Fan:** 1 unit (VF-1)

Pumps

- **Heating Water Pumps:** 2 units (HWP-1, HWP-2)

Coils

- **Cooling Coils:** 2 units (CC-100, CC-200)
- **Heating Coils:** 2 units (HC-100, HC-200)

Dampers

- **Return Air Dampers:** 4 units (RAD-100A, RAD-100B, RAD-200A, RAD-200B)
- **Outside Air Dampers:** 4 units (OAD-100A, OAD-100B, OAD-200A, OAD-200B)

Filters

- **Filter Sections:** 2 units (FS-100, FS-200)

Heat Exchangers

- **Building Heating Water Heat Exchangers:** 3 units (HX-1, HX-2, HX-3)

Fan Coil Units

- **FCUs:** 4 units (FCU-1 to FCU-4)

Unit Heaters

- **UH Units:** 3 units (UH-1, UH-2, UH-3)

VAV Boxes with Reheat

- **VAVRs:** 478 units (239 East + 239 West)



Sources

+ Add Discover

- Select all sources
- 22884_UTAH GAMES AT CITY CENTRE_DRAWINGS.pdf
- 22884_UTAH GAMES AT CITY CENTRE_SPECIFICATIONS.pdf
- 22884_UTAH GAMES_CITY CENTER - ADDENDUM 01.pdf
- Comparing Western Sheet Metal Proposals and Subcontra...
- Subcontract - Games renovation -Western Sheet Metal.pdf
- UU22884 - Approved Specifications.pdf
- UU22884-Approved Plans.pdf
- Utah Games - HVAC Proposal.pdf

Chat



Utah Games at City Centre: Construction Drawings

8 sources

These sources comprise detailed specifications and contract documents for the Utah Games - City Centre Remodel project at the University of Utah, covering diverse construction trades. The documents establish general conditions like liquidated damages and the University's rights, alongside comprehensive Division 1 requirements for project management, submittals, and alteration work procedures. Substantial sections cover mechanical systems including fire protection, seismic and sound control, HVAC piping, and sophisticated electronic controls that integrate Variable Refrigerant Flow (VRF) units with the Building Management System (BMS). Finally, the specifications address electrical systems such as grounding, raceways, surge protection, digital lighting controls, and fire-alarm systems, along with specific material and installation instructions for finishes like glazing and acoustical ceilings.

Save to note

Video Overview Audio Overview Mind Map

Start typing... 8 sources

How do the project's specifications manage risk, compliance, and quality control across dif

Studio > Note

Construction Shop Drawings: Requirements and Process

(Saved responses are view only)

Shop Drawings are a crucial part of the construction process, serving as detailed plans prepared by the Contractor or subcontractors to illustrate specific portions of the Work. They are distinct from the Contract Documents themselves.

Requirements for Shop Drawings

Shop Drawings must be project-specific and drawn accurately to scale, rather than merely reproductions of the Contract Documents or standard printed data. Their primary purpose is to demonstrate how the Contractor proposes to conform to the information and design concept outlined in the Contract Documents.

Key information to be included in Shop Drawings, as applicable, comprises:

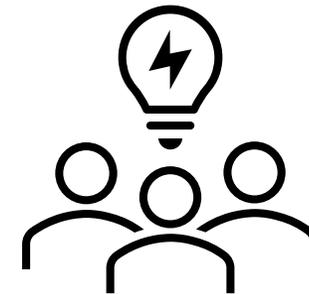
- **Product Identification and Schedules**
- **Compliance with Specified Standards**
- **Coordination Requirements**
- **Field Measurements:** Notations of dimensions established by field measurements are essential.
- **Relationship and Attachment to Adjoining Construction:** Clearly indicate how the work connects to other building elements.
- **Professional Engineer's Seal and Signature:** Required if professional design services or certifications are specifically assigned to the Contractor by the Contract Documents. This includes seismic restraint details for electrical and mechanical systems and aluminum-framed entrances/storefronts.
- **Equipment Details:** For mechanical and electrical equipment, include unit dimensions, weights, loads, required clearances, methods of field assembly, components, and the location and size of each field connection.
- **Wiring Diagrams:** Specifically for power, signal, and control wiring, including those for electrified door hardware, distributed digital lighting control systems, and fire-alarm systems.
- **Specific System Details:**
 - **Hollow-Metal Doors and Frames:** Elevations, detailed dimensions (vertical, horizontal edges, metal thicknesses), and reinforcement/hardware preparations.
 - **Aluminum-Framed Entrances and Storefronts:** Plans, elevations, sections, full-size details, and attachments to other work. This includes detailed isometric views of vertical-to-horizontal intersections showing joinery, anchorage, expansion provisions, glazing, flashing, and drainage.
 - **Architectural Cabinets:** Dimensions, profiles, and details, including field measurements and locations of concealed framing and blocking.
 - **Penetration Firestopping Systems:** Location, illustration of the system, and design designation of the

Convert to source



Future Outlook

- AI & Analytics
- Prefabrication & Automation
- IoT Integration
- Protecting digital assets vs Open-Source Collaboration
- Generational Transition



Q&A



Contact

Garrett Montrone

Email: garrettm@westernsheetmetal.net

Phone: 801-924-6217

LinkedIn: <https://www.linkedin.com/in/garrettmotrone/>

Western Sheet Metal, Inc

Email: shop@westernsheetmetal.net

Phone: 801-973-7072

WWW: <https://www.westernsheetmetal.net>

LinkedIn: <https://www.linkedin.com/company/westernsheetmetal>



Western Spiral Pipe and Fittings, Inc

Email: shop@westernspiralpipe.com

Phone: 801-908-0668

WWW: <https://www.westernspiralpipe.com>

WESTERN SPIRAL PIPE & FITTINGS, INC.



Please take a moment to complete the session survey provided to you.

2025 SMACNA ANNUAL CONVENTION

A decorative illustration at the bottom of the slide. On the left, there are brown mountains with green foliage. In the center, there are blue waves with white foam. On the right, there is a large pink and white hibiscus flower. The background of the illustration is a light yellowish-brown color.