

Person

Person

Person

**SMARTVID.IO**

**Barton  
Malow**



**AUTODESK  
CONSTRUCTION  
CLOUD™**

# AGENDA

- Speaker introductions
- About Barton Malow, Smartvid, Autodesk
- Barton Malow's Smartvid journey
  - Expansion
  - COVID-19 impacts
  - Where we go from here
- Q&A

**Barton  
Malow**

**SMARTVID.IO**



**AUTODESK  
CONSTRUCTION  
CLOUD™**

# JOSH KANNER, SMARTVID.IO



- Founder, CEO
- 15 years in AEC Software
- Former founder, Vela Systems, now Autodesk BIM 360 Field
- Boston based
- “Fun” facts
  - Best jobsite walks: Cowboy stadium, Liberty hotel
  - Continue to try to organize cross-industry groups (now the Predictive Analytics Strategic Council)
  - Tip for handling the quarantine with 2 sons, wife, dog: lots of Netflix

# SMARTVID.IO's MISSION

*To reduce risk in  
the AEC industry  
by using AI to  
improve safety,  
quality and  
productivity.*



# WHO IS SMARTVID.IO?

- Software focused on reducing project risk using AI
- 100% focused on the Construction Industry
- Our construction-tuned AI is 4x better than Google
- Pre-built integrations with leading con-tech vendors for easy deployment
- Boston-based, offices around the world

**Barton  
Malow**

Suffolk

**Lithko**  
CONTRACTING, INC.

**CLAYCO**



**OBAYASHI**

**DPR**  
CONSTRUCTION

**Messer**  
WeAreBuilding.

**JE DUNN**  
CONSTRUCTION

**SHAWMUT**  
Design and Construction

 **WEBCOR**

**CLARK**  
CONSTRUCTION

**SMARTVID.IO**

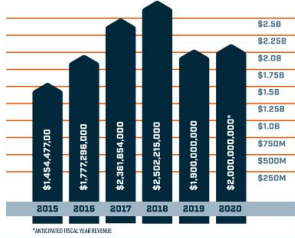
# TED JENNINGS, BARTON MALOW



- Senior VDC Manager
- Based in Southfield (aka, Detroit), MI
- Construction experience (11 years)
  - Federal Court House, San Diego
  - Coronado Island Naval Hangars, San Diego
  - Power plants across SE Michigan
- Fun facts (little known)
  - Loves skiing
  - 2 boys - 7 and 3 (if on video, watch the door behind him)



# Barton Malow



## FISCAL YEAR REVENUE

## REVENUE PER MARKET (3 YEAR AVERAGE)

24% INDUSTRIAL

20% EDUCATION

17% HEALTHCARE

15% SPORTS + ENTERTAINMENT

14% ENERGY

10% COMMERCIAL

76  
MILLION

MAN-HOURS WORKED IN 5 YEARS  
BARTON MALOW + SUBCONTRACTORS

100%  
AMERICAN +  
EMPLOYEE  
OWNED

**BUILD IT  
SAFE**  
NO EXCEPTIONS



**0.45  
EMR**  
WORLD CLASS  
SAFETY RECORD

ONE  
VISION

10  
STATES

15  
OFFICES

2000  
EMPLOYEES  
(6 month average)

52%  
TRADES

48%  
OFFICE

20%  
CERTIFIED  
P.E., AIA, LEED AP

bartonmalow.com



## OFFICE LOCATIONS

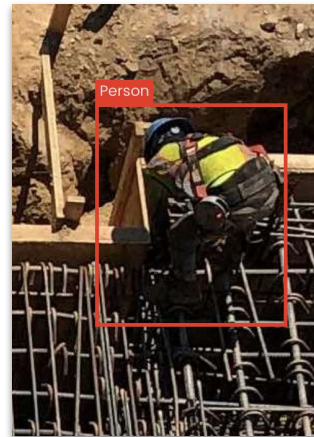


**96**  
C1924  
**YEARS**  
CONTINUOUS  
OPERATION

BUILDING WITH THE  
AMERICAN SPIRIT  
**PEOPLE  
PROJECTS  
COMMUNITIES**

# SMARTVID RELATIONSHIP RECAP

- 2019 Pilot expanded to Division-wide rollout in Q1 2020
- Safety Monitoring using 2D photos from Box and 360 photos from Structionsite
  - Now adding BIM 360 imagery
- Currently launching Safety Observations Module
- Member of the Predictive Analytics Strategic Council
  - Demonstrated potential value in incident rate reduction from analytics & management focus



**B** AUTODESK® BIM 360®



StructionSite



# AUTODESK RELATIONSHIP RECAP

- Long time customer of Assemble, PlanGrid, BuildingConnected
- Now moving company-wide to BIM 360 as core construction management system
- Review of entire process from viewing documents in the field to the analysis of all of the data generated by project teams



**AUTODESK CONSTRUCTION CLOUD™**



Assemble



BuildingConnected



BIM 360



PlanGrid

# SMARTVID DEPLOYED IN 3 PHASES

Phase 1

Phase 2

Phase 3

## MODULES



SAFETY  
MONITORING



SAFETY  
OBSERVATIONS



PREDICTIVE  
ANALYTICS



ENTERPRISE PHOTO & VIDEO MANAGEMENT

## FOUNDATION



VINNIE THE AI ENGINE

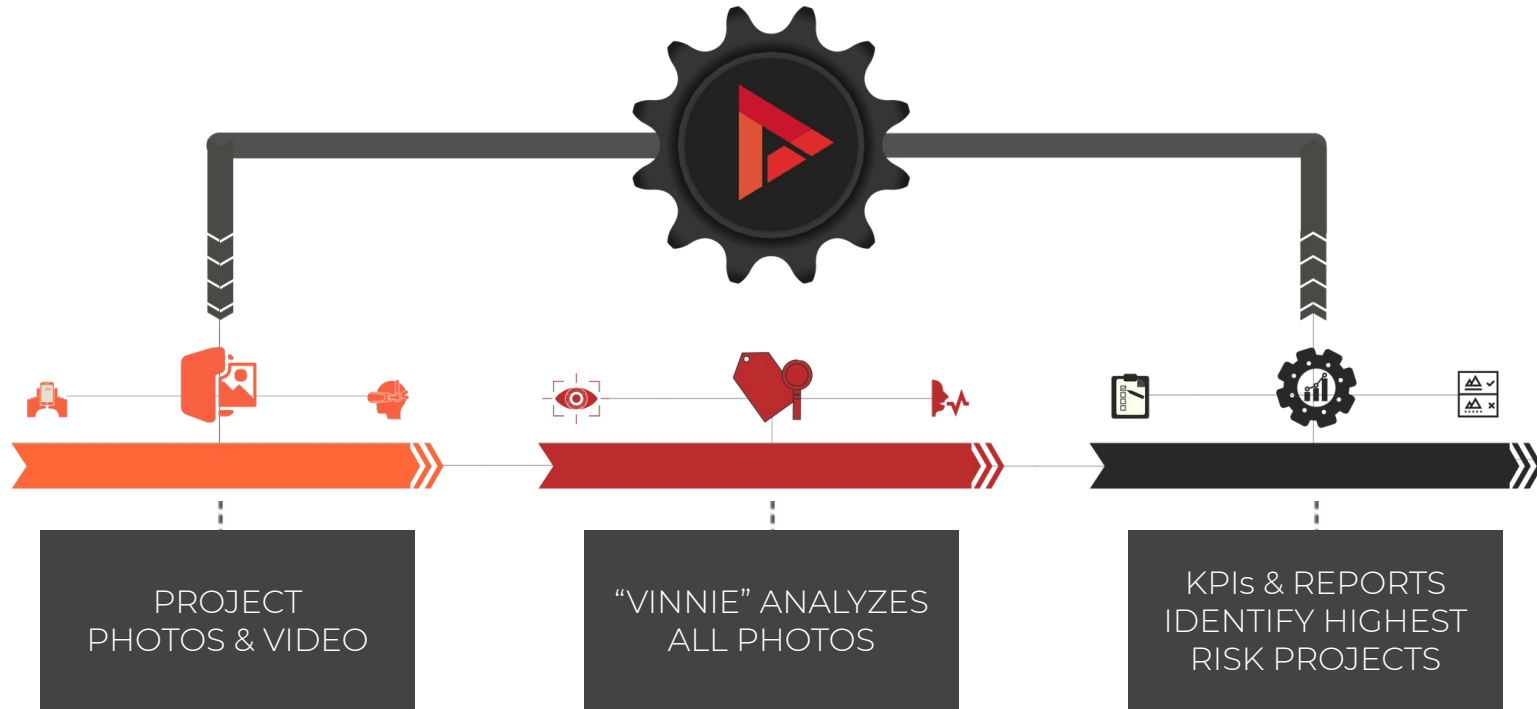


REPORTING & DATA ANALYSIS



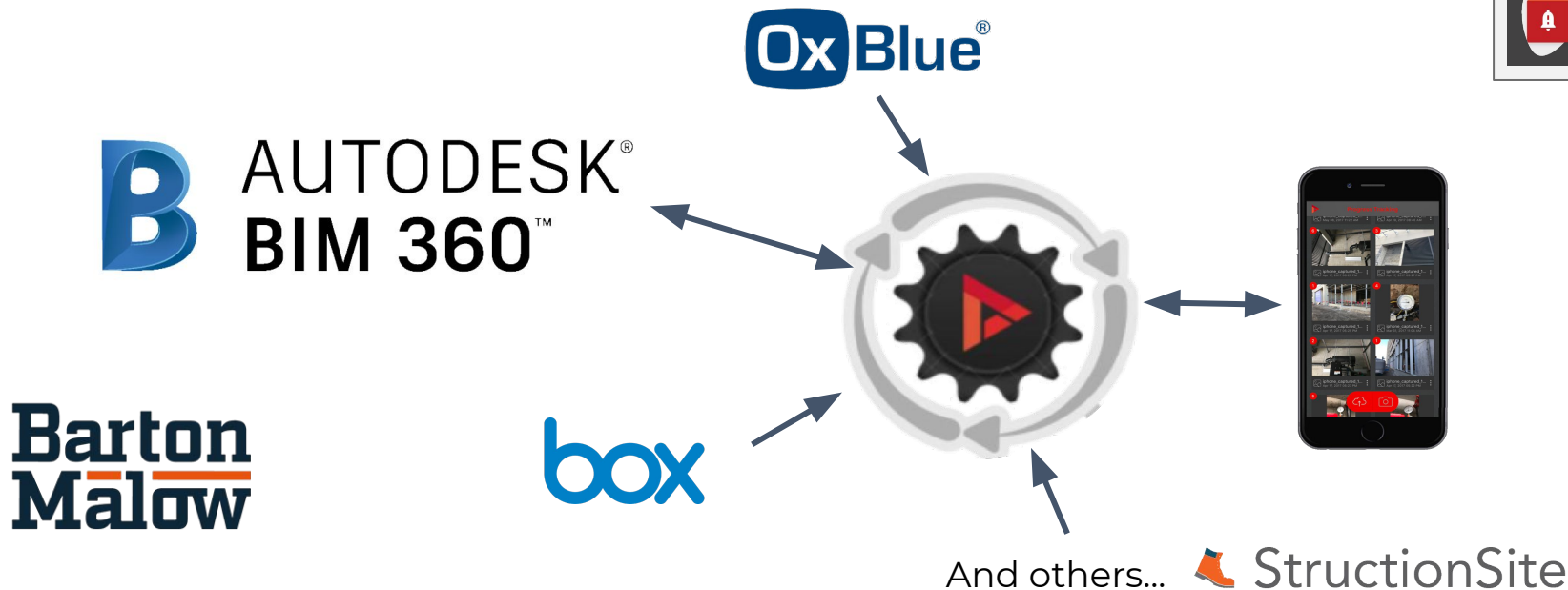
PREBUILT INTEGRATIONS & APIs

# SAFETY MONITORING MODULE



# ANALYZE All JOBSITE IMAGERY

Project teams capture photos. Smartvid.io's mobile app & pre-built integrations make it fast and easy to pull them all together:



**SMARTVID.IO**  
SAFETY SUITE



SAFETY  
MONITORING



SAFETY  
OBSERVATIONS



PREDICTIVE  
ANALYTICS

**SMARTVID.IO**

# WHAT DOES VINNIE SEE? SOME EXAMPLES...



-1 of 5  
workers not  
wearing  
gloves



SmartFilter

17 17 17

MORE  
CONFIDENT

LESS  
CONFIDENT

Enter existing tag

No Gloves (3)

No Gloves 01

No Gloves 02



No Gloves 03



Truck

Person (5)

Trench Work

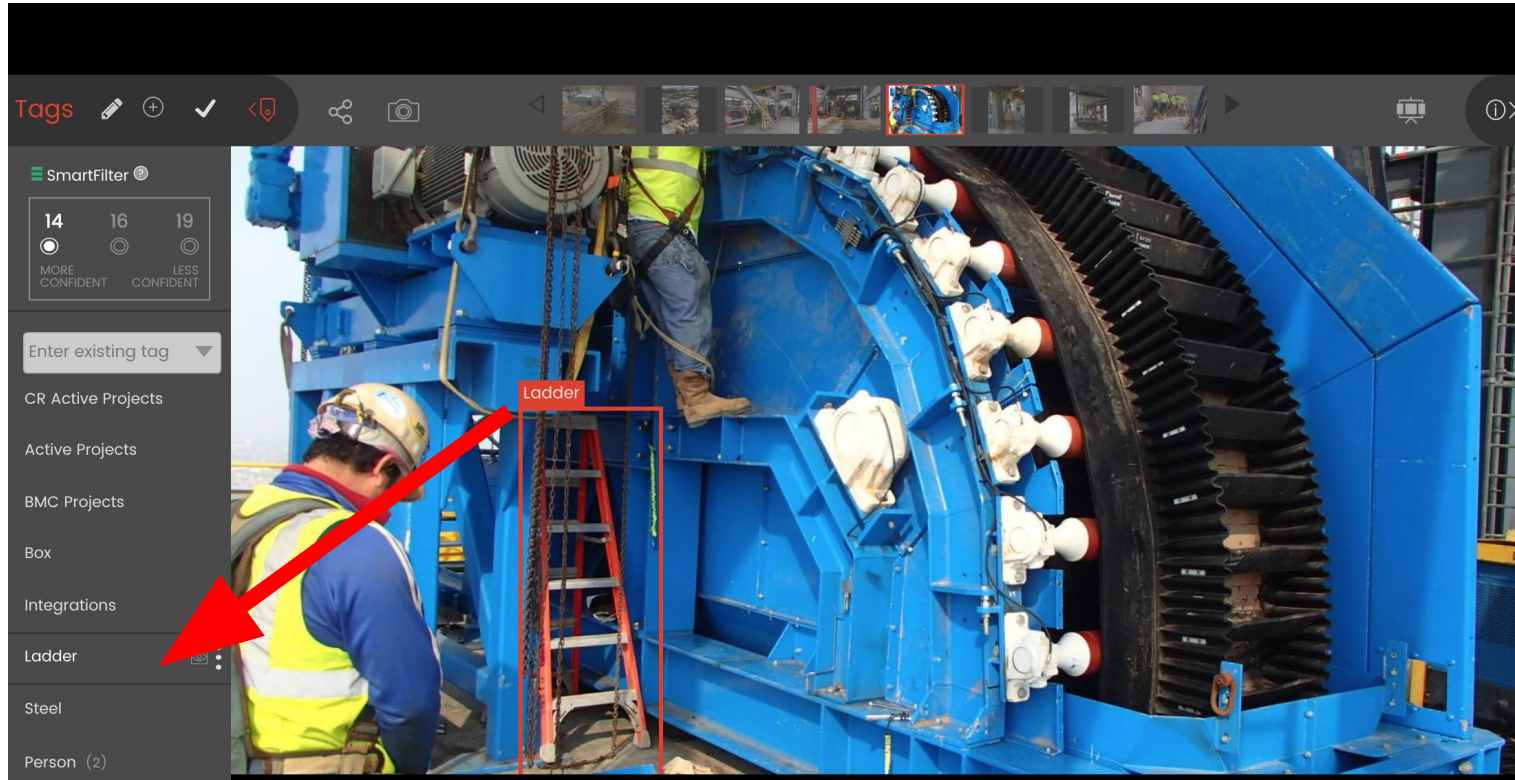
Folding Ladder (4)

Rebar





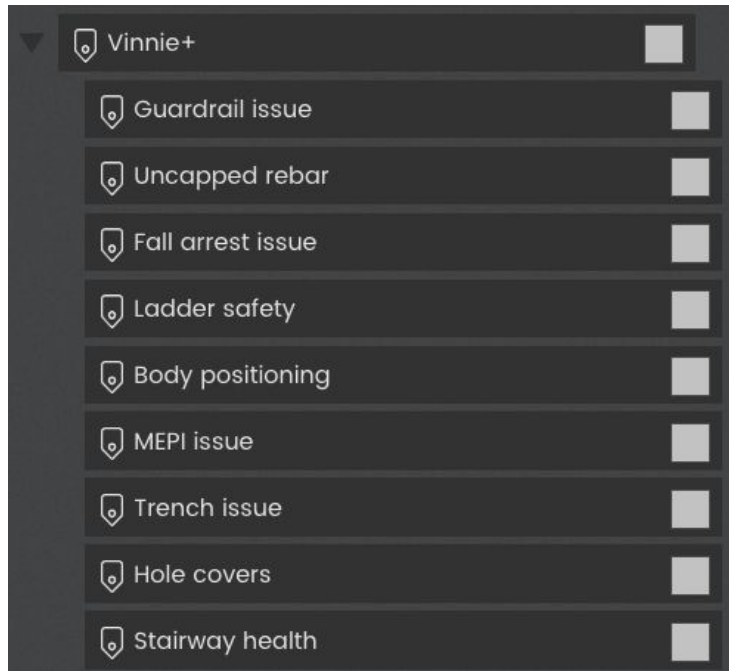
# WHAT DOES VINNIE SEE? SOME EXAMPLES...



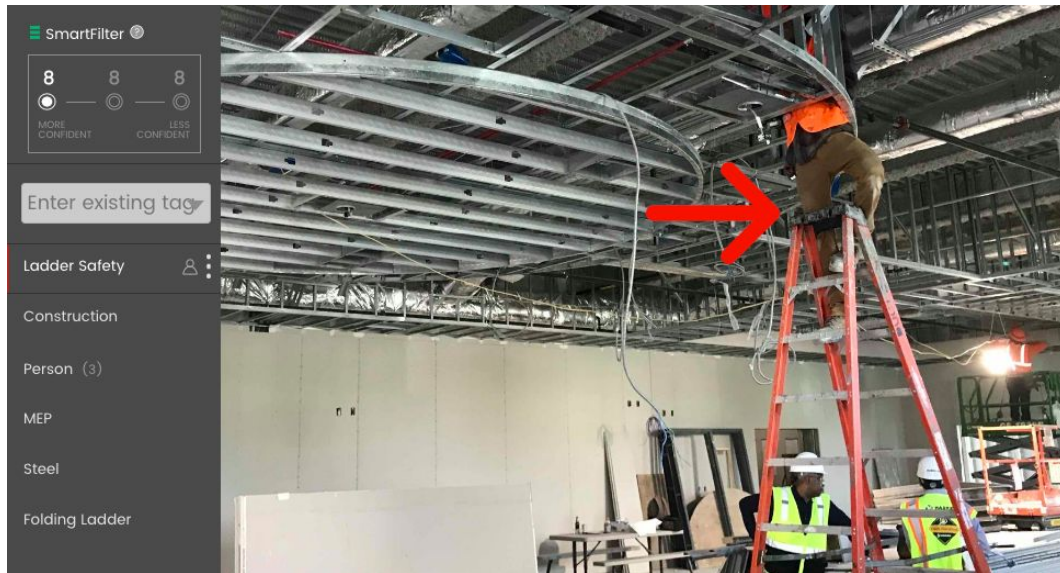
Finding  
ladder  
positioning

# VINNIE+ EXTENDS SMARTVID'S INSIGHTS TO NEW CATEGORIES

## Vinnie+ Risk Categories:



## Ladder Safety Example



# COVID-19 RESOURCES

- **Appreciation to everyone keeping jobs open and cranes moving**
- Mitigation measures we've heard from our customers
  - Temperature screening; On/off days; Clear social distancing guidelines; Additional cleaning crews; Minimize ride & tool sharing
- Some of Barton Malow's mitigation measures include
  - Immediate and strong action plan to work from home
  - Leverage technology like StructionSite for WFH, site documentation
  - Develop simple tools for surveys and questionnaires

## Resources



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

<https://www.agc.org/coronavirus>

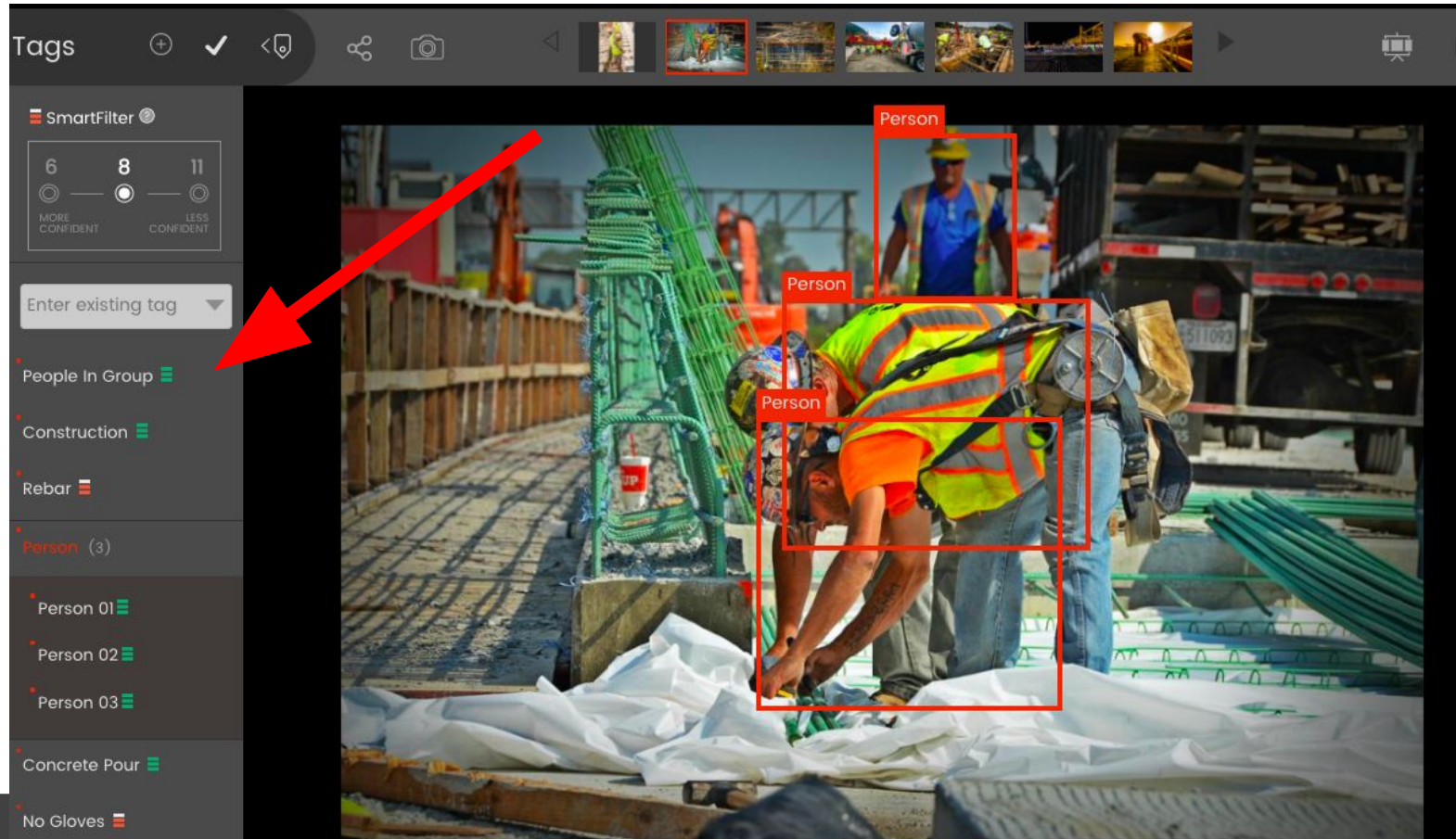
Includes: sample COVID-19 mitigation plan



<https://constructionblog.autodesk.com/covid-19-construction/>



# AND NOW... PEOPLE IN GROUP TAGGING



Tags



Information

SmartFilter

16

21

28



MORE  
CONFIDENT



LESS  
CONFIDENT

Enter existing tag

Ladder (2)

Person At Height (2)

Construction

People In Group

No Face Mask

Steel



Properties

2020-09-22\_019.jpg

Size

3.1 MB

Uploaded

Oct 09, 2020 08:01AM

Created

Sep 22, 2020 09:05AM

Last Modified

Just Now

Uploaded By

Automatic BartonMalow



16



0





Tags



Information

SmartFilter

12

19

23



MORE CONFIDENT



LESS CONFIDENT

Enter existing tag

BIM 360 Docs

Integrations

No Gloves



Person (3)

Foundation



Properties

2020-08-11\_001.jpg

Size

4.11

Uploaded

Oct 09, 2020 07:25AM

Created

Aug 11, 2020 03:21AM

Last Modified

Just Now

Uploaded By

Automatic BartonMalow

19

0





Tags



Information

SmartFilter

16



MORE  
CONFIDENT

21



26



LESS  
CONFIDENT

Enter existing tag

Person (6)

Construction

Structural Steel

No Face Mask



Concrete



Properties

2020-09-25\_029.jpg

Size

3.5 MB

Uploaded

Oct 09, 2020 08:15AM

Created

Sep 25, 2020 04:17AM

Last Modified

Today 11:13AM

Uploaded By

Automatic BartonMalow



16



0

Tags



Information



Properties

2020-09-16\_065.jpg

Size

3.6 MB

Uploaded

Oct 09, 2020 07:47AM

Created

Sep 16, 2020 04:31AM

Last Modified

Just Now

Uploaded By

Automatic BartonMalow

16

0



SmartFilter

16

MORE  
CONFIDENT

18

MORE  
CONFIDENT

23

LESS  
CONFIDENT

Enter existing tag

No Face Mask

Ladder

Person At Height



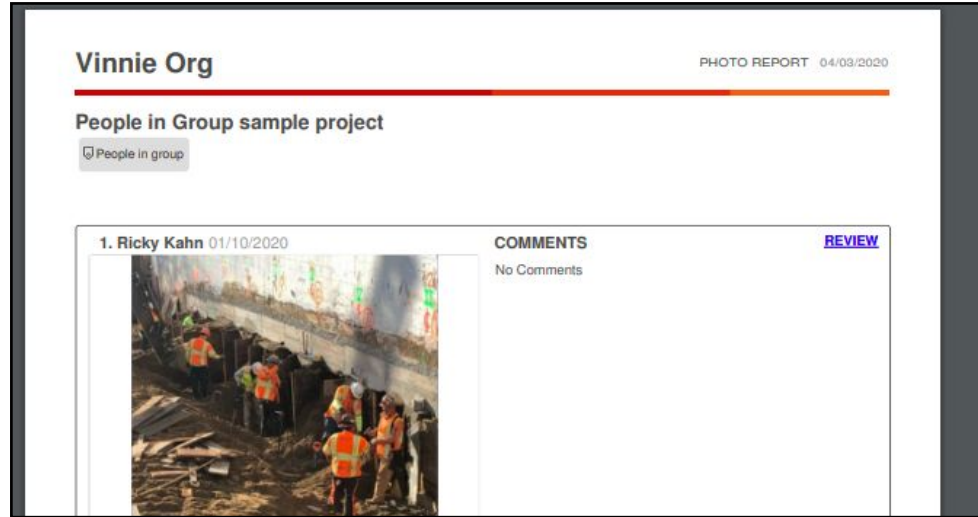
Person (2)

Structural Steel



# PEOPLE IN GROUP: REPORTING

- Get automatic .pdf reports summarizing all examples for each project

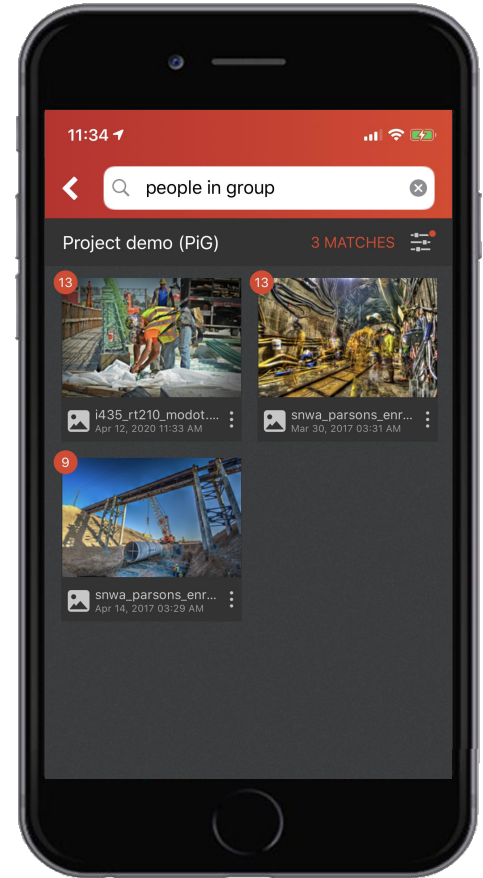
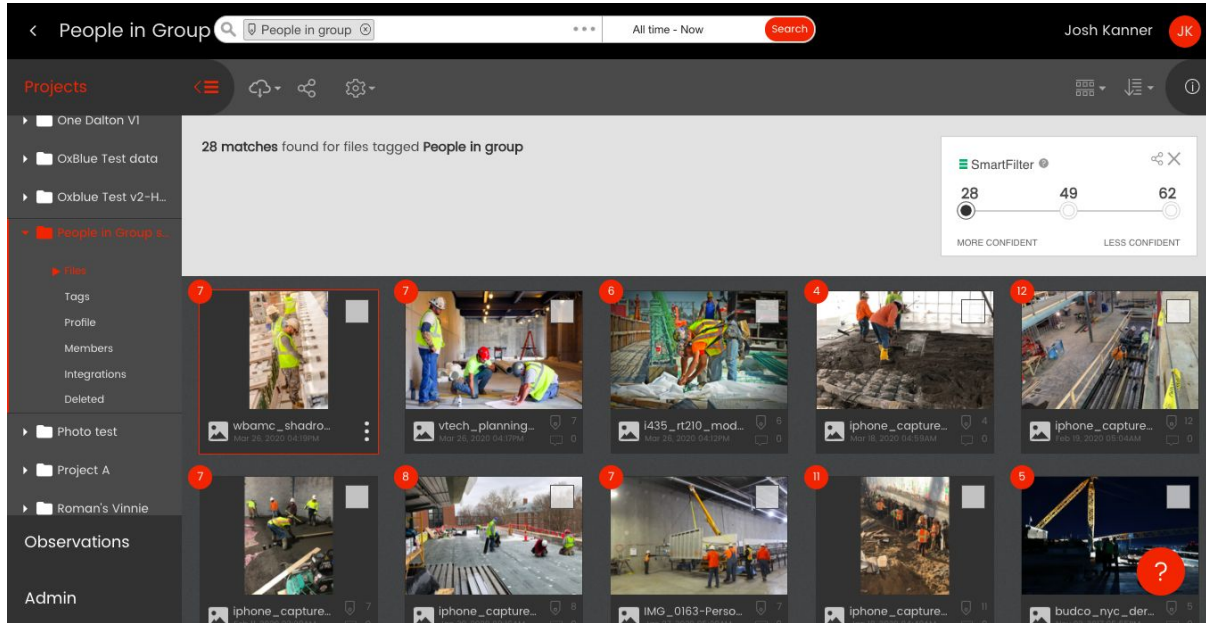


Report generated automatically on all “People in Group” tags

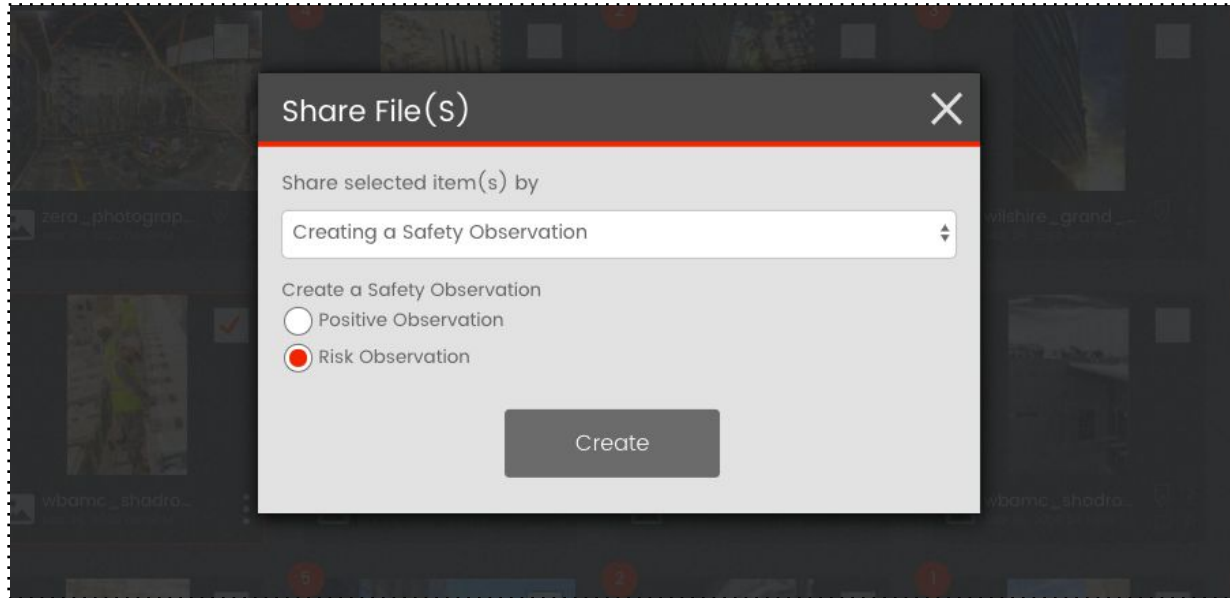


# PEOPLE IN GROUP: "REAL TIME" VIEWING

- Keep an eye on results in "real time" in the web or mobile interface



# PEOPLE IN GROUP: CREATE OBSERVATIONS



Create observations in:



AUTODESK  
CONSTRUCTION  
CLOUD™

SMARTVID.IO

SMARTVID.IO

# BEYOND IMAGES, GET INSIGHT INTO SAFETY TRENDS

Barton  
Malow

## HIGHLIGHTS FROM LAST MONTH

Project

All

Month

2020-02

### PROJECTS IN SMARTVID

Project URL	Project Name	Project Score	Photos per Month	Work at Height	Ladders Last	Slip & Trip	People per 100	PPE Compliance
<a href="#">Project B</a>	Project B	38.7	450	334.0	1.6	1.1	356.9	99.6%
<a href="#">Project H</a>	Project H	50.9	465	208.0	1.0	2.4	281.3	99.1%
<a href="#">Project C</a>	Project C	52.9	522	190.4	1.9	0.2	237.2	99.6%
<a href="#">Project F</a>	Project F	57.7	129	100.8	1.5	0.0	50.4	93.5%
<a href="#">Project D</a>	Project D	DSQ	77	58.4	2.0	7.8	13.0	97.5%
Avg		50.1	216	125.7	2.0	2.5	145.3	98.5%

### PROJECT SCORES



### CONSTRUCTION ACTIVITIES

Structural Steel  
11  
MEP  
4  
Concrete Pour  
1

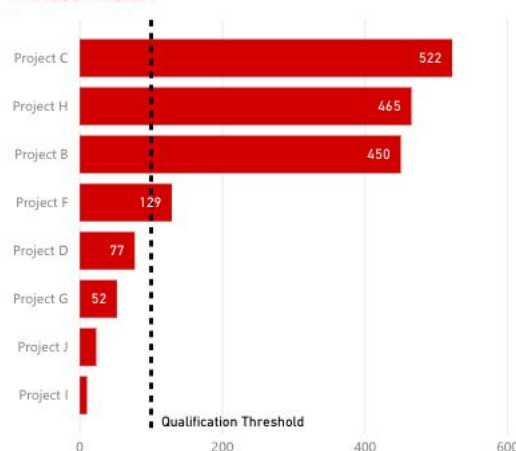
### PHOTOS PER PROJECT



### QUALIFYING PROJECTS



### PHOTOS BY PROJECT



### PROJECT LOCATION



SMARTVID.IO

powered by



# SIMPLE PRIORITIZED LIST OF PROJECTS BY RISK SCORE

## PROJECTS IN SMARTVID

Project URL	Project Name	Project Score	Photos per Month	Work at Height	Ladders Last	Slip & Trip	People per 100	PPE Compliance
	Project B	38.7	450	334.0	1.6	1.1	356.9	99.6%
	Project H	50.9	465	208.0	1.0	2.4	281.3	99.1%
	Project C	52.9	522	190.4	1.9	0.2	237.2	99.6%
	Project F	57.7	129	100.8	1.5	0.0	50.4	93.5%
	Project D	DSQ	77	58.4	2.0	7.8	13.0	97.5%
Avg		50.1	216	125.7	2.0	2.5	145.3	98.5%

# VINNIES SCORING FOR PROJECT BENCHMARKING

Barton  
Malow

## HIGHLIGHTS FROM LAST MONTH

Project

All

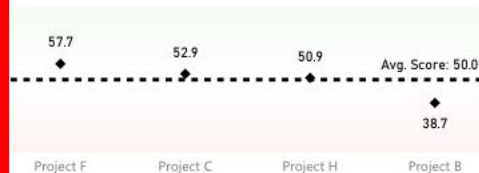
Month

2020-02

### PROJECTS IN SMARTVID

Project URL	Project Name	Project Score	Photos per Month	Work at Height	Ladders Last	Slip & Trip	People per 100	PPE Compliance
<a href="#">Project B</a>	Project B	38.7	450	334.0	1.6	1.1	356.9	99.6%
<a href="#">Project H</a>	Project H	50.9	465	208.0	1.0	2.4	281.3	99.1%
<a href="#">Project C</a>	Project C	52.9	522	190.4	1.9	0.2	237.2	99.6%
<a href="#">Project F</a>	Project F	57.7	129	100.8	1.5	0.0	50.4	93.5%
<a href="#">Project D</a>	Project D	DSQ	77	58.4	2.0	7.8	13.0	97.5%
Avg		50.1	216	125.7	2.0	2.5	145.3	98.5%

### PROJECT SCORES



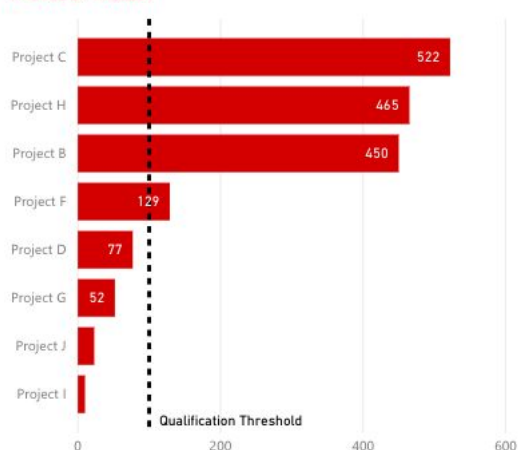
### CONSTRUCTION ACTIVITIES

Structural Steel  
11  
MEP  
4  
Concrete Pour  
1

### PHOTOS PER PROJECT



### PHOTOS BY PROJECT



### QUALIFYING PROJECTS



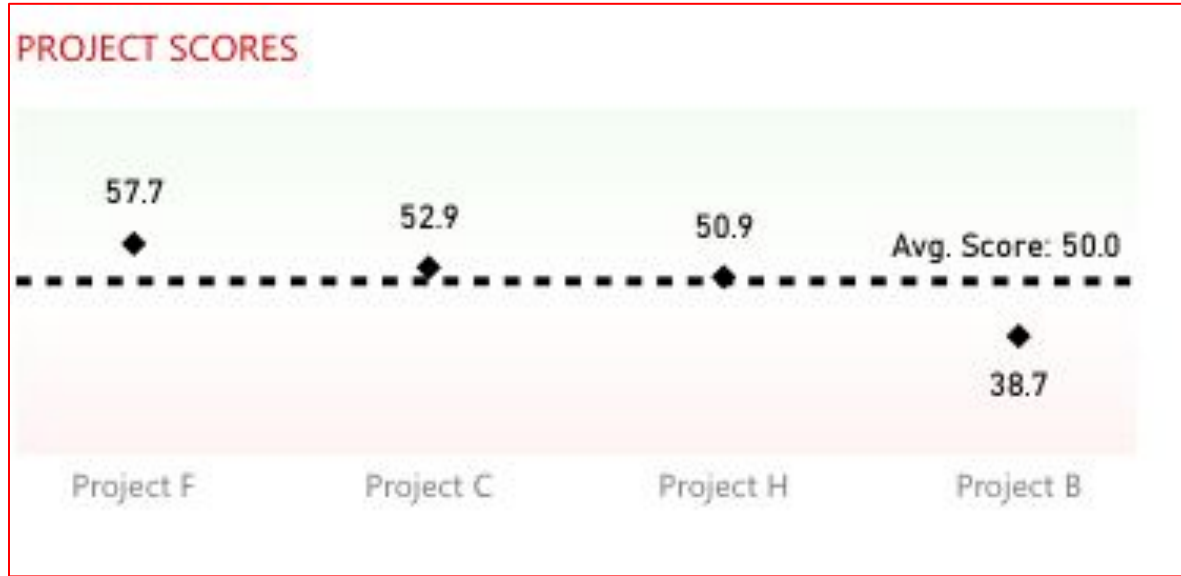
### PROJECT LOCATION



SMARTVID.IO

powered by

# RISK SCORE BENCHMARKING HELPS FOCUS ATTENTION



# Now let's go to the live dashboard for more...

Barton

Malow

HIGHLIGHTS FROM LAST MONTH

Project

All

Month

2020-03

PROJECTS IN SMARTVID

Project URL	Project Name	Project Score	Photos per Month	Work at Height	Ladders Last	Slip & Trip	People per 100	PPE Compliance
<a href="#">Project J</a>	Project J	43.7	501	101.2	1.2	25.1	25.7	97.3%
<a href="#">Project D</a>	Project D	50.1	277	15.9	1.8	8.3	98.2	98.1%
<a href="#">Project H</a>	Project H	56.1	642	132.6	0.9	4.1	185.8	98.7%
<a href="#">Project B</a>	Project B	DSQ	13	23.1	0.5	0.0	130.8	95.6%
<a href="#">Project C</a>	Project C	DSQ	31	48.4	0.5	6.5	203.2	98.8%
Avg		50.0	258	64.4	0.9	9.3	111.9	97.5%

PROJECT SCORES

Project	Score
Project H	56.1
Project D	50.1
Project J	43.7
Avg. Score	50.0

CONSTRUCTION ACTIVITIES

- MEP 440
- Structural Steel 121
- Interior Work 36
- Trench Work 30
- Concrete Pour 12
- Excavation 7
- Foundation 7
- Demolition 5
- Finish Detail 2

PHOTOS PER PROJECT

258

PHOTOS BY PROJECT

Project	Photos
Project H	642
Project J	501
Project D	277
Project F	84
Project C	31
Project B	13

QUALIFYING PROJECTS

3

PROJECT LOCATION

Score Category: Above Average (green), Below Average (red), DSQ (black)

MICHIGAN

Grand Rapids, Flint, Kalamazoo, Lansing, Ann Arbor, Detroit, South Bend, Fort Wayne, Toledo

Project D, Project J, Project B, Project H, Project C, Project F

# BIM 360 JOURNEY THIS YEAR ...

## 2 Contractor Site Specific Requirements

Done

All contractors are required to provide Barton Malow with a Site-Specific Safety Program for this project. Items to include should only pertain to this job. Below is a list of all required information. Contractors will not be allowed to start work until this has been submitted and approved by the Barton Malow team. The collection of these procedures and documents will be kept on site at the safety office.

Assigned To: Daniel Ortega (Barton Malow) (Inherited) ✓

### 2.1 Job Hazard Analysis catalog

Description:  
JHA catalog listing work task, known potential hazards, and controls. This catalog will create an open issue; issue will remain open until all hazards are documented.

☒ Submitted  
☐ Not Submitted


#23 Job Hazard Analysis catalog

### 2.2 List of Project Supervision and Competency

Description:  
To include: Superintendent, Foreman, Safety Officer, Competent Person and First Aid/CPR trained personnel. This list will be kept on site at the safety office.


### 1 Contractor Information

Safety Risk Factors




0

High Risk Subcontractors




16

High Risk Issues



1

Housekeeping Issues



10

Positive Observations

Risk	Hazard	ID	Title	Description	Assigned To
Other	Hazardous Material	20	Are material staging/storage areas organized?		
Other		18	Equipment is properly being used?		
Other	Missed Inspection	19	Is the pre-use inspection complete?		
Electrocution		24	Is housekeeping in good condition?		
Electrocution		3	Is housekeeping in good condition?		
Other	Hand/Power Tools, PPE, PPE - Hearing	7	Is job specific PPE required and being used?	Workers running chop saws without the use o...	Mark Haggrenmaker
Struck By	PPE	14	Is the standard PPE being worn?		Mark Haggrenmaker
Fall	Lift and hoist	1	Proper use of scissor lift.		
Other		13	Is there signage present on site to identify ha...		
Other	PPE	6	Is job specific PPE required and being used?		Mark Haggrenmaker

# BIM 360 + SMARTVID

2 Contractor Site Specific Requirements

1/24 Done

Section assignee (Inherited)  
Daniel Ortega  
Barton Malow

All contractors are required to provide Barton Malow with a Site-Specific Safety Program for this project. Items to include should only pertain to this job. Below is a list of ... [Show More](#)

2.1 Job Hazard Analysis catalog

3HA catalog listing work task, known potential hazards and protective measures. Answer will create an open issue; issue will remain open until documentation is uploaded to the open issue.

☒ Submitted  
☐ Not Submitted

126 OPEN Job Hazard Analysis catalog

Issue Note Photo

2.2 List of Project Supervision and Competent Person

To include: Superintendent, Foreman, Safety Manager / Responsible Individual, Competent Person and First Aid/ CPR trained personnel. Answer will create an open issue;

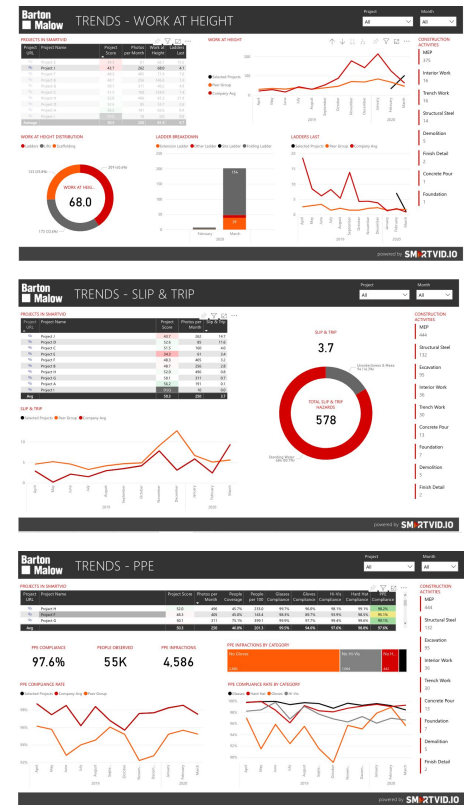
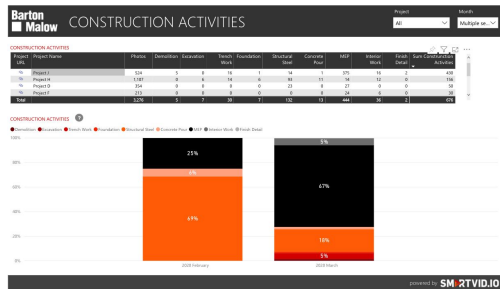
0/2 Completed





# (INTERNAL SLIDE) LIVE DEMO TO EXPLORE...

- Phases of Construction on Homepage (click projects) - we'll come back to this
- Click into "Project J" to explore work at height metrics
  - See ratio of ladders last improving but above peer group
  - Types of work at height increasing a lot Month over month
- Slip and Trip hazards - where do we need to focus?
  - Click into that tab and identify the projects see vs. peer group
- PPE analysis - where and how are issues cropping up?
  - Compare one project to another
  - Context specific is key - may not care as much if in interiors
- Speaking of construction phase, we now can give insight into phase across your projects in the activities tab



# NEXT: OBSERVATIONS AND PREDICTIVE

Phase 2

Phase 3

## MODULES



SAFETY  
MONITORING



SAFETY  
OBSERVATIONS



PREDICTIVE  
ANALYTICS



ENTERPRISE PHOTO & VIDEO MANAGEMENT

## FOUNDATION



VINNIE THE AI ENGINE

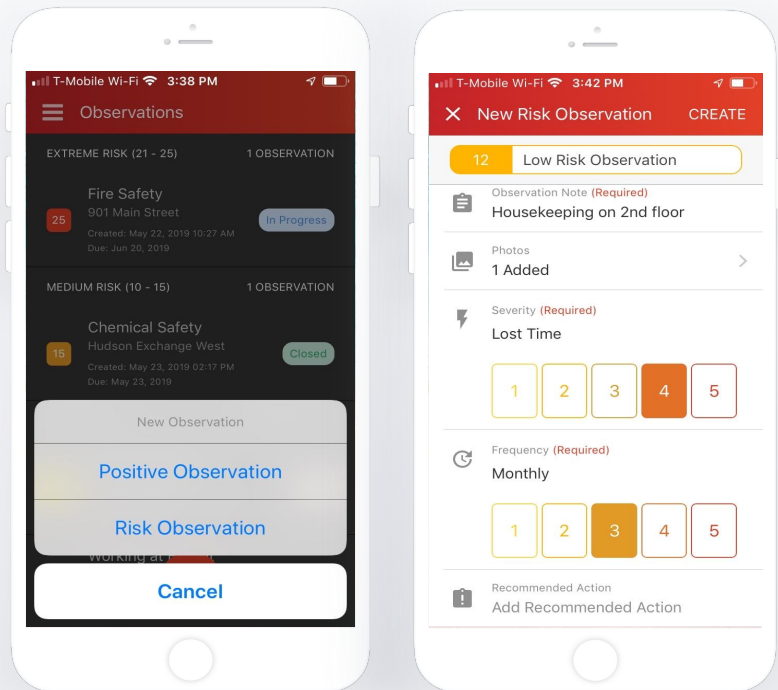


REPORTING & DATA ANALYSIS



PREBUILT INTEGRATIONS & APIs

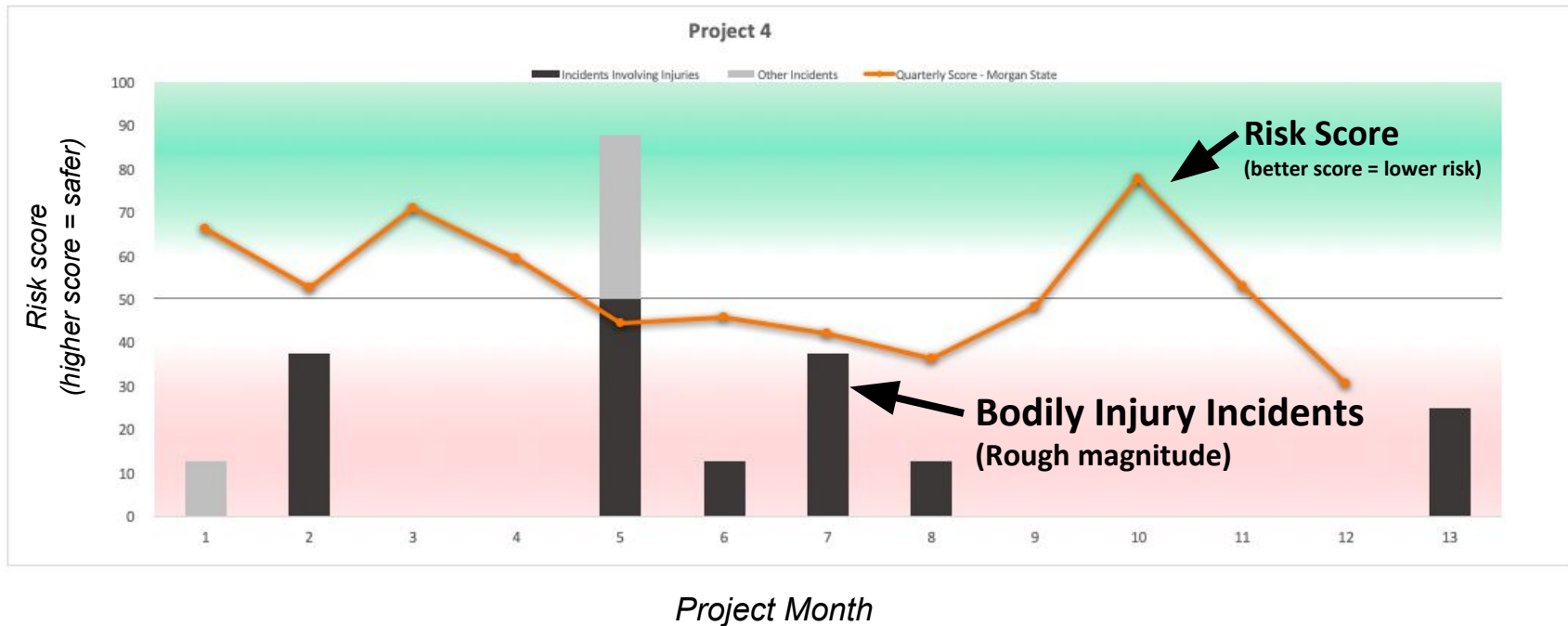
# RISK-WEIGHTED MOBILE SAFETY OBSERVATIONS



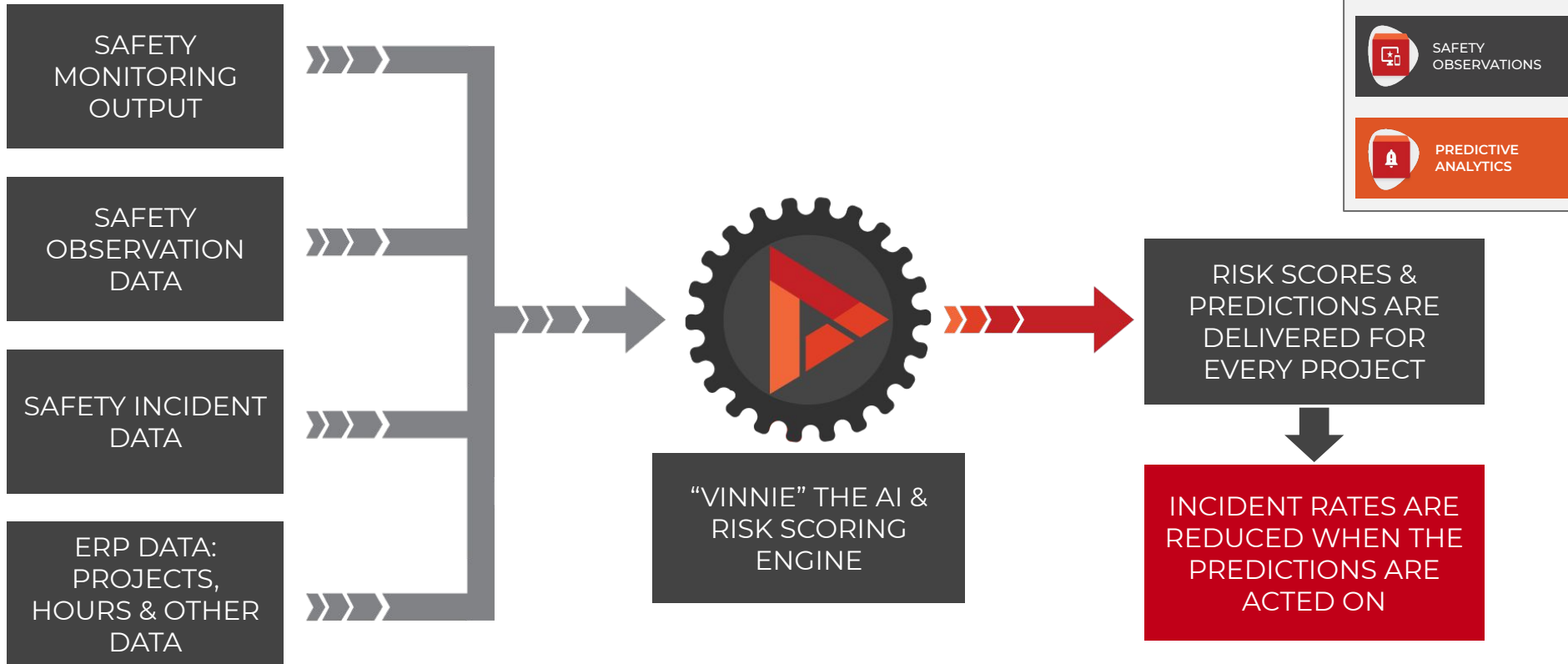
- Easy to use, mobile-first
- Configurable
- Risk-weighted & AI-ready
- APIs & access to data
- Enables Predictive-Based Safety



# VINNIE METRICS CORRELATE WITH ACTUAL INCIDENTS ACROSS HISTORY



# PREDICTIVE ANALYTICS AT WORK





# BIM360 AND SMARTVID - FROM DATA TO CARDS

- Insights and safety risks heat map is aligned well with Smartvid & Vinnie

The screenshot shows the Autodesk BIM 360 Project Home interface. The main dashboard includes sections for Project Address (map of Kendall Square, Cambridge, MA), Weather (60° Partly Cloudy), Project Field Issues (table with 7 items), Project Issues (table with 4 items), and Project RFIs. A 'Card Library' overlay is open on the right, showing a search bar and filters for Issues, Project Controls, Design, RFIs, Submittals, Quality, Schedule, Partner Cards, and Planning. The library contains four cards: Smartsheet, SMARTVID.IO, STRUCTIONSITE, and TRUELOOK. The SMARTVID.IO card is highlighted.

**Project Address**

101 Main Street  
Cambridge, MA 02142

**Weather**

60° Partly Cloudy

Sun 62° Mon 60° Tue 58° Wed 48°

**Project Field Issues**

ID	Title
1	Missing hi vis
3	Test
4	xxx
2	Test for AU
5	Worker missing
7	Testing with K

**Project Issues**

ID	Title	Type	Due Date
1	Missing hi vis again!	Safety	Oct 24, 2018
3	Test	Quality	Nov 2, 2018
4	xxx	Quality	Nov 2, 2018

**Project RFIs**

**Card Library**

Search

**FILTERS**

Issues Project Controls Design RFIs Submittals  
Quality Schedule Partner Cards Planning

☐ Smartsheet  
SMARTSHEET

☐ SMARTVID.IO  
SMARTVID

☐ STRUCTIONSITE  
STRUCTIONSITE

☐ TRUELOOK  
TRUELOOK

Cancel Add Card

# ADD SAFETY, COVID METRICS TO BIM 360 INSIGHTS DASHBOARD

## Quality Risk Overview

293 Active projects

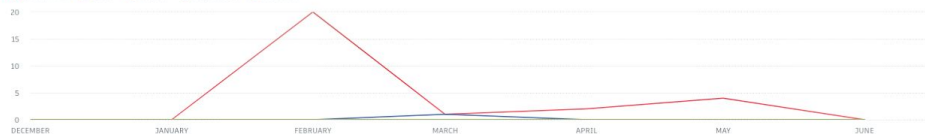
7 High  
4 Medium  
22 Low  
241 No Data

View Project Risk Trend

Construction IQ - PREVIEW

## High Risk Quality Issues

All High Risk Water Rework Key Activity Inspection



Construction IQ - PREVIEW

## Project Risk

Bayfront Arena  
Castle Medical Center  
Center of Excellence  
Farmborough Hotel  
Lumina Casino and Hotel  
Dos Flores Resort  
Alpine Retreat  
Pleasant Court Building  
Pacific Center Campus  
Blackpool Lobby Remodel  
Hotel G San Francisco  
Alameda High School  
Carrer Center  
Family Skating Rink  
London Blackfriars  
Manchester Performing Arts Center - Phase 2  
Tahoe Lodge  
0001AS Museum of Abstract Art

High  
High  
High  
High  
High  
High  
High  
Med  
Med  
Med  
Med  
Low  
Low  
Low  
Low  
Low  
Low  
Low  
Low

Construction IQ - PREVIEW

Page 1 2 3 4 ... 17 Next

## SMARTVID - COVID 19 Report

Back to report

AVERAGES ACROSS PROJECTS

LAST REFRESH: 6/15/2020, 2:22:20 PM

Project URL	Project	Photos with People	Potential Social Distance Issues	Density of Social Distance Issues	Gloves Compliance	Face Mask Compliance
	Project 555	2,799	219	31%	96%	100%
	Project 545	2,218	51	9%	95%	100%
	Project 599	3,014	46	6%	98%	11%
	Project 547	1,447	42	12%	79%	98%
	Project 554	664	33	20%	88%	100%
	Project 603	175	25	29%	93%	70%
	Project 546	345	22	26%	93%	100%
	Project 563	273	22	32%	64%	93%
	Project 587	678	19	11%	92%	91%
	Project 570	479	17	14%	91%	100%
	Project 573	79	16	61%	92%	100%
	Project 548	144	12	33%	90%	100%
	Project 585	255	11	17%	97%	100%
	Project 601	271	8	12%	93%	100%
	Project 551	676	7	4%	76%	95%
	Project 604	270	7	5%	100%	100%
	Project 592	146	5	14%	98%	100%
	Project 544	210	5	10%	87%	100%
	Project 600	112	4	14%	98%	100%
	Project 594	272	3	4%	99%	100%
	Project 550	237	2	3%	84%	100%
	Project 596	1,319	2	1%	97%	100%

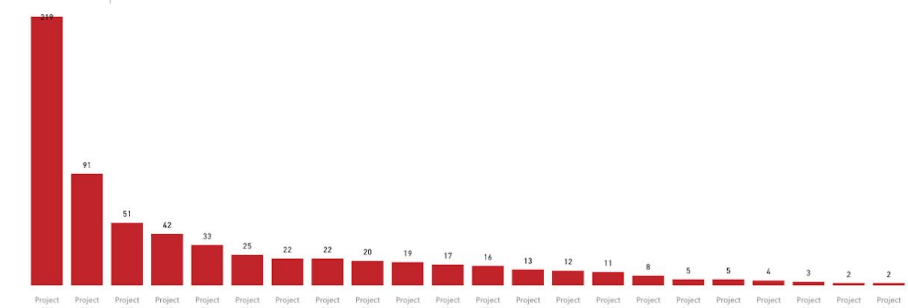
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## SMARTVID - COVID 19 Report

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POTENTIAL SOCIAL DISTANCE ISSUES BY PROJECT

LAST REFRESH: 6/15/2020, 2:22:30 PM



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# FOR MORE INFORMATION...

- Add “Vinnie” to your team!
  - email: [info@smartvid.io](mailto:info@smartvid.io)
  - visit: [www.smartvid.io](http://www.smartvid.io) and “Contact us”
- Thank you and stay safe!



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# Thank you!

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