



Enabling Lean Practices in Construction through Technology

Peter L. Rowland, *VP Sales*



TURN YOUR JOBSITE

INTO A SMARTSITE™

© 2022 smartapp.com

Software



Hardware

as a service per project

as a service per project



Smartapp **PLANNER™**

\$295 / mo

Advanced digital pull planning
And CPM scheduling.



Smartapp **FIELD™**

\$595/mo

Drawings, BIM view & markup, RFIs,
Punchlists, Submittals, and more.



Jobsite **BOARD™**

\$595/mo

86" Interactive digital plan board
and accompanying equipment.



Jobsite **KIOSK™**

\$595/mo

Worker in/out kiosk where you can
Print worker & visitor badges.



Smartapp **SAFETY™**

\$795/mo

Monitor site worker in/out and
track STAs & Safety permits.



Smartapp **PRO™**

\$995/mo

Rapidly digitize absolutely any
jobsite work stream process.



Jobsite **RTLS™**

\$595/mo

Real-time location tracking of
workers, equipment, tools, and more.



Jobsite **ACCESS™**

\$395/mo

Automate and secure all your jobsite gates
with built-in auto attendance & time tracking.



Lean Construction

AGILE PRINCIPLES

LAST PLANNER SYSTEM[®]

8 WASTES

5S / 6S

5M



Lean Construction

CRAFTSMANSHIP

COMMUNICATION

COMMITMENT

TRUST



Agile Construction

Plan WORK



Schedule WORK



Dispatch WORK



Track & Verify
WORK



Analyze & Adjust
WORK



Construction Data

Once we shift to the jobsite, data collection is mostly **indirect**.

Information becomes a ***lagging*** effort

- Schedule updates
- Budget updates
- Safety incidents
- Drawing updates



Construction Data

Once we shift to the jobsite, data collection is mostly indirect, versus **direct** data acquisition.

Information becomes a ***leading effort***

- Live
- Real-time
- Location-specific
- Context Aware
- Schedule updates
- Budget updates
- Safety incidents
- Drawing updates



Construction Data

Once we shift to the jobsite, data collection is mostly indirect, versus **direct** data acquisition.

How do you collect accurate, real-time data from the *jobsite* during construction?



By turning your Jobsite into an Agile Data Factory



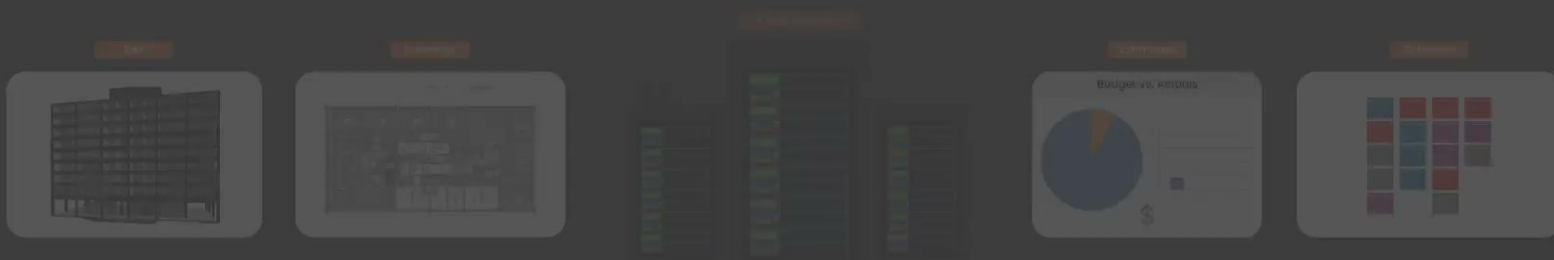
While incorporating

- ✓ Lean Methodology
- ✓ Technology Adoption



TURNING YOUR JOBSITE INTO AN AGILE DATA FACTORY

Plan WORK



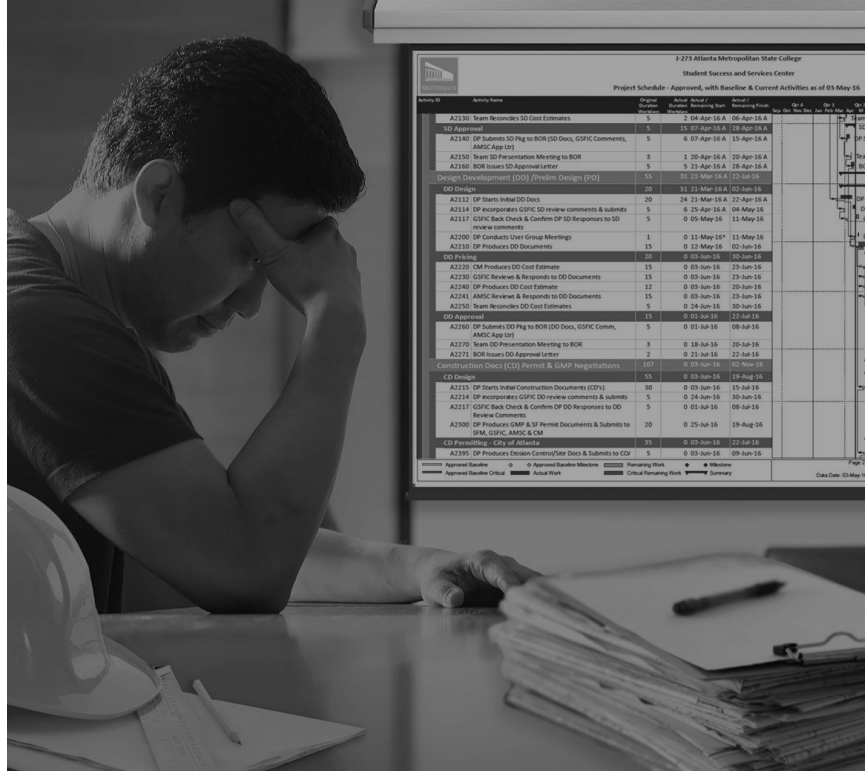
Construction Technology

Why is technology adoption
such a big **challenge**? —————

The majority of construction technology is built for the back office while the majority of construction *activity* is on the **JOBSITE.**



Process Improvement - Last Planner®



Process Improvement

Identify Waste

- Defects
- Overproduction
- Waiting
- Non-Utilized Talent
- Transportation
- Inventory
- Movement
- Extra-Processing

01 Plan

02 Status

03 Verify

04 Adjust

05 Repeat

Eliminate Waste

- Value Stream Map
- Data Collection
- Root Cause Analysis
- 6M
- 5 Why
- Establish Standards
- 6S
- Constant Improvement

Process Improvement

Identify Waste

- **Defects**
 - Rework caused by incorrect information
- **Waiting**
 - Next step in the process unclear
 - Translating pull plan to action

01 **Plan**

02 **Status**

03 **Verify**

04 **Adjust**

05 **Repeat**

Eliminate Waste

- Value Stream Map
- Pull Planning
 - Digital / LIVE
- Using mobile friendly, real-time, multi-party common data solution

PLANNING transforms from

This →



PLANNING Automated

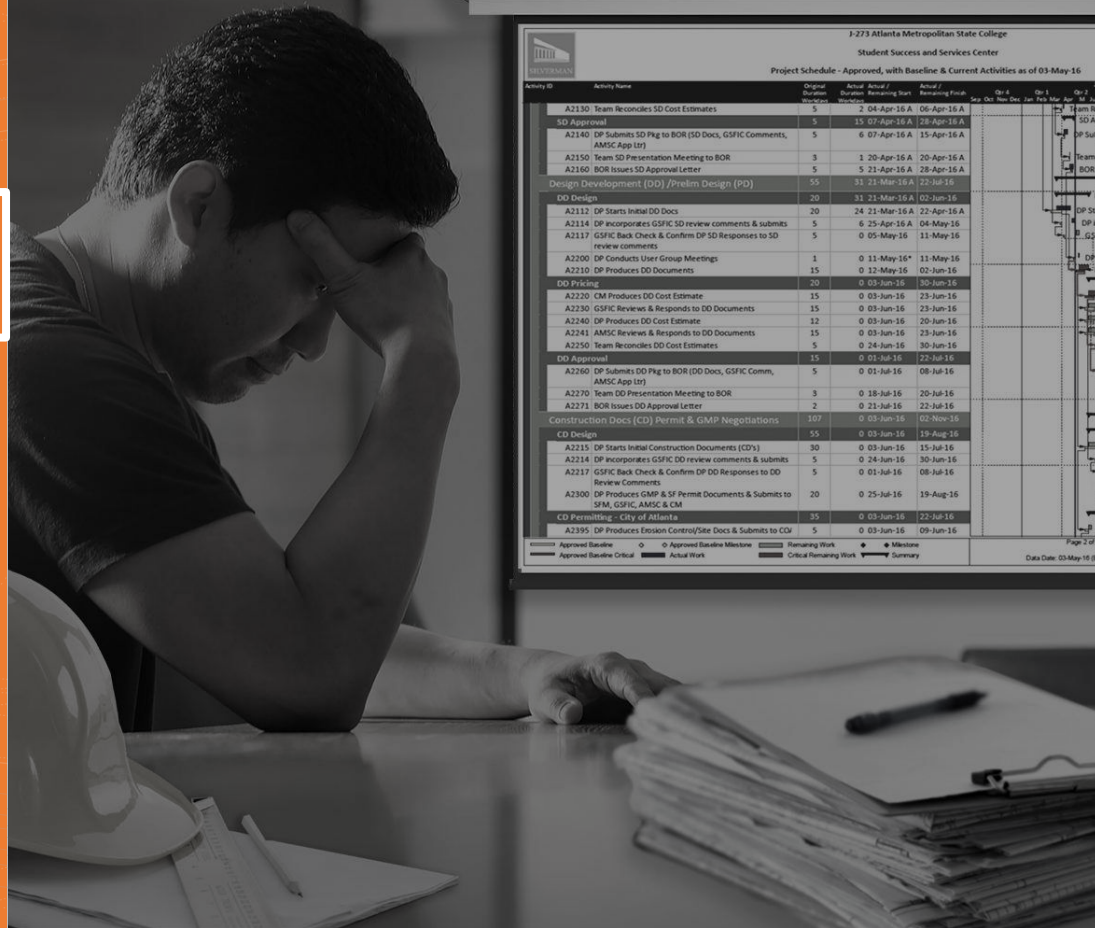


← To That



SCHEDULING transforms from

This →



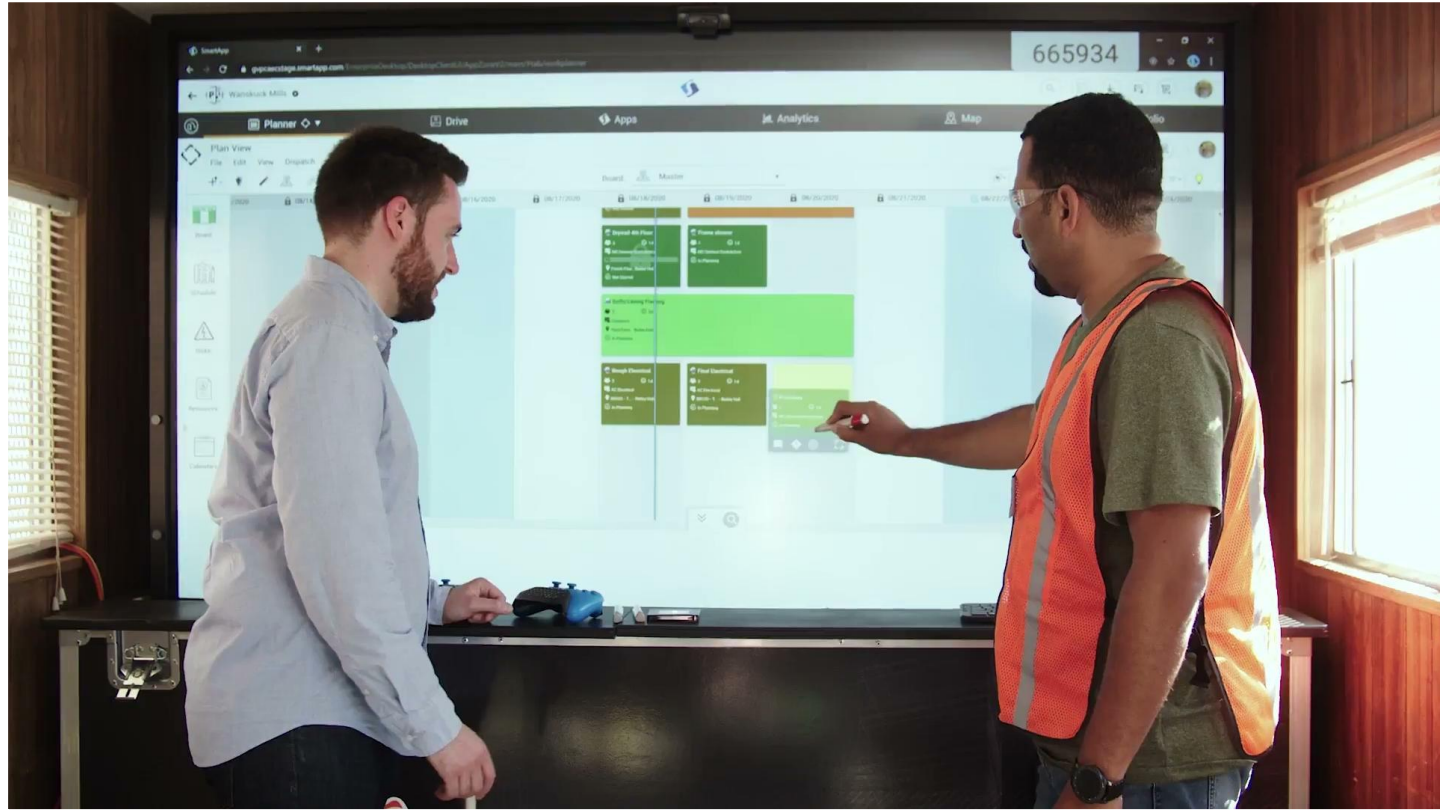
SCHEDULING Auto updated

500

3-273 Atlanta Metropolitan State College
Student Success and Services Center
Project Schedule - Approved, with Baseline & Current Activities as of 03-May-16

| Activity ID | Activity Name | Original Duration | Actual Duration | Actual Start | Actual Finish | Remaining Start | Remaining Finish | On 4 | On 5 | On 6 | On 7 | On 8 |
|-------------|---|-------------------|-----------------|--------------|---------------|-----------------|------------------|------|------|------|------|------|
| A2130 | Team Reconciles SD Cost Estimates | 5 | 2 | 04-Apr-16 A | 06-Apr-16 A | | | | | | | |
| | SD Pkg to BOR (SD Doc, GSFIC Comments, IIR) | 5 | 15 | 07-Apr-16 A | 20-Apr-16 A | | | | | | | |
| | presentation Meeting to BOR | 3 | 1 | 20-Apr-16 A | 20-Apr-16 A | | | | | | | |
| | SD Approval Letter | 5 | 5 | 21-Apr-16 A | 28-Apr-16 A | | | | | | | |
| | Permit (DD) / Prelim Design (PD) | 55 | 13 | 22-Mar-16 A | 22-Jun-16 A | | | | | | | |
| | Final DD Docs | 20 | 24 | 21-Mar-16 A | 02-Jun-16 A | | | | | | | |
| | Reviews GSFIC SD review comments & submits | 5 | 6 | 25-Apr-16 A | 04-May-16 A | | | | | | | |
| | Permit (DD) / Prelim Design (PD) | 55 | 13 | 22-Mar-16 A | 22-Jun-16 A | | | | | | | |
| | presentation Meeting to BOR | 3 | 0 | 18-Jul-16 | 20-Jul-16 | | | | | | | |
| | SD Approval Letter | 2 | 0 | 21-Jul-16 | 22-Jul-16 | | | | | | | |
| | (CD) Permit & GMP Negotiations | 107 | 0 | 03-Jun-16 | 02-Nov-16 | | | | | | | |
| | Final Construction Documents (CD's) | 30 | 0 | 03-Jun-16 | 15-Jul-16 | | | | | | | |
| | Reviews GSFIC DD review comments & submits | 5 | 0 | 24-Jun-16 | 30-Jun-16 | | | | | | | |
| | Check & Confirm DP DD Responses to DD comments | 5 | 0 | 01-Jul-16 | 08-Jul-16 | | | | | | | |
| | Reviews GMP & SF Permit Documents & Submits to CAMSC & CM | 20 | 0 | 25-Jul-16 | 19-Aug-16 | | | | | | | |
| | Permitting | 35 | 0 | 03-Jun-16 | 22-Jul-16 | | | | | | | |
| | Site Erosion Control/ Site Docs & Submits to CDD | 5 | 0 | 03-Jun-16 | 09-Jun-16 | | | | | | | |

← To That



FIELD COMMUNICATION from

This →



FIELD COMMUNICATION Live

500

The screenshot shows a web browser window with the following elements:

- Browser Tabs:** Smartapp.com, Smartapp Sketch™, Loading...
- Address Bar:** 9cf3fa819dc4e3c946d00cc559353a3.smartapp.com/EnterpriseDesktop/DesktopClientUI/AppZoneV2/main/?profile=cHJv#tab/files
- Bookmarks:** Prod SAX, Gilbane Org, jfk, GCP Console, AWS Console, Play Console, Old, ProjectZoneSync (...), Lilly, KMC, ConEd MPS Prod, ConEdison F2F PRO...
- Navigation Bar:** College Dorm, LiveSupport, and various utility icons.
- Drive Interface:**
 - Recent:** BaileyHallPlan.rvt (1 Sec ago), Fifth Floor Plan.pdf (1 Min ago), 09162019-094739.jpg (1 Hr ago), 09172019-145847.jpg (1 Hr ago), 09162019-095850.jpg (1 Hr ago).
 - Folders:** Schedules (23), Drawings (83), Sketch (7), 360 (50), BIM (2), Photos (275), Videos (10), Files (54), App Files (39), User Space (1), Safety Policies (5), Certifications (9), LiveLink Meetings (8), Daily Photos (28).

← To That



DAILY REPORTS from

This →



DAILY REPORTS automatically



Daily Report for Project College Dorm

Mar 29, 2022



GV Constructions

Table of Contents :

[Work Assianed](#)

[Work Labor](#)

[Daily Impact](#)

[Journal Entries](#)

← To That



SAFETY MANAGEMENT from

This →



SAFETY MANAGEMENT Live

500

STA Incidents

College Dorm

LiveSupport

Project Team

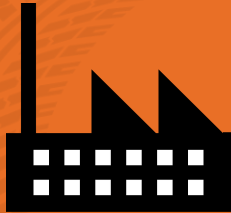
Search

| | FIRST NAME | LAST NAME † | COMPANY | EMAIL | RTLS ID | GPS TAG ID | ROLE | TRADE |
|--------------------------|-----------------|-------------|------------------------|-----------------------------|----------------------------|------------|-----------------------------|-------------------------|
| <input type="checkbox"/> | Ravi | A | AV Architects | sri6007@gmail.com | | | Architect | Architectural |
| <input type="checkbox"/> | Paul | Adams | AV Architects | smartappu+w09@gmail.com | | | Consultant | Architectural |
| <input type="checkbox"/> | Praveen | B | GV Constructions | pbollavarapu@smartapp.com | | | GC/CM/PCM | Construction Management |
| <input type="checkbox"/> | Harminder Singh | Basra | Harry Mechanical Works | harminder@smartapp.com | | | Owner | Mechanical |
| <input type="checkbox"/> | Graham | Bell | AV Ltd | smartappu+w04@gmail.com | | | Consultant | Controls |
| <input type="checkbox"/> | Micheal | Bolton | AV Architects | mksudeep+mks1@smartapp.com | | | Architect | Architectural |
| <input type="checkbox"/> | Chris | Cairns | AV Architects | smartappu+w02@gmail.com | | | Architect | Architectural |
| <input type="checkbox"/> | Jeremy | Carr | GV Constructions | jcarr@smartapp.com | 0e99da17-01f1-4371-9092... | | Safety Manager | Concrete |
| <input type="checkbox"/> | Consultant | Civil | Galaxy Builders | smartappu+consult@gmail.com | | | Consultant | Construction Management |
| <input type="checkbox"/> | Project Manager | Civil | KS Constructions | smartappu+pm@gmail.com | | | Project Manager | Civil |
| <input type="checkbox"/> | Supervisor | Civil | Hirise Elevators | smartappu+super@gmail.com | | | Trade Contractor Supervisor | Civil |
| <input type="checkbox"/> | George | Clooney | GV Constructions | mksudeep+civil@smartapp.com | | | Consultant | Demolition |

← To That

safety policies
Qualifications

**With your Jobsite
Data Factory
up & running...**



**Reports, analytics
and visualizations,
become live
and accurate.**



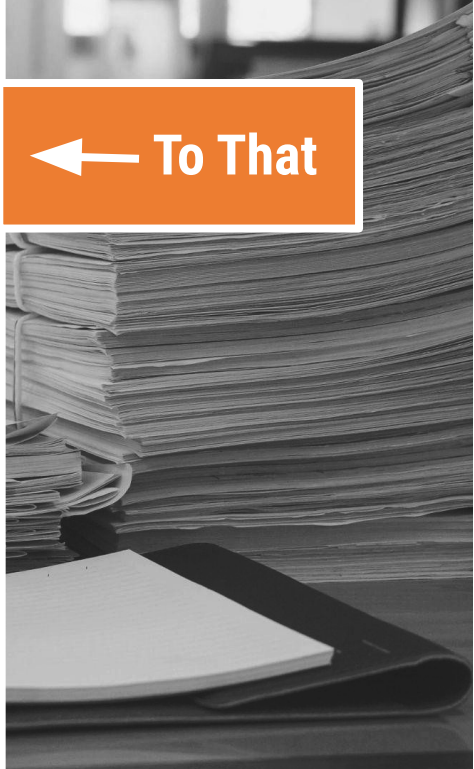
ANALYTICS/REPORTING from

This →



ANALYTICS Automated

← To That



We look forward to seeing you at the LCI Congress

VISIT US AT BOOTH #101

Let us help you successfully enable Lean Construction with our technology.



Smartapp.com™

TURN YOUR JOBSITE

INTO A SMARTSITE™

Peter L. Rowland, *VP Sales*
prowland@smartapp.com

