BEGINNING WITH THE END IN MIND:

How **Digitalizing Project Closeout** Can Eliminate

One Of The Greatest Risks To A Successful Project

INEIGHT

Project Controls EXPO

PROVEN PROJECT CERTAINTY.

TODAY'S SPEAKERS

Mike Paul

Managing Director of
Europe, Middle East
and Africa (EMEA)

INEIGHT

Frank Peters

Program Manager, central
Building Information
Management (cBIM)

LAWA
LOS ANGELES WORLD AIRPORTS

PROVEN PROJECT CERTAINTY.

PROVEN PROJECT CERTAINTY.

INEIGHT

A CAUTIONARY TALE: DENVER BAGGAGE HANDLING SYSTEM

United axes troubled baggage system at Denver airport
The complicated system never worked as designed
COMPUTERWORLD

Denver Airport Saw the Future. It Didn't Work.
The New York Times

INEIGHT

TODAY'S DISCUSSION: NIMBLE, MODERN PROJECT CONTROLS

Construction:

- The world's largest ecosystem, representing 13% of global GDP…

- …but also lagging in technology adoption

- Highly regulated, cyclical demand, significant projects extremely customized

- Greatly affected by COVID outbreaks in the workplace

Los Angeles World Airports (LAX):

- Essentially the same infrastructure and project control needs of a city

- Embarked on ambitious 15-year, $17B (US) modernization project

- Digitalized processes, systems and documentation with asset operation in mind

- Digital platform improves efficiency, mitigates risk and enhances owner satisfaction

PROVEN PROJECT CERTAINTY.

INEIGHT

EFFECTIVE CLOSEOUT: THE PROJECT VERSION OF A HEALTHY DIET

- You know you need to do it...

- It's hard because ...

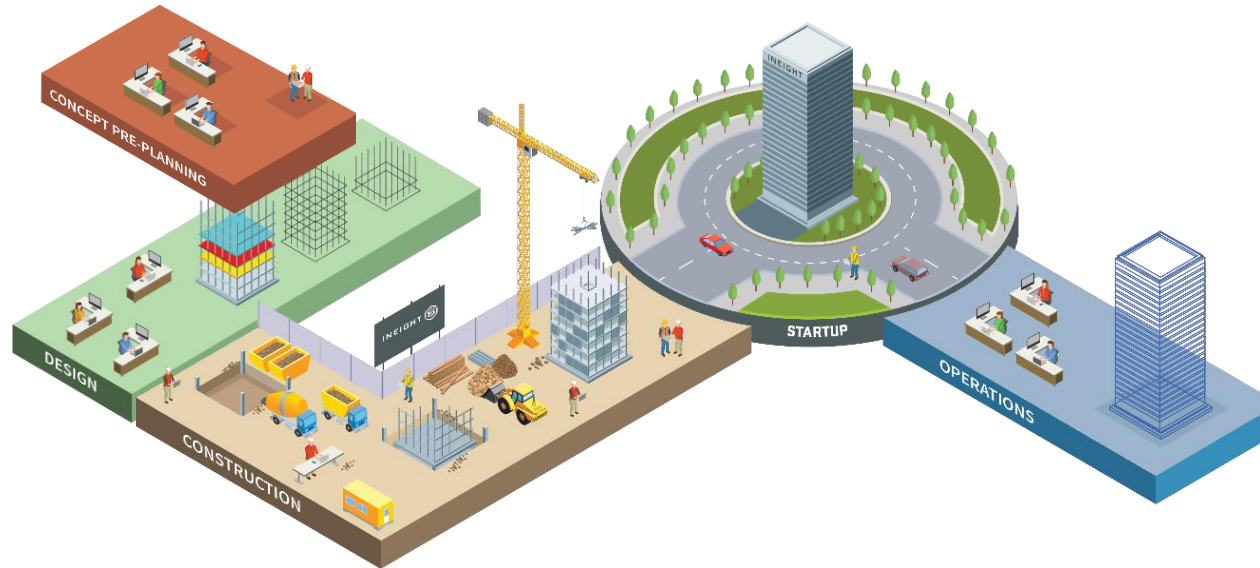- Working remotely – we can make it more efficient

- It's even more important now

INEIGHT

THE END-TO-END PROJECT & ASSET LIFECYCLE

Concept/Pre-Planning

- Manage all applications and workflow through a single landing page

- Create conceptual, budgetary estimates and schedules for early-stage projects based on previous projects

- Properly evaluate schedule and cost risk using machine learning and benchmarking

Design

- Create detailed estimates and schedules based on latest scope and design

- Easily assess cost and schedule impacts from scope and design changes

- Manage contracts and document control with workflow through the design phase

Construction

- Update earned values, budgets and forecasts based on real-time progress

- Create work packages, manage crews/subs/suppliers and track progress

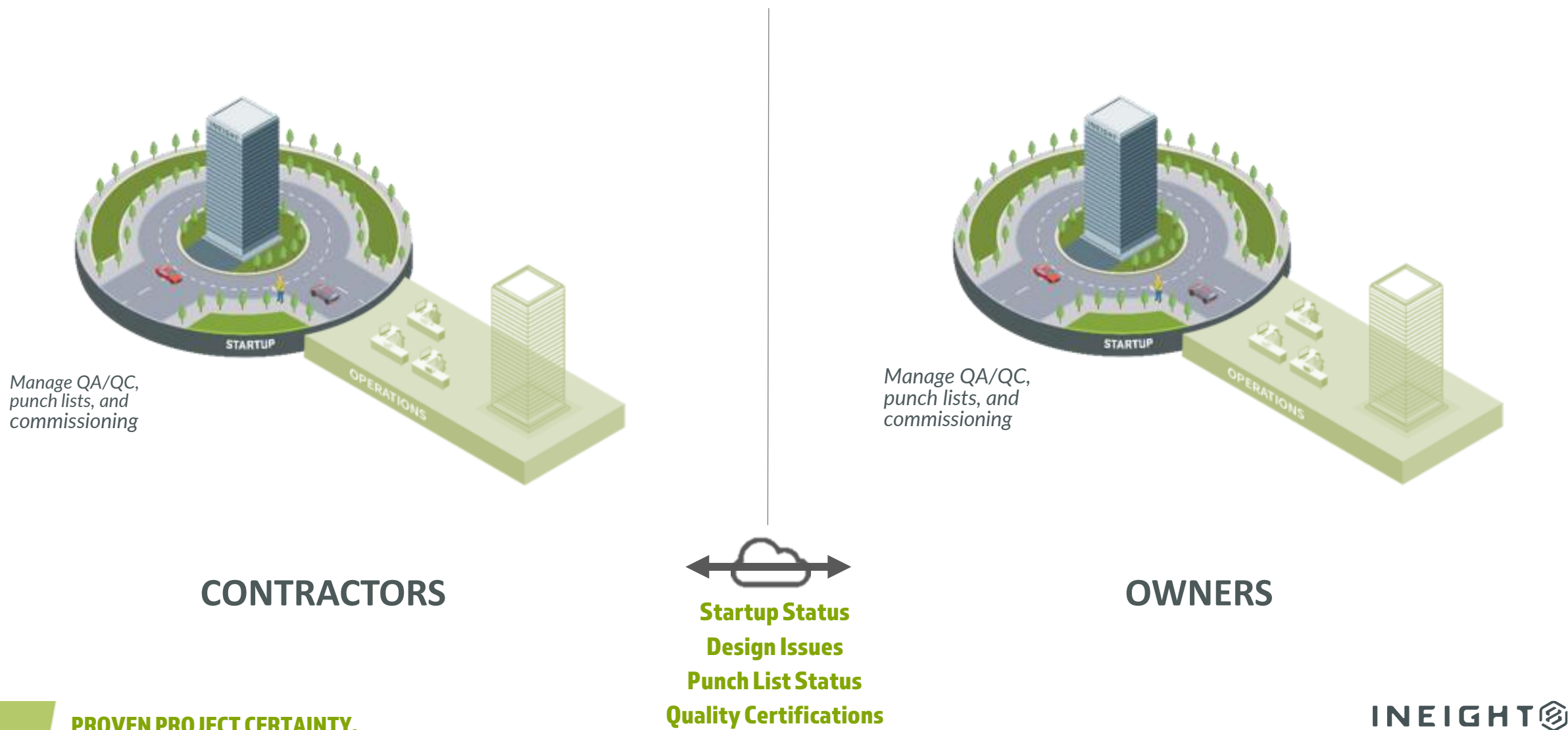- Manage contracts, bid buyout and procurement
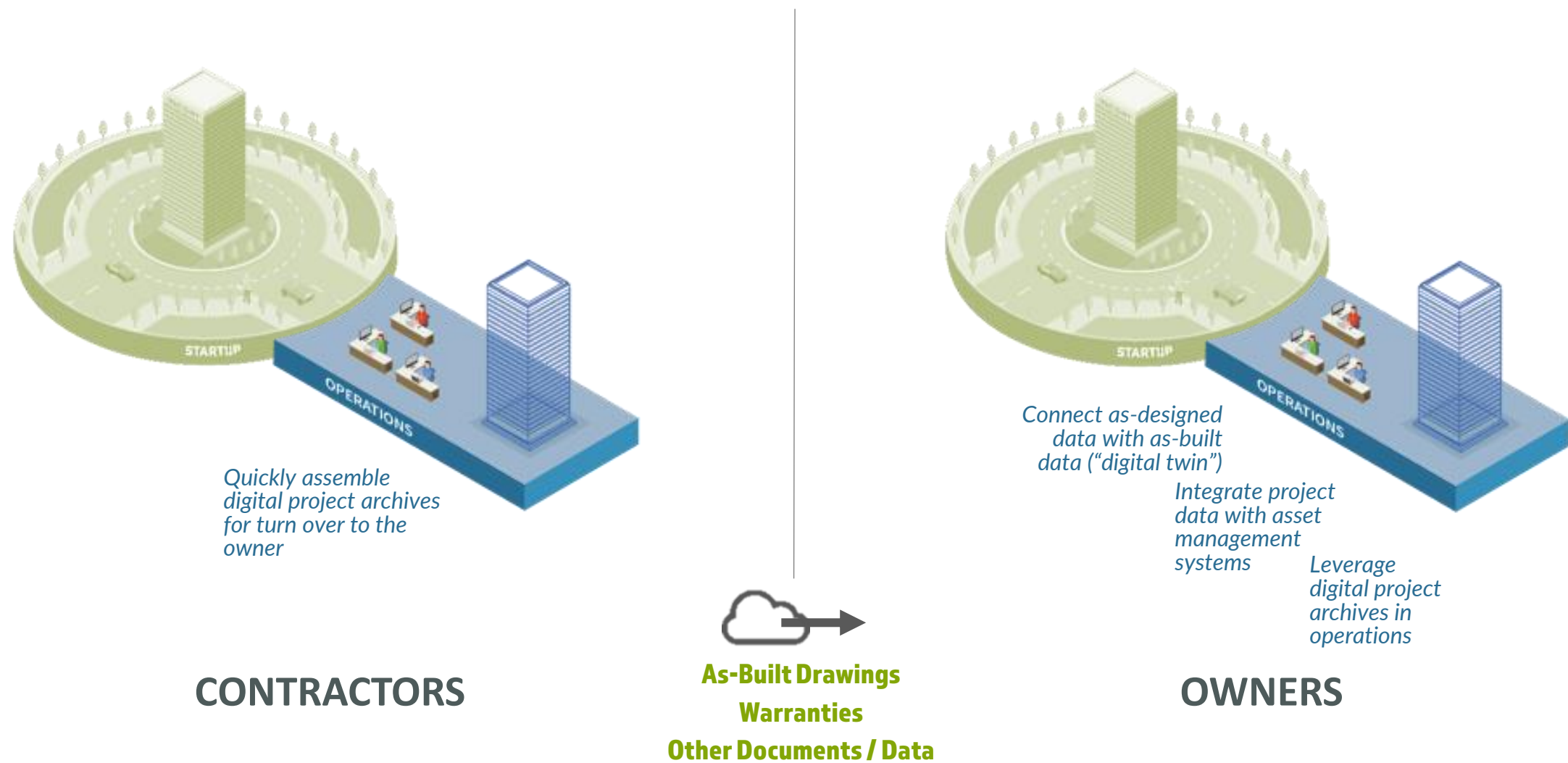
Operations

- Plan maintenance/shutdown and ongoing upgrades to the facility/asset

- Integrate project data with asset management systems

- Leverage digital project archives in operations

- **DIGITAL TWIN** connects as-designed and as-built data

Commissioning / Closeout

- Manage QA/QC requirements

- Manage punch lists

- Plan and execute commissioning and startup activities

PROVEN PROJECT CERTAINTY.

INEIGHT

LATER LIFECYCLE STAGE: COMMISSIONING / CLOSEOUT

Manage QA/QC, punch lists, and commissioning

Manage QA/QC, punch lists, and commissioning

CONTRACTORS

OWNERS

Startup Status

Design Issues

Punch List Status

Quality Certifications

INEIGHT

LATER LIFECYCLE STAGE: OPERATIONS

Quickly assemble digital project archives for turn over to the owner

Connect as-designed data with as-built data ("digital twin")

Integrate project data with asset management systems

Leverage digital project archives in operations

CONTRACTORS

As-Built Drawings

Warranties

Other Documents / Data

OWNERS

PROVEN PROJECT CERTAINTY.

INEIGHT

8 KEY IMPERATIVES FOR A SUCCESSFUL CLOSEOUT

1 **Leverage BIM** to develop a model with the end in mind

2 Recognize the technology needs to **support both Project Delivery AND Operations**

3 Institute consistent **checks and balances** throughout the project

4 Develop and implement a **contractually binding owner's standard**

5 **Check and validate deliverables** throughout project design and construction phases

6 Provide **a single source** of easily accessed, usable and **updated as-built information**
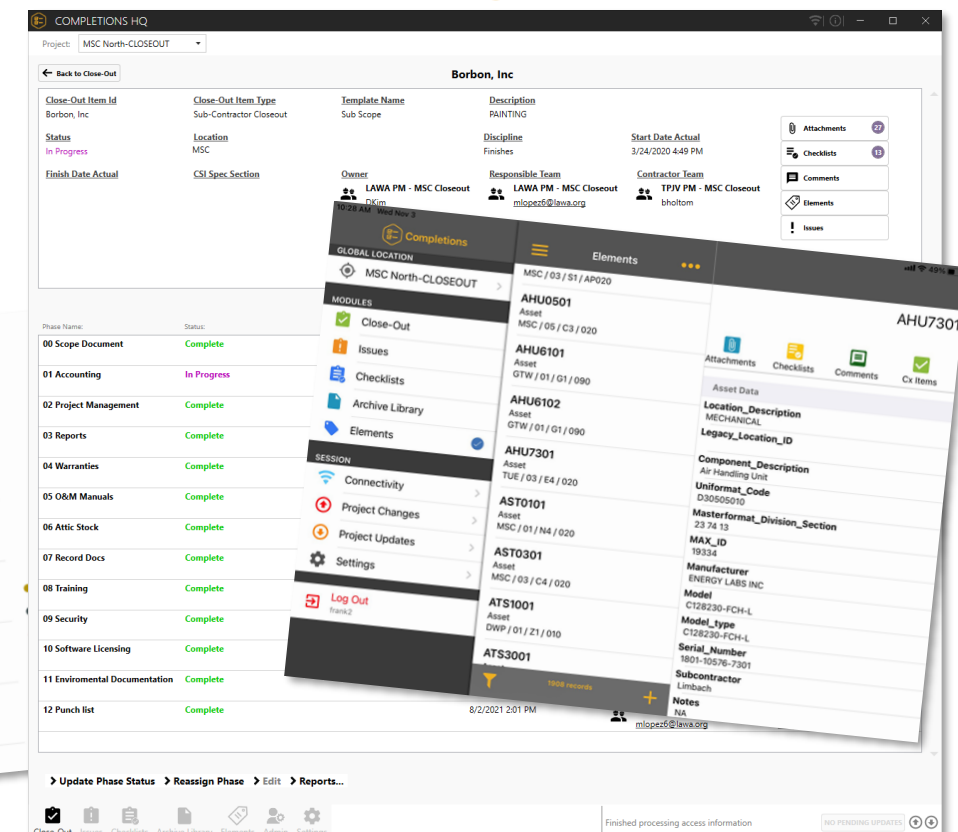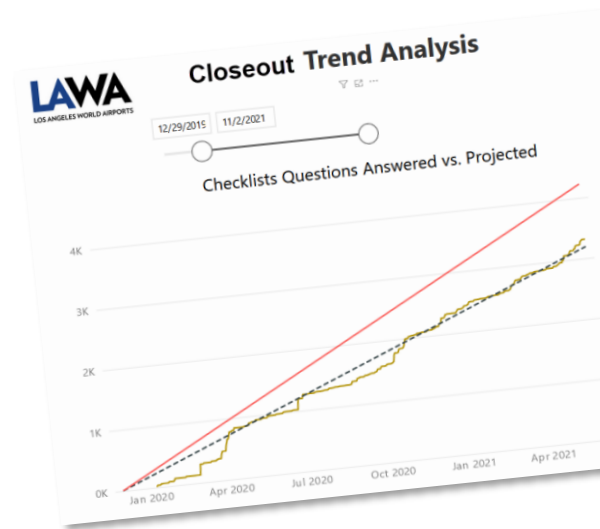
7 **Reduce risk of repeated as-built efforts and cost** for the same location

8 **Maintain as-built data in its native file format** for easy re-use

INEIGHT

DIGITIZED CLOSEOUT DURING COVID: THE LAX APPROACH

- Make it familiar and use legacy framework

- Implement as workflow in an existing system

- Adapted SQC Module to automate manual workflow

INEIGHT

DIGITIZED CLOSEOUT: THE BENEFITS TO LAX

INEIGHT

DIGITIZED CLOSEOUT: THE BENEFITS TO LAX

- Consistent collection of important information from capital projects

- Consolidation of related activities such as punch, commissioning, training, etc..

- Focused process to feed LAX campus master (digital twin database)

- Improved data transfer to operations (CMMS)

- Improved visibility - holistic campus-wide view

PROVEN PROJECT CERTAINTY.

INEIGHT

BACK TO DIA: COULD IT HAVE BEEN PREVENTED?

1 **Go beyond BIM** to develop a model with the end in mind

2 Recognize the technology needs to **support both Project Delivery AND Operations**

3 Institute consistent **checks and balances** throughout the project

4 Develop and implement a **contractually binding owner's standard**

5 **Check and validate deliverables** throughout project design and construction phases

6 Provide **a single source** of easily accessed, usable and **updated as-built information**

7 **Reduce risk of repeated as-built efforts and cost** for the same location

8 Maintain as-b file format fo

No real way to know for sure, but – what could have been different?

- Starting with the end in mind

- Integrate Information workflows in the Delivery process

- Reporting analytics– punch list management can be an indicator.

- Technology won't save you – and don't wait until the end

INEIGHT

Mike Paul
mike.paul@ineight.com

Frank Peters
fpeters@lawa.org

THANK YOU.

PROVEN PROJECT CERTAINTY.