Plan to Perform: BIM 360 Field Execution Guide to Improving Project Quality

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Key learning objectives

At the end of this class, you will be able to:

- Learn how to use the BIM 360 Field Execution Plan to focus and define team goals

- Understand the value of process mapping in setting workflows

- Understand how to create a training program specific to team goals

- Understand how to use reporting tools to measure success against goals
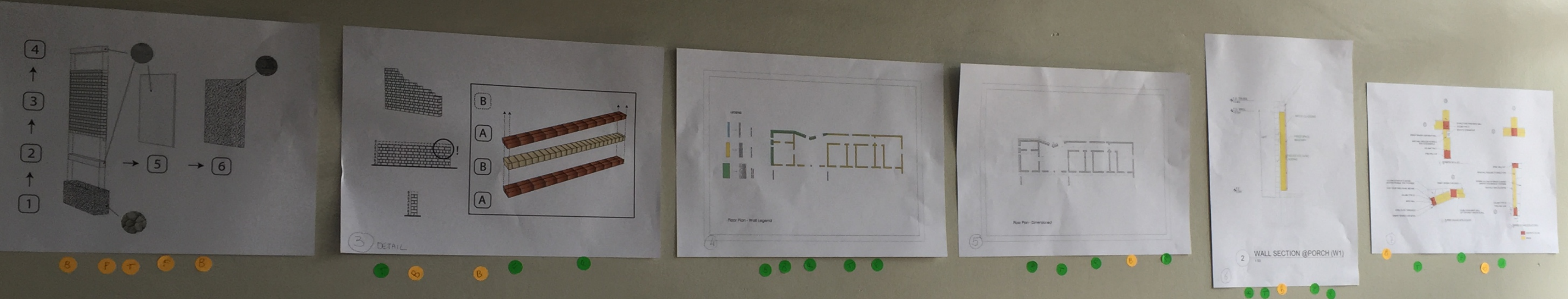
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Builders | Architect | Students | Autodesk

Technology will not "save" construction.

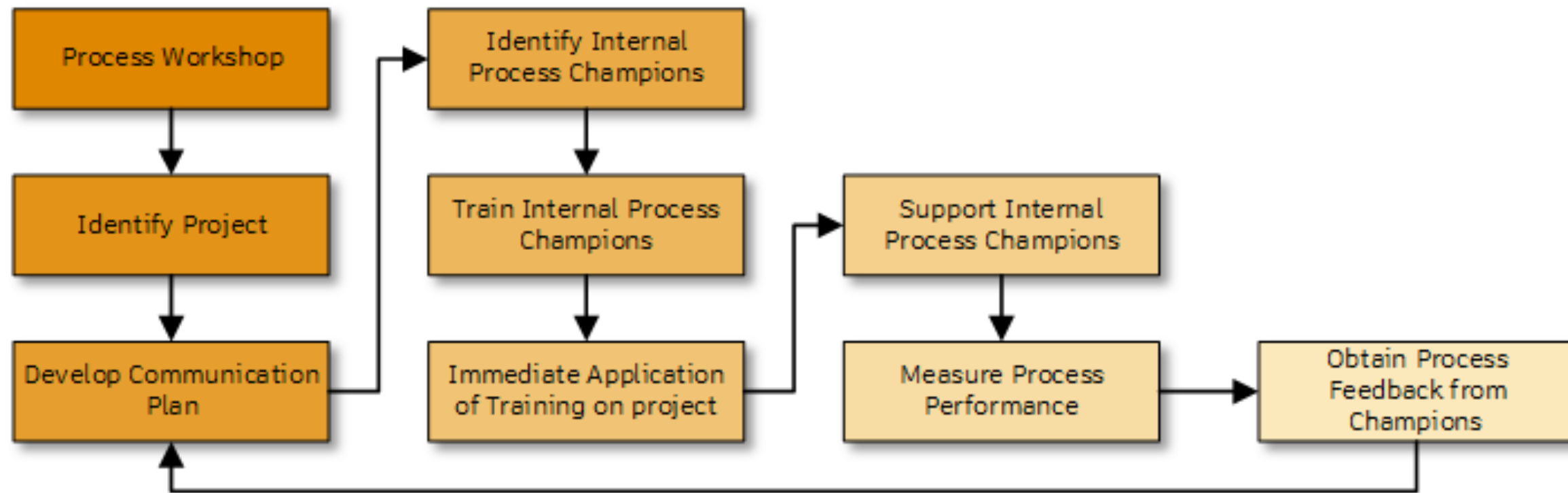We need to be talking about communication.

How might we use technology to facilitate communication?

Adoption Process

```
Process Workshop ──────────┐
      │                     │
      ▼                     ▼
 Identify Project    Identify Internal
      │              Process Champions
      ▼                     │
 Develop Communication      ▼
      Plan ──────────► Train Internal Process
                           Champions
                            │
                            ▼
                      Immediate Application ──────► Support Internal
                      of Training on project        Process Champions
                                                         │
                                                         ▼
                                                   Measure Process ──────► Obtain Process
                                                   Performance              Feedback from
                                                                            Champions
```

Field Adoption Team:
- Champions Team
    - Executive Sponsor
    - PM/ Engineer/Superintendent with experience
    - People responsible for set up/training
- BIM360 Site
    - Field Lead
    - Office Lead

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In one Process Mapping exercise, we have identified:

1. Ground rules

2. Roles

3. Deliverables

4. Milestones

5. Training needs

6. Process changes

[Company Name] FIELD EXECUTION PLAN

AUTODESK® BIM 360™ FIELD

BIM 360™ Field is field management software which provides a centralized database which will be used to track issues, checklists, tasks, and documents for the duration of the project. BIM 360™ Field is accessible via desktop and iPad app.

CONTROLLING ACCESS TO DATA THROUGH FILTERS AND ROLES

1. WORKFLOW	2. WHY THESE WORKFLOWS ARE IMPORTANT		3. HOW WE USE FIELD TO ACHIEVE THESE WORKFLOWS								4. ROLES INVOLVED IN EACH WORKFLOW						5. OUR PLAN FOR TRAINING OUR TEAM				6. METRICS
	WHY THESE WORKFLOWS ARE IMPORTANT TO THIS PROJECT	CHECKLISTS	ISSUES	TASKS	EQUIPMENT	DAILY UPDATES	LIBRARY	PHOTOS	REPORTS	Contractor	Subcontractor	Owner	Architect	Engineer	Inspector	TRAINING 1	TRAINING 2	TRAINING 3	TRAINING 4	TYPE
QA/QC	If we understand which areas and trades have quality issues, we can systematically address issues and ensure schedule is not affected.	•			•			•		•						•				ISSUES PER MONTH
ISSUE TRACKING	Inform subcontractors of issues everyday, update progress. This will allow us to track the status of issues at all times, prioritize critical issues and work for the day efficiently.		•	•				•	•	•						•				TIME TO CLOSE ISSUES
PUNCHLIST	Collaborate with architect and team to manage punchlist process efficiently with the goal of zero open issues at building turnover.		•				•	•	•	•	•		•	•					•	ISSUES PER TRADE
SAFETY	Track root causes of common safety issues on site to allow the development of targeted training programs to mitigate future risks. Track safety audits for record.			•				•	•							•				ROOT CAUSE ANALYSIS
DAILY SITE OBSERVATIONS						•														
COMMISSIONING																				

KEY PROJECT CONTACTS

NAME	COMPANY	PHONE	EMAIL

Five keys to project success:

1. Set expectations using the Field Ex Plan
2. Set up Location Breakdown Structure
3. Set up Roles and Access
4. Train Team!
5. Use Scheduled Reports

FIELD EXECUTION PLAN DIRECTORY

1.0 Field Execution Plan

1.05 Company Set Up standards

1.1 Controlling information thru Roles and Filters

1.2 Location Breakdown Structure

1.23 Working with Locations

1.25 Barcode Best Practices

1.3 Working on the iPad

2.0 ISSUES

3.0 CHECKLISTS

4.0 EQUIPMENT

5.0 TASKS

6.0 DAILY UPDATES

7.0 LIBRARY

8.0 REPORTS

9.0 Workflow generator

EXPECTED SKILL SETS

	Desktop	iPad
CONTRACTOR - OFFICE STAFF	• Set up project • Manage document library • Initiate issues, checklists • Monitor resolution of open items • Report on open items and specific workflows	• Initiate issues and checklists • Review open items for completion • Use document library for references
CONTRACTOR - FIELD STAFF	• Run reports on field issues	• Initiate issues and checklists • Review open items for completion • Use document library for references • E-mail??? • Mark up photos???
SUBCONTRACTOR	• Run reports on field issues	• Update assigned tasks • Complete tasks
OWNER	• Run reports on field issues	• Initiate issues
ARCHITECT	• Run reports on field issues	• Initiate issues and checklists • Update issue lists
ENGINEER	• Run reports on field issues	• Initiate issues and checklists • Update issue lists
INSPECTOR		

TRAINING PLAN DETAIL

TRAINING 1 – Project set up
Timing: Prior to construction start
Participants: GC Office Staff
Intent:
- Complete Field Execution Plan
- Determine location Breakdown Structure
- Identify Custom Properties, Filters and Checklists.
- Populate Library

TRAINING 2 – Field Introduction
Participants: All Roles
Intent:
- Review Field Workflows on Project
- Set participation expectations
- Conduct Desktop and Tablet Training

TRAINING 3 – Field Continuation
Participants: GC, Subs, Architect
Intent:
- Review process to date. What is working? What is not?
- Review advanced field workflows.

TRAINING 4 – Punchlist
Participants: GC, Subs, Architect, owner
Intent:
- Review punchlist workflows
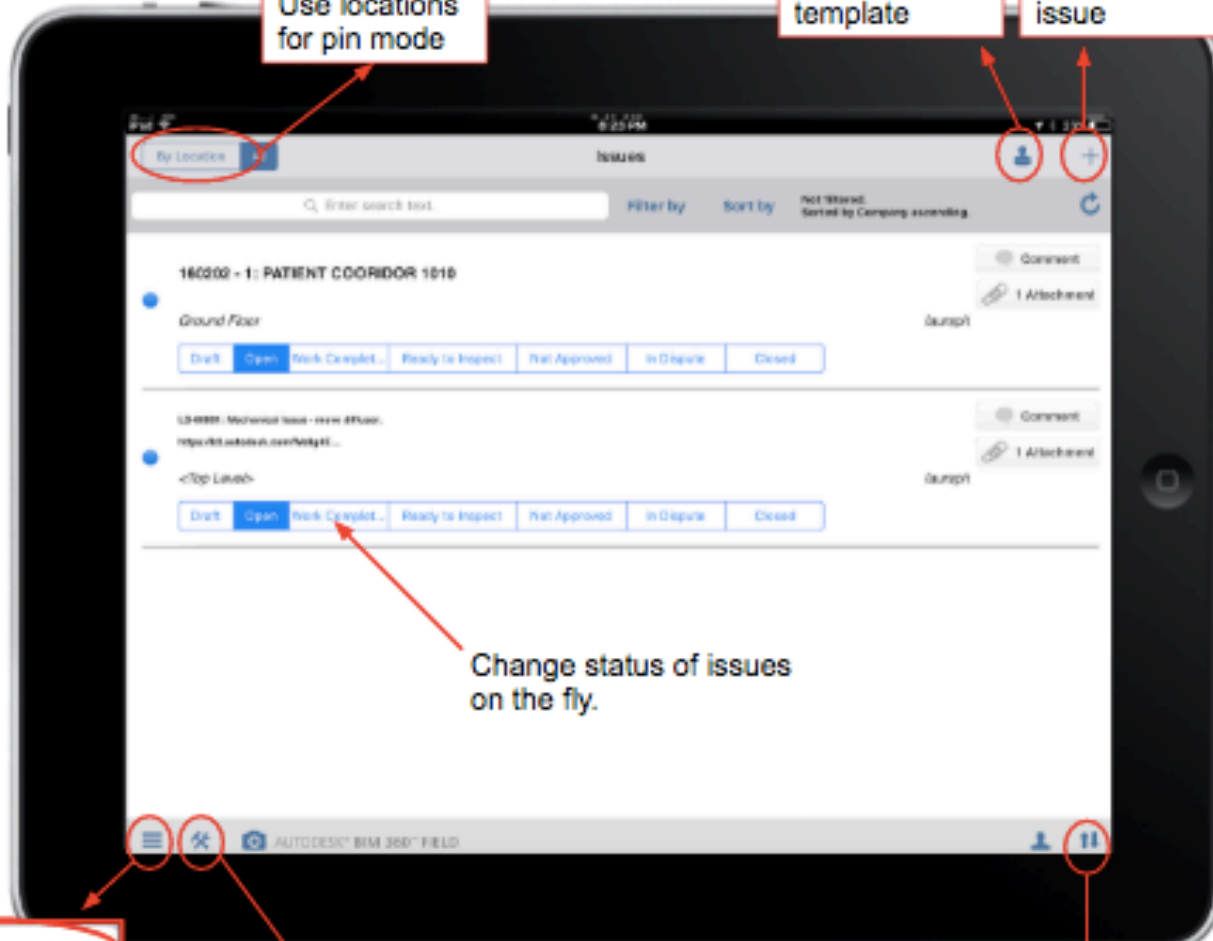- Review project hand over requirements

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Requirements:

- Use Equipment to group all checklist and issues to rooms
- Barcodes for easy navigation
- Standard checklists for each room
- Issue templates for easy adding of issues
- Had to be able to report out
- Issue type work flow:

| Non Conforming | → | Pre-Punch | → | Punch |

WORKING WITH ISSUES ON THE IPAD

ISSUE BASICS:

Use locations for pin mode

Add issue by template

Add single issue

Change status of issues on the fly.

Menu - looking at issues view.

Level
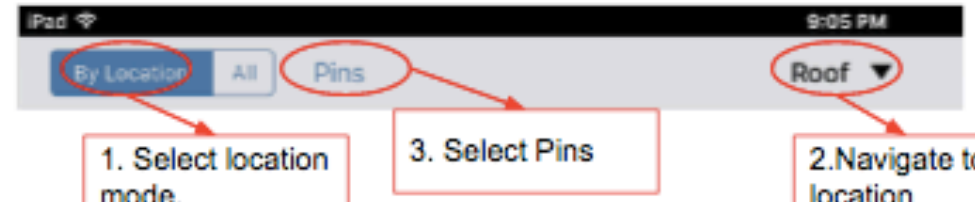
Notebook

Barcode Scanner

Barcode Scanner - Scan barcodes on site to take you to a list of issues in that location!

Sync updates to the Cloud

PIN MODE (LOCATIONS):

1. Navigate to locations by:
   a. manually
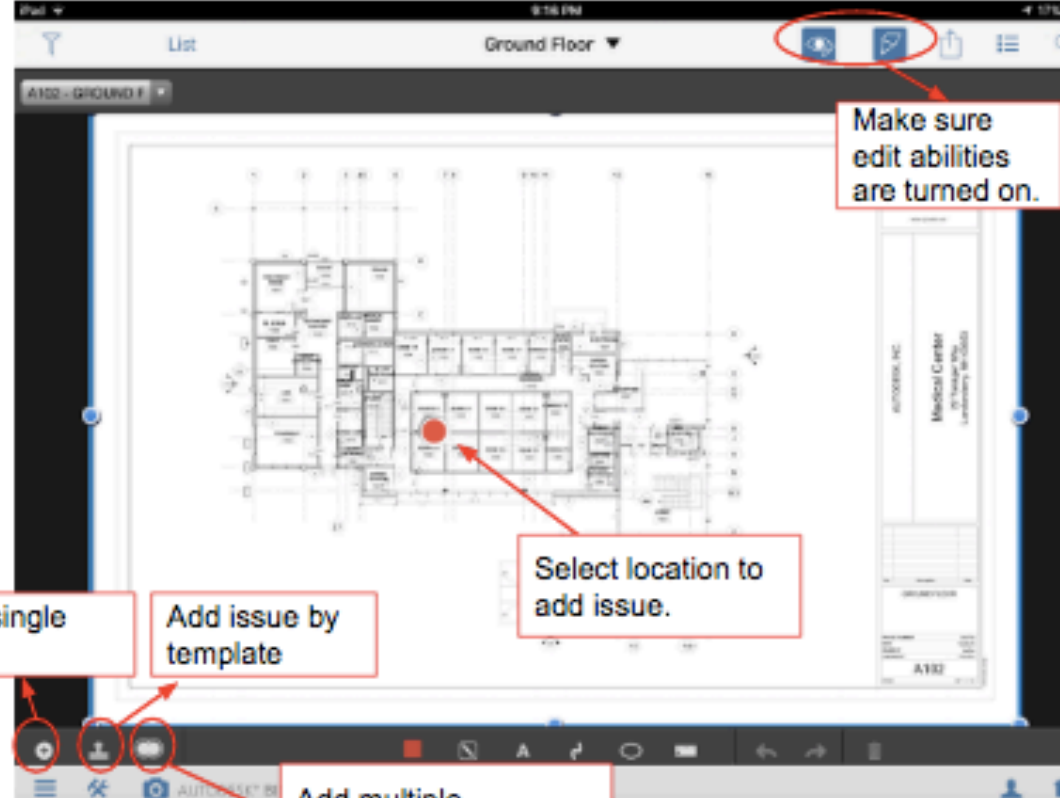
1. Select location mode.

3. Select Pins

2. Navigate to location

   b. Bar Codes
      i. Use bar code scanner to scan posted location barcode
      ii. Select Pins

Make sure edit abilities are turned on.

Select location to add issue.

Add single issue

Add issue by template

Add multiple occurences of issues.

Edit Issue LS-00001

Save **Close**

Details

Remind assigned company

Issue type — Coordination Issues

* Issue ID — LS-00001

* Description —
Mechanical Issue - move diffuser.

https://b3.autodesk.com/We9g4E

Source

Equipment CONSULT 3 1300 **X Delete**

Link Task **Link Equipment**

✓

Daily Good Catch
    Fall Protection
    Housekeeping
Uncategorized
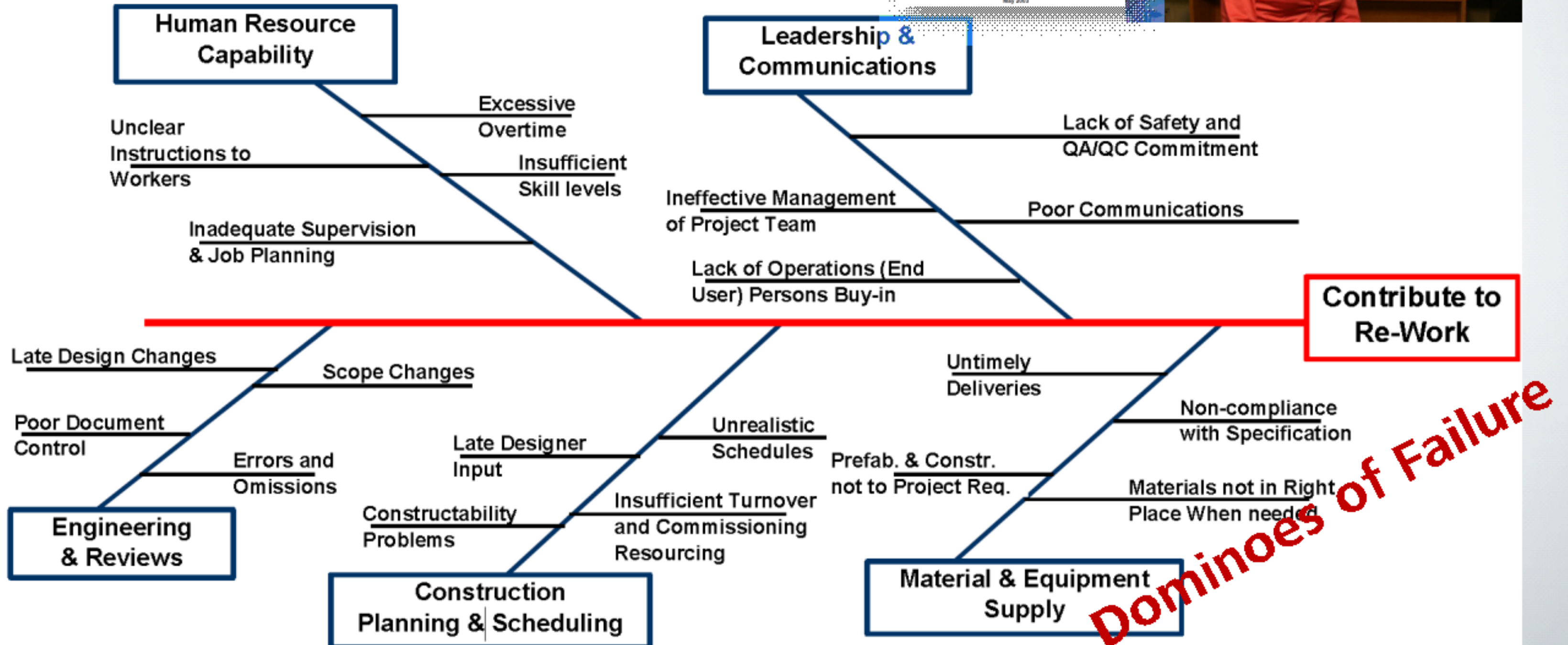   New...

Root cause

Company

Status

Location

Fishbone Rework Cause Diagram

Measuring and Classifying Construction Field Rework: A Pilot Study

Aminah Robinson Fayek, Ph.D., P.Eng.
Manjula Dissanayake, Provisional Ph.D. Candidate
Oswaldo Campero, M.Eng.

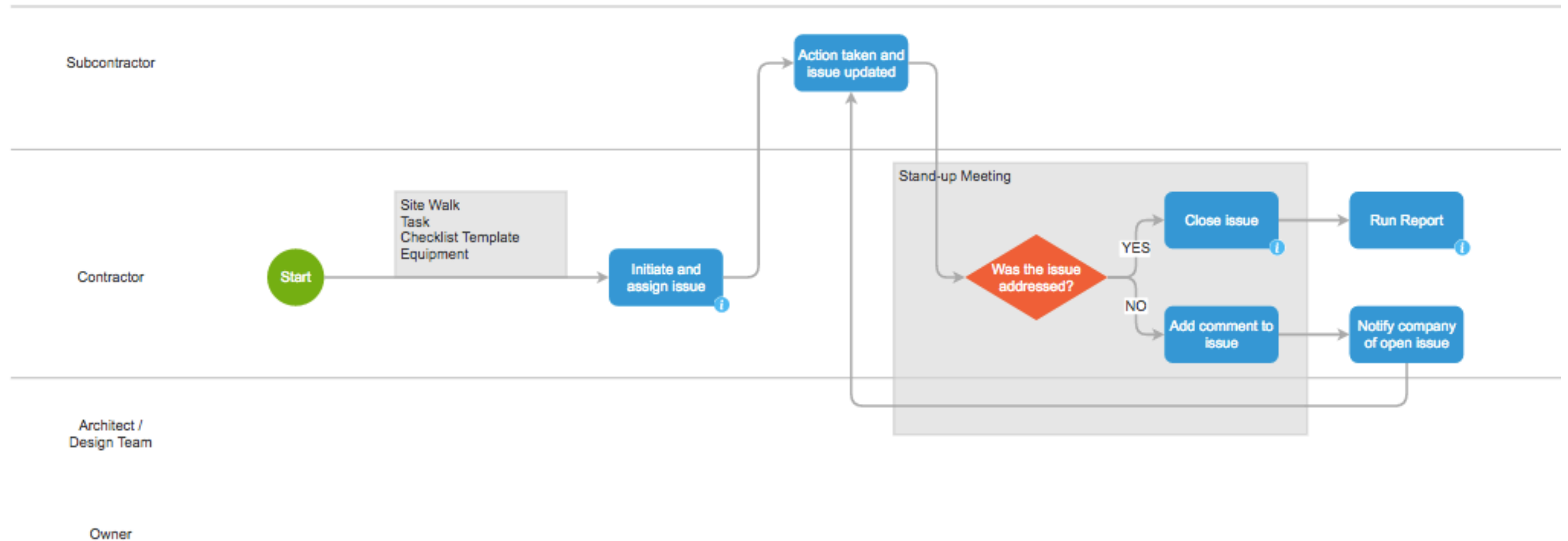Department of Civil and Environmental Engineering
University of Alberta

May 2003

Human Resource Capability

Excessive Overtime

Unclear Instructions to Workers

Insufficient Skill levels

Inadequate Supervision & Job Planning

Leadership & Communications

Lack of Safety and QA/QC Commitment

Ineffective Management of Project Team

Poor Communications

Lack of Operations (End User) Persons Buy-in

Contribute to Re-Work

Late Design Changes

Scope Changes

Untimely Deliveries

Non-compliance with Specification

Poor Document Control

Errors and Omissions

Late Designer Input

Unrealistic Schedules

Prefab. & Constr. not to Project Req.

Materials not in Right Place When needed

Engineering & Reviews

Constructability Problems

Insufficient Turnover and Commissioning Resourcing

Construction Planning & Scheduling

Material & Equipment Supply

Dominoes of Failure

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Issue Tracking

Request Field Ex