

BIM 360
is an Autodesk
application used
to “connect,
organize, and
optimize
projects.”



Inception Through Inspection: Quality Control in the Simpson Strong Tie Laboratory

The purpose of this senior project is to create a quality control program in the Simpson Strong Tie (SST) Laboratory using BIM360. The goal of this program is to better systemize the building process of the six foot by eight foot tiny home in Residential Construction Management. The SST laboratory activities have been developed in the true spirit of “learn by doing” and serve as a way for Construction Management (CM) students to interact with the building process directly. Students in the CM department are taught that quality begins at the inception of a job and should be strictly monitored throughout construction and into closeout. Utilizing BIM 360 to carry out inspections in the classroom has made the building of the tiny homes more practical and realistic for CM students and for lab technicians, all while creating a lasting record of the process that can be referenced by future professors or lab technicians. This quality program also has the ability to expose students to basic inspection practices that they can expect to experience on any internship or job in the future. The advantages of tracking quality has gone beyond the outcome of the tiny home itself, as it also encourages the students to build the project to the highest caliber.



Key terms: Quality Control, Construction, Inspections, Checklists, BIM 360



Inspection Checklists
used to track the quality of building processes for the Tiny Home.

Checklist

CM 214 - Kelting's Residential 6x8 Shed
Final Building Inspection

Cal Poly SLO

COMPLETED	TYPE	CREATED	SCHEDULED	COMPLETED
	Punch List	Jun 03, 2019	Jun 05, 2019	Jun 05, 2019

DescriptionCM 214 Residential 6x8 ShedLocationProject > SST LabCreatorAllyson Forster Cal Poly SLOAssigned toAllyson Forster Cal Poly SLOSection Assignees

SECTIONS	ITEMS	ISSUES	CONFORMING	NON-CONFORMING	N/A	TO BE ANSWERED
6/6	24/24	4	12	12	0	0


1. General

1.1 Site is free from debris and swept clean.

YES

NO

N/A



Jun 05, 2019 11:25 - Allyson Forster

NoteRequire students to vacuum shop once shed work is completed.

1.2 Inside of shed is free from dust and materials.

Verizon10:51 AM76%

CancelCalendarToday

PUBLISHEDMonday, May 13, 2019

Labor

Total:124

WorkersHours


Company NameWorkersHours

Show all notes

Cal Poly SLO124

Notes and Photos

Student carpenters broke out into teams to prepare house for finish materials and installed starter strip and shingles to the roof structure. Carpenters wrapped and waterproofed the house and all penetrations with correct waterproofing and flashing methods. Windows and door were installed/hung. Roof was lifted onto roof at 2:30 PM. Minor issue with height of ceiling joists and ability to lift on forklift. Additional joists at lower elevation were added to frame by SST lab technicians. COMPLETED TASKS: waterproofing, roofing, windows/door installation. IN PROGRESS TASKS: fill-in studs/OSB sheathing at gable ends, house-wrapping at gable ends, cutting T-11 rough sawn siding, z-flashing installation.



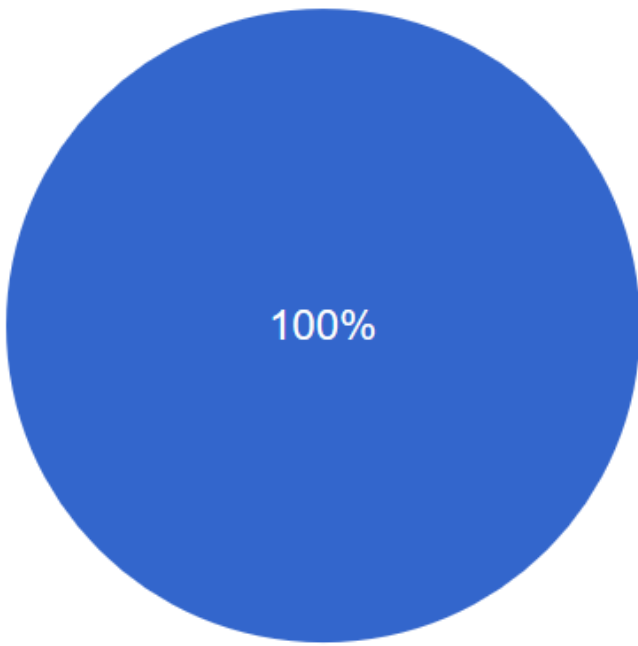
Daily Logs
used to track attendance and
worker productivity.

Issue Logs
used to track issues in workmanship to be fixed before continuing.

Status	ID	Title	Assignee
		Type / Subtype Root Cause / Category	
NOT APPROVED	3	Bottom of window R.O. is flashed with 4" or 6" Flexwrap. Flexwrap wraps at least 6" up each Quality / Quality Workmanship / Quality North window failed to flash window 6" up each side due to material shortage. To be considered in future class sections. SST Lab (North wall window.)	Allyson Forster Cal Poly SLO
CLOSED	2	Verify height of header per plan Quality / Quality Workmanship / Quality Bottom of header TO BE 6'-9 1/4" from bottom of bottom plate. SST Lab (East wall windows.)	
CLOSED	1	Verify rough openings per plan Quality / Quality Workmanship / Quality Adjust rough opening to true 2'-0" x 3'-0". SST Lab (North Wall window.)	

Student Feedback
used to assess the feasibility of this program in the classroom.

Do you think this quality control program has a good application for CM 214?



- Yes, I was able to see what mistakes I made and learned how to fix those mistakes.
- No, I think this tracks too much detail for a project of this size.

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