

Managing Trade Contractors for High Performance Homes

Carl Seville



Overview

- Implementing Management Systems
 - Why
 - How
 - Steps
 - Troubleshooting
 - Successes

High Performance Buildings

- Attention to detail
- Management Systems
- Choose your performance level
- Set your own standards
- High Performance = Green Building

*Management of Trades Leads to
Quality*

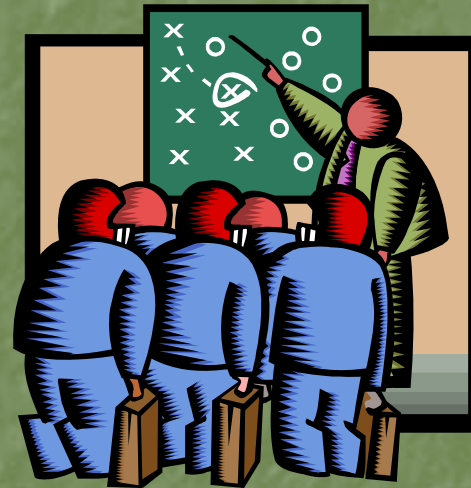
Why Systems?

- Improve Back Office Operations
- Eliminate The Great Oral Tradition
- Short
- Concise
- Single Page
- Self Documenting
- K.I.S.S.



Management Systems Work

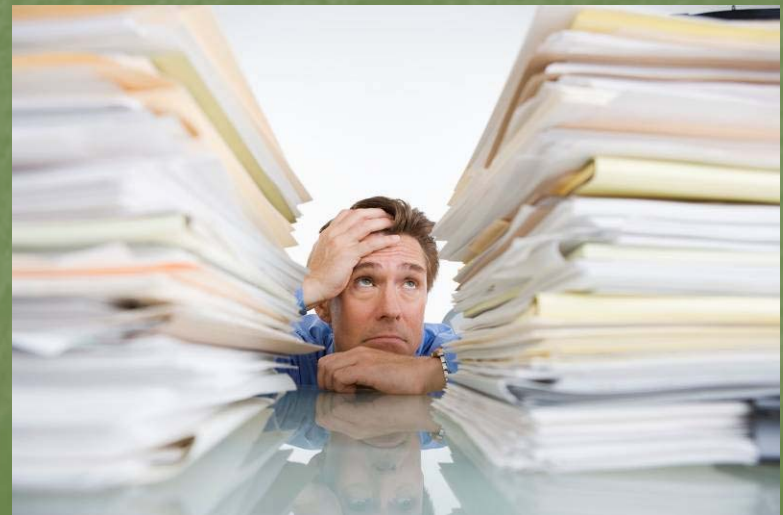
- Commercial Airlines
- Restaurants
- Franchise Businesses
- Fed Ex/UPS
- Manufacturing



Take the Good Parts

Trade Contractor Management

- General Agreement
- Project Agreement (Sub Contract)
- Control Documents
- Project Documents
- Procedures
 - Business Operations
 - Field Operations



General Agreement

- Signed by Trade Contractor
- Covers all projects
- Sets Rules
 - Contractor
 - Trade Contractors
 - Employees



General Agreement

- Includes:

- Introduction
- Submitting Proposals
- Plans & Specs
- Permits & Inspections
- Invoicing & Payments
- Acceptance of Substrate
- Property Damage
- Safety
- Scheduling
- Insurance
- Cleanup
- Warranty
- Changes
- Communication
- Jobsite Rules
- What Else?

General Agreement

■ Invoicing & Payments:

Payment requests must be submitted in writing via email or by fax to the Accounting Department on the following schedule:

Pay requests must be **for work completed** on the Friday before pay requests are submitted. We reserve the right to withhold payment on an invoice submitted prior to the completion of the work....

Pay requests must be **received** by the Accounting Department **by 2:00 PM Monday** (for work completed during the prior period), unless a legal holiday falls on the Monday, then pay requests must be received no later than 10:00 A.M. Tuesday.

Payments are **issued on the 2nd and 4th Friday** of every month. Checks will be **available** for pickup at our office **after 2:00 PM** on those dates. Payments not picked up by the close of business on that day will be mailed the following Monday.

General Agreement

- Acceptance Of Substrate:

Trade Contractors agree to accept the existing or a previous trade's work when starting your phase of the work. When there is any rework required due to any problems that were **visible existing conditions**, the work and the cost will be **your responsibility**. Any required corrections that are pointed out to the Project Manager prior to your start of work will be repaired before any new work begins.

Project Agreement

- Signed contract for each job
- References project documents
- Work Schedule
- Payment Schedule
- Special Requirements



Control Documents

- Management Checklists
 - Instructions
 - General Information
 - Pre-Construction
 - Completion
 - Retainage
 - Sign Off



Management Checklists

Project Name: _____ Trade Contractor _____

Instructions: Trade contractor must review all sections before beginning work. At completion of work or phase of work, trade contractor must inspect each checklist item and confirm that work is complete and correct by signing and dating the form and returning it to the project manager. Project manager must inspect work and sign off that it is complete. Signed forms to be placed in job book

SawHorse Inc. Framing Checklist

Project Name: _____ Trade Contractor _____

Instructions: Trade contractor must review all sections before beginning work. At completion of work, trade contractor must inspect each checklist item and confirm that work is complete and correct by signing and dating the form and returning it to the project manager. Project manager must inspect work and sign off that it is complete. Signed forms to be placed in job book.

Trade Initials

General Information:

- Confirm complete set of correct plans with "RC" stamp on them
- Review plans
- Read any instructions, save for homeowner
- Do not assume anything, ask questions of project manager if you don't understand something
- Do not discuss the work with the homeowner
- Do not make any changes or additions without consulting the Project Manager

*Acceptance of Substrate: You agree to accept the existing or a previous trader's work when starting your phase of the work. When there is any work required due to any problems that were visible existing conditions, that work and the cost of it will be your responsibility. Any required corrections that are pointed out to the Project Manager prior to your start of work will be repaired before any new work begins.

Pre-Construction Checklist

- Check foundations for level and square, anchor bolts placed correctly
- Check material order
- Confirm correct fasteners for ACH treated lumber
- Confirm plumbing and electrical for framing layout

Accepted By PM _____

Final Completion Checklist

	Yes	No	N/A	Retention
Check all room dimensions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check and sight all walls and floors for plumb and level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check window and door openings – square, correct dimensions, plumb, level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check layout for plumbing and electrical installations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check stairs – 36" min. finished width, 6" 0" min finished headroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check bathrooms for blocking at edges of the walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Friezeblocking installed at all dropped ceiling areas and lowered chases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Roof decking – gaps or H clips between sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Roof decking at HVAC and all storage areas, blocked up for ceiling insulation depth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Seal opening between roof decking and fascia completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All corners 2 stud open type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All T walls open type ladder framing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All exterior headers have foam insulation between boards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
No headers at non structural walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check for all details in framing members within code limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All bearing points and walls continuously supported to foundation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
ACH all glass installed with correct fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
No nails in finish roofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Debris removed, excess materials stored and covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$

Trade Specific Items:

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$

Trade Contractor: I certify that the work is complete. _____ Date _____

Project Manager: Work is not complete. Initials _____ Date _____ Retain until completion \$ _____
 Work is fully completed. Initials _____ Date _____ Release full payment _____

■ Instructions

Management Checklists

SawHorse Inc. Fram

Project Name: _____ Trade Contractor: _____

Instructions: Trade contractor must review all sections before beginning work of work, trade contractor must inspect each checklist item and confirm that he signing and dating the form and returning it to the project manager. Project sign off that it is complete. Signed forms to be placed in job book.

Trade Initials _____

General Information:

- Confirm complete set of correct plans with "TIC" stamp on them
- Review plans
- Read any instructions, save for homeowner
- Do not assume anything, ask questions of project manager if you don't understand something
- Do not discuss the work with the homeowner
- Do not make any changes or additions without consulting the Project Manager

*Acceptance of Substrate: You agree to accept the existing or a previous phase of the work. When there is any rework required due to any problems in conditions, that work and the cost of it will be your responsibility. Any request to the Project Manager prior to your start of work will be repaired before you start.

Pre-Construction Checklist:

- Check foundations for level and square, anchor bolts placed correctly
- Check material order
- Confirm correct fasteners for ACH treated lumber
- Confirm plumbing and electrical for framing layout

Final Completion Checklist:

Item	Yes	No	Not Inspected
Check all room dimensions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check and sight all walls and floors for plumb and level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check window and door openings - square, correct dimensions, plumb, level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check layout for plumbing and electrical installations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check stairs - 30" min. finished width, 6" min finished headroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check bathrooms for locking at edges of the walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friezcladding installed at all dropped ceiling areas and lowered chases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roof decking - gaps or H clips between sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After decking at HVAC and all storage areas, blocked up for ceiling insulation depth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seal opening between roof decking and fascia completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All corners 2 stud open type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All T walls open type ladder framing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All exterior headers have foam insulation between boards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No headers at non structural walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check for all details in framing members within code limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All bearing points and walls continuously supported to foundation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACH all plate installed with correct fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No nails in finish roofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debris removed, excess materials stored and covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Job Specific Items:

Item	Yes	No	Not Inspected
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Trade Contractor: I certify that the work is complete. _____ Date _____

Project Manager: Work is not complete. Initials _____ Date _____ Retain until completion \$ _____

Work is fully completed. Initials _____ Date _____ Release full payment _____

Trade Initials _____

General Information

- Confirm that you are working from a complete set of correct plans released for construction
- Review plans thoroughly. Direct any questions to the Project Manager.
- Read any instructions before installing products. Save all instructions for homeowner
- Do not assume anything, ask questions of project manager if you don't understand something
- Do not discuss the work with the homeowner
- Do not make any changes or additions without consulting the Project Manager
- Inspect the existing conditions before you start work. Alert Project Manager to any problems with the substrate you are working on that are not acceptable. NOTE: Unless defects are pointed out prior to beginning work, you will be responsible for the cost of any rework necessary to correct defects.
- Maintain a clean and safe work area.

General Information

Management Checklists

Pre-Construction Checklist:

- Check foundations for level and square, anchor bolts placed correctly
- Check material order
- Confirm correct fasteners for ACQ treated lumber
- Confirm plumbing and electrical for framing layout
- Identify central cut location with Project Manager
- Review structural drawings thoroughly and confirm materials on site
- Review structural drawings for correct header sizing for each opening

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Project
Initials of work,
signing
Trade
Initials
General
-Confirm
-Obtain
-Obtain
-Do not
-Do not
-Accept
-Obtain
-Obtain
-Obtain

Pre-Construction Checklist

- Check foundations for level and square, anchor bolts placed correctly
- Check material order
- Confirm correct fasteners for ACQ treated lumber
- Confirm plumbing and electrical for framing layout

Accepted By PM _____

Final Completion Checklist

	Yes	No	N/A	Retention
<input type="checkbox"/> Check all room dimensions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Check and sight all walls and floors for plumb and level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Check window and door openings – square, correct dimensions, plumb, level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Check layout for plumbing and electrical installations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Check stairs – 36" min. finished width, 6" 0" min finished headroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Check bathrooms for blocking at edges of the walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Fireblocking installed at all dropped ceiling areas and lowered chases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Roof decking – gaps or H clips between sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Rafter decking at HVAC and all storage areas, blocked up for ceiling insulation depth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Seal opening between roof decking and fascia completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> All corners 2 stud open type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> All T walls open type ladder framing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> All exterior headers have foam insulation between boards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> No headers at non structural walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Check for all cutouts in framing members within code limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> All bearing points and walls continuously supported to foundation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> ACQ all gable installed with correct fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> No nails in finish roofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/> Debris removed, excess materials stored and covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$

Final Specific Items:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$

Trade Contractor: I certify that the work is complete. _____ Date _____

Project Manager: Work is not complete. Initials _____ Date _____ Retain until completion \$ _____

Work is fully completed. Initials _____ Date _____ Release full payment _____

Pre-Construction

Management Checklists

Final Completion Checklist:

- Check all room dimensions
- Check and sight all walls and floors for plumb and level
- Check window and door openings – square, correct dimensions, plumb, level
- Check layout for plumbing and electrical installations
- Check stairs – 36" min. finished width; 6'8" min finished headroom
- Check bathrooms for blocking at edges of tile walls
- Fireblocking installed at all dropped ceiling areas and lowered chases
- Roof decking – gaps or H clips between sheets
- Attic decking at HVAC and all storage areas, blocked up for ceiling insulation depth
- Seal opening between roof decking and fascia completely
- All corners 2 stud open type
- All T walls open type ladder framing
- All exterior headers have foam insulation between boards
- No headers at non structural walls
- Check for all cutouts in framing members within code limits
- All bearing points and walls continuously supported to foundation
- ACH sill plate installed with correct fasteners
- No nails in finish roofing
- Debris removed, excess materials stored and covered

Yes No N/A Retention

Yes	No	N/A	Retention
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____

Accepted By PM

Yes No N/A Retention

Yes	No	N/A	Retention
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____

■ Completion
■ Retainage

Project Name: _____

Instructions: Trade contractor must review of work, trade contractor must inspect and sign and date the form and returning sign-off that it is complete. Signed form.

Trade Initials _____

General Information:

- Confirm complete set of correct plans with review plans
- Read any instructions, save for homeowner
- Do not assume anything, ask questions
- Do not discuss the work with the homeowner
- Do not make any changes or additions without approval

*Acceptance of Substrate: You agree to the phase of the work. When there is any new conditions, that work and the cost of it will be out to the Project Manager prior to your start.

Pre-Construction Checklist:

- Check foundations for level and square.
- Check material order
- Confirm correct fasteners for ACH treated
- Confirm plumbing and electrical for framing

Final Completion Checklist:

- Check all room dimensions
- Check and sight all walls and floors for plumb
- Check window and door openings – square
- Check layout for plumbing and electricals
- Check stairs – 36" min. finished width; 6'8" min finished headroom
- Check bathrooms for blocking at edges of tile walls
- Fireblocking installed at all dropped ceiling areas and lowered chases
- Roof decking – gaps or H clips between sheets
- Attic decking at HVAC and all storage areas, blocked up for ceiling insulation depth
- Seal opening between roof decking and fascia completely
- All corners 2 stud open type
- All T walls open type ladder framing
- All exterior headers have foam insulation between boards
- No headers at non structural walls
- Check for all cutouts in framing members within code limits
- All bearing points and walls continuously supported to foundation
- ACH sill plate installed with correct fasteners
- No nails in finish roofing
- Debris removed, excess materials stored and covered

Trade Specific Items:

Trade	Yes	No	N/A	Retention
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____

Trade Contractor I certify that the work is complete: _____ Date _____

Project Manager: Work is not complete. Initials _____ Date _____ Retain until completion \$ _____
Work is fully completed. Initials _____ Date _____ Release full payment

Management Checklists

Trade Contractor: I certify that the work is complete: _____ Date _____

Project Manager: Work is not complete, Initials _____ Date _____

Retain until completion: \$ _____

Work is fully completed, Initials _____ Date _____

Release full payment

Project Name: _____

Instructions: Trade contractor must review all plans and specifications of work, trade contractor must inspect each phase of work and sign off the form and returning it to the project manager. Project manager must inspect work and sign off that it is complete. Signed forms to be placed in job book.

Trade Initials _____

General Information:

- Confirm complete set of correct plans with "RC" stamp on them
- Review plans
- Read any instructions, save for homeowner
- Do not assume anything, ask questions of project manager if you don't understand something
- Do not discuss the work with the homeowner
- Do not make any changes or additions without consulting the Project Manager

*Acceptance of Substrate: You agree to accept the existing or a previous trade's work when starting your phase of the work. When there is any work required due to any problems that were visible existing conditions, that work and the cost of it will be your responsibility. Any required corrections that are pointed out to the Project Manager prior to your start of work will be repaired before any new work begins.

Pre-Construction Checklist:

- Check foundations for level and square, anchor bolts placed correctly
- Check material order
- Confirm correct fasteners for ACH treated lumber
- Confirm plumbing and electrical for framing layout

Accepted By PM _____

Final Completion Checklist:

	Yes	No	N/A	Retention
Check all room dimensions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check and sight all walls and floors for plumb and level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check window and door openings - square, correct dimensions, plumb, level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check layout for plumbing and electrical installations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check stairs - 36" min. finished width, 6" min finished headroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check bathrooms for blocking at edges of the walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Friezeblocking installed at all dropped ceiling areas and lowered chases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Roof decking - gaps or H clips between sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Roof decking at HVAC and all storage areas, blocked up for ceiling insulation depth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Seal opening between roof decking and fascia completely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All corners 2 stud open type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All T walls open type ladder framing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All exterior headers have foam insulation between boards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
No headers at non structural walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Check for all details in framing members within code limits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
All bearing points and walls continuously supported to foundation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
ACH all glass installed with correct fasteners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
No nails in finish roofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
Debris removed, excess materials stored and covered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$

PM Specific Items:

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$

Trade Contractor: I certify that the work is complete: _____ Date _____

Project Manager: Work is not complete, Initials _____ Date _____ Retain until completion: \$ _____

Work is fully completed, Initials _____ Date _____ Release full payment

- Sign off
- Payment Release

Checklists: Green Specs

- _____ 7 Check window and door openings – square, correct dimensions, plumb, level, and matching plans
- _____ 7 Check layout for plumbing and electrical installations
- _____ 7 Check stairs – 36” min. finished width; 6’8” min finished headroom
- _____ 7 Check bathrooms for blocking at edges of tile walls
- _____ 7 Fireblocking installed at all dropped ceiling areas and lowered chases
- _____ 7 Roof decking – gaps or H clips between sheets
- _____ 7 Attic decking at HVAC and all storage areas
- _____ 7 Seal opening between roof decking and fascia completely
- _____ 7 All corners 2 stud open type
- _____ 7 All T walls open type ladder framing
- _____ 7 All exterior headers have foam insulation between boards
- _____ 7 All headers size properly for load according to plans - no oversized headers
- _____ 7 No headers at non structural walls
- _____ 7 Check for all cutouts in framing members within code limits
- _____ 7 All bearing points and walls continuously supported to foundation

Project Documents

- Plans
- Specifications
- Things you already have
- Make sure they are concise and complete



Procedures

- Field Operations
 - Communications
 - Scheduling
 - Performance Standards
 - Completion
 - Troubleshooting
- Business Operations
 - Recruiting
 - Qualifying
 - Orientation
 - Accounts Payable
 - Insurance

How to Do It

- Assemble: Reference Materials
- Create: Specifications
 - General
 - Trade Specific
- Create: Control Documents
- Write: Procedures
- Sell it: Introduction Meeting
- Check it: Evaluation

Reference Materials

- Management
 - Subcontractor Management Books
 - Trade Partnership Programs
- Technical
 - EEBA Builder's Guides
 - PATH Tech Sets
 - Green Building Advisor
 - Green Building Program Guidelines

Create Specifications

- Brainstorm Meeting
 - Assemble Stakeholders
 - Flip Chart
 - Facilitator/Leader
 - No Censoring
 - Write Down Any and All Ideas
 - Group Agrees on List



What Are Your Specifications?

- Resource Efficiency
 - Framing
- Durability
 - Building Envelope
 - Siding & Exterior Trim
- Energy Efficiency & Indoor Air Quality
 - Insulation & Air Sealing
 - HVAC

Building Envelope

- Housewrap:
 - 3" Lap at Horizontal and 6" Lap at Vertical Joints
 - Layer Over All Roof Flashing
 - Flash All Penetrations with Flexible Tape
- Windows and Doors:
 - Installed According to Manufacturer's Instructions
 - Plumb, Level, Shimmed Correctly, Operate Smoothly
 - Flashed with Flexible Tape, Sides Lap Over Sill,
 - Housewrap and Tape Lapped Over Head Flashing
- Other Requirements?

Insulation & Air Sealing

- Air Sealing:
 - Meet Requirements of Energy Star TBC
 - Caulk at Sills, Rim Joist, and Bottom Plates
 - Low Expansion Foam at All Windows and Doors
 - Solid Blocking and Sealant at:
 - Chases in Ceiling and Holes in Plates
 - Behind Fireplaces and Tubs
 - Dropped Soffits
 - Below Knee Walls
 - Cantilevered Floors
 - Other Requirements?

Insulation & Air Sealing

- Fiberglass Insulation
 - All Insulation HERS Grade I (reference documents)
 - Baffles Installed at Roof Edges
 - Batts Cut Around All Boxes, Wires, etc.
 - No Batts Compressed in Wall Cavities
 - Kraft Facing Stapled to Face of Studs
 - Blown Ceiling Insulation to Specified Depth
 - Chases Sealed Before Blown Insulation Installed
 - Other Requirements?

Insulation & Air Sealing

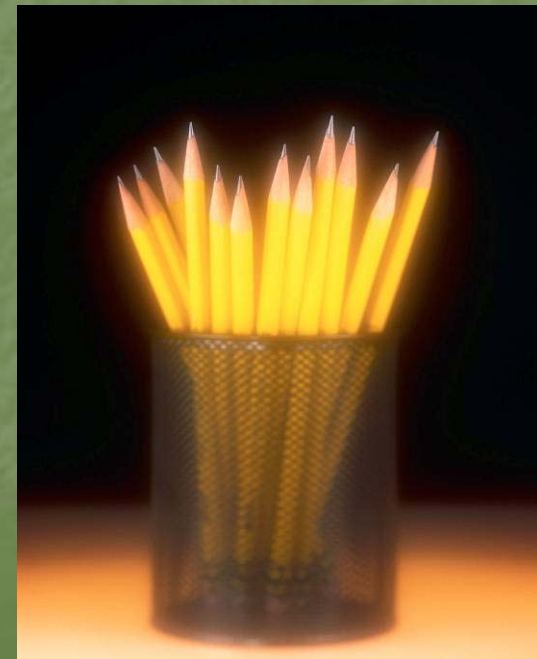
- Spray Foam Insulation
 - All Cavities Filled to Specified Thickness
 - All Walls and Ceilings Trimmed to Framing
 - Confirm Termite Pre-Treat on Framing
 - Other Requirements?

Create Documents

- Brainstorm Meeting Results
- Assign to Company Scribe or Consultant
- Stakeholder Review
- Revisions
- Issue

Write Procedures

- Start With Result in Mind
- Step by Step – How to Do It
- Review by Users
- Feedback and Revisions
- K.I.S.S.



Write Procedures

- State Goal
- List Numbered Steps to Complete
- Break Down into Sub-Procedures
- Test & Refine

Procedure – State Goals

Program Goals:

- **Define expectations**

By listing our general and specific guidelines, Trade Contractors will understand what is expected of them

- **Guidelines to inspect work**

Project Managers will have a consistent method to inspect work

- **Eliminate payment for incomplete work**

Project Manager will identify all incomplete work and place a value on it to retain from our payments to our Trade Contractors

Procedure – Explanation

Each checklist has 4 parts:

- **General Information**

Lists general expectations for their performance on the jobsite

- **Pre-Construction Checklist**

Identifies items they must review before starting their work

- **Rough and Final Completion Checklist**

Identifies items they must review to confirm that they have completed their work completely

- **Job Specific items**

Project Manager identifies any issues that are specific to this particular job for Trade Contractor to include in their inspection

Procedure – Numbered Steps

1. **At Trade Commitment:** Project Manager fills out checklist for each trade and makes 2 copies
 - a. 1 copy to accounting with vendor agreement (subcontract)
 - b. 1 copy to trade contractor with vendor agreement (subcontract)
 - c. Original to job book.

Procedure – Numbered Steps

- 2. Completion of Trade Work:** Trade Contractor inspects their work to confirm that all items are complete
 - a. Checks off and initials complete items
 - b. Signs and dates form
 - c. Attaches a copy to final invoice for project
 - d. Delivers checklist and invoice to accounting department

Procedure – Numbered Steps

3. Approving Payment:

- a. Accounting sends Project Manager the checklist and the invoice to be approved from accounting.
- b. Project Manager takes checklist to jobsite to inspect the work

Procedure – Sub Procedures

3. Approving Payment (Continued):

- c. Project Manager reviews each item on the checklist and determines if the work is complete
 - i. For complete items, PM checks the “Yes” box
 - ii. For incomplete or defective items, PM checks the “No” box and writes an amount for retainage on line for that item.
- d. Project Manager totals up all retained amounts and returns checklist to accounting with either “complete” or “incomplete” line initialed, and retainage totaled.
- e. Project Manager returns completed checklist to accounting for processing (Accounting has its own procedure)

Introduction Meeting

- Required Attendance
 - Trades
 - Employees
 - Management
- Fixed Start Date for Program
- Ask for Feedback
- Incorporate Good Recommendations
- Feed Them

Evaluation

- Troubleshooting
- Fine Tune
 - Documents
 - Procedures
- What can go wrong?



Get Buy In

- Trade Contractors
 - Include in Development Process
 - Introduction Meeting
 - Explain How They Will Do Better
 - They Will Help Implement System
 - Correctly Presented – It Will Sell

Get Buy In

- Field Staff
 - Key to Success
 - Involve in Planning Process
 - Include in Introduction Meeting
 - Explain How System Will Help Them
- New Hires Will Know it as the Standard

Get Buy In

- Office Staff
 - They Pay the Bills
 - Involve in Planning Process
 - Show Them How Their Jobs Will Be Easier



Critics

- Offer Opportunity to Get On Board
- Some May Need to Leave
 - Employees
 - Trade Contractors
- Don't Let Dissent Undermine Efforts
- Constructive Criticism is Good

Success Stories

- Selling Change to Staff
- Complete Implementation of New System



Trade Contractor Management

- General Agreement
- Project Contract
- Control Documents
- Procedures
 - Business Operations
 - Field Operations

Questions & Discussion



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