

What are the true costs of waste, errors and customer complaints?

Housekeeping

Welcome

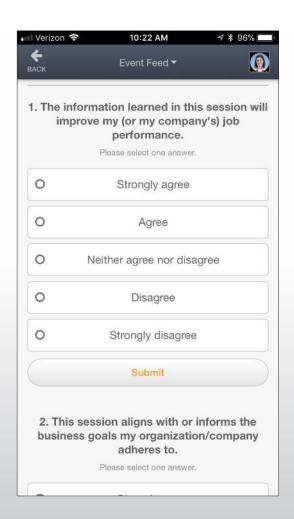
- Safety
- Bathrooms
- Cell phones



Session Survey Instructions

At the end of each session, you will be given 5 minutes to complete the session survey.

- 1. Open the "HEF2017" app
- 2. Navigate to "Agenda" and select the session
- 3. Scroll down to "Session Feedback"
- 4. For each question, select answer and hit "Submit"
- 5. Show completed survey to BetterBuiltNW rep to earn points
- 6. Prizes awarded Friday to the top point earners
 - See "Challenge" section in the app for activities
- 7. Assistance available at the BetterBuiltNW table





What percentage of most operating budgets would you guess are waste?



Agenda

- Common language
- What is the cost of poor quality?
- Establishing a culture of quality
- Closing and Evaluations

Objectives

- Establish a definition of quality
- Calculate the cost of waste, defects, etc.
- List the benefits of a quality culture
- Document potential next steps

Common Language

LOYALTY

QUALITY

PURPOSE

VALUE

PREVENTION

WASTE

ZERO DEFECTS

ZTNAW

FEAR

QUALITY

Doing work to agreed upon requirements

Either you did or you did not

WASTE

Anything that consumes resources and does not add value to the end product



WASTE

Cost of doing business

Areas of Waste

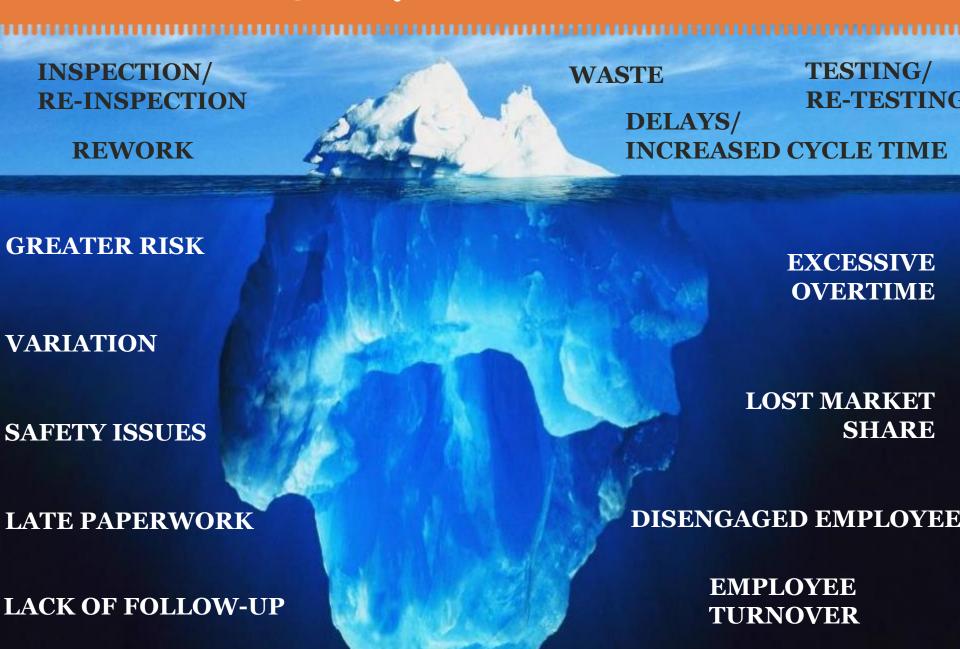
- 1. Rework
- 2. Waiting
- 3. Transportation
- 4. Variation
- 5. Inventory



Cost of Poor Quality



Cost of Poor Quality



What is the cost of a failed inspection?



What does it cost to process paperwork?

Rater Design Review Checklist ENERGY STAR Certified Homes, Version 3 / 3.1	(Rev.	08)	(Rev. 08)	(Rev. 08) Blust Rater NA **	(Rev. 08)	(Rev. 08)	(Rev. 08)	s ¹ (Rev. 08)
Home Address: City State: Pen	mit Date:		office Vorfice N/A.			Designer Verified		, , , , ,
1. Partnership Status	Must	Mater*			uration (i.e., elevation, configurations (i.e.,	-	chist. One mesioned.	
1.1 Rater has verified that builder is an ENERGY STAR partner using energyatar cov/partner/covtor	Correct	Verified	-		for more information. 2	□N/A	shall be retained	equirements.
1.2 Rater has verified that HVAC contractor holds credential required to complete the HVAC Commissioning Checklist.					nergy Rater. later.	-	pon request.	se requirements se requirements,
unless all equipment to be installed in home to be certified is an exempted type. In which case check "NA" 2 - NA			36 TOTOWS:	less Noted in Footnote		-		
HVAC Contractor company Name:			ficeling insulation in extends to the full		Date:	COP .		ents, the home
2. High Performance Fenestration	-		nt bays)."		iled HVAC contractor		Date	
2.1 Specified fenestration meets or exceeds 2009 IECC requirements *			Climate Zones 4-87			-	DA	Marian Indiana 2
3. High-Performance Insulation			III III III III			kittuh -	to code:	thever is less. 2
3.1 Specified ceiling, wall, floor, and slab insulation levels comply with one of the following options.					ific or part of a group: 2	kBtuh -	ractor-verted	sathylene sheeting,
3.1.1 Meets or exceeds 2009 IECC levels * 3 ° OR: 3.1.2 Achieves < 133%, or the total UA resulting from the U taxters in 2009 IECC Table 402.1.8, per guidance in		-				III NIA		following: 5.4.5
Footnote 4d, AND specified from initiation does not exceed the totology. ^{6,6}	-	-			Designer Verified		design #.	IDROWING TO
3 ACHS0 in CZs 1, 2 2.5 ACH50 in CZs 3, 4 2 ACH50 in CZs 5, 6, 7 1,5 ACH50 in CZ 8			horizontal surface		Verified	N/A	Contractor	
4. Review of HVAC Design Report *						*	Verified N/A	
4.1 HVAC Design Report collected for records, with no items left blank								
4.2 HWAC Design Report reviewed by Rater for the following parameters (HWAC Design Report Item # Indicated in parent)	hesis):				minutes -		. 0	
4.2.1 Cooling season and heating season outdoor design temperatures used in loads (3.3) are within the limits defined at <u>generostate outmoor sources of the State and County</u> where the name will be built, or the designant has provided an allowance from EPA to use attendibute values. ²						mmended: 90 = 130%	- 0	slab or crawlspace
4.3.2 Number of occupants used in loads (3.4) is within + 2 of the home to be certified ⁶					y room) -	lowed: 90 = 160%	- 0	e cloth. Drain tile
4.2.5 Conditioned floor area used in loads (5.5) is between zero and 300 sq. ft. larger than the home to be certified					notion is not	- 100%, plus 15 kBbsh	- 0	channel provided
4.2.4 Window area used in loads (3.6) is between zero and 60 sq. ft. larger than the home to be certified			fijolala exempled). ⁴⁶		notion is not			
4.2.5 Predominant window SHGC used in loads (3.7) is within 0.1 of predominant value in the home to be certified **					perate	□ N/A	. 0	galaria, or
4.25 sensitio, latent, 8 total neat gain are occurrented (5.10 - 5.12) for the gnentation of the nome to be certified (1								panetrations.
4.2.7 The variation in total heat gain across orientations (3.13) is < 6 kBfuh **							. 0	605. ^{9,10}
4.2.8 Cooling sizing % (4.13) is within the cooling sizing limit (4.15) selected by the HVAC designer				ors and meets one of	s will reduce	-	- 10	
Rate: Name Date of Review				1,0			- 10	
					□ N/A		. 0	single-style with
Raise Signature. Raise Company Name.					rit .	00 = 200%	. 0	provided that
					es (e.g.	□ N/A	. 0	esemptions. 3, 13, 14
			erial)		erperAHJ ** -	CFM -	0 0	from the edge of
						-		
					. · · ·	-	g 🗆 -	
					- P	Design Airflow (CFM)	D .	composed of tile or
							1 1	prade walls, except
								d that drains to a
					NW -			system.
							0 :	prevent all moisture
				militals:				sence of the home. equirements for any
				nitials: (Initials:	Bun M. II		0 0	at required if either; at, or engineer; OR,
						Space O cf 4	0 0	ny season).
Required for homes committed ** starting 07/01/2016 Revised 00/16/2016	p	100 1 of 9	Page 8 of 9	Page 4 of 9	Page 1 of 4	Page 2 of 4	Page 1 of 2	Page 1 of 2

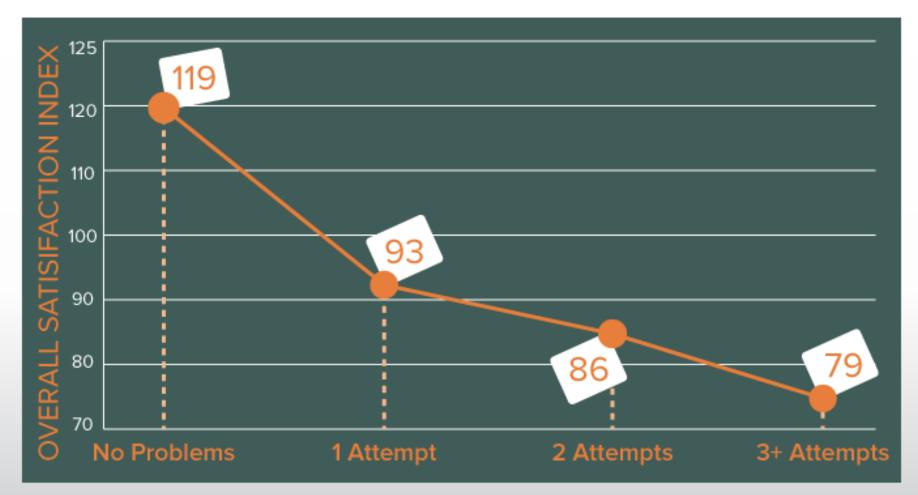
What is the cost of a callback?



The saddest thing in life is wasted talent.



Overall Satisfaction Declines Dramatically When Problems Require Repeated Attempts to Fix



Source: 2002 J.D. Power and Associates New Home Builder Customer Satisfaction Study



What is the true cost of poor quality?

The level of quality in any company is its acceptance of non-conformance to its own standards of work.

Activity: Calculate the Cost of Poor Quality

The Cost of Poor Quality



Individual Incidents				
Problem or Issues Associated with the Problem or Cost of the				
Defect	Defect		Issue	
	Rework	\$	75.00	
Gasket seal	Extra Material	\$	20.00	
	Lost Production	\$	150.00	
along the attic hatch	Phone Calls (3)	\$	15.00	
	Transportation	\$	4.00	
	Reschedule	\$	5.00	
		\$	269.00	

Lost Revenue Per Year					
Number of Homes/Units	Annual Activity Rate	Total Cost Per Year of Problem			
Total number of homes/units within the company per year	Percentage of homes/units with this problem per year	Total estimated cost for the problem or defect per year			
1000	10%	\$ 26,900.00			





List Cost Areas of Doing Business

The Cost of Doing Business



Costs are based on a 5 day-8 hour work schedule (≈260 work days per year)

Labor Cost	Cost	per Year	С	ost per Day	ost per Hour	ost per Iinute
Labor – Management	\$	-	\$	-	\$ -	\$ -
Labor – Office	\$	-	\$	-	\$ -	\$ -
Labor – Sales	\$	-	\$	_	\$ _	\$ =
Labor – Crew leader/Super	\$	-	\$	-	\$ _	\$ -
Labor – Crew member	\$	-	\$	-	\$ -	\$ -
Labor – Crew member	\$	-	\$	-	\$ -	\$ -
Payroll taxes (Avg 14%)	\$	-	\$	-	\$ -	\$ -
Total Labor	\$	-	\$	-	\$ -	\$ -

Office Staff Labor (per hour)	
\$	-
Field Crew Labor (per hour)	
\$ Field Crew Labor (per hour)	-

Fixed/Variable Cost	Cost	per Year	ost per Day		st per Iour	st per nute
Office Rent or Mortgage	\$	-	\$ -	\$	-	\$ -
Truck Maintenance	\$	-	\$ -	\$	-	\$ -
Truck Insurance	\$	-	\$ -	\$	-	\$ -
Gas	\$	-	\$ -	\$	-	\$ -
Tools and Equipment	\$	-	\$ -	\$	-	\$ -
Tool Maintenance	\$	-	\$ -	\$	-	\$ -
Office Supplies/Software	\$	-	\$ -	\$	-	\$ -
Computer Repairs	\$	-	\$ -	\$	-	\$ -
Legal Fees	\$	-	\$ -	\$	-	\$ -
Accounting	\$	-	\$ _	\$	-	\$ -
Licensing, Bond and Certificates	\$	-	\$ _	\$	_	\$ _
Health Insurance	\$	-	\$ _	\$	_	\$ _
Workers Comp Insurance	¢		\$ _	¢	_	\$ _







LET'S COMPLETE AN EXAMPLE

Individual Incidents				
Problem or Defect	Issues Associated with the Problem or Defect	Cost of the Issue		
		\$ -		
		\$ -		
		-		
		\$ -		
		\$ -		
		\$ -		
		-		
		\$ -		
		\$ -		
		\$ -		
		\$ -		
		\$ -		
		Ψ		

Lost Revenue Per Year					
Number of Homes/Units	Annual Activity Rate	Total Cost Per Year of Problem			
0	0%	#REF!			

<u>Instructions</u>

The first column is for the one problem or defect that occurs within the company.

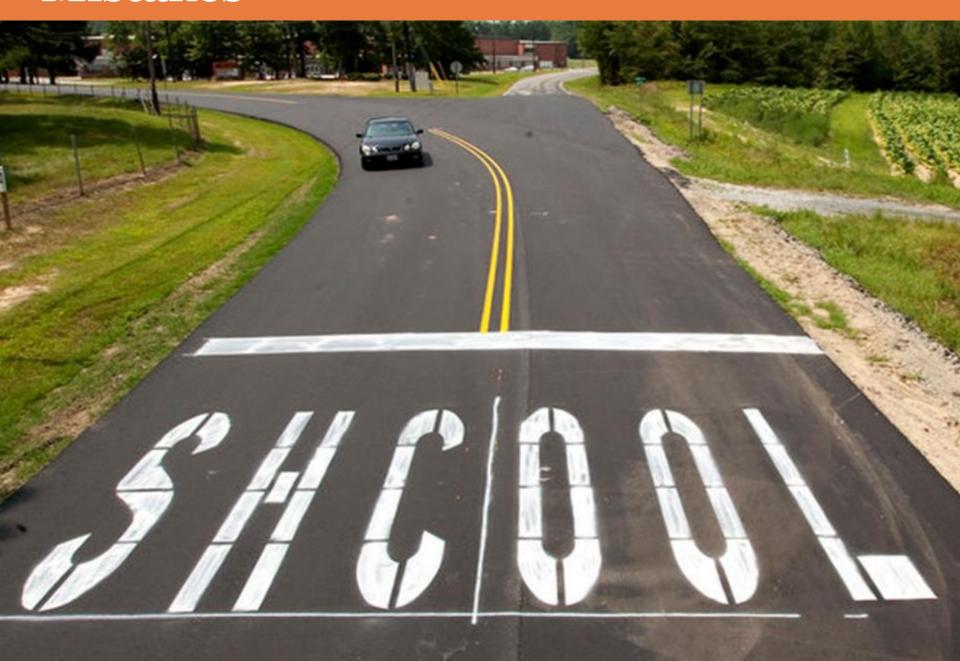
The second column is for the issues associated with the one problem or defect that occured.

The third column if for the costs associated with each of the issues.

How do most inefficiencies and defects happen?

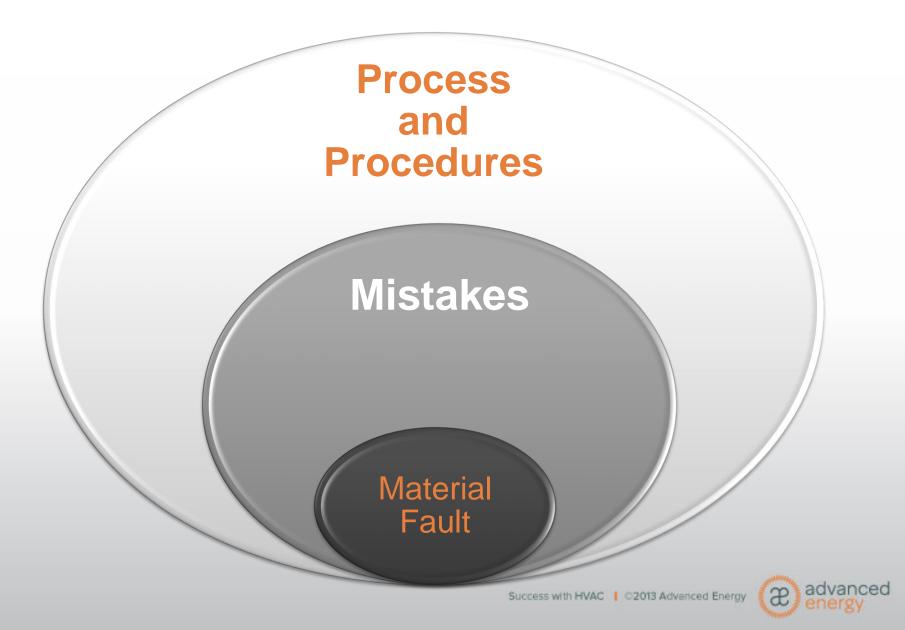


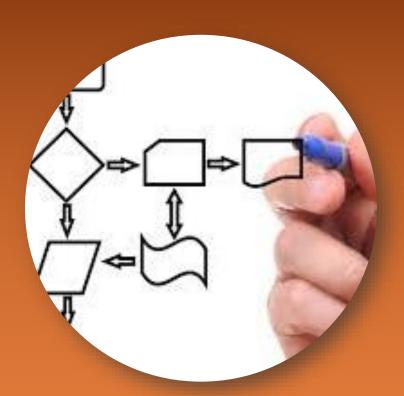
Mistakes





Distribution of Defect Cause





PROCESS



Fails More Than

PEOPLE





Accountability and Responsibility

• A blame free workplace **never** dismisses assignment of accountability and responsibility.

The Five Whys

Ask "Why?" 5 times to get to the root cause of a problem, defect or inefficiency There was no weather stripping WHY? on the attic access hatch There was no weather stripping on the truck It wasn't on the work order WHY? The sales person didn't document it during the assessment There is no standardized assessment form

PROCESS

Building Quality Into The Process

Standards Training Coaching **Mistake Proofing Quality Control Quality Assurance Improvement**

Process

"It is better to have common people managing a superior process than to have superior people managing a bad process."

- W. Edwards Deming, Quality Pioneer

Path to Sustainable Profit

PEOPLE PERFORMANCE PROFIT







Internal & Extermal rective & Efficient ROI

Respect and honor each:

- Employees
- Customers
- Funders
- Trade allies
- Suppliers

Execution:

- S.A.F.E standards
- Effective
- Efficient

Result:

- Cost of conformance
- Cost of poor quality and inefficiency

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No One Has Ever Made Less Money Doing Work Right The First Time!



Where do we go from here?

• What do you feel is the greatest benefit associated with quality management?

• What will you apply in the next 48 hours after you leave this room?

ACTION PLAN



Document and track defects, extra trips, waste, etc.



Calculate the cost of one defect or issue that bugs you



Work as a team toward a solution

Advanced Energy Online Resources

http://insights.advancedenergy.org/ets/pages/?p=success with quality management



Advanced Energy Training Portal

Advanced Energy - Success With Quality Management

Literature	Quality Tools
Cost of Poor Quality	Cost of Doing Business
Cracking the Quality Code	Cost of Poor Quality
Creating a Blame-Free Company	Quality Improvement
Quality Common Language	Event Log
Quality Management References	

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