ENERGY RATING FOR "HIGH-VOLUME" BUILDERS

RESNET 2017 CONFERENCE

SCOTTSDALE, AZ

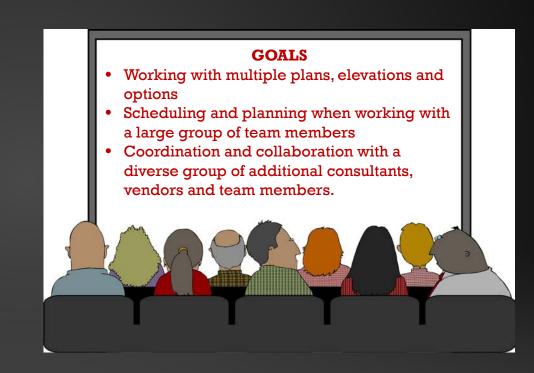
SESSION 4 - TUESDAY FEBRUARY 28, 2017

8:30 - 10:00 A.M.



SESSION OUTLINE AND GOALS

- Opening
- Session One
 - Dave Bell
 - Vice President of Building Science
 - Top Build Home Services
- Session Two
 - Tommy Spain
 - QAD Energy Inspection Services
 - SkyeTec
- Session Three
 - Matthew Cooper
 - Senior Vice President
 - PEG
- Session Four Roundtable Discussion



SESSION ONE DAVE BELL, VICE PRESIDENT OF BUILDING SCIENCE TOPBUILD HOME SERVICES

- How do you address the number of plans and options off of those plans?
- Dedicated plan review resources
- Start with initial data collection base plan and all options

PLAN REVIEW INPUT FORM (I.E. PRIF) SECTION #1 - GENERAL INFORMATION (COMPLETED EXAMPLE)

PRIF # 0000, NAME: N/A	DATE:
GENERAL	
SUBDIVISION NAME	SYCAMORE FALLS
PR REGION	BALTIMORE
PR COMMUNITY	DUAL FUEL
BUILDER NAME	ABC BUILDER
CONTACT	JOHN DOE
ADDRESS	1234 STREET NAME
CITY, ST ZIP	COLUMBIA, MD 12345
COUNTY	HIGHLANDS
PHONE	123-456-7890
E-MAIL ADDRESS	JOHN.DOE@BUILDER.COM
ADDITIONAL E-MAIL ADDRESS	N/A
IECC/CODE	2012 IECC
PROGRAM	ENVIRONMENTS FOR LIVING + ENERGY STAR V3.1
PROGRAM LEVEL	PLATINUM
ACTUAL CITY, ST, ZIP OF CONSTRUCTION	NEW HAVEN, MD 12345
CLIMATE ZONE	5A
ELECTRIC UTILITY COMPANY	ELECTRIC UTILITY / DATE
NATURAL GAS UTILITY COMPANY	NATURAL GAS UTILITY / DATE
PROPANE UTILITY COMPANY	N/A
UTILITY REBATES	N/A
HOUSE TYPE	SINGLE FAMILY
EFFECTIVE DATE FOR STARTS	12/01/2015

PLAN REVIEW INPUT FORM (I.E. PRIF) SECTION #2 – THERMAL ENVELOPE (COMPLETED EXAMPLE)

THERMAL ENVELOPE	VELOPE (COMPLETED EXAMPL
BASEMENT WALLS	R-11 - 4' DRAPED
CRAWLSPACE WALLS	R-11 - 2' DRAPED
SLAB	UNINSULATED
FRAMED FLOORS - OVER CRAWL	UNINSULATED
FRAMED FLOORS - OVER AMBIENT/CANTILEVERS	R30
FRAMED FLOORS - OVER GARAGE	R30
RIM/BAND JOISTS	R15 2X4
EXTERIOR WALLS - 1ST FLOOR	R15 2X4
EXTERIOR WALLS - 2ND FLOOR	R15 2X4
EXTERIOR WALLS-CONTINUOUS SHEATHING	R-0.5 OSB 7/16"
GABLE WALLS	R15 2X4
GARAGE WALL	R15 2X4
ATTIC KNEEWALLS (HOTWALLS)	R15 2X4
COMMON WALLS	N/A
WALL FRAMING	2X4 16" OC STD
SH/DH/XO/FX WINDOW FRAME TYPE	VINYL
SH/DH/XO/FX WINDOW GLASS TYPE	DOUBLE, LOW E
SH/DH/XO/FX WINDOW U-FACTOR	0.3
SH/DH/XO/FX WINDOW SHGC	0.21
GLASS DOOR FRAME TYPE	VINYL
GLASS DOOR GLASS TYPE	DOUBLE, LOW E
GLASS DOOR U-FACTOR	0.3
GLASS DOOR SHGC	0.21
DOOR TYPE - FRONT, R-VALUE OF OPAQUE AREA	R4.4
DOOR TYPE - OTHER, R-VALUE OF OPAQUE AREA	N/A
DOOR TYPE - GARAGE, R-VALUE OF OPAQUE AREA	R4.4
DOOR TYPE - ATTIC, R-VALUE OF OPAQUE AREA	N/A
CEILING FLAT	R-40
CEILING VAULTED	R-38
SEALED ATTIC	NO
RADIANT BARRIER	NO

PLAN REVIEW INPUT FORM (I.E. PRIF) SECTION #3 – MECHANICAL SYSTEMS (COMPLETED EXAMPLE)

MECHANICAL SYSTEMS	
1ST HEATING SYSTEM	93% AFUE
2ND HEATING SYSTEM	93% AFUE
3RD HEATING SYSTEM	N/A
4TH HEATING SYSTEM	N/A
1ST COOLING SYSTEM	13 SEER
2ND COOLING SYSTEM	13 SEER
3RD COOLING SYSTEM	N/A
4TH COOLING SYSTEM	N/A
PROGRAMMABLE THERMOSTATS	YES
WATER HEATER TYPE	CONVENTIONAL
WATER HEATER FUEL TYPE	GAS
WATER HEATER SIZE, EFFICIENCY & LOCATION	50 GAL 0.65 EF - COND BASEMENT
WATER HEATER MODEL NAME / NUMBER	AO SMITH GPTV-50
TANKLESS WATER HEATER	NO
TANKLESS WATER HEATER EFFICIENCY & LOCATION	N/A
TANKLESS WATER HEATER MODEL NAME / NUMBER	N/A
SOLAR WATER HEATING	NO
DUCTS SUPPLY	R-6
DUCTS RETURN	R-6
DUCT LOCATION	100% CONDITIONED AREA (FLOOR SYSTEM)
DUCT LKG TO OUT %	0.03%
DUCT LKG TOTAL %	0.04%
INFILTRATION (HOUSE LKG) ACH	3.00 ACH50
INFILTRATION (HOUSE LKG) % OF SHELL	25% OE 1.37 ELA/100
FRESH AIR VENTILATION TYPE	EXHAUST
VENTILATION FLOW	N/A
FRESH AIR VENTILATION FAN WATTS	23.3

PLAN REVIEW INPUT FORM (I.E. PRIF)

SECTION #4 – LIGHTING, APPLIANCES & WATER FIXTURES
SECTION #5 – RENEWABLES
(COMPLETED EXAMPLE)

LIGHTING, APPLIANCES & WATER FIXTUR	ES
INTERIOR % OF CFL'S	100
INTERIOR % OF PIN-BASED	0
EXTERIOR FIXTURES (%)	0
GARAGE FIXTURES (%)	0
DISHWASHER	0.82 EF , WDF520PADM
REFRIGERATOR	691 KWH/YR (DEFAULT)
OVEN/RANGE	ELECTRIC
CLOTHES DRYER	ELECTRIC
CLOTHES WASHER	N/A
LOW-FLOW SHOWER HEADS	N/A
LOW-FLOW FAUCETS	N/A
HIGH PERFORMANCE TOILETS	N/A
RENEWLABLE ENERGY	
PHOTOVOLTAICS	NO
PHOTOVOLTAICS SIZE(S)	N/A
PHOTOVOLTAICS PANEL	N/A
PHOTOVOLTAICS INVERTER	N/A
PHOTOVOLTAICS AZIMUTH ROTATION	N/A
PHOTOVOLTAICS TILT DEGREES	N/A

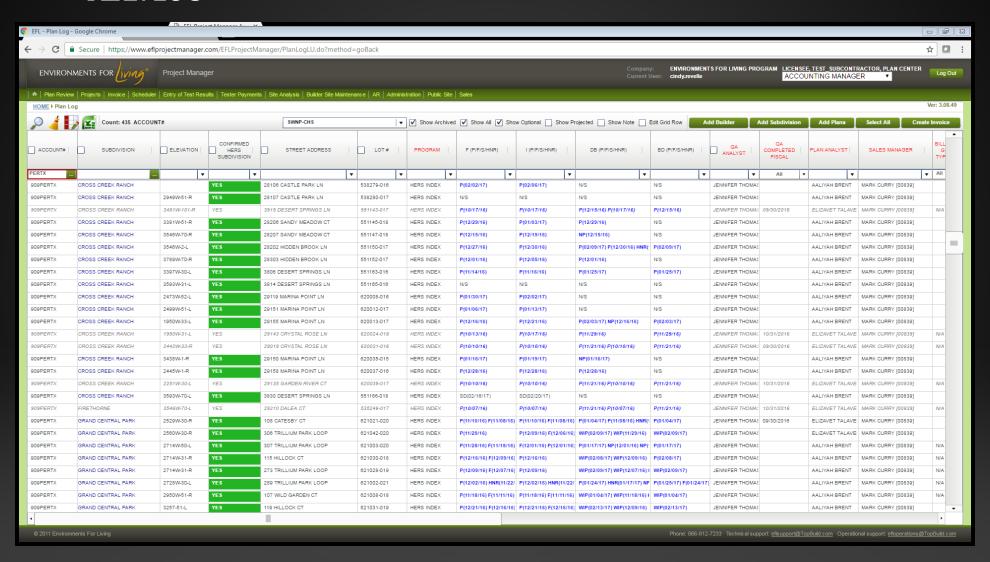
OPTIONS

- Collect all options data upfront
- Create either a Master Plan or build as needed
- Capture all options
- If possible have builder list options on P.O.

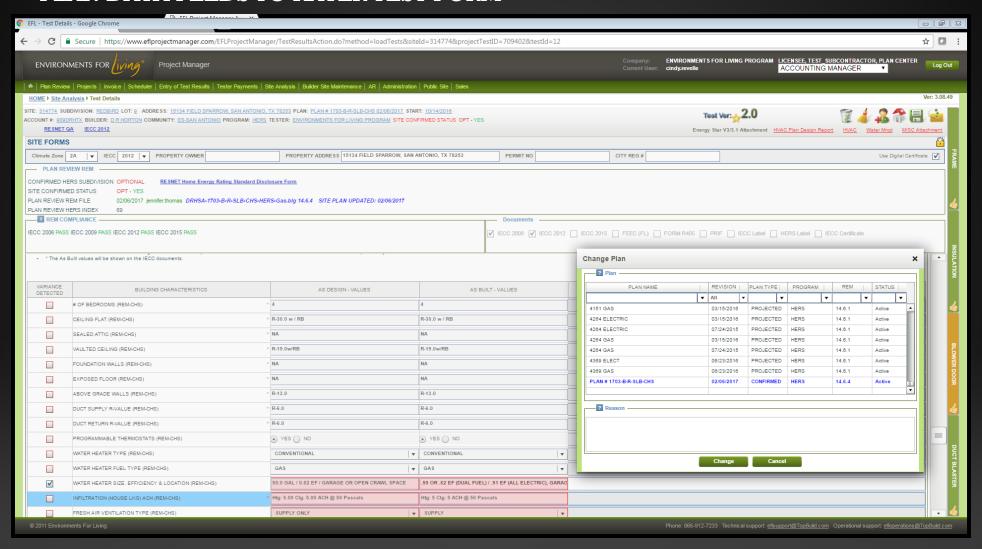
DATABASE

- Create database that is accessible by field (raters)
- Upload software files to be site specific
- Field personnel has access to plan and can now compare to field and make corrections if needed or contact office

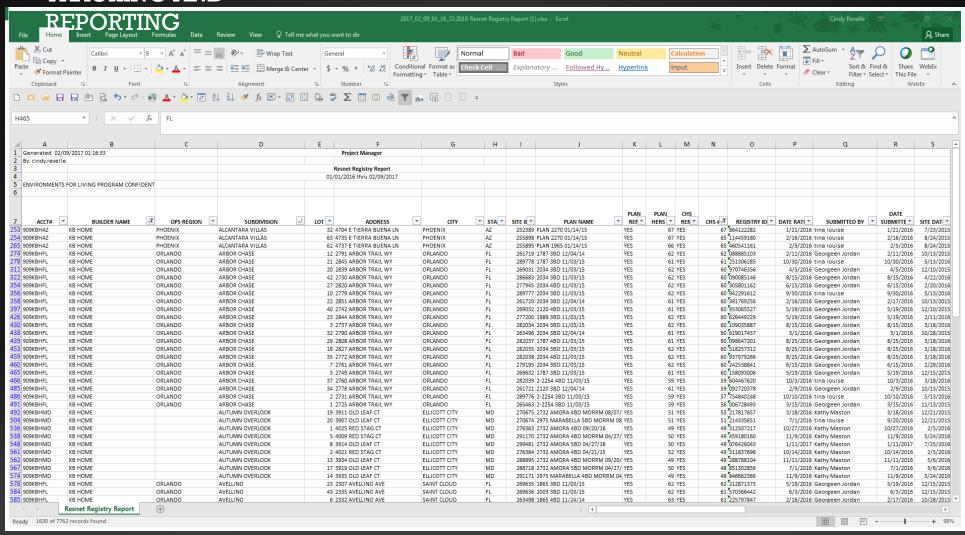
PLAN LOG



PLAN DATA FEEDS TO RATER TEST FORM



TRACKING AND



SESSION TWO RATER SCHEDULING 101: PRODUCTION BUILDERS TOMMY SPAIN RESNET QAD – ENERGY INSPECTION SERVICES SKYETEC



INTERNAL STRUCTURING

- Define team member roles (in-office and in-field)
- Create internal scheduling procedures
- Centralize scheduling & customer records
 - Record house history
 - Share information across teams



CUSTOMER & TRADE EDUCATION

- Educate your customer on program guidelines & requirements
- Review Rater process flow with the builder
- Obtain buy-in from management
- Organize in-person meeting with all pertinent trades
- Establish communication standard and future meetings to review house performance patterns



KNOWING YOUR CUSTOMER

- Understand builder footprint and align resources accordingly
- Learn builder scheduling and communication method(s)
- Know the Build Time (anticipating final inspection)
 - Communicating with customer to ensure house testing completion
- Plan considering Builder Fiscal Year
 - End of Year phenomenon
- Track builder volume distribution and utilize to forecast inspections
- Agree upon schedule notification time; cut off time
- Collect builder contact information and community assignment(s)



SCHEDULE NOTIFICATIONS

Promptly handle schedule notifications

Communicate receipt of schedule notifications

Confirm House Readiness Criteria is met Ensure all required house documentation is obtained prior to scheduling

Assign inspection to qualified rater and communicate any special builder requests Document and communicate passing results, dry run & inspection failure information (when applicable)



SESSION THREE MATTHEW COOPER SENIOR VICE PRESIDENT PEG

Successful Coordination between Raters and other High-Volume Builders' Design Partners, Suppliers and Trades



WHO ARE KEY TEAM MEMBERS YOU MUST WORK WITH?

- Builders Design Team
- Builders Purchasing Team
- Architect
- Engineers
- Equipment Manufacturers
- Vendors / Trades
- Builders Construction Team
- Builders Sales team
- Code Officials



WHAT ARE THE KEYS TO WORKING WITH HIGH VOLUME BUILDERS?

Time

 Production builders depend on evenflow, designs that work and predictable outcomes.

Cost

 Raters can model cost effectiveness of the impact for so many variables in a house that other experts only look at in a vacuum.

Consistency

 Nothing frustrates production builders as quickly as failing guidance and re-inspections.

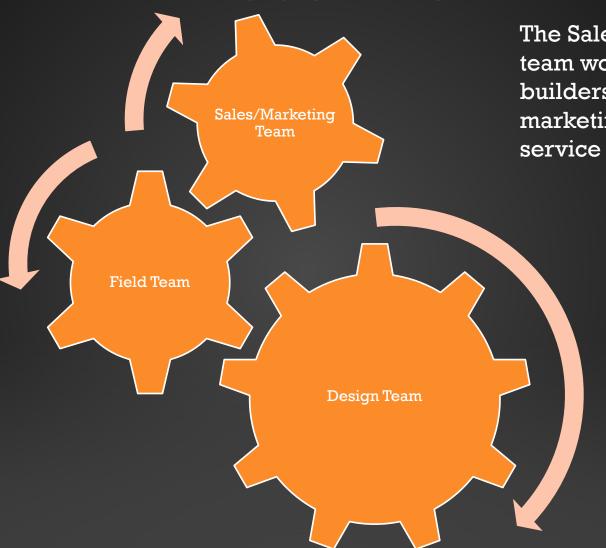
Confidence

Production builders operate like a fine watch. If they
can learn to count on you to be who pulls the whole
team together, you can count on their loyalty. (Decoupling becomes necessary)



DE-COUPLING

The Field team works
with Equipment
Manufacturers,
Vendors / Trades,
Builders Construction
Team,
Builders Sales team,
Builder Service &
Warranty team and
Code Officials



The Sales/Marketing team works with the builders sales & marketing team, service & warranty

The Design team
works with Architects,
Engineers, Builders
Design and
Procurement teams as
well as Equipment
Manufacturers and
some Vendors /
Trades

WHAT ARE THE BENEFITS?



- Driving the relationship from the Design & Procurement position allows for top-down support and sets the stage for Time and Cost maximized benefit.
- Involving design professionals, trades/vendors and the builder field staff ensures Consistency and Confidence which feeds back to Design and Procurement that things are going as expected and costs are predictable.
- Involving the front-end and back-end customer contacts of Sales and Service assures the builder of being able to quantify the results of the Raters guidance in sales and increased customer satisfaction.

WHAT ARE THE HAZARDS?

- Some Common Challenges that can impact working with high volume builders and with managing a de-coupled approach.
 - Disconnect between the Rater's Design and Field teams. If what you tell the client is going to be done in the field isn't being done in the field, you will fail.
 - Disconnect between the Builder's Design &
 Procurement and Field teams. If you and the
 Builder's Team decisions don't get conveyed to their
 Field staff, they will fail which means you will fail.
 - If in the overall process you or your staff get hung up on ideas the builder doesn't endorse or reject without merit ideas the Builder or their partners bring to the table; you will fail.



SESSION FOUR

Roundtable Discussion

END OF SESSION

On behalf of PEG, TopBuild and SkyeTec

We Thank You!