BEYOND THE HERS INDEX

Exploring Data and Marketing Opportunities Presented by: Jenna Grygier, RESNET QAD & Trainer, BPI Analyst, and LEED for Homes Green Rater And Trevor Donnelly, RESNET QADD and BPI Analyst





BUILDING SCIENCE COMICS

Brought to you by our EarthCraft intern, Rachel Bergman



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- 2) Data Extraction Results
- 3) Behind the Scenes: REM/Rate Export Types
- 4) Data Extraction Process
- 5) Question & Answer



BEYOND THE HERS INDEX

DATA EXTRACTION OVERVIEW



What are some questions we can answer using data?

- Average HERS Index / builder, development, program, etc.
- How are we doing compared to the current code?
- How are we doing compared to up and coming code?
- How much money are we saving customers on utility bills?
- What is the environmental impact of the homes?



WHO CAN BENEFIT?

- Researchers
- HERS Raters
- HERS Providers
- Home buyers
- Marketing
- Builders
- Developers
- Real estate agents
- Homeowners
- Administrators





BENEFITS OF DATA EXTRACTION

- Administrative efficiency and ease
- Performance analysis and tracking on many levels
 - project, program, builder, region, and more
- Endless opportunities for research
- Quickly analyze projects, trends, and quantify impact
- Project team feedback loops
- Marketing tools
- Education and awareness
- Online dashboards and portfolios
- Identify opportunities for improvement to meet future goals
- And more, the list goes on!

综 Southface

DISCLAIMER

Unless you have direct permission from the builder or other applicable party, data should be **anonymous** and not traceable back to builders, property owners, addresses, HERS Rater, Provider, etc. If you are uncertain of your limitations, please consult RESNET for guidance



BEYOND THE HERS INDEX

DATA EXTRACTION RESULTS



RESULTS

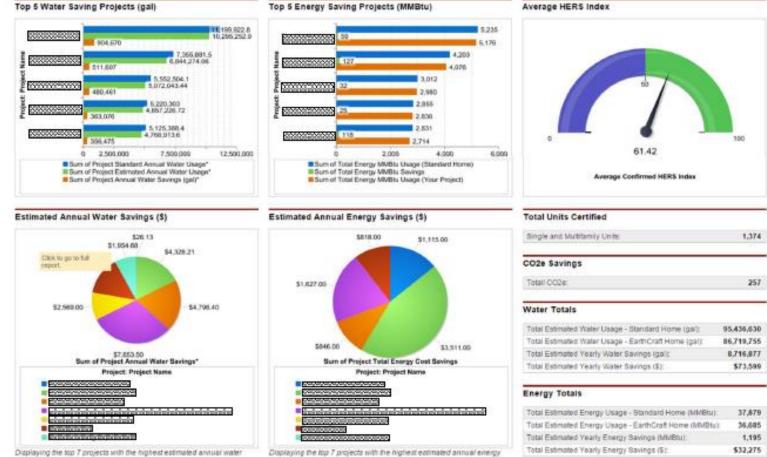
Southface built reports for communicating outcome measures to stakeholders participating in Southface administered programs. Users can view energy, water, and carbon savings for individual projects as well as their entire portfolio of projects.

We also created an online dashboard which tracks program success, available to the public









savings.

Displaying the top 7 projects with the highest estimated annual energy aavvings.

RESULTS A snapshot of our dashboard



MARKETING AND EDUCATION

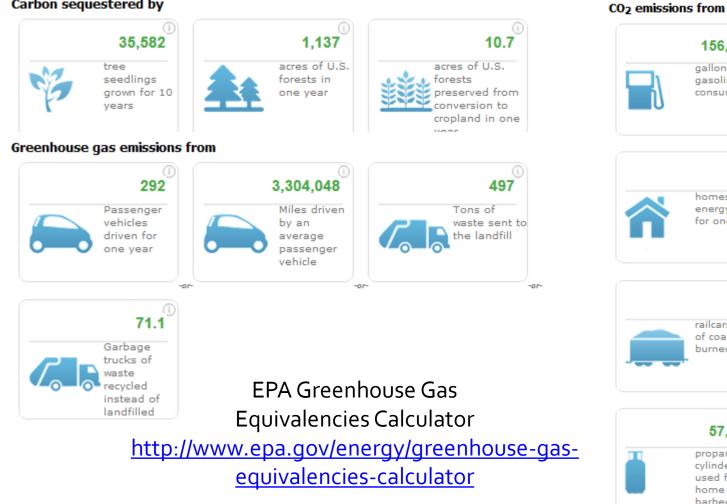
- Market enhanced performance
- Spread awareness through education
- Benefits sales transaction process
- Pride of ownership
- Transparency and trust
- Motivation to save and consume less
- Access environmental impact

ENERGY, WATER AND CARBON GUIDE My Home Energy Rating ¹ $\overleftrightarrow \overleftrightarrow \overleftrightarrow \overleftrightarrow \overleftrightarrow \overleftrightarrow \overleftrightarrow $ HERS Index: 59 Property address: 515 Example Lane, Any City, GA 30308				
	Comparison Standard New Home	and Savings Your Home	Your Savings 4,5	
Estimated Energy Usag	ge²		\$966	
Electricity (kWh)	34,752	25,838	26%	
Gas (Therms)	232	158	32%	
Estimated Water Usage	2 ³		\$120	
Gallons	148,372	128,145	10%	
Estimated Carbon diox	ide (savings in tor	nnes) ⁶	7	
Your savings will depend on your utility rates and use 2012 EarthCraft certified Verifier:				
Verifier: Chris Verifier – Verifying Services, Inc. Builder: Bob Builder, LLC QA Provider: Southface Energy Institute – www.southface.org7 Completion and Certification Date: 11/20/2014 Energy, Water, and Carbon Label Version 1.0				



MARKETING AND EDUCATION

Carbon sequestered by



156,149 1,490,548 18.4 gallons of Pounds of tanker coal burned gasoline trucks' worth of gasoline consumed 00 -or -01 127 0.382 191 Wind homes' homes' turbines electricity energy use for one year installed use for one vear -00 -0/ 7.4 36,299 3,227 railcars worth Incandescent barrels of oil of coal lamps switched consumed to CFLs burned 57,821 0.0004 coal-fired propane cylinders power plants used for in one year home barbeques

-00

-00

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BEYOND THE HERS INDEX

BEHIND THE SCENES: REM/RATE EXPORT TYPES



BEHIND THE SCENES: REM/RATE EXPORT TYPES

REM/Rate creates an "AS-IS," "Reference," and "Design" home for every comparison you want to do

- Example 1: to compare savings against 2009 IECC Code, REM/Rate generates a 2009 IECC Design home and 2009 IECC Code Reference home. The 2009 IECC Design home is set to 2009 IECC assumptions
- Example 2: To compare savings against the HERS Reference home, you would compare the HERS Design home against the HERS Reference home. The HERS Design home is set according to RESNET Standards



BEHIND THE SCENES: REM/RATE EXPORT TYPES

Design homes...

- Have the same geometry, orientation, shape, size, fuel type as the "AS IS"
- Are based off of standardized and code agreed assumptions
- Ensure that the assumptions from the code you are using are set
- Avoid "gaming" savings-setpoints, interior shading, infiltration, etc.



Reference Home Subtleties



Comparing various reports for a single building file will sometimes show what look like inconsistencies at first glance. For example, why would the heating consumption change when you run the Fuel Summary report in 1-building mode versus the same report comparing the Design Home to the IECC Reference Home?

Here's the reason: Reference Homes complicate the picture.

For every building file you create, REM considers 3 basic variations on what you entered:

- 1. "As-Is" Home, which is never really labeled as such, but which is EXACTLY the home as you entered it into REM. This is what you see in the Analysis Pane tab for Energy results, and in any report which does not involve a Reference Home.
- 2. "Design" Home, which is always what you entered but with selected changes that are required to make a fair comparison to the Reference Home (see next). It is always the home that gets compared to the Reference Home. A common change is thermostat setpoints, which must be matched in the Design and Reference Homes.
- 3. "Reference" Home, which is the geometric twin of the house you entered, but with specifications that barely meet the Compliance or Certification program for which you have chosen to run a report, e.g. the 2009 IECC Cost Compliance report.

The distinction between the "As-Is" and the "Design" homes is more subtle than most people care about. This help page is for those who do look closely at the REM reports and notice the discrepancies. Rest assured, you can trust the REM calculations -- but explaining them can sometimes require patience!

SUMMARY OF EXPORT TYPES

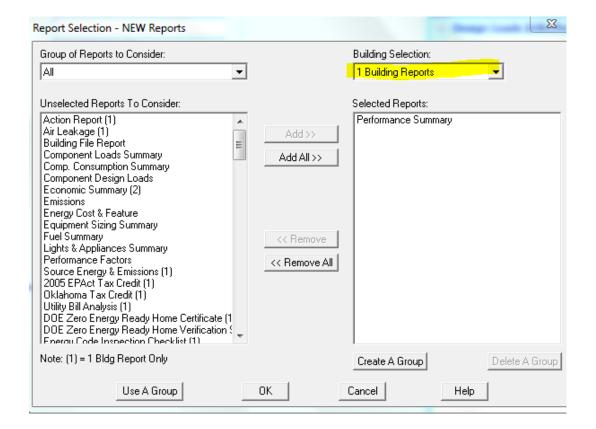
As explained by the REM/Rate Help menu



REM/RATE REPORT OPTIONS

"AS-IS" aka "Export Building"

- To run reports for the AS-IS building, the highlighted Building Selection, "1 Building Reports" (default) will need to be selected
- HERS Index is produced from the "AS-IS" export building





Ana	alysis		д×
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	<u></u> 2↓ ≯ 🖨		
Ξ	Design Loads (kBtu/hr))	
	Heating	44.7	
	Cooling	27.9	
Ξ	Annual Loads (MMBtu/	уг)	
	Heating	30.7	
	Cooling	30.6	
	Water Heating	14.5	
	Annual Consumption (M	IMBtu/yr)	
	Heating	14.1	
	Cooling	8.4	
	Water Heating	14.8	
	Lights and Appliances	31.8	
	Photovoltaics	-0.0	
	Total	69.2	
	Annual Energy Costs (\$	5/уг)	
	Heating	198	
	Cooling	176	
	Water Heating	248	
	Lights and Appliances	536	
	Photovoltaics	-0	
	Service Charge	72	
	Total	1230	



Performance Report

Electricity

Property 123 HERS Path Rd Ratertown, GA 30308		Organization Southface 123-456-7891 Wiley Coyote	01 /	RS Ifirmed 12/2016 eri D:	
Weather:Augusta, GA Test File 1_HERS 74.blg	g	Builder Contruction Time LLC			
	Annual Lo	bad			MWBtu/yr
	Heating				30.7
	Cooling				30.6
	Water Heatin	g			14.5
	Annual Co	onsumption			MMBtu/yr
	Heating				14.1
	Cooling				8.4
	Water Heatin	ię.			14.8
	Lights & Appl				31.8
	Photovol taics	i			-0.0
	Total				69.2
	Annual Er	nergy Cost			\$/yr
	Heating				198
	Cooling				176
	Water Heatin	ie,			248
	Lights & Appl	iances			536
	Photovoltaics	5			-0
	Service Charg	ges			72
	Total				1230
					1.0. (1
	Design Lo				kBtu/hr
	Space Heatin	-			44.7
1	Space Cooling	Ę			27.9
	Utility Ra	tes			

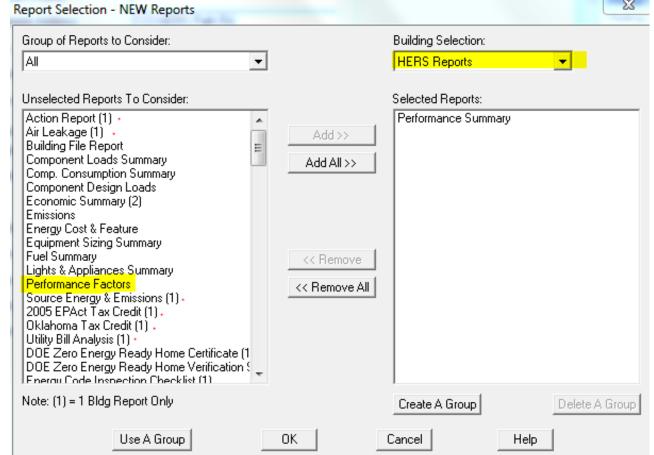
Feel the power****



REM/RATE REPORT OPTIONS

"Design Home" Reports

- To run a comparison report, the Building Selection will need to be changed
- Only reports on the left hand side *without* a (1) next to the name, will work for this feature



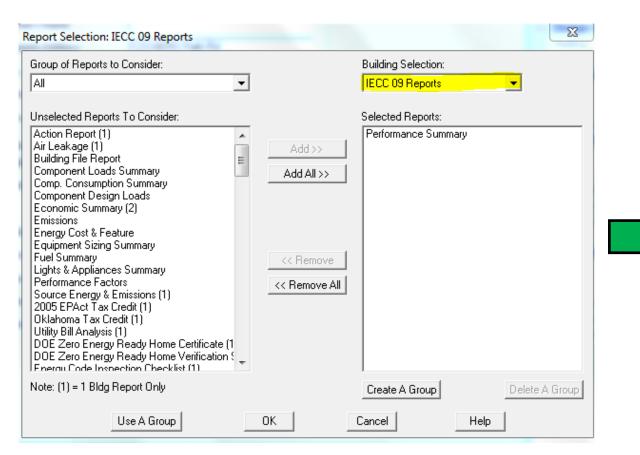


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	Design Loads (kBtu/hr)		
	Heating	44.7		
	Cooling	27.9		
	Annual Loads (MMBtu/	(уг)		
	Heating	30.7		
	Cooling	30.6		
	Water Heating	14.5		
	Annual Consumption (M	MBtu/yr)		
	Heating	14.1		
	Cooling	8.4		
	Water Heating	14.8		
	Lights and Appliances	31.8		
	Photovoltaics	-0.0		
	Total	69.2		
	Annual Energy Costs (\$/уг)		
	Heating	198		
	Cooling	176		
	Water Heating	248		
	Lights and Appliances	536		
	Photovoltaics	-0		
	Service Charge	72		
	Total	1230		

Performance Report

Property 123 HERS Path Rd Ratertown, GA 30308 Weather:Augusta, GA Test File 1_HERS 74.blg	Organization Southface 123-456-7891 Wiley Coyote Builder Contruction Time LLC		HERS Confirmed 01/12/2016 Rateri D:		
Annual Load(MMBtu	ı/yr)	HERS	Test File 1_HERS 74.blg	Savings	%Saved
Heating		41.0	32.6	8.4	20.5%
Cooling		39.1	30.6	8.5	21.9%
Water Heating		16.3	14.5	1.8	11.3%
Annual Consumption	n(MMBtu/yr)				
Heating		23.0	14.9	8.2	35.5%
Cooling		14.3	8.4	5.8	41.0%
Water Heating		16.7	14.8	1.9	11.36
Lights & Appliances		32.9	31.8	1.1	3.2%
Photovoltaics		-0.0	-0.0		
Total		86.9	69.9	17.0	19.5%
Annual Energy Cost	(\$/yr)				
Heating		319	208	110	34.66
Cooling		307	175	132	43.0%
Water Heating		282	248	34	12.0%
Lights & Appliances		560	536	24	4.3%
Photovoltaics		-0	-0		
Service Charges		72	72		
Total		1539	1239	300	19.5%
Design Loads (kBtu/	hr)				
Space Heating		42.2	45.9	-3.7	-8.7%
Space Cooling		33.9	31.4	2.5	7.3%
Utility Rates					
	Feel the power****				





Property Organization HERS 123 HERS Path Rd Southface Confirmed Ratertown, GA 30308 123-456-7891 01/12/2016 Wiley Coyote Rater I D: Weather: Augusta, GA Builder Test File 1_HERS 74.blg Contruction Time LLC Annual Load(MMBtu/yr) Test File 1_HERS 74.blg Savings 2009 IECC %Saved Heating 49.2 44.5 4.7 9.6% Cooling 48.6 40.6 8.0 16.5% Water Heating 14.5 14.5 Annual Consumption(MMBtu/yr) Heating 20.7 19.3 1.4 6.6% Cooling 13.3 11.2 2.2 16.3% Water Heating 14.8 14.8 Lights & Appliances 31.8 31.8 Photovol taics -0.0 -0.0 Total 80.6 77.1 3.5 4,4% Annual Energy Cost (\$/yr) Heating 287 18 6.4% 269 Cooline 285 236 49 17, 1% Water Heating 250 249 0.4% 1 Lights & Appliances 540 538 2 0.4% **Photovoltaics** -0 -0 72 72 Service Charges 71 4.9% Total 1435 1364 Design Loads (kBtu/hr) Space Heating 53.8 45.9 7.9 14.8% Space Cooling 40.0 31.1 8.9 22.2% Utility Rates Feel the power**** Electricity

Performance Report



BEYOND THE HERS INDEX

Data Extraction Process



PROCESS OVERVIEW

- 1) Gather Resources
- 2) Create Database
- 3) Setup Export
- 4) Export to Database
- 5) Manipulate Database
- 6) Analyze data



GATHERING RESOURCES TO EXPORT DATA

- Data Extraction Process document (handout)
- REM Report aka "Export Bible"
- Patience and an investigative spirit
- Microsoft Access
- REM Software Google Group

http://groups.google.com/group/remsupport?pli=1





DATABASE SETUP

Access this feature through Tools or Reports

REM/Rate v 14.6.1 - Test File 1_HERS 74	l.blg		Competence -					
File Building View Extras Libraries	Rep	oorts Tools Help						
i 🗅 😅 🖬 🆦 🖱 🏢 📏 🕞 🔐	<mark>></mark>	Quick Analysis New View/Select Reports						
Building Name:		New Logos Graph		L				
Property Information: Owner's Name:					Too	bls Help	1	
Property Address: 123		New Home E	O SQL Server			Export Rotate Windows/Skylights		Export Database Setup
City: Rate	erl	User Defined Database: C:\\Bey	ond the HERS Index\Blank	database-Example.mdb		Change Building Input Mode	9	Export Export Code Compliance Building
State: GA		Rating Use F	New	Select		Sampling Batch		Export code compliance bananigin
Phone Number:		Print Permiss.		1		RESNET Building Registry		
Builder Information:	_	Printer Setup	Prope	erty Address:		Batch File Modification		E
Builder's Name: Cont	tri 📂	Batch	City:			Library Transfer	F	A
Builder's Address:		Old Manufala d Dan e de	State		z	Web Services	1	
		Old View/Select Reports	Phon	e Number:		Reset Window Layout		
Builder's Email:		Old Logos	Builder	Information:		Options		
			Builde	er's Name:		options		



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ACCMEAS			COMPLIAN	ICE		- 🗆 ×
ACTSOLAR ADDMASS	∠ LBLDGRUNN ▼ FHERSSCOR ▼	FHERSCOST - FHERSSTARS - FH	HERSRHCN - FHERSR	CCN - FHERSRDCN	FHERSRLACN - FHERSRPVCI -	FHERSRTCN - FHERSDHCN - FHER
AGWALL						
ASHPTYPE BLDGINFO						
BLOCK						
BUILDING BUILDRUN						
CEILTYPE						
СОМРТУРЕ						
COSTRATE DFHPTYPE						
DHWDISTRIB						
DHWTYPE						
DOOR DOOR						

EXPLORE NEW DATABASE

Can you pronounce these words?



Use the REM/Rate Report to decode language: Help \rightarrow Export Format Report \rightarrow Print All

	Export Format Report -	BuildRun	
Date: Febr	uary 09, 2016		
Table: Notes:	BuildRun		
	Values used for lBRExpTpe:		
	Export Building	= 1	
	Export IA Base Building	= 2	
	Export IA Improved Building	= 3	
	Export UDRH As Is Building	= 4	
	Export UDRH Reference Building	= 5	
	Export ASHRAE Code Reference Building	= б	
	Export ASHRAE Code Design Building	= 7	
	Export HERS Code Reference Building	= 8	
	Export HERS Code Design Building	= 9	



EXPLORE NEW DATABASE

Snapshots of REM/Rate Report

223	f09IEDSVCT	float(20,4)	2009 IECC Design Service Cost
224	f09IEDTCT	float(20,4)	2009 IECC Design Total Cost
225	b09IECC	int(20)	2009 Meets IECC Cost Compliance 1 = TRUE
226	f09IECCRUA	float(20,4)	2009 IECC Reference Overall UA
227	f09IECCDUA	float(20,4)	2009 IECC As Designed Overall UA
228	b09IECCDuP	int(20)	2009 IECC Ducts pass 0 = False and 1 = TRUE
229	b09IECCuAP	int(20)	2009 IECC Overall UA Compliance <mark>0 = False, 1 = TRUE</mark>
230	fHERS_PV	float(20,4)	HERS PV Adjusted (Not in REM/Design)
231	fES_HERS	float(20,4)	ES HERS Rating Score (Not in REM/Design)
232	fES_HERSSA	float(20,4)	ES HERS SAF Adjusted (Not in REM/Design)
233	bEStarv25	int(20)	ENERGY STAR v 2.5 (0=Fail, 1=Pass) (Not in REM/Design)

These values are used for variable nSIFndType:

Slab	= 0
Open Crawl Space	= 1
Enclosed Crawl Space	= 2
Cond. Crawl Space	= 3
Uncond. Full Basement	= 4
Cond. Full Basement	= 5
Uncond. Walkout Basement	= 6
Cond. Walkout Basement	= 7
Mixed	= 8
Values for nSIInfMTyp:	
User estimate = 1	
Tracer gas test = 3	
Blower door test = 4	
Values for nSIInfUnit:	
CFM @ 50 Pascals	= 1
CFM @ 25 Pascals	= 2
ACH @ 50 Pascals	= 3
Natural ACH	= 4
Eff. Leakage Area(sq.in)	= 5
ELA/100 sf shell	= 6
Values for lSILvAbGar:	
First = 1	
Second = 2	



EXPORT SETUP

Batch	X		Export Code Compliance Buildings	X
Buildings	Batch File		Database	
H:\\Anonymous\Test File 1_HERS 74.blg	None		H:\\2016\Beyond the HERS Index\	All of the data.mdb
H:\\Anonymous\Test File 2_HERS 24.blg H:\\Anonymous\Test File 3_HERS 49.blg	Open Save Save As			Select
H:\\Anonymous\Test File 4_HERS 76.blg				
H:\\Anonymous\Test File 5_HERS 58.blg H:\\Anonymous\Test File 6_HERS 66.blg	Action		International Energy Conservation Cod	Model Energy Code and ASHRAE
H:\\Anonymous\Test File 7_HERS 20.blg			🗌 🗆 2015 IECC 🔲 2003 IECI	C 🗌 1995 CABO Model Energy Code
H:\\Anonymous\Test File 8_HERS 25.blg H:\\Anonymous\Test File 9_HERS 58.blg	□ IECC 2006 □ IECC 2012		2012 IECC 2001 IEC	
H:\\Anonymous\Test File 10_HERS 82.blg H:\\Anonymous\Test File 11_HERS 70.blg	🗖 IECC 2009 🗖 IECC 2015		Z009 IECC	
H:\\Anonymous\Test File 12_HERS 70.blg	🗖 HERS 🗖 New York			
H:\\Anonymous\Test File 13_HERS 68.blg H:\\Anonymous\Test File 14_HERS 76.blg	Indoor Air Plus		🗌 2006 IECC 🔲 1998 IEC	C ASHRAE Standard 90.2 - 1992
H:\\Anonymous\Test File 15_HERS 72.blg	ENERGY STAR V2.0 ENERGY STAR V2.5	N	2004 IECC	
			- State Codes	
	🗖 ENERGY STAR V3 🗖 ENERGY STAR V3.1			
	🔲 ENERGY STAR V3.0 Guam, Puerto Rico, Hawaii		🔲 FE PA New Homes Rating	NY-ECCC 2010
	Batch Report		FE OH New Homes Rating	Energy Conservation Code of Southern Nevada
	E Batch Heport		🔲 NC Texas COG Code	🔲 2012 Iowa Energy Code
	E Reports Select Reports			
	UDRH Setup UDRH			
			Programs	
	Export Building Setup Export		Home Energy Rating	ENERGY STAR Version 2.5
	Export Building Codes Setup Codes		DOE Zero Ready Homes	ENERGY STAR Version 3.0
	C:\\Blank database-Example.mdb		LEED for Homes	ENERGY STAR Version 3.0 Guam, Puerto Rico, Hawaii
Add Delete Delete All			ENERGY STAR Version 2.0	ENERGY STAR Version 3.1
Run Ca	ancel Help		ОК	Cancel Help

Southface

QUIZ QUESTION

For one REM/Rate file, how many total export buildings will REM/Rate export, based on the options selected? Identify each export type for each option selected.

Answer:

7 total

1) AS-IS 2) 2012 Design 3) 2012 Reference 4) 2009 Design 5) 2009 Reference 6) HERS Design 7) HERS Reference

xport Code Compliance Buildings	22		
Database			
H:\\2016\Beyond the HERS Index\A	II of the data.mdb		
	Select		
International Energy Conservation Code	Model Energy Code and ASHRAE		
🗆 2015 IECC 🗖 2003 IECC	🔲 1995 CABO Model Energy Code		
☑ 2012 IECC	🔲 1993 CABO Model Energy Code		
🔽 2009 IECC 🔲 2000 IECC	🔲 1992 CABO Model Energy Code		
🗆 2006 IECC 🛛 🗖 1998 IECC	ASHRAE Standard 90.2 - 1992		
2004 IECC			
State Codes			
🔲 FE PA New Homes Rating	NY-ECCC 2010		
🔲 FE OH New Homes Rating	Energy Conservation Code of Southern Nevada		
🔲 NC Texas COG Code	🔲 2012 Iowa Energy Code		
Programs			
Home Energy Rating	ENERGY STAR Version 2.5		
🔲 DOE Zero Ready Homes	ENERGY STAR Version 3.0		
LEED for Homes	ENERGY STAR Version 3.0 Guam, Puerto Rico, Hawaii		
ENERGY STAR Version 2.0	ENERGY STAR Version 3.1		
ОК	Cancel		



QUIZ QUESTION

If you only wanted to export the AS-IS buildings, what would you select here?

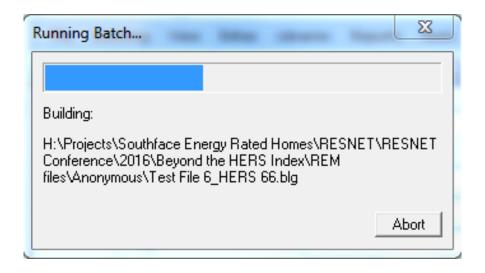
Answer: Nothing ©

export Code Compliance Buildings	23
Database	
C:\Users\jgrygier\Desktop\Trevors E:	xample.mdb
	Select
International Energy Conservation Cod	Model Energy Code and ASHRAE
🗆 2015 IECC 🛛 2003 IEC	C 🗌 1995 CABO Model Energy Code
🗆 2012 IECC 🛛 2001 IEC	C 🗌 1993 CABO Model Energy Code
🗆 2009 IECC 🛛 2000 IEC	C 🗌 1992 CABO Model Energy Code
🗆 2006 IECC 🛛 1998 IEC	C ASHRAE Standard 90.2 - 1992
2004 IECC	
State Codes	
🔲 FE PA New Homes Rating	NY-ECCC 2010
🔲 FE OH New Homes Rating	Energy Conservation Code of Southern Nevada
🔲 NC Texas COG Code	🔲 2012 Iowa Energy Code
Programs	
🔲 Home Energy Rating	ENERGY STAR Version 2.5
🗖 DOE Zero Ready Homes	ENERGY STAR Version 3.0
LEED for Homes	ENERGY STAR Version 3.0 Guam, Puerto Rico, Hawaii
ENERGY STAR Version 2.0	ENERGY STAR Version 3.1
OK	Cancel Help



EXPORT TO DATABASE

- Example with 15 confirmed, anonymous REM/Rate Files
- Multiple methods to sort through data
 - Writing SQL code
 - Query Wizard





Queries

Queries are the real workhorses in a database, and can perform many different functions. Their most common function is to retrieve specific data from the tables. The data you want to see is usually spread across several tables, and queries allow you to view it in a single datasheet. Also, since you usually don't want to see all the records at once, queries let you add criteria to "filter" the data down to just the records you want. Queries often serve as the record source for forms and reports.

EXPORT TO DATABASE

What is a Query? Defined by Microsoft Office Support

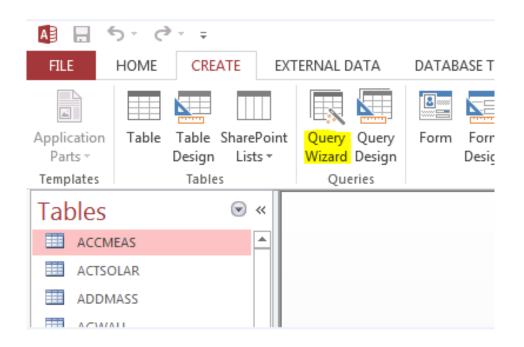


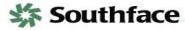
MANIPULATE DATABASE

Choose "All Access Objects" to be visible

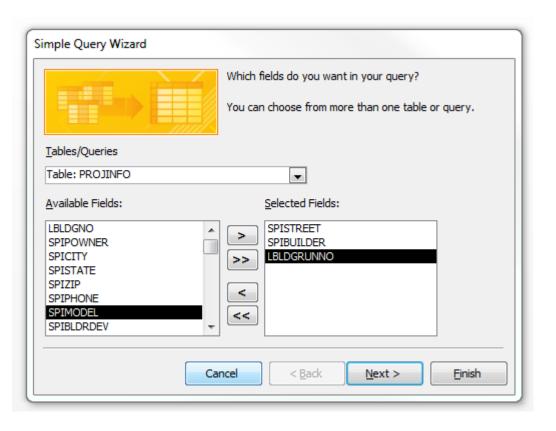
A	📄 🕤 - 🏕 - All the data-final-15 files : Da
FI	LE HOME CREATE EXTERNAL DATA
Al	Access Obje 🖲 «
	Navigate To Category
	Custom
~	Object Type
	Tables and Related Views
	Created Date
	Modified Date
	Filter By Group
	Ta <u>b</u> les
	Queries
	Forms
	Reports
-	All Access Objects
	COMPLIANCE
	COMPTYPE

SELECT what you want to see by using SQL coding and/or built-in Query Wizards





MANIPULATE DATABASE



- The dropdown allows you to select the Table(s) you want to pull from
- "Available Field" lists the column headers from the Table(s)



In "Design View," you can edit your existing Query

- You also have the option to select "SQL" view here. You can use one or both methods to create/edit your Query
- Start simple, you can always add more fields later, using the drag and drop method in design view

										022320:	16 Query Wizard			
I			Save	y Wizard			BUILDRUN * BUILDRUNNO SBRDATE SBRPROGVER		BUILDING	PROJ * LBLDGF LBLDGF SPIPOV		COMPLIANCE * LBLDGRUNNO FHERSSCOR FHERSCOST		
SPISTREET - SPICITY	- SPISTATE	- SPIZIP	· ·	SCOR - LBLDG	GRUNN -		SBRRATENO		SBURATENO	SPISTRE		FHERSSTARS		
L23 HERS Path Ratertown	GA	30308	Close	74	0		SBRFLAG	•	NBUBLGTYPE 🖵	SPICITY	•	FHERSRHCN	T	
L23 HERS Path I Ratertown	GA	30308	Close All	89	1									
23 HERS Path Ratertown	GA	30308	Design View	74	2									
	GA GA	30308 30308		74 83	2									
23 HERS Path I Ratertown			SQL SQL View		2 3 4									
23 HERS Path Ratertown 23 HERS Path Ratertown	GA	30308		83	2 3 4 5									
L23 HERS Path Ratertown L23 HERS Path Ratertown L23 HERS Path Ratertown L23 HERS Path Ratertown L23 HERS Path Ratertown	GA GA	30308 30308	SQL SQL View	83 75	2 3 4 5 6									
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123 HERS Path Ratertown 123 Bad Weath Roswell	GA GA GA GA	30308 30308 30308 30308 30308	SQL SQL View Datasheet View Contruction Tir	83 75 75 75	2 3 4 5 6 7 8	Field:	SPISTREET	SPICITY PROJINFO	SPISTATE PROJINFO	SPIZIP PROJINFO	SPIBUILDER PROJINFO	FHERSSCOR COMPLIANCE	COMPLIANCE	
23 HERS Path Ratertown 23 HERS Path Ratertown 23 HERS Path Ratertown 23 HERS Path Ratertown 23 Bad Weath Roswell 23 Bad Weath Roswell	GA GA GA GA GA	30308 30308 30308 30308 30308 30075	SQL SQL View Datas <u>h</u> eet View Contruction Tir CanWeFixit	83 75 75 75 24	2 3 4 5 6 7 8 9	Field: Table: Sort: Show:								
123 HERS Path Ratertown 123 HERS Path Ratertown 123 HERS Path Ratertown 123 HERS Path Ratertown 123 HERS Path Ratertown	GA GA GA GA GA GA	30308 30308 30308 30308 30308 30075 30075	SQL SQL View Datasheet View Contruction Tir CanWeFixit CanWeFixit	83 75 75 75 24 87	2 3 4 5 6 7 8 9 10	Field: Table: Sort:		PROJINFO	PROJINFO	PROJINFO			COMPLIANCE	



MANIPULATE DATABASE

Let's change the column headers

- Highlighted=manually added
- Tip: this works best when column headers do not have spaces

Field:	City: SPICITY	State: SPISTATE	Zip: SPIZIP	Builder: SPIBUILDER	HERS_Index: FHERSSCOR	ESTARv3: IIf([bESTARV.	Volume: FBIVOLUME	CFA: FBIACOND
Table:	PROJINFO	PROJINFO	PROJINFO	PROJINFO	COMPLIANCE		BLDGINFO	BLDGINFO
Sort:								
Show:	V	V	V	V	V	V	V	V
Criteria:								
or:								
	•							Þ



IIf Function

Returns one of two parts, depending on the evaluation of an expression.

You can use IIf anywhere you can use expressions. You use IIf to determine if another expression is true or false. If the expression is true, IIf returns one value; if it is false, IIf returns another. You specify the values IIf returns.

Example: ESTARv3: IIf([bESTARV3]=1,"PASS","FAIL")

EXPORT TO DATABASE

What IF you want to write an IIF statement? Defined by Microsoft Office Support



MANIPULATE DATABASE

You can either type this expression in the "Field" Row in Design View, or use the "Expression builder" to help you

Field:	ESTARv3: IIf([bESTARV3]=1,"PASS","FAIL")
Table:	
Sort:	
Show:	
Criteria:	
or:	

(Examples of expressions include	[field1] + [field2] and [field1	l] < 5)	
Export Type: IIf([LBREXPTPE] = 1 Reference", IIf([LBREXPTPE] = 9, Ref", IIf([LBREXPTPE] = 33, "2009 Reference", IIf([LBREXPTPE] = 43,	HERS Design", IIf ([LBREXPTF IECC Design", IIf ([LBREXPTP	PE]=3 PE]=4	2,"2009 IECC	OK Cancel Help << Less
Expression Elements	Expression Categories		Expression Value	es
Olivity Constants Olivity Con	 <all> Arrays Conversion Database Date/Time Domain Aggregate Error Handling Financial General Inspection </all> 	* III	HtmlEncode HyperlinkPart IIF IMEStatus InputBox InputBox InStr InStrRev Int IPmt	



TIPS AND TRICKS

- Baby steps-make sure you understand each field
- Use Microsoft Access embedded tools to help you
 - Totals, Make Table, Criteria



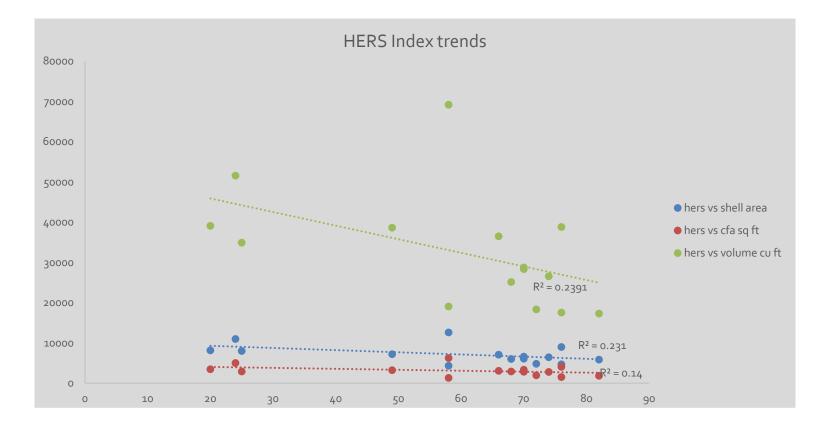
- Export a fresh database with each new REM/Rate version
 - Copy and paste existing queries to save work
- Reference Process Document for more, then create your own!







PRACTICE







BEYOND THE HERS INDEX

Question & Answer

