

Department of Inspections Licenses and Permits 3430 Court House Drive Ellicott City, MD 21043 Permits (410) 313-2455 Opt. #4 Inspections (410) 313-1840	HOWARD COUNTY RESIDENTIAL HEATING-VENTILATION-AIR CONDITIONING AND REFRIGERATION PERMIT APPLICATION	HVACR PERMIT # <div style="font-size: 1.2em; margin-left: 20px;">M25000232</div> BUILDING PERMIT #
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SITE BUILDING ADDRESS: 7829 Flagstone Ct Ellicott City, MD 21043 SUBDIVISION: TYPE OF IMPROVEMENTS: Installation of (1ea.) Geothermal heat pump. USE:	SUITE/APT:	OWNERS NAME: John Magoon ADDRESS: 7829 Flagstone Ct CITY: Ellicott City STATE: MD ZIP CODE: 21043 HOME PHONE: CELL PHONE: 301-704-3680
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<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;"><u>CHECK ONE</u></th> <th style="text-align: left; border-bottom: 1px solid black;"><u>HOW MANY</u></th> </tr> </thead> <tbody> <tr> <td>SINGLE FAMILY DWELLING <input checked="" type="checkbox"/></td> <td><u> 1 </u> ZONES</td> </tr> <tr> <td>SINGLE FAMILY TOWNHOUSE <input type="checkbox"/></td> <td><u> </u> ZONES</td> </tr> <tr> <td>MULTI-FAMILY / HOTEL/MOTEL <input type="checkbox"/></td> <td><u> </u> ROOMS</td> </tr> <tr> <td>ASSISTED LIVING HOMES (16 OR FEWER RESIDENTS) <input type="checkbox"/></td> <td><u> </u> ROOMS</td> </tr> </tbody> </table>	<u>CHECK ONE</u>	<u>HOW MANY</u>	SINGLE FAMILY DWELLING <input checked="" type="checkbox"/>	<u> 1 </u> ZONES	SINGLE FAMILY TOWNHOUSE <input type="checkbox"/>	<u> </u> ZONES	MULTI-FAMILY / HOTEL/MOTEL <input type="checkbox"/>	<u> </u> ROOMS	ASSISTED LIVING HOMES (16 OR FEWER RESIDENTS) <input type="checkbox"/>	<u> </u> ROOMS	COMPANY NAME: Total Comfort Heating & Air Conditioning LICENSEE NAME: James E. Aaron ADDRESS: 12009 Margaret Dr. CITY: Hagerstown STATE: MD ZIP CODE: 21742 PHONE: 301-745-3700 HVACR LICENSE NO: 5833-01
<u>CHECK ONE</u>	<u>HOW MANY</u>										
SINGLE FAMILY DWELLING <input checked="" type="checkbox"/>	<u> 1 </u> ZONES										
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<u>New Construction</u> <input type="checkbox"/> Heating and Air Conditioning <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Heating	<u>Additions and Alterations</u> <input type="checkbox"/> Heating <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Heating and Air Conditioning	<input checked="" type="checkbox"/> Geo Thermal System <input type="checkbox"/> Gas Conversion (Make and Model of Equipment) <input type="checkbox"/> Ductless Mini Splits <input type="checkbox"/> Thru The Wall Systems <input type="checkbox"/> Other Work (Describe):
<u>Replacement</u> <input type="checkbox"/> Heating <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Heating and Air Conditioning	Remove & dispose of existing HVAC system. Installation of (1 ea.) WaterFurnace geothermal heat pump. Model: WaterFurnace W5AV060BD1A12CTL2D11. Installation of vertical closed ground loop by Allied Well Drilling. Well Permit # HO-22-0178	
Make and Model of Equipment is required		
****Replacement Geo Thermal Systems are not required; However, if a tax credit is being sought a permit is required****		

RECEIVED

<u>Zones</u> Permit Fee = # of Zones x \$40 = <u> 40.00 </u> Technology Fee (10% of Permit Fee) = <u> 4.00 </u> Plus Application Fee <u> 50.00 </u> Total Fees Due = <u> 94.00 </u>	<u>Rooms</u> Permit Fee = # of Rooms x \$80 = _____ Technology Fee (10% of Permit Fee) = _____ Plus Application Fee \$50 _____ Total Fees Due = _____
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FEB 24 2024

LICENSES & PERMITS DIVISION \$50.00

I HAVE CAREFULLY EXAMINED AND READ THIS APPLICATION AND KNOW IT IS TRUE AND CORRECT. THE WORK DESCRIBED HEREIN WILL BE PERFORMED BY A STATE HVAC LICENSED PERSON(S), AND ALL WORK WILL BE PERFORMED IN COMPLIANCE WITH APPLICABLE CODES AND STANDARDS OF HOWARD COUNTY THE STATE OF MARYLAND.

_____ SIGNATURE OF LICENSEE	2/19/2025 _____ DATE
James E. Aaron _____ PRINT NAME OF LICENSEE	
contact@tchvac.net _____ Email Address	

Validation
Check Number: <u> 11444 </u>
Money Order#: _____
Invoice Number: <u> 832335 </u>

Make check payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

MD5000232

Load Report

Feb 19, 2025



Customer:

7829 Flagstone Court
Ellicott City, MD, 21043

Company:

Patrick Aaron
Total Comfort Heating & AC, Inc.
12009 Margaret Dr.
Hagerstown, MD, 21742
(301) 730-5543
contact@tchvac.net

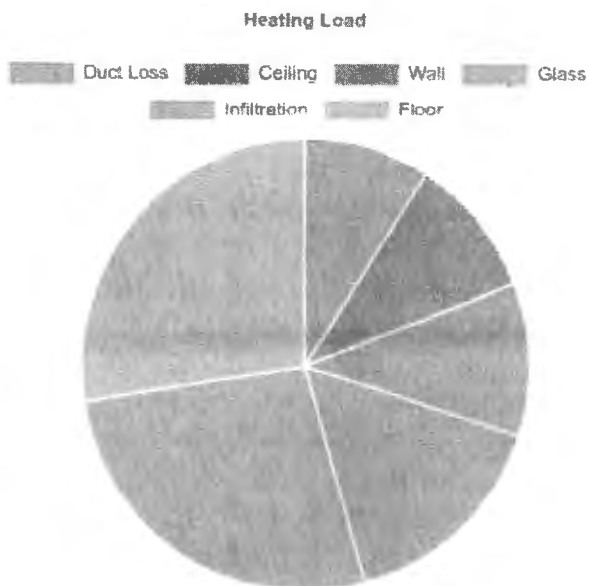
HOUSE AND DESIGN CONDITIONS

Square Feet	2664			
Residents	2			
Ceiling Height (average)	9			
Insulation R-Values:				
Wall	Floor	Ceiling		
11	5	22		
Glass U-Value	0.5			
Glass Solar Heat Gain Coefficient (SHGC)	0.85			
Glass:	E	N	S	W
	193 sqft	27 sqft	27 sqft	135 sqft
Indoor Design Temperatures	70°(w) - 75°(s)			
Outdoor Design Temperatures	15°(w) - 91°(s)			
Grains of Moisture Difference	53			
Summer Wet Bulb	76°F			



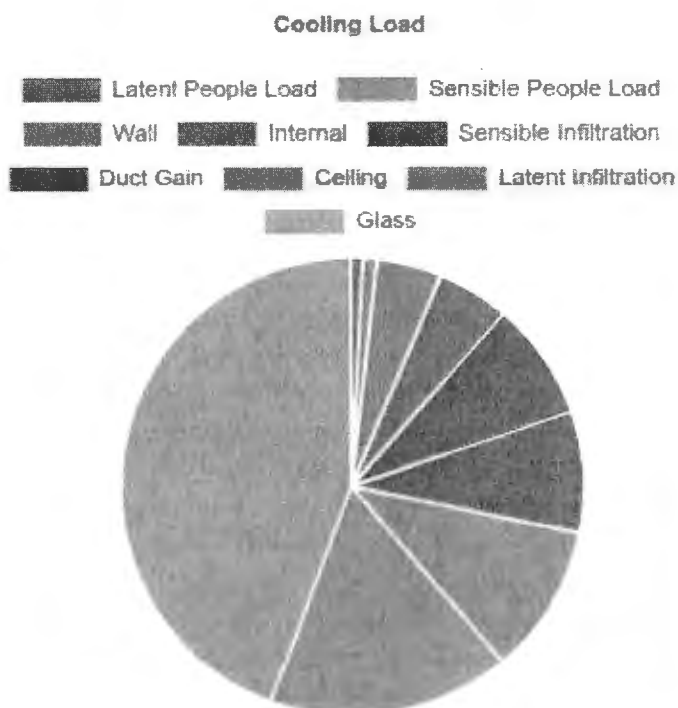
Duct Loss (Heating)	10%
Duct Gain (Cooling)	10%
Winter Ventilation	0 CFM
Summer Ventilation	0 CFM
Cooling Infiltration	0.6 Air Changes/Hour
Heating Infiltration	0.8 Air Changes/Hour
Sensible Heat Ratio (SHR)	0.75

HEATING LOADS



Duct Loss	6,099 BTUh or 9.1%
Ceiling	6,659 BTUh or 9.9%
Wall	7,381 BTUh or 11%
Glass	10,505 BTUh or 15.7%
Infiltration	17,987 BTUh or 26.8%
Floor	18,458 BTUh or 27.5%
Total	67,089 BTUh
Required Heating Airflow	871 CFM

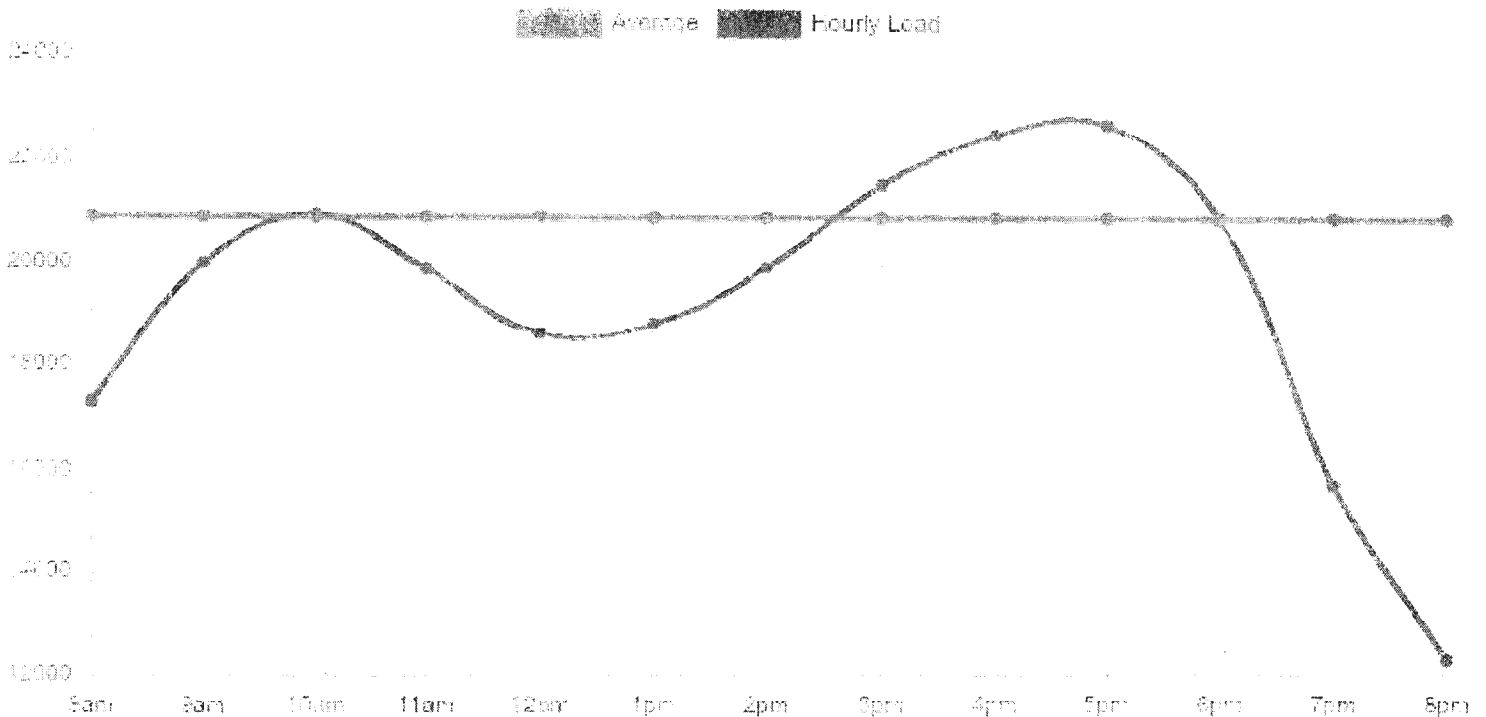
COOLING LOADS



Latent People Load	400 BTUh or 0.8%
Sensible People Load	460 BTUh or 1%
Wall	2,147 BTUh or 4.5%
Internal	2,400 BTUh or 5.1%
Sensible Infiltration	3,924 BTUh or 8.3%
Duct Gain	3,999 BTUh or 8.5%
Ceiling	4,964 BTUh or 10.5%
Latent Infiltration	8,036 BTUh or 17%
Glass	20,918 BTUh or 44.3%
Total	47,249 BTUh
Sensible Load	38,813 BTUh
Latent Load	8,436 BTUh
Calculated SHR	0.82
* Cap. at 0.75 SHR	51,751 BTUh or 4.31 Tons
Required Cooling Airflow	1,725 CFM

* Total equipment capacity required to have the sensible capacity to cover the sensible cooling load in accordance with industry sizing protocols.

GLASS EXPOSURE DIVERSITY



CONTRACTOR ALERT: If the hourly glass load exceeds the average glass load at any part of the day, especially in mid to late afternoon, areas of the home may become uncomfortable. You may want to consider a Variable Comfort System (staged or modulating cooling and heating, and variable airflow). You may also want to consider individual room/area temperature controls with temperature sensors or zone control to allow you to control how and when you condition certain rooms/areas. Lastly, you may consider a separate comfort system (ducted or ductless) to condition the problem area.

Software Validation: Data used in the calculation and displayed on the report are sourced from the user-entered data, Google, ATTOM, and the NOAA. All calculations comply with all local, state, and federal code requirements and meet or exceed the requirements of the International Energy Conservation Code (IECC) paragraph 403.6 in their entirety as verified by independent engineer William M. McMahon Jr. P.E. CEM. The programs are appropriately based on HVAC industry-standard heat loss/heat gain engineering formulas coupled with the appropriate weather data, location factors, general home construction materials, and other considerations customarily used in the HVAC industry. While consistent with heat loss/heat gain load calculation formulas from ACCA, this program can be considered as meeting the "other approved heating and cooling calculation methodologies", and therefore does not require approval from ACCA. Further, Paul Welch, P.E.; FL Reg. No. 29945 affirmed that the software computes building heating and cooling loads and sizes equipment in a manner consistent with good engineering practices and approved heating and cooling load calculation methodologies and fully complies with Florida Building Code and Energy Conservation Codes. All computed results are estimates. Product developed and maintained by Energy Design Systems, LLC.

1105000232

C 1	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND WELL COMPLETION REPORT FILL IN THIS FORM COMPLETELY PLEASE TYPE	THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.
	THIS NUMBER IS TO BE PUNCHED IN COLUMNS 3-6 ON ALL CARDS		COUNTY NUMBER

ST/CO USE ONLY DATE Received MM DD YY 8 13	DATE WELL COMPLETED MM DD YY 2-3-25	Depth of Well 22 400 26 (TO NEAREST FOOT)	PERMIT NO. FROM "PERMIT TO DRILL WELL" 110-22-0178
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OWNER: Lee, Kevin + Goh, Philippe
 WELL SITE ADDRESS: 78.51 Blagden Pl, Rockville, MD TOWN: Ellicott City, MD
 SUBDIVISION: _____ SECTION: _____ LOT: 41

WELL LOG
Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET		check if water bearing
	FROM	TO	
Top Soil	0	1	
Bm Clay	1	10	
Red Bm Clay	10	20	
Bm Sand	20	50	
Sandstone	50	52	
Bm Clay	52	70	
Bm Gray Rock	70	80	
Med Gray Rock	80	160	✓
Hard Gray Rock	160	405	

(2) closed loops

GROUTING RECORD yes no
 WELL HAS BEEN GROUTED (Circle Appropriate Box) Y N
 TYPE OF GROUTING MATERIAL (Circle one)
 CEMENT CM BENTONITE CLAY BC
 NO. OF BAGS 45 56 NO. OF POUNDS 49 150
 GALLONS OF WATER 900
 DEPTH OF GROUT SEAL (to nearest foot)
 from 48 TOP 52 ft. to 54 BOTTOM 58 ft.
 (enter 0 if from surface)

CASING RECORD
 casing types insert appropriate code below
 ST STEEL CO CONCRETE
 PL PLASTIC OT OTHER
 MAIN CASING TYPE Nominal diameter top (main) casing (nearest inch) Total depth of main casing (nearest foot)
 60 61 63 64 66 70

OTHER CASING (if used)
 diameter depth (feet)
 inch from to

SCREEN RECORD
 screen type or open hole
 ST STEEL BR BRASS HO OPEN HOLE
 PL PLASTIC OT OTHER

PUMPING TEST

HOURS PUMPED (nearest hour) _____

PUMPING RATE (gal. per min.) _____

METHOD USED TO MEASURE PUMPING RATE _____

WATER LEVEL (distance from land surface)

BEFORE PUMPING _____ ft.

WHEN PUMPING _____ ft.

TYPE OF PUMP USED (for test)

A air P piston T turbine
 C centrifugal R rotary O (describe below)
 J jet S submersible

PUMP INSTALLED

DRILLER INSTALLED PUMP YES NO
 (CIRCLE) (YES or NO)

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.

TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29. _____

CAPACITY: GALLONS PER MINUTE (to nearest gallon) _____

PUMP HORSE POWER _____

PUMP COLUMN LENGTH (nearest ft.) _____

CASING HEIGHT (circle appropriate box and enter casing height)

+ above } LAND SURFACE (nearest foot)
 - below }

NUMBER OF UNSUCCESSFUL WELLS: 0

WELL HYDROFRACTURED Y N

CIRCLE APPROPRIATE LETTER
 A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
 E ELECTRIC LOG OBTAINED
 P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO.: MW D 598
 DRILLERS SIGNATURE: Walter A. Wolfe
 LIC. NO.: D

DEPTH (nearest ft.)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

SLOT SIZE 1 _____ 2 _____ 3 _____

DIAMETER OF SCREEN (NEAREST INCH)
 from _____ to _____

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68 _____

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)

T (E.R.O.S.) _____ W Q _____

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

TELESCOPE CASING LOG INDICATOR OTHER DATA

LATITUDE 39.21501
 LONGITUDE 76.78249
 (DEFAULT COORD. WGS 84)

Pursuant to §10-624 of the State Govt. Article of the Maryland Code personal info. requested on this form is used in processing this form pursuant to COMAR 26.04.04. Failure to provide the info. may result in this form not being processed. You have the right to inspect, amend, or correct this form. The Maryland Department of the Environment is subject to the Maryland Public Information Act. This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not protected by federal or state law.

Take Careful