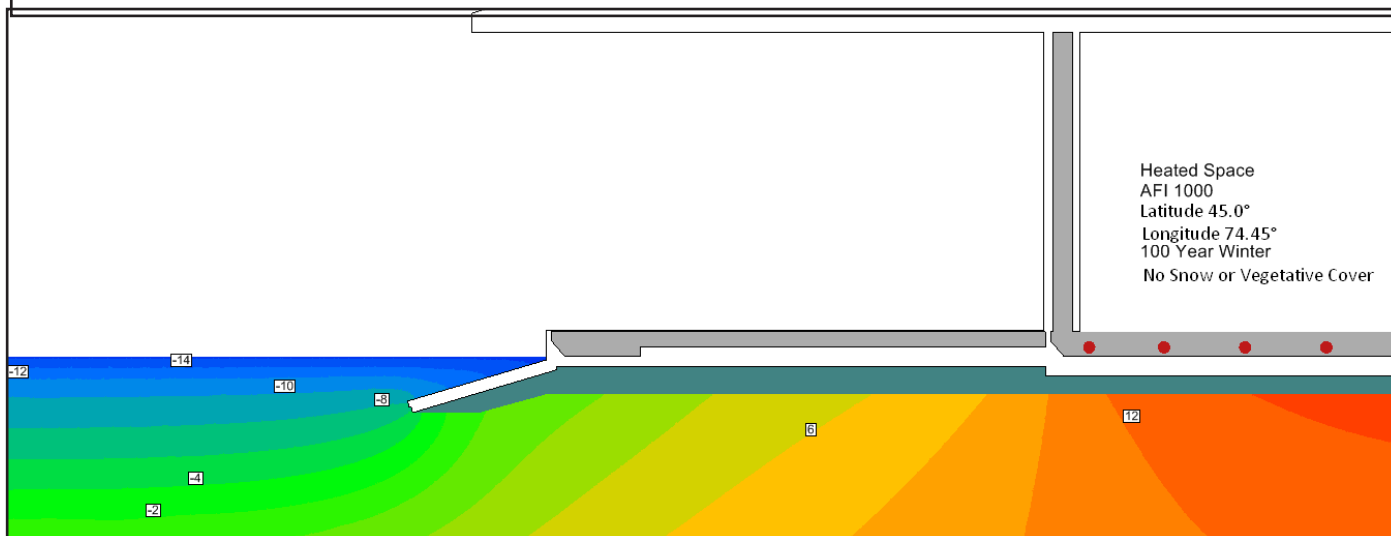




DESIGN PARAMETERS

Latitude:	45.0°
Longitude:	74.45°
Building location:	Cornwall, ON
Building location elevation:	52 m / 171 ft.
Nearest weather station:	Cornwall, ON
Nearest weather station elevation:	76 m / 249 ft.
Nearest weather station average AFI in °C_Days:	880
Adjusted AFI:	1261
Design outdoor temperature:	-25° C / -13° F
Mean soil design temperature:	10° C / 50° F
Existing simulation ground temperature based on AFI:	8° C / 46° F
Building Area:	Avg. 1210.805 m² / 13,033 ft²
Building perimeter:	Avg. 177.7 m / 583 ft.



THE TEAM

Developer:	Carefor (Formerly known as Victorian Order of Nurses)
Architect / Consulting Engineers:	The Thompson Rosemount Group Inc.
Project Manager / Firm:	R.W. Taylor / The TRG Inc.
Builder / Site Foreman:	Grant Marion Construction / Paul Tillart
Legalett Service Representative / Installer:	ICF RIDEAU / Teixeira Construction

BUILDING ISSUES

- Site had very poor soil conditions, soil bearing was 400 PSF
- Use of Legalett provided on grade access and eliminated the use of piles thus reducing costs

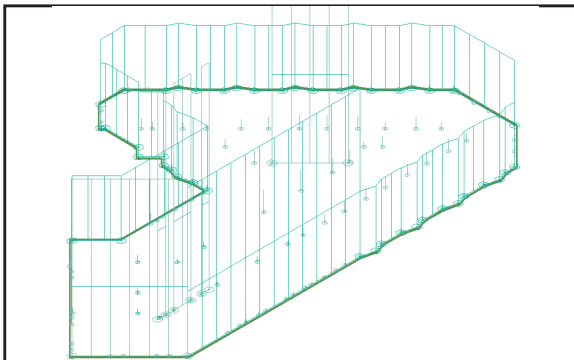
John Teixeira - (ICF Rideau)

LEGALETT

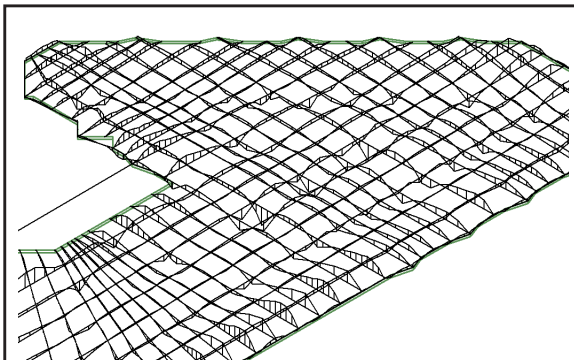
WHY LEGALET ?

- Energy efficiency and comfort were a desirable item
- Client saved approximately \$250,000

STRUCTURAL



Loads



Moment Diagram



Soil Bearing Pressure

ENERGY

LEGALETT Heat Loss Page 1 of 24 (v. 5/21/08)

Project # **6199**

Prepared by **JT** Checked by

Project Title **Cornwall Hospice - All Heaters**

City **Cornwall**

Revision

Nearest City **Ottawa**

Order Date **October 14, 2008**

Material Delivery Date **ICF Rideau**

Service Rep **Teixeira Construction**

Installer **Teixeira Construction**

Building R-values

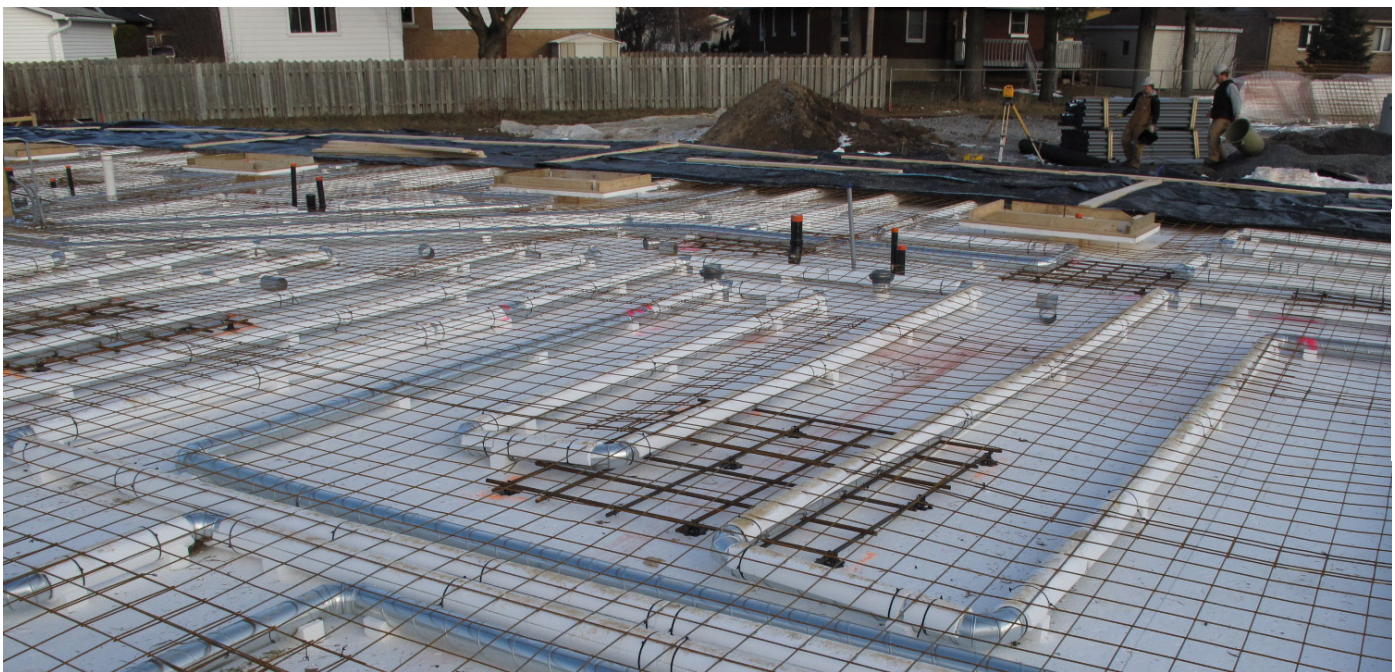
Unheated Wall R	20	Verbal	Checked
Unheated Flat Ceiling R	40	Verbal	
Unheated Cathedral Ceiling R	20	Verbal	
Window R	4	Verbal	
Man Door R	4	Choose	
Garage Door R	4	Choose	
Suspended Slab Insulation R	Not Used	Not Used	
Slab-on-Grade Exposed Edge R	12	Judgement	
Slab-on-Grade Edge Factor	0.13	6" EPS, Edge Factor 0.13	
Slab-on-Grade Slab Factor	0.16	6" EPS, Slab Factor 0.16	
Choose Piping Size	4"	4" or 2"	
Climate Data	Ottawa, ON		
Nearest Location	Ottawa, ON		
Outdoor Design Temp	-25	°C	

Heat Loss

LEGALETT 4000 series Design Parameters PAGE 1 of 2

Location	Cornwall	Parcel Number	0.111	°C
Building area	1,147	Volume	0.001	m³
Building perimeter	100	Volume flow rate per heater	0.001	m³/hr
Building perimeter	100	Conduction of concrete	1.1	W/m²K
Indoor design temperature	22	Conduction of EPS	0.004	W/m²K
Outdoor design temperature	-25	Per density @ 40C	1.127	kg/m³
Mean Soil Temperature	10	Floor surface resistance	0.17	M²K/W
Average Air Flowrate Index	0.001	4 inch pipe system design		
Mean Annual Temperature	10	Conduction of pipe	0.0008	W/m²K
Heat Loss	100	Surface resistance of pipe	0.1	W/m²K
Design Heat Density	100	Volume flow rate per heater	0.001	m³/hr
Design Heat Density	100	Conduction of EPS	0.004	W/m²K
Slab on Grade	12	Per density @ 40C	1.127	kg/m³
Upper Pipe	12	Floor surface resistance	0.17	M²K/W
Lower Pipe	12	4 inch pipe system design		
Resistance	12	Conduction of pipe	0.0008	W/m²K
Volume flow rate per heater	0.001	Surface resistance of pipe	0.1	W/m²K
Design Loop Length	100	Volume flow rate per heater	0.001	m³/hr
Design Equipment Length	100	Conduction of EPS	0.004	W/m²K
Predicted Flow Rate	0.001	Per density @ 40C	1.127	kg/m³
Actual Flow Rate	0.001	Floor surface resistance	0.17	M²K/W
Required air flow rate	0.001	4 inch pipe system design		
Required water flow rate	0.001	Conduction of pipe	0.0008	W/m²K
Water Flow Rate per loop	0.001	Surface resistance of pipe	0.1	W/m²K
Predicted water per loop	0.001	Volume flow rate per heater	0.001	m³/hr
Required water per loop	0.001	Conduction of EPS	0.004	W/m²K
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LEGALETT



CAREFOR HOSPICE - 6199



<http://cornwallhospice.com>