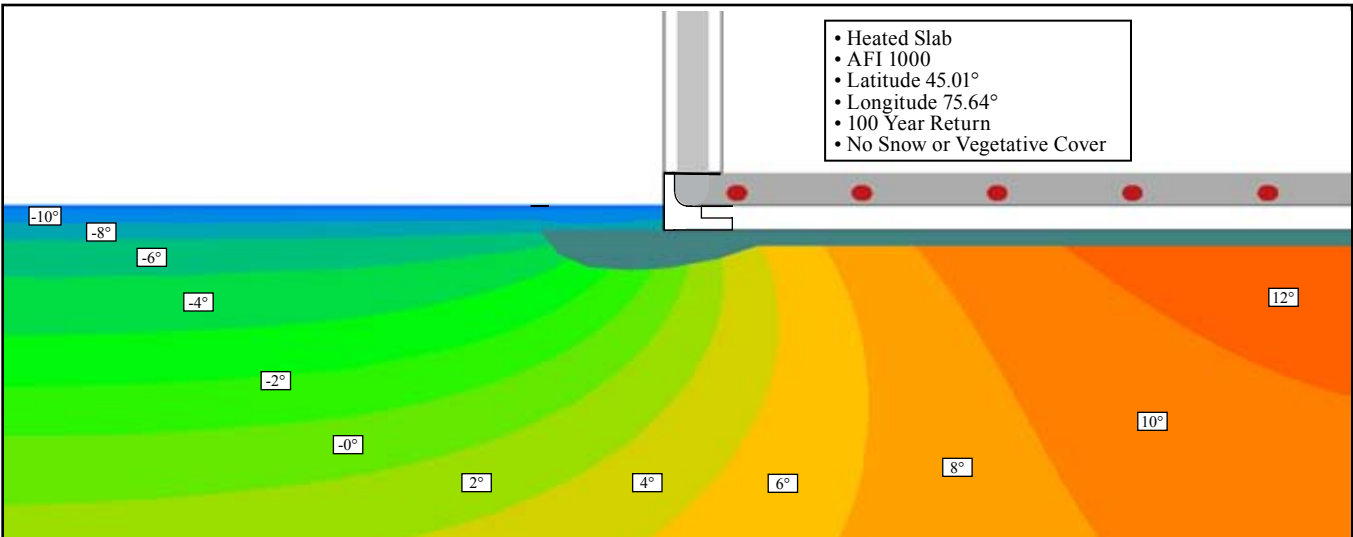


LEGALETT



DESIGN PARAMETERS

Latitude:	45.01°
Longitude:	75.64°
Building location:	Kemptville, ON
Building location elevation:	94 m. / 308 ft.
Nearest weather station:	Kemptville, ON
Nearest weather station elevation:	99.4 m. / 326 ft.
Nearest weather station average AFI in °C_Days:	981
Design AFI:	1000
Design outdoor temperature:	-23° C / -9° F
Mean soil design temperature:	9° C / 48° F
Existing simulation ground temperature based on AFI:	8° C / 46° F
Building Area:	8,471 sq. ft. / 787.0 m²
Building perimeter:	481 ft. / 146.6 m



FROST LINE MODELING - FROST PROTECTED SHALLOW FOUNDATION

THE TEAM

Developer/Owner: **Southgate Community Church**
Architect: **James M. Martin / Timmins Ontario**
Builder: **Southgate Community Church**
Legalett installer: **John Teixeira - Teixeira Construction Inc.**
Westport, ON / (877) 273-5536 .
Legalett Service Representative: **John Teixeira - ICF Rideau**
Westport, ON / (877) 273-5536 .

BUILDING ISSUES

- Lot had 7' of existing mixed fill. Engineer's recommended traditional footings and frost walls which called for removal of all imported fill and replaced with 7' of engineered fill. Cost was prohibitive.
- Legalett design allowed a simplified approach. Vegetative layer was removed and subsoil was compacted for one day with a large vibrating roller, 18" of granular material was added and compacted to 98%-100% Proctor. Legalett was built on top of this base. A small Teixeira Construction crew with 5-7 church volunteers installed the system from start to concrete finished in seven days.

"John Teixeira - (ICF Rideau)"

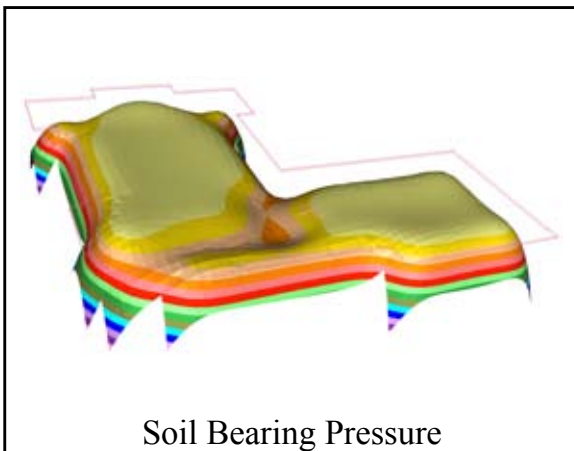
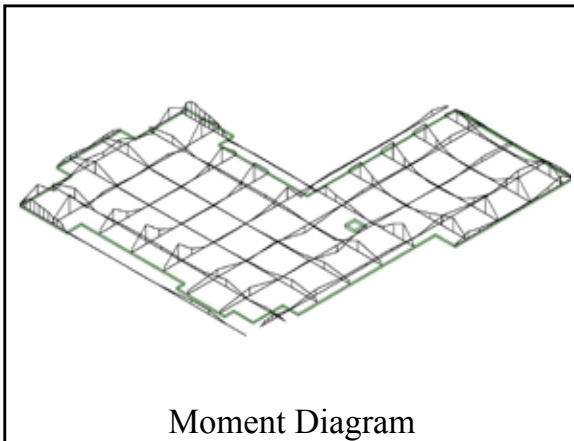
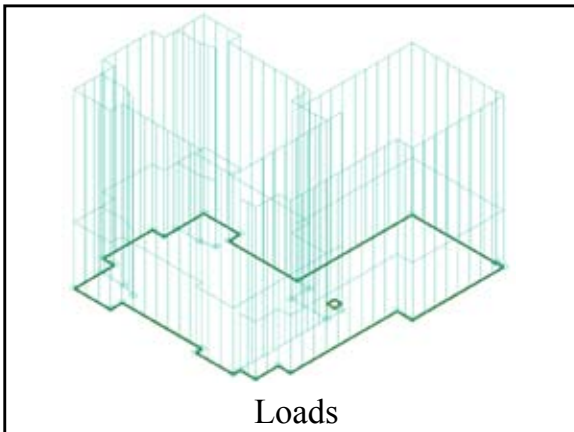
LEGALETT

WHY LEGALET ?

- Savings over traditional process.
- Short timeline for installation.
- Energy efficient design.
- Multiple zone heat control.
- Fuel flexibility.

"Southgate Community Church"

STRUCTURAL



ENERGY

LEGALETT Heat Loss Page 4 of 24
Legalett Project # 6013

Order Date	June 5, 2007	Project Title	Southgate Community Church
Mail Delivery Date	August 1, 2006	City	Kempville, ON
Service Rep	John Teixeira	Revision	
Installer		Nearest City	Toronto, ON

Room Name	sq ft Area	Feet of Permet. Ceiling	sq ft Wood.	sq ft Doors	Bluff	Res.	Design	Res.	Supp.	Design	Res.	Supp.	Design	Chld.
Common area	856	82.0	856		987	18,977	12,464	1.15	10	14.63	0.3	2.5	5.6	
Kitchen	276	26.8	276		305	3,324	1,473	1.45	10	18.27	0.2	1.1	1.8	
Office/Storage	276	33.3	276		385	2,755	6,039	1.45	10	18.27	0.1	0.8	1.5	
Office 12	349	23.0	349		385	3,488	4,898	1.11	10	14.04	0.1	1.0	1.4	
Mech. Room/Bathroom	286	24.2	286		410	2,950	5,178	1.44	10	19.53	0.1	0.8	1.5	
									10	10.60				
									10	10.60				
									10	10.60				
									10	10.60				
Total Individual Rooms	2,160	182.8	2,160		2,762	21,604	34,153	1.25	10	16.81	0.8	6.5	10.0	
Chld. Level	2,160	182.8	2,160		2,762	21,604	34,153	1.25	10	16.81	0.8	6.5	10.0	

Room Name	Res.	Supp.	Design	Res.	Supp.	Design	Res.	Supp.	Design	Chld.
Common area	0.3	0.5	0.7	0.3	0.5	0.7	0.3	0.5	0.7	
Kitchen	0.2	0.2	0.4	0.2	1.8	2.1	0.1	0.9	1.5	
Office/Storage	0.2	0.2	0.3	0.2	1.9	1.8	0.1	0.6	1.4	
Office 12	0.2	0.2	0.2	0.2	1.6	1.4	0.1	0.8	1.1	
Mech. Room/Bathroom	0.2	0.2	0.3	0.2	1.3	1.7	0.1	0.7	1.2	
Total Individual Rooms	1	2	2	2	11	11	1	6	8	

Heat Loss

LEGALETT 4000 series Design Parameters PAGE 1 of 2

Project #	6013	Name:	Southgate Community Church
Location	Kempville, ON		
Building size	8,471	square feet	
Building size	787	square meters	
Building perimeter	481	feet	
Building perimeter	147	meters	
Indoor design temperature	22	Degrees Celsius (normally 22 C)	
Outdoor design temperature	-23	Degrees Celsius	
Mean Soil Temperature	9	Degrees Celsius	
Average Air Freeze Index	808	Degree Days-Celsius	
Mean Annual Temperature	7.2	Degree Celsius	
Heat Load	9.97	Btu per hour per square foot	
Heat Load	31.43	Watts per square meter	
Design Heat Density	10	Btu per hour per square foot	
Design Heat Density	31.53	Watts per square meter	
Slab on Grade	<input checked="" type="radio"/> Choose	tile, vinyl, linoleum, laminate	<input checked="" type="radio"/> Choose
Upper Floor	<input checked="" type="radio"/> Choose	hardwood, 1/2" carpet/pad	<input checked="" type="radio"/> Choose
Basement	<input checked="" type="radio"/> Choose	1" carpet& pad, wool carpet/pad	<input checked="" type="radio"/> Choose
pipe system	<input checked="" type="radio"/> 50 mm	<input checked="" type="radio"/> 100 mm	
Heater coverage	158.00	m2 (standard coverage 158 m2)	
Volume flow rate per heater	940	m3/hour	<input checked="" type="radio"/> electric coil <input checked="" type="radio"/> water coil
Design Loop Length	16.5	m	25 m
Design Equivalent Length	25	m	58 m
Pressure Drop Loop	N/A	Fan 319	319 Pa
			adjust C23 to match

Piping Density

