



## Application Form

### 2007 System Showcase

Radiant Panel Association  
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Response ID ER702

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#### Step 1 CATEGORY

Electric - Electric radiant installed in residential or commercial properties

#### Step 2 SUBMITTED BY

#### Step 3 PROJECT INFORMATION

PROJECT NAME: Fry Residence LOCATION: Gardnerville, NV  
YEAR COMPLETED: 2006 SQ FT LIVING AREA: 3,700

STRUCTURE AGE: New SPACE HEATED/COOLED BY RADIANT: 3,110 sq ft  
LEVELS/STORIES: 2

STRUCTURE CONSTRUCTION: wood frame

STRUCTURE USE: residence

PROJECT TYPE: \_\_\_\_\_

Heating    Cooling    Snow Melting    Other Type

RADIANT PANEL LOCATION: \_\_\_\_\_  
 Floor    wall    Ceiling    Other Location \_\_\_\_\_

Radiant Zones: # 12

ADDITIONAL FUNCTIONS:

Fan Coil    Domestic HW    Hot Tub    Pool

Convector    Other Functions

UTILITY: \_\_\_\_\_

Electric    Natural gas    Propane    Oil

Solar    Other Utility

HEAT SOURCE: \_\_\_\_\_

Resistance    Boiler    Heat Pump    Water Heater

Furnace    Other Heat Source low voltage

**Step 4 PANEL DESCRIPTION**

**Floor Panels**

TUBE OR ELEMENT:

- Cable    Film    PEX tube    PB tube    Rubber    PE/Metal
- PE    Copper    Other Tube/Element self-regulating PTC element

PANEL CONSTRUCTION:

- Concrete slab on grade    Concrete slab below grade    Sand below concrete slab
- Gypsum on concrete    Gypsum on wood subfloor    Concrete/wood subfloor
- Wood sleepers    Under wood subfloor    Suspended in joist bay
- Aluminum plates    Reflective barrier    Premanufactured panels

**Other Panel Construction** on wood subfloor

PANEL COVERING:

- Carpet glued    Carpet & pad    Hardwood    Softwood
- Ceramic Tile    Stone    Brick    Bare

**Other Panel Covering**

OTHER PANEL DETAILS:

**Tube Size:** \_\_\_\_\_ inch **Cable Size:** \_\_\_\_\_ watts/ft

**Spacing:** \_\_\_\_\_ to \_\_\_\_\_ in o/c (range) **Other Panel Details:** \_\_\_\_\_

**Wall Panels**

- Cast iron    Welded steel    Extruded aluminum
- Embedded tube/cable    Premanufactured electric

**Other Wall**

**Ceiling Panels**

- Embedded tube/cable    Premanufactured electric    Premanufactured hydronic

**Snow Melt Panels**

SNOW MELT CONSTRUCTION:

- Embedded tube    Embedded cable
- Asphalt    Concrete    Pavers

SNOW AND ICE MELTING:

- Always clear and dry    Melt and run off    Melt within an hour of snowfall

## Step 5 CONTROLS

### INDOOR SENSING:

6 Air sensing thermostats      Panel sensors Other 6 time proportional controller

### OUTDOOR SENSING:

     Reset heat source high limits      Secondary loop temp controls

### PANEL TEMPERATURE CONTROL:

     3-way mixing valves      4-way mixing valves      Injection valves  
     Injection Pumps      Heat exchangers      On-off valves  
     On-off pumps      On-off heat source      The element acts as a floor sensor

### ROOM CONTROL:

     Zone valves      Manifold telestats      Pumping zones  
     Thermostatic valves      Relays (electric system)      PTC Element

## Step 6 ADDITIONAL DESCRIPTION

The Fry Residence is located in Gardnerville, Nevada, at an altitude of approximately 5000 feet. The total structure is 3,700 square feet, of which 2,759 sq.ft. on the first floor and 343 sq.ft. on the second floor have STEP Warmfloor radiant floor heating.

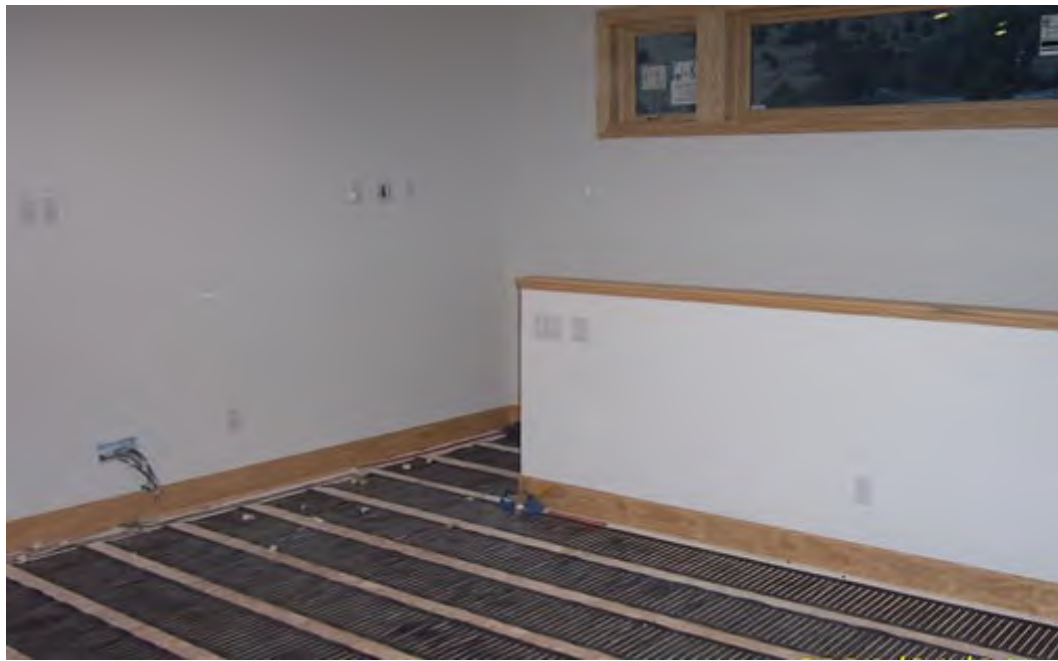
When Dr. Fry decided to rebuild his new home after a fire destroyed his former house, he started by doing a lot of research on the website and asking around to educate himself on available construction options. One of his priorities was energy efficiency and that is how he got interested in STEP Warmfloor. Since I have STEP Warmfloor electric radiant heat installed in my whole house, I was able to show him the advantages and ease of installation of the system. He liked the simplicity and low-consumption of the system.

The choice of floor coverings went from hardwood, carpet and tile, so he needed a system that could go under all types of floors. He finished by installing carpet in most rooms and tile in the kitchen, entry and bathrooms. The other concern was the large windows the house had to take advantage of the beautiful view overlooking Lake Topaz. A heat loss calculation was made to satisfy the heating needs for this type of construction.

What makes STEP Warmfloor energy efficient and able to go under most floor coverings is the self-regulating properties of the product. As the material gets warm, it pulls less energy and it cannot over heat. It is as having a floor sensor over the whole floor.

Dr. Fry followed very closely the construction of what he considered would be his dream house. A forced air system was also installed in the house, but Dr. Fry never turned on the furnace during the whole winter as the STEP Warmfloor heating system supplied sufficient heat to keep the home comfortable. As he enjoyed his radiant heat, he commented to me that 'this is the way to go'.









*ER 702*

Room	Floor Covering	Transformer		Element		Feet	Total Wattage	Primary Amperage	Circuit Main Panel	Control Model	Zone
		No.	Model	Model	Model						
Master Bath	Tile	1	EP-1500VA	EP-30-2-29W	EP-30-2-29W	114.0	1003.2	8.4	# 13	Microreg	1
	Tile	2	EP-500VA	EP-23-2-36W	EP-23-2-36W	8.7	100.1	0.8	# 13	Microreg	2
Master Bedroom	Carpet	3	EP-1500VA	EP-30-2-24W	EP-30-2-24W	159.3	1194.8	10.0	# 7	Digi-Lux	3
	Carpet	4	EP-1500VA	EP-30-2-24W	EP-30-2-24W	46.1	345.8	2.9	# 7	Digi-Add-on	
Master Closet	Carpet	5	EP-100VA	EP-30-2-24W	EP-30-2-24W	99.6	747.0	6.2	# 5	Microreg	4
Living Room	Carpet	6	EP-1500VA	EP-30-2-24W	EP-30-2-24W	164.2	1231.5	10.3	# 9	Digi-Add-on	5
Dining Room	Carpet	7	EP-1500VA	EP-30-2-24W	EP-30-2-24W	153.0	1147.5	9.6	# 15	Digi-Lux	
Hall Entry	Carpet	8	EP-1500VA	EP-30-2-29W	EP-30-2-29W	126.0	1108.8	9.2	# 5	Digi-Add-on	6
Pwdr Rm & Entry	Tile	9	EP-500VA	EP-30-2-29W	EP-30-2-29W	46.4	408.3	3.4	# 5	Microreg	
									Pantry Sub-panel		
Kitchen	Tile	10	EP-1500VA	EP-30-2-29W	EP-30-2-29W	153.2	1348.2	11.2	# 2	Digi-Lux	7
Bedroom # 2	Carpet	11	EP-1500VA	EP-30-2-24W	EP-30-2-24W	157.5	1181.3	9.8	# 4	Digi-Lux	8
Bathroom # 2	Tile	12	EP-500VA	EP-30-2-29W	EP-30-2-29W	42.1	370.5	3.1	# 4	Microreg	9
Hall Stairs	Carpet	13	EP-500VA	EP-30-2-24W	EP-30-2-24W	52.8	396.0	3.3	# 2	Digi-Add-on	10
Great Room	Carpet	14	EP-1500VA	EP-30-2-24W	EP-30-2-24W	176.7	1325.3	11.0	# 10A	Digi-Lux	
	Carpet	15	EP-1500VA	EP-30-2-24W	EP-30-2-24W	163.8	1228.5	10.2	# 11A	Digi-Add-on	
	Carpet	16	EP-1500VA	EP-30-2-24W	EP-30-2-24W	114.3	857.3	7.1	# 11A	Digi-Add-on	
Laundry	Tile	17	EP-1000VA	EP-30-2-29W	EP-30-2-29W	95.6	841.3	7.0	# 8	Microreg	11
Office - 2nd Floor	Carpet	18	EP-1500VA	EP-30-2-24W	EP-30-2-24W	165.4	1240.5	10.3	# 6	Digi-Lux	12
	Carpet	19	EP-1000VA	EP-30-2-24W	EP-30-2-24W	99.6	747.0	6.2	# 6	Digi-Add-on	
TOTAL		19				2138.3	16822.5	140.2			

FRY RESIDENCE 1ST FLOOR ZONES # 1 2 3 4 5 6 7 8 9 10 11

LAYOUT OF THE STEP WARM FLOOR HEATING ELEMENTS

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