



**CLEVELAND METROPARKS ZOO**®

SECURING A FUTURE FOR WILDLIFE  
**RainForest Dome**

**Replacement**

**Guaranteed Maximum Price 1**

# RainForest Dome Replacement – GMP 1



Opened to much acclaim in 1992, the RainForest has proven a destination for families and tourists, housing over 10,000 plants and 600 animals. The RainForest is one of the most popular exhibits at the Zoo. There are five animals from opening day in 1992 that still live in The RainForest.



# RainForest Dome Replacement – GMP 1

## Existing geodesic Dome

- Acrylic panel failure
- Tinted acrylic does not allow UV penetration into the habitats
- Water infiltration at failing panels and base of dome flashing



# RainForest Dome Replacement – GMP 1

## Dome Geometry Options

### Pie Shaped

#### Lower Pie Shaped

010 Isometric view

011 Top view

012 Front view

013 Cushion types

#### Geodesic

014 Isometric view

015 Top view

016 Front view

017 Cushion types

70°

70°

018 Isometric view

Area: 6,114 sq ft  
 SE Extrusion: 275  
 DE Extrusion: 1745.5

019 Foot plan

020 Elevation

019 Cushion types

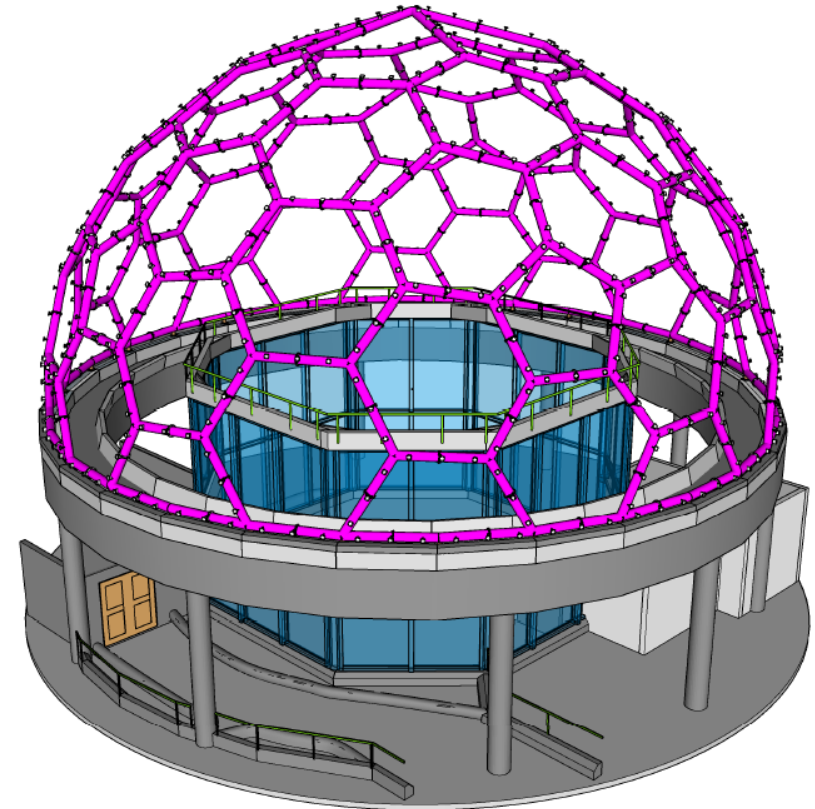
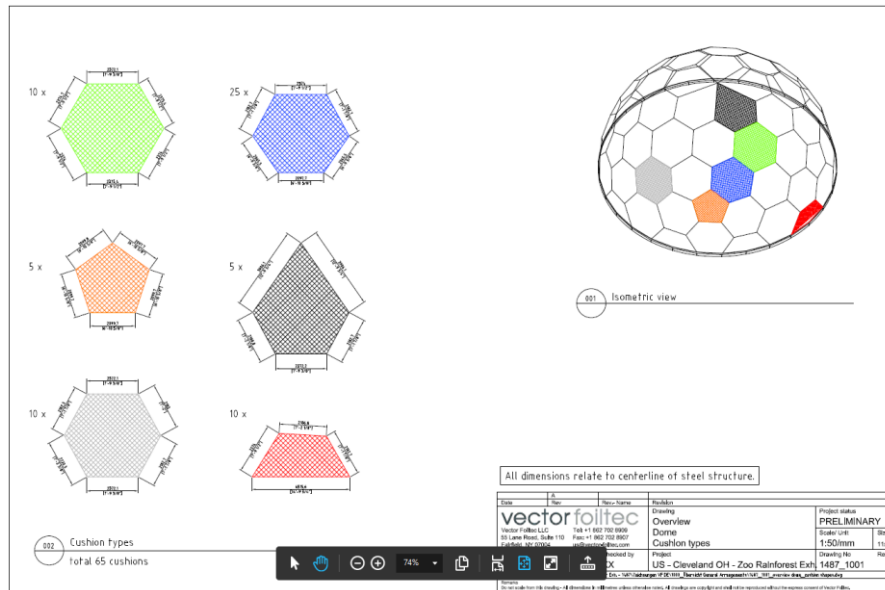
021 Cushion types

Date		Rev	Rev. Name	Revision	Project Status	
vectorfolitec				Drawing	PRELIMINARY	
vector folitec LLC				Option 2	Scale/ Unit	Size
651 Lane Road, Suite 110				General arrangement	NTS	11x17
Fairfield, NY 07004					Drawing No	Rev
Tel: +1 862 702 8600				Project	1487_1001	
Fax: +1 862 702 8607				US - OH Cleveland Rainforest Dome		
us@vector-folitec.com						
Drawn by	Date	Checked by	Project		Drawing No	
JT	10-10-19	JG	US - OH Cleveland Rainforest Dome		1487_1001	
Remarks						
Do not scale from this drawing. All dimensions in millimeters unless otherwise noted. All drawings are copyright and shall not be reproduced without the express consent of Vector Folitec.						

# RainForest Dome Replacement – GMP 1

## Dome Geometry

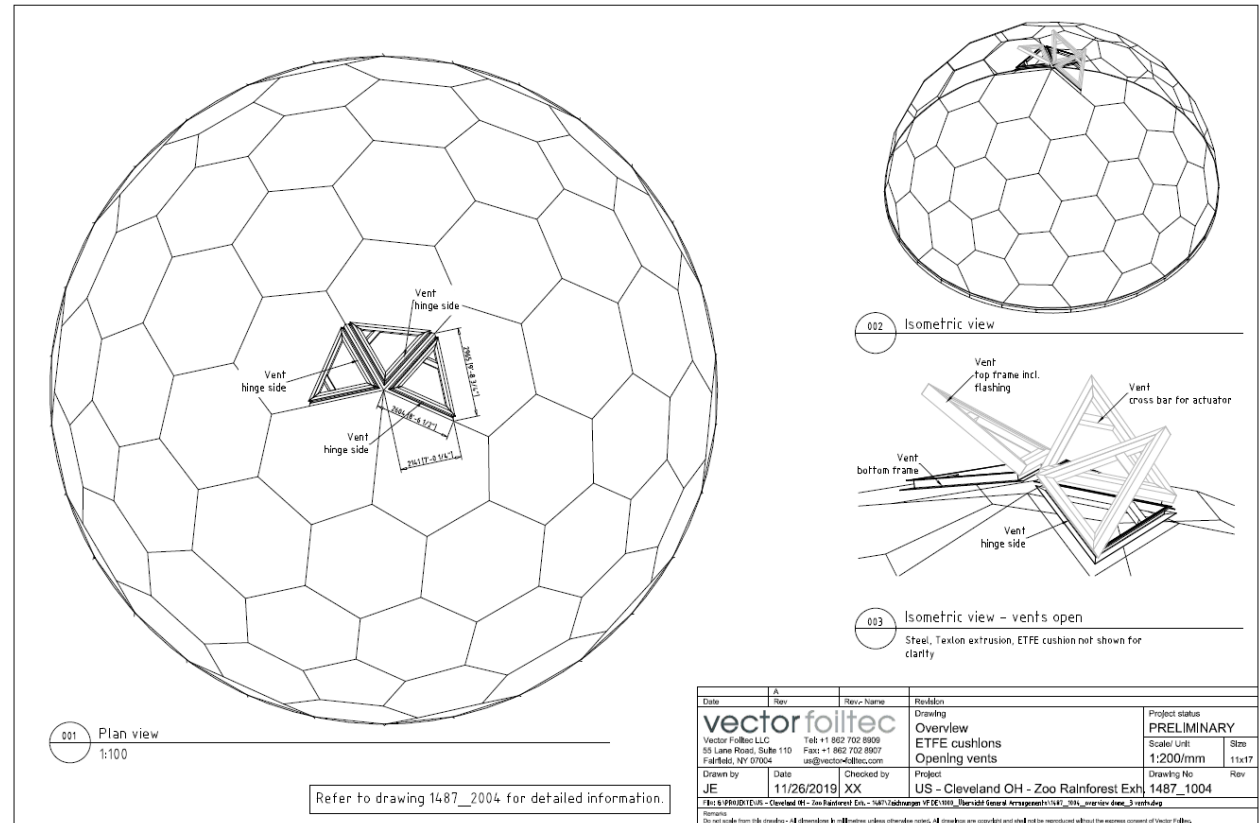
- Replace tinted acrylic geodesic dome with multi-layer ETFE clad dome, replicating the primates' natural biome's high level of UV radiation in the habitat
- The dome will be made of six shapes of efficient cushions
- The radius of the dome is similar to the original



# RainForest Dome Replacement – GMP 1

## Dome Venting

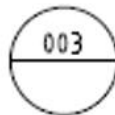
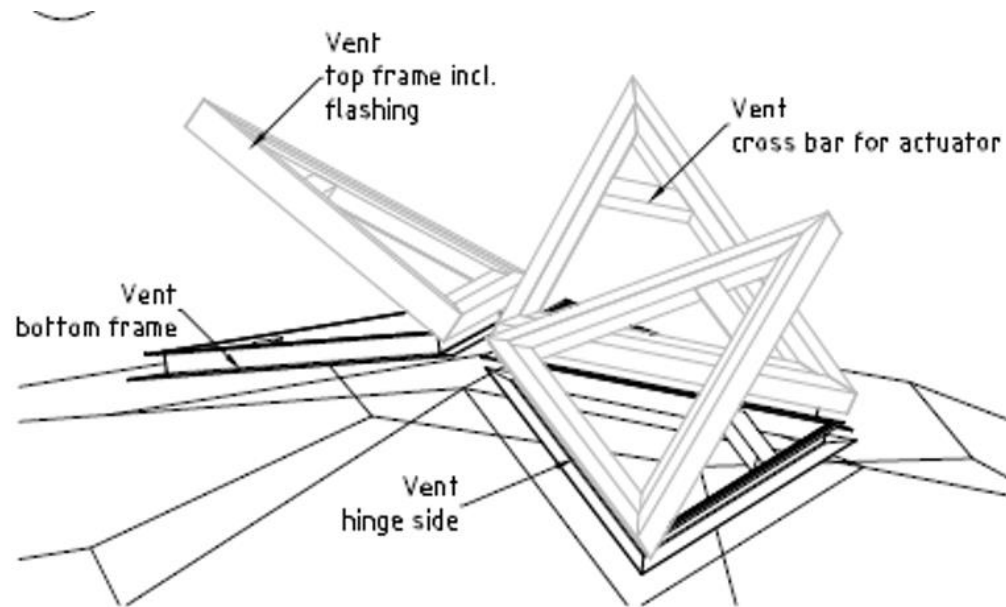
- Provide dome venting to better control the heat build-up and reduce operating cost and energy consumption
- Dome will be provided with three operable vents



# RainForest Dome Replacement – GMP 1

## Dome Venting

- Provide dome venting to better control the heat build-up and reduce operating cost and energy consumption
- Dome will be provided with three operable vents



Isometric view – vents open

Steel, Texlon extrusion, ETFE cushion not shown for clarity

# RainForest Dome Replacement – GMP 1

## Control Solar Transmission

- Apply printed fritting technology to improve the solar control of the building envelope
- ETFE is an extremely transparent material
- The fritting is printed with silver pigments to reflect the solar radiation
- The selected pattern will reduce the UV transmission by approximately 25% vs a non-fritted panel.

Dot Random DR 16-46:41 – Medium



Values	Layer Two	Layer Three
Tvis%	0.54	0.51
SHGC	0.57	0.54
Btu/h·ft²	0.45	0.33

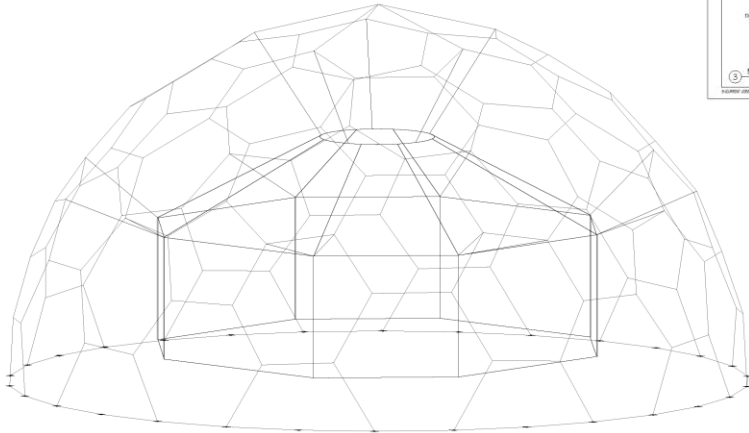
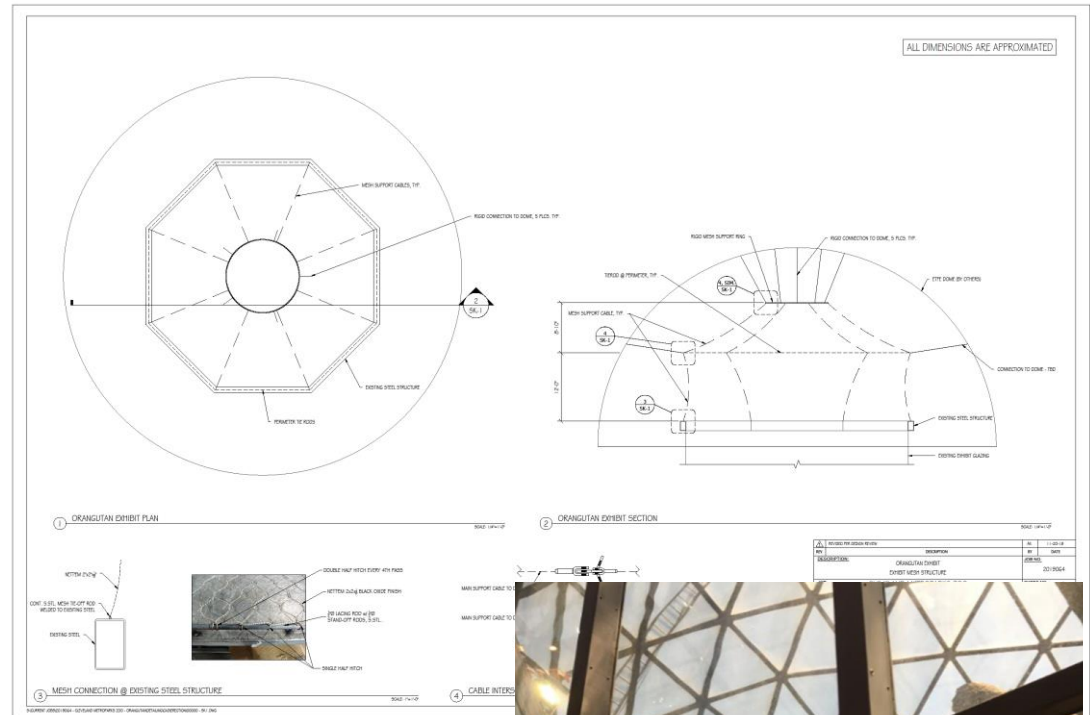
These figures are for information only. For project specific information please contact us at [www.eco-panels.com](http://www.eco-panels.com)  
Stephanie: 01410, 01425  
Tara: 01410, 01425  
01410, 01425  
01410, 01425  
01410, 01425

Values	Layers	
	Two	Three
Tvis%	0.54	0.51
SHGC	0.57	0.54
Btu/ft² h°F	0.45	0.33



# RainForest Dome Replacement – GMP 1

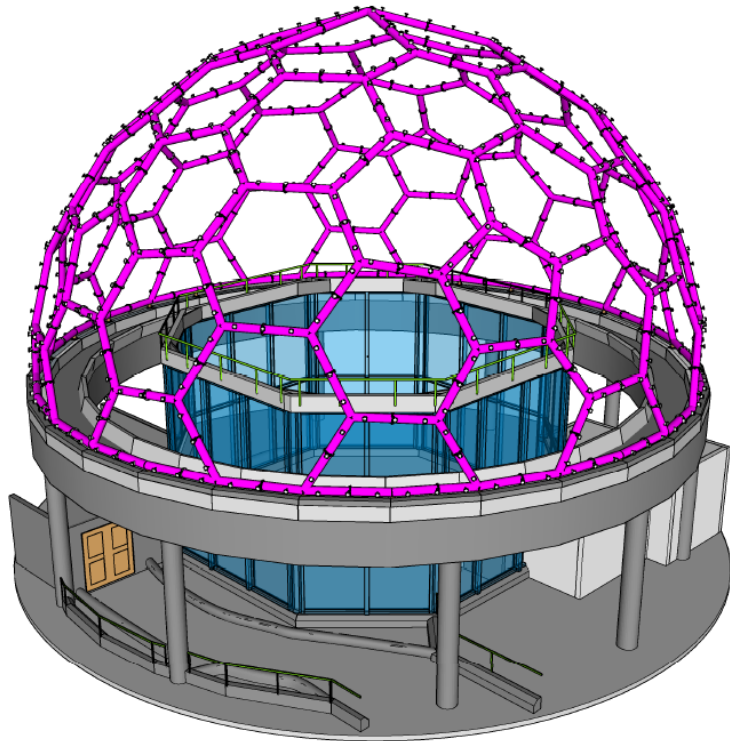
- Habitat improvement
- Fully enclosed orangutan habitat which will allow access to habitat overnight
- Will enhance vertical arboreal nature of the habitat for the good of the orangutans
- Enclosed habitat will accommodate future species



# RainForest Dome Replacement – GMP 1

## GMP Establishment

Regency has established the below GMP 1:



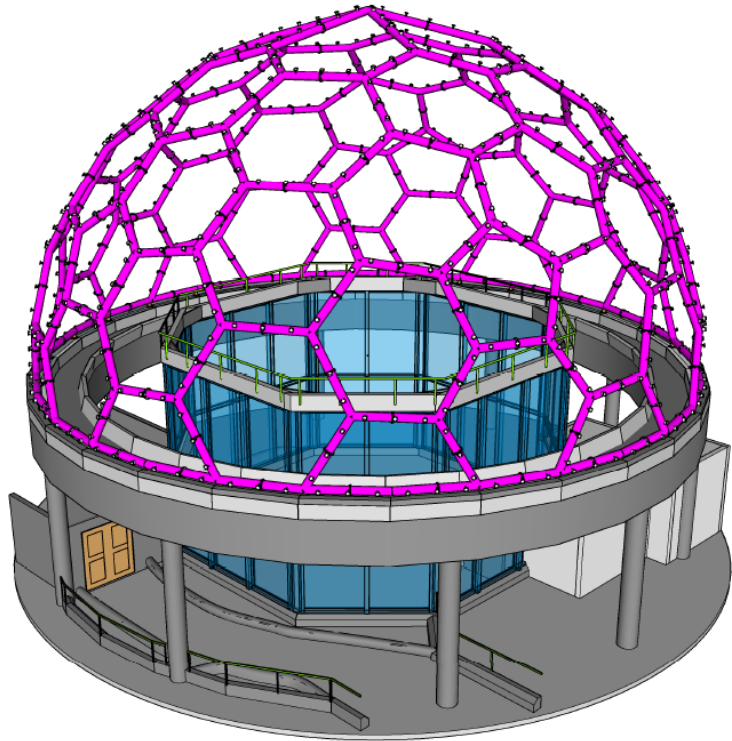
<u>Item</u>	<u>Cost</u>
Vector Foiltec Dome Fabrication	\$1,561,090.00
Alt: 3 <sup>rd</sup> Layer of ETFE	\$ 12,646.00
Alt: ETFE 20% Shade Fritting	\$ 4,534.50
Alt: Three (3) Dome Operable Vents	\$ 83,055.00
<i>Cost of Work Subtotal</i>	\$1,661,325.50
General Conditions (6.32%)	\$ 104,995.77
DB Construction Stage Fee (1.58%)	\$ 26,248.94
DB Fee (2.5%)	\$ 41,533.14
Contingency (2.5%)	\$ 41,533.14
Sprinkler and Vent Control Engineering	\$ 6,000.00
Soffit Design and Evaluation	\$ 11,392.00
Skylight Design and Analysis	\$ 22,292.00
Guaranteed Maximum Price 1	\$1,915,320.49

**Total GMP 1 \$1,915,320.49**

# RainForest Dome Replacement – GMP 1

## Future GMP 2 Components

- Dome Demolition
- Temp Building Enclosure Systems
- Exhibit Enclosure
- Lightning Protection
- Structural Retrofits
- Sprinkler System Modifications
- Electrical Component Modifications





**CLEVELAND METROPARKS ZOO**®

SECURING A FUTURE FOR WILDLIFE  
**RainForest Dome**

**Replacement**

**Guaranteed Maximum Price 1**