UTAH SYSTEM OF HIGHER EDUCATION
Building a Stronger State of Minds

State Board of Regents
Board of Regents Building, The Gateway
60 South 400 West
Salt Lake City, Utah 84101-1284

Phone 801.321.7101
Fax 801.321.7199
TDD 801.321.7130
www.higheredutah.org

May 11, 2016

MEMORANDUM

TO: State Board of Regents

FROM: David L. Buhler

SUBJECT: Utah Valley University – Non-State Funded Athletic Dome Project Approval

Issue

Utah Valley University (UVU) is requesting Regents' approval to proceed with a $1.5 million non-state funded project to enclose an athletic field located on the Vineyard Campus.

Background

UVU proposes to enclose one of the intercollegiate athletic fields at the Vineyard Campus with a 60,000 square foot fabric air structure dome. The structure will be designed and constructed by a specialized designer/ manufacturer/ installer and cost approximately $1.5 million, which will be financed with Western Athletic Conference (WAC) affiliation funds. The operation and maintenance (O&M) costs, estimated to be between $70,000 and $104,000, will be paid by athletic teams that use the facility. No state appropriated funds will be used in the design, construction, or operation of the proposed project.

Regent policy R710, *Capital Facilities* requires the Regents review and approve non-state funds construction or remodeling projects which cost more than $1,000,000. Building Board approval will also be required since state statute (63A-5-104) classifies this as a "capital development" project due to the fact it will enclose previously open space.

Additional information about the project is provided in the attached documents and UVU representatives will be present at the Board meeting to respond to Regent questions.

Commissioner's Recommendation

The Commissioner recommends the Board approve the proposed project and authorize UVU to move forward with the Utah State Building Board for final approval.

_____
David L. Buhler
Commissioner of Higher Education

DLB/KLH/RPA
Attachments

UVU Sports Field Cover

Presentation to the Board of Regents

Purpose:

We seek Board approval to install an air supported structure to provide year-round training and game space for our students and student-athletes.

Background:

During 2013 four soccer fields were constructed at the UVU Vineyard property to support our growing need for sports fields. The turf fields on campus were being used by so many groups that the sod was beginning to die. Student-athletes do not have a space large enough on campus to stay conditioned during the winter months. Year round use of the fields has been requested by all user groups. The cover will allow us to maximize our $5,000,000 investment in the fields.

Remedy:

A study of suitable structures to over the field was undertaken by the UVU Facilities Department. Due limitations in funding and improvements in material technology and control systems, an air supported structure became the solution to providing the cover over the field.

Traditional construction first costs for a building of the size needed to cover 60,000 SF would be $15,000,000. Other types of buildings including tensile structures and metal framed structures had first costs in the $6M to $12M range. These construction costs far exceeded our budget.

Operating and maintenance costs were also explored to justify the air supported structure. Industry and local engineering reviews have informed us that the operating costs of the structure will be in the range of $70,000 to $104,000 per year. The structure is expected to have a usable life of 25 years. This equals a life cycle cost of $3.4M. The initial cost of the structure is $1.5M; making our total investment only $4.9M, well below the initial cost of the next available structure type.

Recommendation:

We recommend that the Board approve our request and permit us to install an air supported structure to cover one of the fields of our turf complex at Vineyard.

UVU Sports Field Cover

UVU Vineyard Turf Fields

Four Soccer Fields with Multiple Game Lines

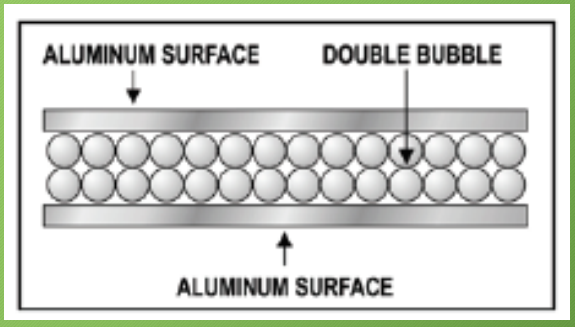
In Use for Past Three Years, Cost $ 5M

Year-round Use Needed by All User Groups

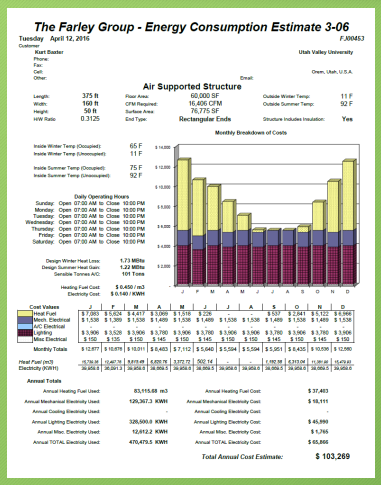
One Field to be Covered

Air Supported Structure

Insulated to R-10



Operating Costs $104,000 annually



The Farley Group - Energy Consumption Estimate 3-06

Tuesday April 12, 2016

Air Supported Structure

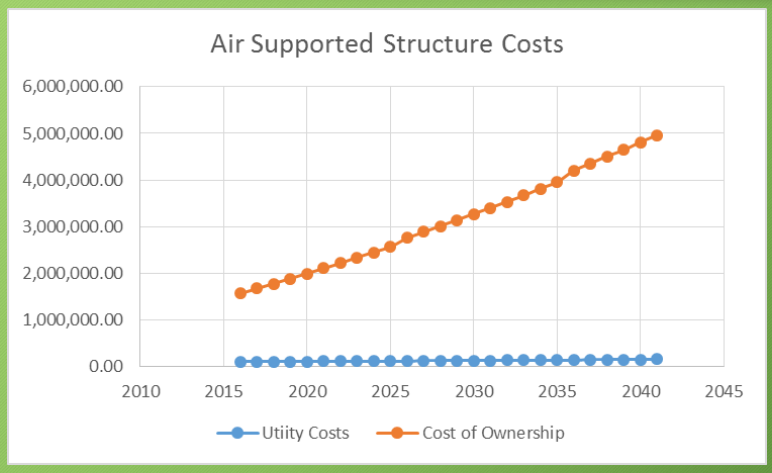
Total Annual Cost Estimate: $ 103,269

Colvin Engineers Analysis

- Use LED Lighting
- Minimal Cooling

- $68,840 annual cost

Cost of Ownership 25 years $5 Million



Improvements

-2026 $75,000

-2036 $115,000

Warranty and Life Span

- Five year fabrication warranty
- Fabric warranties of up to 20 years

Life Span from 18 to 25 years

- Shorter construction schedules than conventional buildings

Other Users

- College of Staten Island, NY
- Thiel College, PA
- Royal Military College, ONT
- Oakland University, MI
- Roosevelt Island Tennis, NY
- Chicago Fire Soccer Club, IL
- Bidder has over 900 in use

Other Types of Structures

Costs of other Buildings: Initial Costs & O+M

Fabric Tensile Structures: $ 6,000,000 + 3,400,000 = $ 9,400,000

Metal Buildings: $ 12,000,000 + 3,900,000 = $ 15,500,000*

Brick and Mortar: $ 15,000,000 + 3,900,000 = $ 18,500,000*

* Reroof Cost

The Farley Group - Energy Consumption Estimate 3-06

Tuesday April 12, 2016 *FJ00453*

Customer

Kurt Baxter **Utah Valley University**

Phone:

Fax:

Cell: Orem, Utah, U.S.A.

Other: Email:

Air Supported Structure

Length:	375 ft	Floor Area:	60,000 SF	Outside Winter Temp:	11 F
Width:	160 ft	CFM Required:	16,406 CFM	Outside Summer Temp:	92 F
Height:	50 ft	Surface Area:	76,775 SF		
H/W Ratio	0.3125	End Type:	Rectangular Ends	Structure Includes Insulation:	Yes

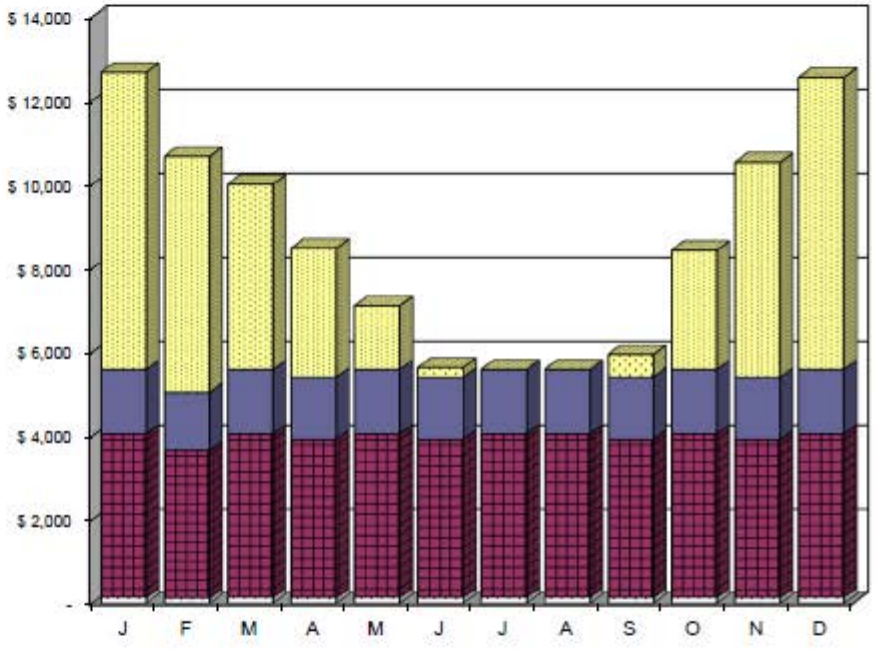
Inside Winter Temp (Occupied):	65 F
Inside Winter Temp (Unoccupied):	11 F
Inside Summer Temp (Occupied):	75 F
Inside Summer Temp (Unoccupied):	92 F

Daily Operating Hours

Sunday: Open 07:00 AM to Close 10:00 PM
Monday: Open 07:00 AM to Close 10:00 PM
Tuesday: Open 07:00 AM to Close 10:00 PM
Wednesday: Open 07:00 AM to Close 10:00 PM
Thursday: Open 07:00 AM to Close 10:00 PM
Friday: Open 07:00 AM to Close 10:00 PM
Saturday: Open 07:00 AM to Close 10:00 PM

Design Winter Heat Loss:	1.73 MBtu
Design Summer Heat Gain:	1.22 MBtu
Sensible Tonnes A/C:	101 Tons
Heating Fuel Cost:	$ 0.450 / m3
Electricity Cost:	$ 0.140 / KWH

Monthly Breakdown of Costs



Cost Values	J	F	M	A	M	J	J	A	S	O	N	D
Heat Fuel	$ 7,083	$ 5,624	$ 4,417	$ 3,069	$ 1,518	$ 226	-	-	$ 537	$ 2,841	$ 5,122	$ 6,966
Mech. Electrical	$ 1,538	$ 1,389	$ 1,538	$ 1,489	$ 1,538	$ 1,489	$ 1,538	$ 1,538	$ 1,489	$ 1,538	$ 1,489	$ 1,538
A/C Electrical	-	-	-	-	-	-	-	-	-	-	-	-
Lighting	$ 3,906	$ 3,528	$ 3,906	$ 3,780	$ 3,906	$ 3,780	$ 3,906	$ 3,906	$ 3,780	$ 3,906	$ 3,780	$ 3,906
Misc Electrical	$ 150	$ 135	$ 150	$ 145	$ 150	$ 145	$ 150	$ 150	$ 145	$ 150	$ 145	$ 150
Monthly Totals	$ 12,677	$ 10,676	$ 10,011	$ 8,483	$ 7,112	$ 5,640	$ 5,594	$ 5,594	$ 5,951	$ 8,435	$ 10,536	$ 12,560
Heat Fuel (m3)	*15,730.36*	*12,497.76*	*9,815.49*	*6,820.76*	*3,372.72*	*502.14*	-	-	*1,192.58*	*6,313.04*	*11,381.90*	*15,479.03*
Electricity (KWH)	39,958.6	36,091.3	39,958.6	38,669.5	39,958.6	38,669.5	39,958.6	39,958.6	38,669.5	39,958.6	38,669.5	39,958.6

Annual Totals

Annual Heating Fuel Used:	83,115.68 m3	Annual Heating Fuel Cost:	$ 37,403
Annual Mechanical Electricity Used:	129,367.3 KWH	Annual Mechanical Electricity Cost:	$ 18,111
Annual Cooling Electricity Used:	-	Annual Cooling Electricity Cost:	-
Annual Lighting Electricity Used:	328,500.0 KWH	Annual Lighting Electricity Cost:	$ 45,990
Annual Misc. Electricity Used:	12,612.2 KWH	Annual Misc. Electricity Cost:	$ 1,765
Annual TOTAL Electricity Used:	470,479.5 KWH	Annual TOTAL Electricity Cost:	$ 65,866

Total Annual Cost Estimate: **$ 103,269**