January 16, 2014

MEMORANDUM

TO:          Dr. Mark A. Hussey
             Interim President, Texas A&M University

SUBJECT:     CBE Recommendation: Thermal Storage Tank Recommendation of New Site Location

At its December 10, 2013 meeting, the Council for the Built Environment (CBE) discussed a request from Utilities and Energy Services requesting CBE consideration and approval of a new site for a thermal storage tank.

On May 14, 2013, the Thermal Energy Storage Tank was presented to the CBE for review and approval at the completion of schematic design. The original concept design approval was for a 50 ft. high tank at the SUP1 facility across from Reed Arena. The new design was for an 80’ ft. in diameter and 80’ ft. high tank constructed of welded steel at the same location. The CBE voted ‘no’ to the construction of the thermal tank as proposed. Reservations were based on aesthetic concerns as well as the precedence this could establish for future buildings in highly visible locations. The President approved to not recommend the construction of the thermal tank at the SUP1 facility on June 14, 2013.

Since then, an engineering and architectural firm was hired to identify alternate, innovative solutions. In addition to the thermal storage tank scope of work, a utility infrastructure corridor plan has been prepared to accommodate new lines necessary to support the thermal storage tank and other future construction projects on west campus. On November 13, 2013, Utilities and Energy Services presented revised site locations for the thermal storage tank and a utility infrastructure plan for review and approval. Review and approval would only be for the site location and utility infrastructure plan. The exterior design for the thermal storage tank will be presented at a later date.

The following three site options were presented to the DRsc:
- Option A1 or A2 - Integrated into the design of the new proposed parking garage (West Campus Housing Development)
- Option B1 - North of the Variety Testing and Sorghum Breeding Building
- Option B2 - At parking Lot 36E

The advantage to Option A1 or A2 is its ability for the facade to cover a majority of the tank. Depending on the height of the parking garage (proposed as five stories), there is the potential that the tank may be exposed 10 feet to 15 feet. There will also be other vertical elements such as the
elevator towers within the parking garage, so exposure of 10 feet to 15 feet can potentially be balanced with the rest of the design for the garage. Another possibility for total concealment would be the incorporation of a treatment such as screening at the top of the garage. Accessory spaces (pump and boiler room) will need to be accommodated on the lower level of the garage. Transportation Services has been included in discussions and it appears timing of both projects (if parking garage is approved) should work.

Option B1 is preferred to Option B2 as the chilled water line would not have to be extended as far and replacement parking would not need to be incorporated into the project cost. Option B1 is also located within an existing group of trees, which could help soften its visual impact. With both options, it is proposed that aesthetic architectural elements be applied to the exterior of the tank.

The utility infrastructure plan as presented is to provide the framework for future utility lines necessary for future campus growth. The proposed future location of SUP 4 site is not part of this approval, but is only shown to indicate that one will need to be sited in that vicinity in the future. Recommendations from the Sub-Councils:

Design Review Sub-Council (DRsc) – The DRsc members voted to recommend approval of the following revised site location for the thermal storage tank and for the utility infrastructure plan with the following caveats:

- Preferred site location is Option A1 or A2 - integration with the proposed new parking garage.
- If approval is not received for the parking garage, then the secondary recommendation is Option B1 - North of the Variety Testing and Sorghum Breeding Building.
- Further review of the design will be presented to the DRsc at 100% Schematic Design.

Jim Riley, Executive Director of Utilities and Energy Services reported on the benefits of the thermal energy storage (TES) system which will include a chilled water storage tank having an 80 ft. height and 80 ft. diameter.

- Reduced Utility Cost – will save the University approximately three quarters of a million dollars a year in utility costs by operating chillers at night using lower cost off-peak power versus operating chillers in the daytime using more expensive power purchased during peak cooling periods.
- Increased Cooling Capacity - will provide additional cooling capacity needed to meet peak cooling load expected by Summer 2015 resulting from additional facilities being constructed on west campus.
- Operational Benefits - will provide greater reliability and redundancy of service while meeting cooling loads on campus.
- Environmental Benefits - will benefit the environment by reducing overall energy consumption and shifting load from peak to off-peak periods when renewable energy is available as a higher percentage of power supply to campus.
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The CBE voted unanimously to recommend the President approve the request to install the Thermal Storage Tank in place with the West Campus Garage (Option A1 or A2, with approval from the DRsc on the design) if approval for the garage is received by January, 2014. If not, recommendation is to approve Option B1 site, north of the Variety Testing and Sorghum Breeding Building.

Kara L. Watson 1-24-14
Provost and Executive Vice President for Academic Affairs
Co-Chair, Council for the Built Environment

B. J. Crain 1-17-14
Vice President for Finance and Administration
Co-Chair, Council for the Built Environment

Mark A. Hussey 1-28-2014
Interim President

Concur or not concur with CBE’s recommendation:
Option B1

cc: B. J. Crain, Vice President for Finance and Administration
Sub-Council Chairs, Council for the Built Environment
January 9, 2014

MEMORANDUM

TO: Dr. R. Bowen Loftin  
President, Texas A&M University

SUBJECT: CBE Recommendation: Thermal Storage Tank Recommendation of New Site Location

At its December 10, 2013 meeting, the Council for the Built Environment (CBE) discussed a request from Utilities and Energy Services requesting CBE consideration and approval of a new site for a thermal storage tank.

On May 14, 2013, the Thermal Energy Storage Tank was represented to the CBE for review and approval at the completion of schematic design. The original concept design approval was for a 50 ft. high tank at the SUP1 facility across from Reed Arena. The new design was for an 80’ ft. in diameter and 80’ ft. high tank constructed of welded steel at the same location. The CBE voted ‘no’ to the construction of the thermal tank as proposed. Reservations were based on aesthetic concerns as well as the precedence this could establish for future buildings in highly visible locations. The President approved to not recommend the construction of the thermal tank at the SUP1 facility on June 14, 2013.

Since then, an engineering and architectural firm was hired to identify alternate, innovative solutions. In addition to the thermal storage tank scope of work, a utility infrastructure corridor plan has been prepared to accommodate new lines necessary to support the thermal storage tank and other future construction projects on west campus. On November 13, 2013, Utilities and Energy Services presented revised site locations for the thermal storage tank and a utility infrastructure plan for review and approval. Review and approval would only be for the site location and utility infrastructure plan. The exterior design for the thermal storage tank will be presented at a later date.

The following three site options were presented to the DRsc:
- Option A1 or A2 - Integrated into the design of the new proposed parking garage (West Campus Housing Development)
- Option B1 - North of the Variety Testing and Sorghum Breeding Building
- Option B2 - At parking Lot 36E

The advantage to Option A1 or A2 is its ability for the facade to cover a majority of the tank. Depending on the height of the parking garage (proposed as five stories), there is the potential that the tank may be exposed 10 feet to 15 feet. There will also be other vertical elements such as the...
elevator towers within the parking garage, so exposure of 10 feet to 15 feet can potentially be balanced with the rest of the design for the garage. Another possibility for total concealment would be the incorporation of a treatment such as screening at the top of the garage. Accessory spaces (pump and boiler room) will need to be accommodated on the lower level of the garage. Transportation Services has been included in discussions and it appears timing of both projects (if parking garage is approved) should work.

Option B1 is preferred to Option B2 as the chilled water line would not have to be extended as far and replacement parking would not need to be incorporated into the project cost. Option B1 is also located within an existing group of trees, which could help soften its visual impact. With both options, it is proposed that aesthetic architectural elements be applied to the exterior of the tank.

The utility infrastructure plan as presented is to provide the framework for future utility lines necessary for future campus growth. The proposed future location of SUP 4 site is not part of this approval, but is only shown to indicate that one will need to be sited in that vicinity in the future. Recommendations from the Sub-Councils:

**Design Review Sub-Council (DRsc)** – The DRsc members voted to recommend approval of the following revised site location for the thermal storage tank and for the utility infrastructure plan with the following caveats:

- Preferred site location is Option A1 or A2 - integration with the proposed new parking garage.
- If approval is not received for the parking garage, then the secondary recommendation is Option B1 - North of the Variety Testing and Sorghum Breeding Building.
- Further review of the design will be presented to the DRsc at 100% Schematic Design.

Jim Riley, Executive Director of Utilities and Energy Services reported on the benefits of the thermal energy storage (TES) system which will include a chilled water storage tank having an 80 ft. height and 80 ft. diameter.

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- **Environmental Benefits** - will benefit the environment by reducing overall energy consumption and shifting load from peak to off-peak periods when renewable energy is available as a higher percentage of power supply to campus.
The CBE voted unanimously to recommend the President approve the request to install the Thermal Storage Tank in place with the West Campus Garage (Option A1 or A2, with approval from the DRsc on the design) if approval for the garage is received by January, 2014. If not, recommendation is to approve Option B1 site, north of the Variety Testing and Sorghum Breeding Building.

Concur or not concur with CBE’s recommendation:

R. Bowen Loftin
President

cc: B. J. Crain, Vice President for Finance and Administration
Sub-Council Chairs, Council for the Built Environment