WM Group

Our Mission: To exceed your expectations

WM Group Engineers, P.C.
370 Seventh Avenue
Suite 701
New York, NY 10001

Phone (646) 827-6400
Fax (646) 827-6401

February 4, 2008

Mr. Courtney McCracken
Project Manager
Brown Facilities Management
295 Lloyd Avenue
Providence, RI 02912

Re: High Temperature Hot Water Distribution System Upgrade - Task H11
Rhode Island Hall Heating Hub

Dear Courtney:

We are pleased to submit our proposal to provide the engineering services for the above referenced project as follows:

A. Project Understanding and Scope of Work

Design is currently under way by Brown University under another project to renovate Rhode Island Hall in 2008. RI Hall is currently heated by steam from the Manning Hall hub via an underground tunnel from Slater Hall and there is no centralized cooling system. Brown plans to make RI Hall a heating hub serving itself and Slater Hall. This will involve bringing high temperature hot water (HTHW) to the proposed mechanical room in the eastern half of the basement of RI Hall. The source for the HTHW will be Manning Hall and the underground piping will be routed through the "Front Green" to the west of Manning. RI Hall will also require chilled water (CHW) for cooling. Under previous projects, CHW piping was run from Rockefeller Library to Horace Mann with 8" taps provided in the sidewalk of George Street that were intended to serve other buildings on campus. Those taps will be utilized for this project to serve RI Hall.

Slater Hall, a dormitory, is currently a MTHW heated building with no centralized cooling and is adjacent to RI Hall. Given the proximity to the trenching, MTHW and CHW piping will be run into Slater Hall. The MTHW would be tied into the existing building heating piping, and the existing steam to MTHW heat exchangers, pumps, etc, would be demolished. The CHW piping would be capped for future centralized cooling of the building at which time Slater Hall is renovated. Brown University may chose to provide the CHW branches in the future lowering costs at present time.

It is Brown University's plan to eventually put the Faculty Club Complex, eight building south of George St., onto the centralized heating system, and possibly the cooling system. HTHW and CHW will be run to Shirley Miller and capped. It is the intent to have Shirley

Miller be the future hub for the Faculty Club Complex. Under this scope, the HTHW and CHW pipes entering Shirley Miller will be capped with no other work in the building.

The extent of piping work is as shown on the attached drawing DWG-H11.

B. Project Approach and Scope of Work

Programming Phase:

The programming phase is to develop the pipe routing, sizes, and extent of pipe run. To date, the pipe run is schematic and is shown on DWG-H11 (previously issued).

In addition, we have studied the options of extending MTHW and CHW piping to serve Horace Mann and the Faculty Club complex south of George St. as well as the potential HTHW piping to RI Hall.

Detailed Design Phase:

1. We will retain SEA as our sub-consultant for the civil engineering work including but not limited to the items listed below. Detailed scope of work is outlined in the SEA's proposal of January 21, 2008 (attached).
   - Existing condition and topographic survey
   - Utility designation including subsurface utility engineering (soft dig)
   - Easement application
   - Utility company coordination
   - Drawings and specifications for civil, landscaping, surface preparation, soil preservation and restoration, utility crossing and profiles.

2. We will survey the existing mechanical rooms in the buildings listed above and develop plans to connect building system to the new HTHW, MTHW and/or CHW pipelines. There are a total of 4 buildings.

3. We will survey the potential underground pipe routes and develop the alignment and profiles.

4. For Slater Hall, that is currently using yard steam to MTHW for heating, we will study and design an alternate system to use MTHW directly. The objective is to eliminate the aging yard steam distribution.

5. We will prepare 65% piping installation drawings and specifications for review by Brown University. Upon receiving comments, we will prepare an Issued for Bid set of documents.

6. We will prepare pipe stress analysis for the HTHW and MTHW pipelines. The design of the piping system will be based on using expansion loops in lieu of expansion joints.

7. We will attend meetings during the design phase (estimated at 3 meetings).

Bid Assistance:

1. We will attend a pre-bid meeting, and respond to RFI's from bidders. We will issue addenda as required.

2. After award of contract and finalizing of the scope of project, we will prepare the conformance drawings.

Construction Services:

1. We will review shop drawings and stress analysis prepared by piping manufacturer.

2. Attend construction meetings, respond to RFI's and issue Bulletins as required.

3. Witness and sign off for the cleaning, flushing and pressure testing of the piping work performed by contractor.

4. Prepare punch list and sign off for the substantial completion.

C. Work Not Included

- Geotechnical Investigation
- Filing for permits with authorities having jurisdiction
- Environmental and soil remedial work
- Landscaping architectural work

D. Compensation

Our engineering fee comprises the following:

	Engineering Fee
• Programming Phase	$ 34,000
• SEA Design Phase	$158,510
• WMGE Design Phase	$185,400
• Bid Assistance – SEA	$ 12,520
• Bid Assistance - WM	$ 15,000
Total	**$405,430**

Construction services will be provided on time-card basis and charged to the Utilities Renewal Project.

Expenses for computer plotting, courier, out of town travel and living shall be reimbursable at cost.

We appreciate the opportunity to provide our services to you. If you have any questions with regard to the above, please do not hesitate to contact us.

Very truly yours,

WM Group Engineers, P.C.

Douglas Wen, P.E.
Vice President