

Dave Robinson
February 20, 2014

Business as Unusual: Howard University Hospital's Quest to Exit the Chilled Water Business

Honeywell

Management guru Tom Peters has been quoted as saying,

**“DO WHAT YOU DO BEST AND
OUTSOURCE THE REST”**

Project Background

- Honeywell Building Solutions (HBS) previously executed two phases of EPC at Howard University (Howard) – lighting, HVAC, basic ECMs
- HBS service contract not renewed by new leadership team at sister facility Howard University Hospital (HUH)
- Howard/ HUH significant campus wide manpower downsizing
- Different ESCO at HUH had contract, including chiller retrofit that was running into difficulties
- Board of trustees ordered stop of all work at HUH, with decision to get out of the chiller business
- HBS asked to participate in chiller project RFP

RFP Issued December, 2008

HOWARD UNIVERSITY & HOWARD UNIVERSITY HOSPITAL

REQUEST FOR PROPOSALS (RFP) FOR DESIGN/BUILD/OWN/OPERATE HU/HUH CHILLER PLANT

REFERENCE PROPOSAL: HU/HUH CHILLER PLANT

Date December 19, 2008

DESCRIPTION OF WORK

Design, Build, Own, and Operate a Central Chilled Water Plant for Howard University, Howard University Hospital, or a Legally Authorized Combination of the Two

ISSUING DEPARTMENT

HOWARD UNIVERSITY
Materials Management Department, Suite 413
2244 10th Street, NW
Washington, DC 20059

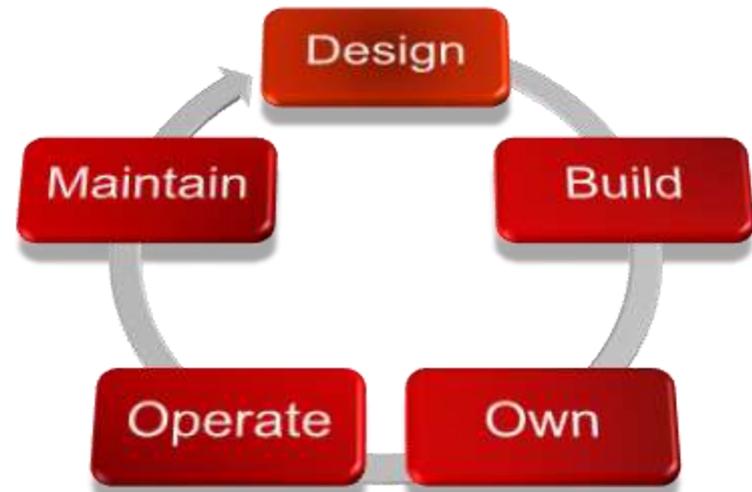
RFP Objectives

- Excel at core competency
 - HUH “wants to be focused on business of health care and not on the business of making chilled water” Mr. Paul Mullings, COO
- Build a cohesive team with developer
 - Through a competitive RFP process select most qualified company
 - Utilization of “Owner-Preferred” subcontractors
- Strengthen HUH’s business objectives
 - Minimize disruption to services
 - Minimize impact to patients and staff
 - Maximize existing assets



DBOOM Overview

- Design (Design Concept)
- Build (Constructability)
- Own (Financial Structure)
- Operate (Operating Procedure)
- Maintain (Honeywell Maintained)



RFP Process, Requirements

- Enhance reliability
- Provide existing capacities
- Reduce energy use
- Provide expansion capacity
- Leverage technology
- Facilitate CHP



RFP Process, Requirements (cont.)

- Reduce staffing
- Reduce Owner's first costs
- Recover costs to provide temporary cooling for HUH
- Purchase existing assets (primarily chiller)



Proposal Delivered February, 2009

HOWARD UNIVERSITY DESIGN/BUILD/OWN/OPERATE HU/HUH CHILLER PLANT

PRESENTED BY
HONEYWELL

FEBRUARY 17, 2009



Proposal included 6 Options

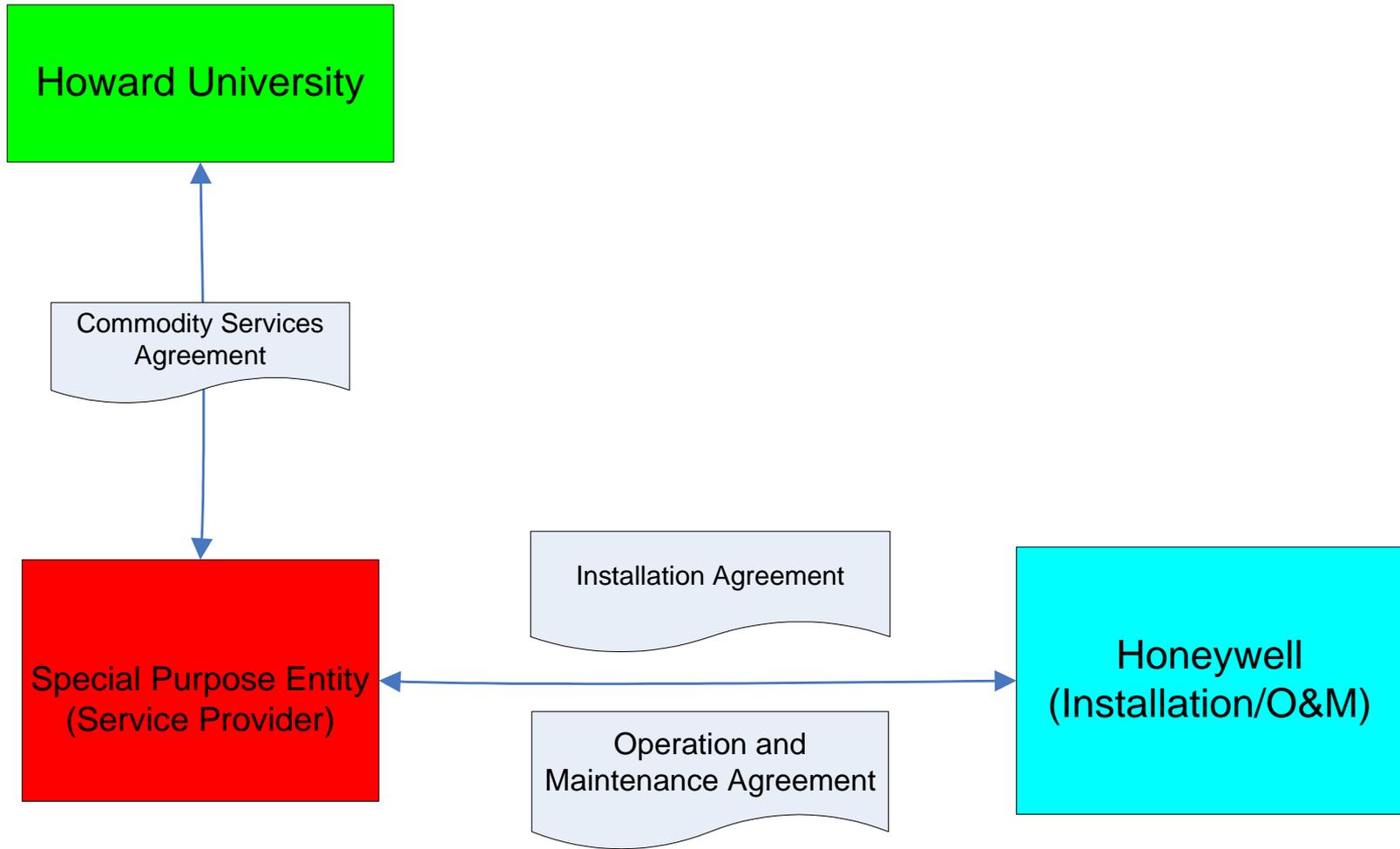
- Option 1 (A, B, C and D)
 - Adjacent to HUH (parking lot)
 - Variables included:
 - underground chilled water piping mains for expansion (site piping)
 - relocate existing chiller (1200 Ton), cooling towers and pumps
- Option 2
 - On the site of existing storage facility
 - Existing chiller, cooling towers remain
- Option 3
 - Behind HU steam plant
 - Existing chiller, cooling towers remain

Feature Matrix

Comparison Matrix of All Options Offered

Description	Options Without Site Piping			Options with Site Piping		
	Option 1a	Option 1c	Option 1d	Option 1b	Option 2	Option 3
Capital cost of plant (with 1 being the least expensive and 3 being the most expensive)	1	3	2	2	2	3
Removes the chiller from the Hospital penthouse		X				
Does not require the use of the inefficient Hospital cooling towers		X	X (part)			
Does not require a sizable condenser water riser from the plant to the Hospital roof		X	X		X	X
Chilled water plant operators do not need access to Hospital penthouse		X				
Frees up space in the Hospital penthouse for the Hospital's use		X				
Underground chilled water distribution system installed lowers the future cost of connecting campus buildings to the chilled water plant				X	X	X
Chilled water piping friction losses to the Hospital are lower than options 2 and 3	X	X	X	X		
Footprint size (with 1 being the smallest and 3 being the largest footprint)	1	2	1	1	3	1
Does not consume valuable parking spaces next to the Hospital					X	X
All the equipment is on the ground level					X	
Centrally located in relation to the University Campus					X	
Distance to the main electrical service (with 1 being the closest and 3 the furthest)	3	3	3	3	2	1
Can conveniently use the existing steam plant operators to operate the new chilled water plant					X	X
More room for expansion					X	X
Can be directly attached to future cogeneration plant						X

Financial Structure Map



Key Structure Points

- 'Special Purpose Entity' (SPE) owns system and sell commodity to HU
- Honeywell builds chilled water plant, and sells it to SPE
- Honeywell operates and maintains plant, guarantees performance
- At end of term, HU can buy plant for 'Fair Market Value' (FMV)
- During term, HU can buy plant for greater of FMV or pre-defined 'Termination Value'

Key Lessons Learned

- Assembled a dedicated project development and implementation team - cradle to grave
- Continued education of all levels of the organization on nuances and benefits of the DBOOM approach
- Negotiate tri-party agreement early
- Explore 'Value Engineering' potential as project differentiator



SUPPORTING PHOTOGRAPHS

Construction site – Before!



During Construction



New Chilled, Condenser Water Chases



Typical of New Chiller



Typical of New Chiller - 2



Chilled Water Pumps



Connections for Temp Chillers



Thermal (BTU) Metering



Electric Submetering



Remote Monitoring - Digital Video



Additional photos

