

Dave Robinson  
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# 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 10<sup>th</sup> Street, NW  
Washington, DC 20059

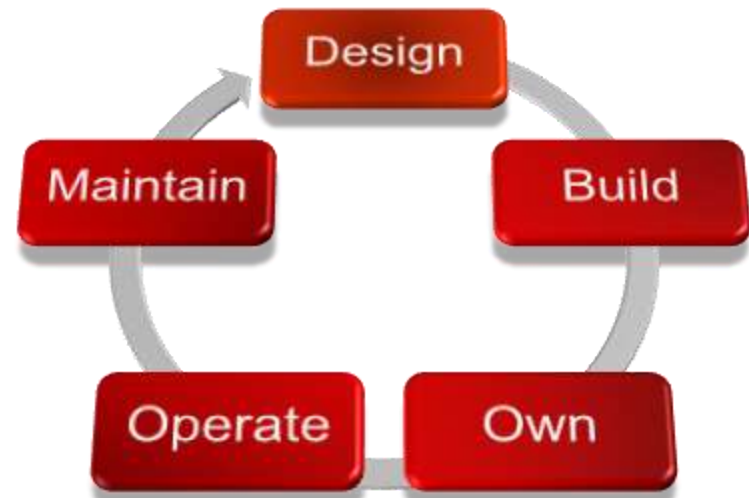
# RFP Objectives

- 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

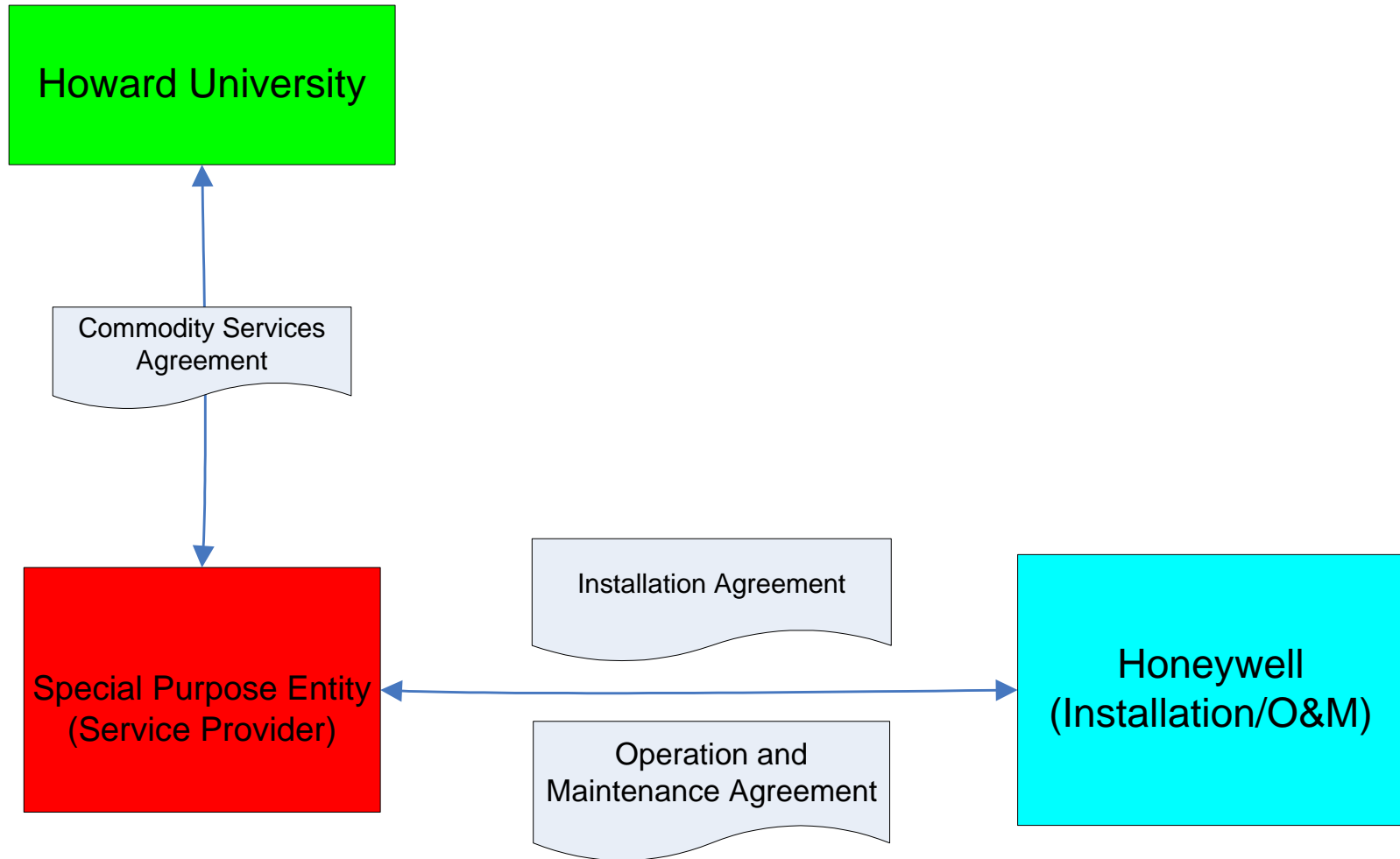
- Option 1 (A, B, C and D)
  - Adjacent to HUH (parking lot)
  - Variables included:
    - underground chilled water piping mains for expansion (site piping)
    - relocate existing chiller (1200 Ton), cooling towers and pumps
- Option 2
  - On the site of existing storage facility
  - Existing chiller,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



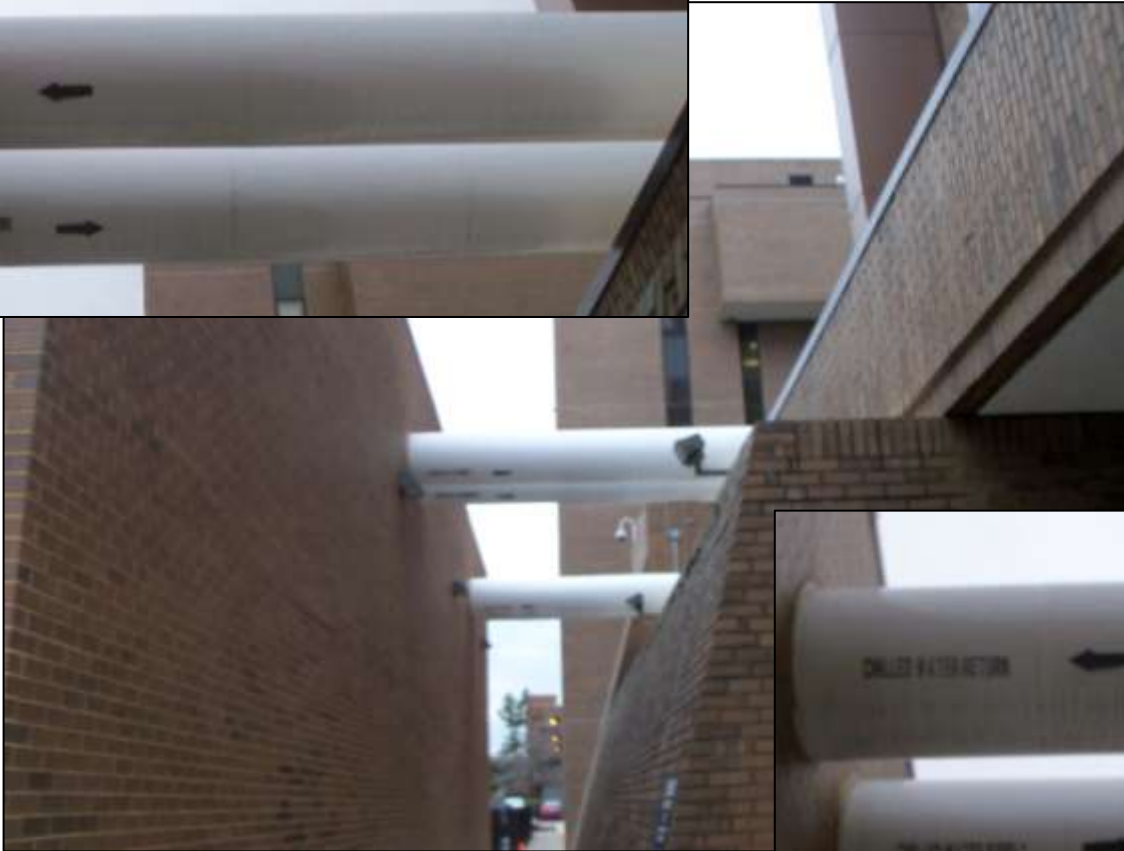
## During Construction



## New Chilled, Condenser Water Chases



## Piping from New to Old Building





## 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

