

## BASIS OF DESIGN - A CENTRAL CHILLER PLANT RETROFIT PROJECT

Date: February 2015 Project Name: Providence, RI Project #: 2015-02 Prepared By: Reader Revision date:

### BUILDING

New Construction  Renovation  Addition Sq. Ft.: \_\_\_\_\_ No. of floors below grade: \_\_\_\_\_ No. of floors at and above grade: \_\_\_\_\_

### UTILITIES

**Electrical:**  New  Upgrade  Existing **Existing Gas:**  New  Upgrade  Existing **Steam:**  New  Upgrade  Existing **Chilled Water:**  New  Upgrade  Existing

**Hot Water:**  New  Upgrade  Existing **Services from Utility for:**  Electric  Gas  District energy steam  Existing

**Campus Power Plant:**  Electric  Gas  Steam  CHWS  CWS  Hot Water  None

### UTILITY DESIGN PARAMETERS

**Electrical:**  120/1/60  208/3/60  277/3/60  480/3/60  \_\_\_/3/60

**Emergency Power:**  New  Diesel oil  Gas  Existing  None **Gas:**  Design parameters by plumbing engineer

**Steam Pressure:**  Low @ \_\_\_psig  Medium @ \_\_\_psig  High @ \_\_\_psig  High @ \_\_\_psig

**Chilled Water Temperature:**  CHWS @ 44°F  CHWR @ 56°F  Outdoor temperature compensated

**Condenser Water Temperature:**  CWS @ 85°F & CWR @ 95°F  CWS @ 46°F & CWR @ 58°F  Outdoor temperature compensated

**Hot Water Temperature:**  HWS @ 160°F & HWR @ 120°F when 9°F OAT and HWS @ 90°F & HWR 70°F when OAT is 60°F  Fixed HWS @ \_\_\_°F & HWR @ \_\_\_°F  None

### ASHRAE APPLICATION HANDBOOK

**ASHRAE 2011 Handbook:** Chapter [36] [37] [38] [39] [40] [41] [42] [33] **ASHRAE 2012 Handbook:** Chapter [3] [39] [43]

### OWNER MECHANICAL DESIGN PARAMETERS

**Equipment Location:**  On floor being served  In Central Equipment Room(s)  \_\_\_\_\_  In Penthouse  Away from building  \_\_\_\_\_

**Maintenance Outside Occupied Space:**  Yes serving primary HVAC equipment  No

**Redundancy:**  For (List equipment)  N+?  None

**Equipment/System Expansion:**  Increase equipment size by \_\_\_%  None

**Acoustic & Vibration Criteria:**  Design parameters by acoustic consultant  None

**Specialty Rooms(s):**  (List room)  None

**Occupancy Schedule:**  24-7-365  Occupied/Unoccupied (List Hours of Occupancy)

### DESIGN CRITERIA

**Outdoor Dry Bulb & Wet Bulb:** \_\_\_°F Heating season \_\_\_°F/\_\_\_°F Cooling season

**Central plant and administration space:**  Occupied 24-7 period  Unoccupied period  Warm-up and cool down

\_\_\_\_\_ **Set Point:** 74°F 78%RH+/- 60% RH cooling season

### ENERGY & ENVIRONMENT CRITERIA

**LEED Certification:**  Yes  No  Other certification (List the program)

**Annual Operating Budget:**  Energy budget  Organization structure  Not applicable

**Refer To "The Facility Files" For Additional Operation & Maintenance Design Criteria**

### SPECIAL CONDITIONS & REQUIREMENTS

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

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