

Project Delivery Method:

- Design-Build (D-B)
- Integrated Project Delivery (IPD)
- CM @ Risk with Guaranteed Maximum Price (GMP)
- Design-Bid-Build (D-B-B)

Owner Team:

- Private Sector
- City School Department, Local and State Agency
- Building Program Committee
- Owner Representative Consultant

Project Delivery Team:

- D-B Project Manager
- CM Project Manager
- Design-Bid-Build (D-B-B) Project Manager
- Job Superintendent
- CM'S Mechanical-Electrical Coordinator
- State Environmental Agency Representative
- Demolition Consultant Engineer

Heating Boiler Project Team:

- Heating Subcontractor Engineer and Project Manager
- Heating Subcontractor Job Site Foreman
- Heating Subcontractor Boiler Technician
- HVAC Supervisor (out-source staff)
- School's O&M Technician (in-house staff)
- Infection Control Consultant (IC)

Application:

- Commercial & Public Buildings, Chapter 3
- Places of Assembly, Chapter 5
- Educational Facilities, Chapter 8
- Power Plants, Chapter 28

Project Type:

- Demolition
- Renovation
- Infrastructure (central heating)
- Facility Audit and Capital Project Master Planning

References:

- 2017 ASHRAE Handbook – Fundamentals
- 2018 ASHRAE Handbook – Refrigeration
- 2019 ASHRAE Handbook – HVAC Applications
- 2020 ASHRAE Handbook – HVAC Systems and Equipment

Other References:

- Cooling Technology Institute (cooling towers)
- ASHRAE Procedures for Commercial Building Energy Audits
- ASHRAE Fundamentals of Design and Control of Central Chilled-Water Plants
- ASHRAE Practical Guide to Seismic Restraints
- ASHRAE Guideline 0 (commissioning process)
- CMAA (Construction Management Association of America)
- OSHA Standard 29 CFR 1926 Subpart T, Demolition

To view the solution online, please visit

www.esmagazine.com



- OSHA Standard 29 CFR 1926 Subpart D, Occupational Health and Environmental Controls
- ANSI/ASSE A10.6-2006, Safety and Health Program Requirements for Demolition Operations
- National Demolition Association – 2013 Demolition Safety Manual

DESIGN INTENT DOCUMENT (DID)

Heating Boiler Plant Design Intent:

- Second Phase Project
- Third Phase Project
- Removal of Highly Efficient and High-Performance Condensing Boilers
- Future Land Use: School Parking
- Owner Building Program Goals and Additional Goals
- System Constraints and Constructability Constraints
- Equipment and Materials Shall Be Recycled
- Boiler to be reused

BASIS OF DESIGN DOCUMENT (BOD)

- Process Outlined in ASHRAE Handbook 2020, Chapter 1, HVAC System Analysis and Selection
- Owner Building Program Goals and Additional Goals
- System Constraints and Constructability Constraints
- CMMA
- Safe Disposal of Equipment, Piping, Insulation, and Sheet Metal
- Relocation and Upgrade of the School's Existing Computerized Maintenance Management Software (CMMS)
- Owner's Program Requirements
- Budget Goals: Energy Audit Costs, Budgeted Operating Cost, and Life Cycle Cost
- Central Air Conditioning
- Timeline Grass Covering the Area in Six Months
- 20,000 Building Installation in Phase 4
- Recycle Heating System Goals: 75% Recycle