**School:** *[****INSERT SCHOOL NAME AND ADDRESS****]*

**Building ID:** *[****INSERT****]*

**Project Design#:** ***DXXXXXX*** *– BUILDING ELECTRIFICATION*

**LLW #:** ***XXXXXX*** *– Electrification/Heat Pump Systems*

**Date(s) of Visits:** *[****INSERT DATE****]*

**Present:** *[****INSERT NAMES & ORGANIZATIONS REPRESENTED****]*

**SCA Design Manager (DM):** *[****INSERT****]*

**SCA Design Project Manager (DPM):** *[****INSERT****]*

**Project Design Consultant:** *[****INSERT****]*

**Prepared by:** *[****INSERT NAME****]*

**Date Prepared:** *[****INSERT DATE****]*

The following was noted/observed:

***[DESIGNER TO EDIT ALL TEXT IN BLUE TO SUIT PROJECT REQUIREMENTS]***

**INTRODUCTION**

The purpose of this Field Report is to evaluate as many of the relevant and significant existing conditions found at the school building in order to explore the feasibility of converting from on-site fossil fuel use to the exclusive use of all electric energy.

**Existing Building Information**

* Number of Floors: *[****INSERT****]*
* Floor to slab heights (including allowance for structural beams): *[****INSERT****]*
* Gross Building Area: *[****INSERT****]*
* List of Public Assembly Spaces and Locations: *[****INSERT****]*
* Number of Classrooms: *[****INSERT****]*
* Structural (typical floor/roof framing-steel, concrete, other, condition): *[****INSERT****]*
* Exterior Wall System(s)-masonry, curtain wall, other, condition: *[****INSERT****]*
* Window/Glazing Systems (window type(s) and glazing, condition): *[****INSERT****]*
* Clearance above windows for potential horizontal arrangement of new MEP ductwork/piping/conduit: *[****INSERT****]*
* HVAC Ductwork (concealed/exposed, insulated/un-insulated, condition): *[****INSERT****]*
* Roofing System(s) (built-up, liquid applied, SBS, other, condition): *[****INSERT****]*
* Utility, Storage and Equipment Spaces that may become available to meet space requirements for the proposed Building Electrification project:

*[List those space(s) that may become available for re-purposing to meet new space requirements for building electrification (edit as applicable). Include a description of the location and characteristics of the space.*

* *Main Electrical Room*
* *Main Mechanical Equipment and/or Boiler Room*
* *Fuel Oil Tank Room*
* *Gas Meter Room*
* *Water Meter Room*
* *Storage Rooms*
* *MDF/IDF Rooms*

*The following is an example of a brief description of a utility, storage and equipment spaces that may become available to meet space requirements for the proposed Building Electrification project:*

* *Main Electric Room*
* *Location: Basement Level*
* *"X" feet long x "Y" feet wide with a clear height of "Z".*
* *Two (2) means of egress with double doors.*
* *The room has substantial available space for electric service equipment expansion.*
* *Located adjacent to a storage room that may offer additional room for expansion.]*

**Existing Site Information**

* Key Site Features: *[****INSERT****]*
* Surrounding Streets: *[****INSERT****]*
* Location of building Electric Service entry (Street, Avenue): *[****INSERT****]*
* Site Utilization (playgrounds, athletic fields, parking, etc.): *[****INSERT****]*
* Landscaping Elements: *[****INSERT****]*
* Site Paving: *[****INSERT****]*
* Flood Zone: *[****LIST APPLICABLE ZONE******OR NA****]*

**EXISTING BUILDING MEP SYSTEMS DESCRIPTION**

**Existing Building Electric Service**

*[Provide a brief description of building Electric Service(s) including: Electric* *Utility Provider (Con-Edison, PSEG), Service Classification/Capacity (Voltage, 3-Phase, # - Wire, Amperes), Service Equipment Type(s) (transformer, panelboard, switch, CB/Fuse), Equipment Manufacturer, physical condition, age, any notable impairment or deficiency reported/observed, Location of point of entry (POE) and description of property line box, man-holes, vaults. Confirm/Identify large equipment loads* *(elevators, chillers, large fans/pumps, other). Confirm/Identify back-up power sources (emergency and/or stand-by generators) including: size - Kw/Kva, Voltage, 3-Phase, # - Wire, method of load transfer, (manual, automatic) engine fuel - gas/oil, building electric loads served]* ***[INSERT****]*

*[Where affected by the primary scope of work, identify the impact on building interior/exterior lighting systems and low voltage electrical systems, including fire detection and alarm systems (including Ansul system, emergency voice/alarm communication, deluge water curtain), carbon monoxide detection and monitoring, gas leak/overpressure alarm systems, auxiliary signal systems, emergency generator, other] [****INSERT****]*

**Central Heating System**

*[Provide a brief description of the type(s) of existing space heating equipment serving the building, current equipment age, operating condition, heating medium (steam, water) fossil-fuel type(s), type of temperature and operational control(s), include BMS if applicable] [****INSERT****]*

**Existing Central Cooling System**

*[Provide a brief description of the type(s) of existing space cooling equipment serving the building, current equipment age, operating condition, cooling medium (water, refrigerant) type of temperature and operational control(s), include BMS if applicable] [****INSERT****]*

**Existing Central Ventilation System**

*[Provide a brief description of the type(s) of existing natural and mechanical ventilation equipment serving the building, current equipment age, operating condition, type of operational control(s), include BMS if applicable] [****INSERT****]*

**Existing Domestic Hot Water Heating System**

*[Provide a brief description of the type(s) of existing domestic hot water heating equipment serving the building, current equipment age, operating condition, fossil fuel type(s), type of temperature and operational control(s), include BMS if applicable] [****INSERT]***

**Existing Gas Utilization** *[edit as applicable]*

* *Cooking/Food Service Areas*
* *Science Classrooms*
* *Vocational Classrooms/Shops*

*[Provide a brief description of the type of existing Kitchen cooking appliances, Science Classroom equipment, Culinary Art Classroom equipment and other Vocational Program equipment utilizing natural gas. Where information is readily available, confirm current age and operating condition of appliances/ equipment using natural gas or other fossil fuels] [****INSERT****]*

**Summary of Key Building/Site Observations**

*[Provide a brief summary of significant Architectural, Structural and Site conditions that were observed during the walkthrough that can limit or facilitate the conversion from on-site fossil use to the exclusive use of all electric energy. Where existing building envelope conditions will significantly impact the electric energy demand for building space heating/cooling equipment, identify those areas of improved envelope performance that can potentially reduce heating/cooling loads and the demand for building electric energy] [****INSERT****]*

*[In accordance with observations made and anticipated modifications needed for building electrification, identify if probes and/or testing is needed to further assess Architectural, Structural and Site conditions that can potentially limit or facilitate the development of the Draft/Final Scope of work**] [****INSERT****]*

**TESTING REQUIREMENTS**

*[Provide a brief summary of the type and extent of Testing required to define and/or qualify significant Architectural, Structural, Site or MEP conditions that were observed during the walkthrough. Select Testing with regard to conditions that that can limit or facilitate the conversion from on-site fossil fuel use to the exclusive use of all electric energy] [****INSERT****]*

*Use the Table provided here to identify required Testing: [****Edit as applicable****]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Non-destructive Testing (NDT)** | | **Destructive Testing (DT)** | |
| *Description:* | *Req. Y/N* | *Description:* | *Req. Y/N* |
| ***Thermography (moisture, heat, air transfer)*** |  | ***Roof Cut*** |  |
| ***Rilem Test (masonry porosity)*** |  | ***Wall Cut*** |  |
| ***Ground Penetrating Radar*** |  | ***Floor Cut*** |  |
| ***Mag. Pachometer (steel reinforcement)*** |  | ***Ceiling Cut*** |  |
| ***Boroscope (internal visual acquisition)*** |  | ***Boring/Test Pit*** |  |
| ***Load Test (in-situ stress, strain, deflection)*** |  | ***Material Core Sampling*** |  |
| ***Pressure Test (duct, pipe, other)*** |  | ***Resident Material Sample Lab Testing*** |  |
| ***Fire detection and alarm system device testing (including: FSD actuation/control, CO detection, Heat detection, Ansul/Deluge water curtain activation, other)*** |  | ***Weldability of existing building steel*** |  |
| ***Other (specify)*** |  | ***Other (specify)*** |  |

**Preliminary Assessment of Equipment Options**

*[Use the Table provided here, and any Significant Building/Site Conditions observed to categorize the SCA Preferred All Electric HVAC Equipment/System Options that will be explored in more detail in the Draft/Final Scope Development Phase of the Project.* ***Edit Table for Yes/No indication of applicable Conditions that may apply****, See Table Key\* for definition of preliminary assessment of All Electric*

*HVAC Equipment/System Options]*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Significant Building/ Site Conditions may include the following:** | | *Condition applies*  ***Yes/No*** | **SCA Preferred All Electric HVAC Equipment/Systems Options:** | | | | | | | | | **Preliminary Design Considerations:** |
| **Central RTU/DX Heat Pump w/ERV**  **(electric baseboard or electric convectors in spaces)** | **Central Split/DX**  **Heat Pump w/ERV interior MER**  **(electric baseboard**  **or electric convectors in spaces)** | **Pkg. DX VUV Heat Pumps w/ERV** | **Chiller/ Heater,**  **Dual Temp, Central RTU/ AHU w/ERV (recessed hot water convectors in spaces)** | **Chiller/ Heater,**  **Dual Temp, Rooftop DOAS (fan coil units**  **in spaces)** | **Chiller/**  **Heater, Dual Temp, MER DOAS (fan coil units in spaces)** | **Chiller/**  **Heater,**  **Dual Temp, VUV Heat Pumps w/ERV** | **DX VUV-Split Heat Pumps w/ERV w/Rooftop Outdoor Units** | **Ceiling mount VRF + DOAS** |
| **Floor mount VRF + DOAS** |
| Bldg. is SHPO  or eligible for registration. | |  | **(Enter from Table Key)** |  |  |  |  |  |  |  |  | SHPO buildings may limit interior/exterior aesthetic changes. |
| Floor area is greater than 20,000 SF. | |  |  |  |  |  |  |  |  |  |  | Ceiling VRF option is limited to 20,000 SF  for overhead filter maintenance. |
| Windows are single pane. | |  |  |  |  |  |  |  |  |  |  | Window replacement may be required. Dual Temp VUV can reduce OA + EXH louvre dimensions. |
| Windows are narrow frame. | |  |  |  |  |  |  |  |  |  |  |
| Windows are poor condition. | |  |  |  |  |  |  |  |  |  |  |
| Shelves, or  obstructions are below windows. | |  |  |  |  |  |  |  |  |  |  | The installation of new electric baseboard, convectors or fan coil units under windows may be limited. |
| Utility/Equip. Spaces are at risk for flooding. | |  |  |  |  |  |  |  |  |  |  | When Utility/Equip. spaces are below the flood plain, flood proofing required to protect new Equip. |
| Roof/Floor cinder conc. slab/clay tile arch structure  are present. | |  |  |  |  |  |  |  |  |  |  | Cinder concrete slabs/clay tile arch have limited loads. VUV/Roof mounted equip. may require suppl. steel. |
| Ceiling/beam  height below 12 Ft AFF. | |  |  |  |  |  |  |  |  |  |  | VRF limited to 12 Ft. height for required filter maintenance. Central SA duct systems limited. |
| Roof is no longer under warrantee. | |  |  |  |  |  |  |  |  |  |  | Roof replacement should be evaluated,  added scope of work where required. |
| HVAC Equip. on curbs not dunnage. | |  |  |  |  |  |  |  |  |  |  |
| Major roof areas are pitched. | |  |  |  |  |  |  |  |  |  |  | If no major flat roofs, locate DX/VRF Units, Chiller/Heater at grade. |
| Bldg. is served throughout by steam heating system. | |  |  |  |  |  |  |  |  |  |  | Central and/or Pkg. DX Heat Pump Systems are good option for oil/gas Boiler replacement. |
| Bldg. is served throughout by supply air (SA) duct systems. | |  |  |  |  |  |  |  |  |  |  | Central RTU/AHU-Split DX Heat Pumps are good option are good option for oil/gas Boiler replacement. |
| SA duct systems are insulated. | |  |  |  |  |  |  |  |  |  |  |
| Bldg. is served throughout by chilled water system. | |  |  |  |  |  |  |  |  |  |  | When existing Bldg. is served by chilled water system, Chiller/Heater  is good option for oil/gas Boiler replacement. |
| Bldg. Electric Svc. greater than 2000 A. | |  |  |  |  |  |  |  |  |  |  | Check historic Bldg. peak Kw load to determine impact on selection of electric HVAC Equipment. |
|  | **\*All Electric HVAC System Categories: Favorable - F, Unfavorable - UF, Not Applicable - NA, To Be Determined-TBD** | | | | | | | | | | | |

**Appendix**

1. **Photos:**

*[Please provide selected Reference Photos (P\_\_ to P\_\_) for Architectural, Structural and MEP work to assist in the presentation of significant building/site conditions that can limit or facilitate the of conversion from on-site fossil fuel-burning equipment to the exclusive use of all electric energy] [****INSERT****]*

1. **Reference Drawings:**

*[Where available and applicable, please provide selected Reference Drawings (R\_\_ to R\_\_) for Architectural, Structural and MEP work to assist in the presentation of significant building/site conditions that can limit or facilitate the of conversion from on-site fossil fuel-burning equipment to the exclusive use of all electric energy]* ***[INSERT****]*

1. **Site Visit Meeting Minutes:**

*[Where discussions with school Principal, Custodian or other participants that were present at site walk through can affect the scope of work that will develop in the Draft/Final Scope Phase of the Project, include a Meeting Minutes for discussion] [****INSERT]***