April 12, 2024

eQuest INPUT SUMMARY

FOR

ENERGY MODELS

2019 Green School Guide & 2020 NYC Energy Conservation Code eQuest Templates

by:
Socotec, Inc.
50 Washington Street
Norwalk, CT 06854
Adrian Tuluca, RA
Senior Principal
Phone: 203-299-1411
Fax: 203-299-1656
E-mail: adrian.tuluca@socotec.us

TABLE OF CONTENTS

1 PURPOSE

The purpose of this document is to describe the default inputs for the New York City School Construction Authority (SCA) project templates. Only systems included in the SCA Design requirements are included in this guide. Instructions on how to use the templates and other, more detailed modeling guidance is provided in the SCA Modeling Template How-To Guide, which is issued separately. The How-to Guide also describes work-arounds for systems not readily modeled in eQuest.

2 DEFINITIONS

Proposed Design- Model of the building based on the design documents

NYCECC 2020 Baseline- A model of the building described according to the Energy Cost Budget Method of ASHRAE 90.1-2016 with amendments per the 2020 New York City Energy Conservation Code (NYCECC 2020, Appendix CA). The amendments to ASHRAE 90.1-2016 are substantial, so this document refers to NYCECC 2020 instead of ASHRAE 90.1-2016. Unless otherwise specified, all references to NYC ECC 2020 refer to the ASHRAE 90.1 compliance path defined in Appendix CA, and not the prescriptive path defined in the commercial provisions (Chapters C2-C6). This model is used to show code compliance only. Compliance with LL31 is based on proposed source energy and is independent of the energy code baseline.

GSG Baseline- A model of the building described by the Performance Rating Method (Appendix G) of ASHRAE 90.1-2010.

3 BUILDING SHELL

3.1 Opaque Envelope Construction Definitions

Three wall constructions have been included in the template: Brick with CMU block backup, precast concrete and rainscreen with steel stud backup. The constructions correspond to descriptions in DR 4.2.1. All typical envelope constructions are summarized in Table 1. All baseline GSG constructions are in accordance with ASHRAE 90.1 2010 Table 5.5-4 and all NYCECC 2020 baseline constructions are in accordance with NYCECC 2020 Appendix CA Table 5.5-4.

The roof, as defined by the 2020 NYC ECC, must account for all the heat loss that goes vertically through the parapet. It will therefore have a higher U-value than if the parapet were not present. The energy modeler should model an average U-value for the entire roof. The average roof U-value must be obtained by performing an area-weighted average between the U-value of the roof assembly in-field and the U-value of the parapet assembly. The Baseline cases already account for the effect of the parapet in the overall assembly U-value.

Table 1. Opaque Envelope Construction Properties

Description	Proposed Design	GSG Baseline	NYCECC 2020 Baseline
Exterior Wall	Masonry Wall w/ Gypboard • eQuest Layer = EW-INS-LA • eQuest Construction = EW-TYP-GB-CON	Steel Framed (applies to all walls) • eQuest Layer = EW-ASG10-L	Mass Wall • eQuest Layer = EW-NYC20-M-L • eQuest Construction = EW-NYC20-M-CON

Description	Proposed Design	GSG Baseline	NYCECC 2020 Baseline
	• Face Brick • Min R-20 insulation. Examples: 4” extruded polystyrene insulation (R-5/in) or 5” semirigid mineral wool (R-4.3/inch) • 8” lightweight CMU backup, max 1 in 2 blocks filled with mortar ▪ 3.5” mineral wool batt insulation (min R-11) friction-fit between studs at 24” O.C. The insulation is pushed outboard against the CMU. This leaves is a 1 inch space between the gypsum wall board and the insulation – space that is available for cables. • 5/8” Gypboard • U-0.033 BTU/Hr-ft^2-°F	• eQuest Construction = EW-TYP-GB-CON • Stucco • Metal siding • 6” semi-rigid insulation • 5/8” Plywood • 6” Mineral wool batt insulation in the stud cavity (R-24) • 5/8” Gypboard • 5/8” Gypboard • U-0.064 BTU/Hr-ft^2-°F	• Face Brick • Rigid insulation (R-4.83) • 8” lightweight CMU backup, 1 in 4 blocks filled with mortar • Air barrier • 5/8” Gypboard • U-0.099 BTU/Hr-ft^2-°F
	Uninsulated Masonry Wall • eQuest Layer = EW-INS-NOGYP-LA • eQuest Construction = EW-TYP-NOGB-CON • Face Brick • 8” lightweight CMU backup, max 1 in 2 blocks filled with mortar • U-0.048 BTU/Hr-ft^2-°F		Masonry Wall Use EW-NYC20-M-CON
	Uninsulated Stair Wall • eQuest Layer = EW-UNINS-LA • eQuest Construction = EW-UNINS-CON • Face Brick • 6” CMU Backup • U-0.299 BTU/Hr-ft^2-°F including thermal bridging		Stair Wall Use EW-NYC20-M-CON

Description	Proposed Design	GSG Baseline	NYCECC 2020 Baseline
	Precast Wall • eQuest Layer = EW-PRECAST-LA • eQuest Construction = EW-PRECAST-CON • 4” Precast concrete exterior face wythe • 4” XPS foam rigid insulation (R-5/in) derated by composite connector pins between the two concrete wythes, on a grid of 18” horizontally and 16“ vertically • 4” Precast concrete interior wythe ▪ 3.5” mineral wool batt insulation (R-15) friction-fit between studs at 24” OC. The insulation is pushed outboard against the CMU. This leaves is a 1 inch space between the gypsum wall board and the insulation – space that is available for cables. • Interior gypsum wall board • U-0.033 BTU/Hr-ft^2-°F		Precast Wall Use EW-NYC20-M-CON
	Uninsulated Precast Wall • eQuest Layer = EW-UNINS-PREC-LA • eQuest Construction = EW-UN-PREC-CON • 4” Precast concrete exterior face wythe • 4” XPS foam rigid insulation (R-5/in) derated by composite connector pins between the two concrete wythes, on a grid of 18” horizontally and 16“ vertically		Precast Wall Use EW-NYC20-M-CON

Description	Proposed Design	GSG Baseline	NYCECC 2020 Baseline
	• 4” Precast concrete interior wythe • U-0.056 BTU/Hr-ft^2-°F		
	Rainscreen Wall • eQuest Layer = EW-LW-INS-LA • eQuest Construction = EW-TYP-LW-CON • Exterior finish R-value not accounted for • 6” mineral fiber (derated) • 5/8” sheathing • 6” Mineral wool batt insulation (R-24) in stud furring with studs 16” OC. • 5/8” Gypboard • 5/8” Gypboard • U-0.043 BTU/Hr-ft^2-°F		Steel Framed • eQuest Layer = EW-NYC20-L1-LA • eQuest Construction = EW-NYC20-LW-CON • Metal siding • 6” semi-rigid insulation • 5/8” Plywood • 6” Mineral wool batt insulation in the stud cavity (R-24) • 5/8” Gypboard • 5/8” Gypboard • U-0.061 BTU/Hr-ft^2-°F
	Insulated Infill Panel Wall • eQuest Layer = EW-INFILL-LA • eQuest Construction = EW-INFILL-CON • R-21 Infill panel • U-0.170 BTU/Hr-ft^2-°F		Improved Infill Panel Wall Use EW-NYC20-LW-CON
Roof	Roof • 2” White Pavers with SRI > 0.82 • 8” Extruded polystyrene R5/inch (R-40) • Hot rubberized asphalt • 4-6” Concrete • U-0.025 BTU/Hr-ft^2-°F	Roof • 2” Gravel • Polystyrene (R-20) • Hot rubberized asphalt • 8” Concrete • U-0.048 BTU/Hr-ft^2-°F	Roof • 2” Gravel • Polystyrene (R-33) • Hot rubberized asphalt • 8” MW Concrete • U-0.030 BTU/Hr-ft^2-°F
Roof parapet (may be modeled directly or as a weighted average for the roof)	Concrete roof parapet - at brick with CMU block backup wall • U-0.082 BTU/Hr-ft^2-°F Concrete roof parapet – at precast panel wall with furring • U-0.158 BTU/Hr-ft^2-°F		

Description	Proposed Design	GSG Baseline	NYCECC 2020 Baseline
	Concrete roof parapet - at precast panel wall without furring • U-0.197 BTU/Hr-ft^2-°F Concrete roof parapet with R-3 thermal break at roof slab - at rainscreen wall with steel stud backup • U-0.076 BTU/Hr-ft^2-°F Concrete roof parapet without thermal break - at rainscreen wall with steel stud backup • U-0.103 BTU/Hr-ft^2-°F		
Slab On Grade	Unheated Floor • 6" Concrete Slab • 3" Polystyrene insulation fully insulated under slab (R-15) • F-Factor: 0.30	Unheated Floor • 6" Concrete Slab • F-Factor: 0.730	Unheated Floor • 6" Concrete Slab • 3" polystyrene insulation (R-15) installed 24" vertically • F-Factor: 0.520
Exposed Floor	Project Specific Mass Floor • 6" Concrete Slab • 3" rigid insulation (R-14.6) • U-0.057 BTU/Hr-ft^2-°F	Steel Framed Floor • U-0.038 BTU/Hr-ft^2-°F	Mass Floor • 6" Concrete Slab • 3" rigid insulation (R-14.6) • U-0.057 BTU/Hr-ft^2-°F
Below Grade Walls	Wall • 12" Concrete wall • 2" polystyrene insulation (R-10) • C-Factor: 0.116	Wall • 8" CMU • 5/8" Gypsum board C-Factor: 1.140	Wall • 8" CMU • 1.5" rigid insulation (R-7.5) • 5/8" Gypsum board C-Factor: 0.119
Doors	Swinging Door <50% glazing • Solid Steel Door • U-0.50 BTU/Hr-ft^2-°F Non-swinging • Roll Door • U-0.50 BTU/Hr-ft^2-°F	Swinging <50% glazing • Solid Steel Door • U-0.70 BTU/Hr-ft^2-°F Non-swinging • Roll Door • U-1.50 BTU/Hr-ft^2-°F	Swinging <50% glazing • Solid Steel Door • U-0.50 BTU/Hr-ft^2-°F Non-swinging • Roll Door • U-0.50 BTU/Hr-ft^2-°F
Note: **Construction descriptions do not include items that do not contribute to the overall U-value, such as sealants**			

3.2 Window Definitions

Current code allows up to 40% window to wall fraction. SCA designs are preferred to be in the 16 to 20 percent range. These values should be replaced with actual design values if they differ from the standard. The characteristics of the new or replacement, typical punched window is taken from DR4.3.1. The characteristics of existing punched windows are taken from ASHRAE 90.1 Appendix A. The window details are given in Table 2

Table 2. Window Properties

Window Type	Description	Proposed Design	GSG Baseline	NYCECC 2020 Baseline
Typical Punched Window& Ribbon Windows, New & Replacement (FIXED PORTION)[3]	Template Glass Type	GL-1-FIX	GL-ASH10-MF-AO	GL-NYC20-MF-AO
	U-assembly, Fixed	Project specific	0.55 Btu/hr-ft^2-F	0.30 Btu/hr-ft^2-F
	SHGC	0.36	0.40	0.36
	Shading Coefficient	0.419	0.465	0.419
	Min Visible Transmittance	40%	44%	40%
Typical Punched Window& Ribbon Windows, New & Replacement (OPERABLE PORTION)	Template Glass Type	GL-1-OP	GL-ASH10-MF-AO	GL-NYC20-MF-OP
	U-assembly, Operable	Project specific	0.55 Btu/hr-ft^2-F	0.40 Btu/hr-ft^2-F
	SHGC	0.36	0.40	0.36
	Shading Coefficient	0.419	0.465	0.419
	Visible Transmittance	40%.	44%	40%
Typical Punched Window& Ribbon Windows, New & Replacement, Average of Fixed & Operable	Template Glass Type	GL-1-AVG	GL-ASH10-MF-AO	GL-NYC20-MF-AVG
	U-assembly, Fixed	0.25 Btu/hr-ft^2-F	* Btu/hr-ft^2-F	* Btu/hr-ft^2-F
	SHGC	0.36	0.40	0.36
	Shading Coefficient	0.419	0.465	0.419
	Visible Transmittance	40%	44%	40%
Typical punched window, Existing, Dual Pane	Template Glass Type	GL-EXIST-DOUBLE	GL-EXIST-DOUBLE	GL-EXIST-DOUBLE
	U-assembly	0.9	Same as proposed	Same as proposed
	SHGC	0.68	Same as proposed	Same as proposed
	Shading Coefficient	0.79	Same as proposed	Same as proposed
	Visible Transmittance	66%	Same as proposed	Same as proposed
Typical punched window, Existing, Single Pane	Template Glass Type	GL-EXIST-SINGLE	GL-EXIST-SINGLE	GL-EXIST-SINGLE
	U-assembly	1.25	Same as proposed	Same as proposed
	SHGC	0.82	Same as proposed	Same as proposed
	Shading Coefficient	0.953	Same as proposed	Same as proposed
	Visible Transmittance	76%	Same as proposed	Same as proposed
Storefront	Template Glass Type	Project specific	GL-ASH10-MF-CW	GL-NYC20-MF-CW
	U-assembly	0.36	0.50 Btu/hr-ft^2-F	0.36 Btu/hr-ft^2-F
	SHGC	0.36	0.40	0.36
	Shading Coefficient	0.419	0.465	0.419
	Visible Transmittance	40%	44%	40%
Glass Block, steel framed	Template Glass Type	Project specific	GL-ASH10-MF-AO	GL-NYC20-MF-AO
	U-assembly	0.6 Btu/hr-ft^2-F	0.55 Btu/hr-ft^2-F	0.36 Btu/hr-ft^2-F
	SHGC	0.56 max	0.40	0.36
	Shading Coefficient	Project specific	0.465	0.419
	Visible Transmittance	Project specific	44%	40%
Insulated light dispersion panels	Template Glass Type	GL-3-LDP	GL-ASH10-MF-AO	GL-NYC20-MF-AO
	U-assembly	0.077 Btu/hr-ft^2-F	0.55 Btu/hr-ft^2-F	0.36 Btu/hr-ft^2-F
	SHGC	0.56 max	0.40	0.36
	Shading Coefficient	Project specific	0.465	0.419
	Visible Transmittance	Project specific	44%	40%

Entrance Doors with >50% glazed area	Template Glass Type	GL-DOOR	GL-ASH10-DR	GL-NYC20-DR
	U-assembly	1.25Btu/hr-ft^2-F	0.85 Btu/hr-ft^2-F	0.68 Btu/hr-ft^2-F
	SHGC	0.40	0.40	0.36
	Shading Coefficient	0.465	0.465	0.419
	Visible Transmittance	68%	44%	40%
Skylight	Template Glass Type	GL-SKYLIGHT	GL-ASH10-SKY	GL-NYC20-SKY
	U-assembly	0.48 Btu/hr-ft^2-F	0.69 Btu/hr-ft^2-F	0.48 Btu/hr-ft^2-F
	SHGC	0.38	0.39	0.38
	Shading Coefficient	0.442	0.45	0.442
	Visible Transmittance	42%	43%	42%
Note: Visible transmittance is not regulated under ASHRAE 90.1-2010. 2020 NYCECC Code Appendix CA Table 5.5-4 specifies that the visible transmittance must be at least 1.1x the SHGC				

4 INTERNAL LOADS

This section describes the default internal loads included in the template. All inputs are identical in the proposed design and baselines unless otherwise noted. Music rooms, technology classrooms and lab classrooms use the same values as classrooms unless otherwise noted.

Appendix A, B, & C each contain a set of schedules including those referenced in this section. Each of these appendices represents a different building type. Some of the schedules have the same name because they reference the same design conditions, but due to the building type the number of Full load equivalent hours will differ. Likewise, not all building types will have all of the space types mentioned in this section. In the event that a project requires a specific space type that is not covered by the schedules in the appropriate building type, the modeler shall consult with the SCA to develop a custom schedule for the needed application.

4.1 Occupant and Equipment Loads

The loads from people to the space are specified in Table 3. The occupancy schedules, equipment schedules and equipment densities are specified in Table 5. Default occupant densities are given in Table 19. These densities are based on the SCA's Program of Requirements, which will list the UFT maximum students plus any staff. For spaces not listed in the POR, the 2014 NYC Building Code Egress is to be used. Project specific values should be used wherever available.

Per the 2020 NYC ECC EN1 form, the following types of plug loads are considered regulated: elevators, escalators, commercial kitchen equipment, office receptacles. In addition, space is provided for additional equipment types found in ASHRAE 90.1-2016 8.4.2.a. and 10.4 The full list of regulated plug loads will therefore be:

- Elevators (10.4.3)
- Escalators (10.4.4)
- Commercial kitchen equipment (10.4.6)
- Office receptacles

Please note that the classroom receptacles are not required to be switched in the GSG (ASHRAE 90.1-2010) baseline. They are only required to be switched in the LL32 (ASHRAE 90.1-2016) baseline. Since this is a NYC ECC requirement as well, it means that the GSG baseline will have slightly higher plug load energy use than the design case and the LL32 baseline models.

Per ASHRAE fundamentals, Athletic Activity produces 2000 Btu/h for adult males, equating to 1500 Btu/h for children. This value is likely higher than the actual activity level for a typical full class, in which some children may not participate at any given moment. The activity type has been recalculated to correspond with Heavy Work, which has a heat gain of 1500 Btu/h for adult males, and 1125 Btu/h for children. These heat-gains translate to model values entered as **PEOPLE-HE-SENS = 450** and **PEOPLE-HG-LAT = 675**. The heat gains for other space types where the population is predominantly children have also been adjusted.

Table 3a. Internal heat gain from people by space type – Public School (Pre-K to 8th grade)

Space Type	ASHRAE Fundamentals 2017 Activity Level	Sensible Heat Gain (BTU/hr.-person)	Latent Heat Gain (BTU/hr.-person)
Classrooms, Library	Moderately active Office Work	198	158
Auditorium Seating	Seated at theater	205	88
Auditorium Stage	Moderate Dance	242	433
Cafeteria	(Lunch) Standing; walking	229	183
Cafetorium	(Lunch) Standing; walking Assembly Event – Seated at theater	229 205	183 88
Gymnasium	(one period – 132 people) Athletic	450	675
Gymatorium	(one period – 132 people) Athletic Assembly Event – Seated at theater	450 205	675 88
Kitchen/Warming Kitchen	Sedentary Work	275	275
Office	Moderately active Office Work	250	200

Table 4b. Internal heat gain from people by space type – High School (9th to 12th grade)

Space Type	ASHRAE Fundamentals 2017 Activity Level	Sensible Heat Gain (BTU/hr.-person)	Latent Heat Gain (BTU/hr.-person)
Classrooms, Library	Moderately active Office Work	250	200
Auditorium Seating	Seated at theater	245	105
Auditorium Stage	Moderate Dance	305	545
Cafeteria	(Lunch) Standing; walking	250	200
Cafetorium	(Lunch) Standing; walking Assembly Event – Seated at theater	250 245	200 105
Gymnasium	(one period – 132 people) Athletic	710	1090
Gymatorium	(one period – 132 people) Athletic Assembly Event – Seated at theater	710 245	1090 105
Kitchen/Warming Kitchen	Sedentary Work	275	275
Office	Moderately active Office Work	250	200

Table 5. Occupancy & Equipment Loads by Space Type

Space Type	Zone Type	Occupancy Schedule	Equipment Power Density (W/ft^2)	Equipment Schedule
Classrm (1st-8th grade)	Conditioned	CLASS-OCC-YR	1.52	CLASS-EQP-YR[b]
Classrm (9th-12 grade+)	Conditioned	CLASS-OCC-YR	1.52	CLASS-EQP-YR[b]
Classrm (Pre-K & kindergarten)[e]	Conditioned	CLASS-OCC-YR	0.06	PREK-EQP-YR
Auditorium	Conditioned	AUD-OCC-YR	0.1	AUD-EQP-YR
Corridor	Conditioned	NULL-OCC-YR	0	ALWAYS-OFF-F-YR
Office	Conditioned	OFFICE-OCC-YR	0.51 [b,c]	OFFICE-EQP-YR[b]
Lobby	Conditioned	NULL-OCC-YR	0.1[b]	LOBBY-EQP-YR[b]
All Locker Rooms	Conditioned	NULL-OCC-YR	0	ALWAYS-OFF-F-YR
Storage	Conditioned	NULL-OCC-YR	1.81[b]	STORAGE-EQP-YR[b]
Library - Stacks	Conditioned	CLASS-OCC-YR	0.5	LIB-EQP-YR
Library – Reading Area	Conditioned	CLASS-OCC-YR	0.5	LIB-EQP-YR
Computer Classroom	Conditioned	TECH-CLASS-OCC-YR	2	TECH-EQP-YR
Music Classroom	Conditioned	CLASS-OCC-YR	0.29[b]	MUSIC-EQP-YR[b]
Mechanical	Conditioned	NULL-OCC-YR	0	N/A
Electrical	Conditioned	NULL-OCC-YR	0	N/A
IDF/MDF	Conditioned	NULL-OCC-YR	26.5[b]	DATA-EQP-YR
Gymnasium (class period)	Conditioned	GYM-OCC-YR	0	ALWAYS-OFF-F-YR
Conference Room	Conditioned	OFFICE-OCC-YR	1.96[b]	LOUNGE-EQP-Y[b]
Gymatorium (multiuse assembly)	Conditioned	GYM-OCC-YR	0.25	GYM-EQP-YR
Cafetorium (multiuse assembly)	Conditioned	CAFE-OCC-YR	0.25	CAFE-EQP-YR
Cafeteria	Conditioned	CAFE-OCC-YR	0.25	CAFE-EQP-YR
Kitchen/ Servery	Conditioned	KITCHEN-OCC-YR	See 4.2	See 4.2
Warming kitchen	Conditioned	KITCHEN-OCC-YR	See 4.2	See 4.2
Dance Studio/ Exercise	Conditioned	AUX-GYM-OCC-YR	0	ALWAYS-OFF-F-YR
Stair	Conditioned	NULL-OCC-YR	0	ALWAYS-OFF-F-YR
Community rooms	Conditioned	OFFICE-OCC-YR	1.96[b]	LOUNGE-EQP-YR[b]
Copy Rooms	Conditioned	NULL-OCC-YR	See Table 11	See Table 11
Nurse's Office	Conditioned	OFFICE-OCC-YR	9.07[b]	NURSE-EQP-YR[b]
Laboratory	Conditioned	SCI-LAB-OCC-YR	2.48[d] + 3.75[a]	SCI-LAB-EQP-YR[b]
Media Centers/ TV Studios	Conditioned	CLASS-OCC-YR	1.25	LIB-EQP-YR
Playroom	Conditioned	CLASS-OCC-YR	0.26[b]	MUSIC-EQP-YR[b]
Records Room	Conditioned	NULL-OCC-YR	0	ALWAYS-OFF -YR
Workshop	Conditioned	OFFICE-OCC-YR	7.42[b]	SHOP-EQP-YR
Restrooms	Conditioned	NULL-OCC-YR	0	ALWAYS-OFF-F-YR
Staff lunch/ lounge	Conditioned	CAFETERIA-OCC-YR	1.96[b]	LOUNGE-EQP-YR[b]
Resource Center/ Workroom	Conditioned	OFFICE-OCC-YR	0.51[b]	OFFICE-EQP-YR[b]

Space Type	Zone Type	Occupancy Schedule	Equipment Power Density (W/ft^2)	Equipment Schedule
Shaft	Unconditioned	N/A	0	N/A
Plenum	Plenum	N/A	0	N/A

[a] Add power density if space has fume hoods, assume sensible and latent contribution to space is 20% and rest is lost up hood.
[b] Derived from the SCA LL31 Feasibility Study for Q375 - Reports for Phases 1 and 2
[c] Additional loads required to account for large equipment such as printers, copiers and coffee makers. S**ee Table 11.**

4.2 Kitchen Equipment Loads

Kitchen and warming kitchen equipment loads and schedules will be determined based on the number of students served. If the kitchen is part of an addition, the total number of students served should be considered, not just those housed in the new addition space. Sections 4.2.1, 4.2.2 and 4.2.3 represent default inputs that are appropriate for the DD phase energy model. Once the design moves to the 60% CD phase, the actual kitchen loads should be calculated based on the kitchen equipment schedules provided in the architectural drawing set. The calculations should be performed using the Appendix A spreadsheet calculator from the SCA How-to guide, while observing the indications and methodology in the Kitchen Instructions tab.

Notes:

1. In this section, "SOURCE" refers to the related keywords in eQuest related to cooking appliances, and should not be confused with source energy used for LL31/16 or other site/source calculations.
2. A "full kitchen" is defined as a kitchen that includes cooking equipment such as a steamer, oven and cooking range. A warming kitchen does not have these appliances, but will have one or more "therm and hold" cabinet and possibly a mobile steamer/holder unit.

4.2.1 Full Kitchen Equipment Loads

Full kitchens should have both equipment and source loads defined. The equipment loads are the same for both electric and gas kitchens, as defined in Table 6a and 6b. These loads include all non-cooking equipment such as refrigerators, cash registers, deli slicers, etc. Source loads for cooking equipment, such as ranges and ovens, are detailed in Table 8 and Table 9.

Per the SCA kitchen design standards, full kitchens generally serve a population larger than 400 students. However, if a project is designed with a full kitchen serving a population smaller than 400 students (such as in a small stand-alone school with less than 400 students), the 401-500 interval should be used instead of the warming kitchen default entries.

Kitchens using gas for cooking should follow Table 8, and kitchens with electric cooking appliances should follow Table 9. Due to differences in gas and electric/electric induction cooking equipment, the input power for gas cooking and electric cooking equipment are different. Kitchen hoods and the outdoor components of walk-in coolers and freezers (refrigeration rack systems) should be modeled separately from the other non-cooking equipment as direct loads on the meters (See Table 36).

Table 6a. Kitchen and Servery Equipment Loads, PS Full Kitchens

Number of Students Served	401-500	501-700	701-900	901-1000	1000+
Equipment Schedule, General Non-Cooking Loads	401-KIT-EQP-YR	501-KIT-EQP-YR	701-KIT-EQP-YR	901-KIT-EQP-YR	1K-KIT-EQP-YR
EQUIPMENT-KW, General[a]	31.8	47.1	49.8	52.5	63.6

Table 7b. Kitchen and Servery Equipment Loads, HS Full Kitchens

Number of Students Served	401-500	501-700	701-900	901-1000	1000+
Equipment Schedule, General Non-Cooking Loads	401-KIT-EQP-YR	501-KIT-EQP-YR	701-KIT-EQP-YR	901-KIT-EQP-YR	1K-KIT-EQP-YR
EQUIPMENT-KW, General[b]	49.5	82.5	85.2	87.9	116.7

Table 8. Kitchen and Servery Cooking Loads, Full Kitchens with GAS Cooking

Number of Students Served	401-500	501-1000	1000+
Source Schedule	401-KIT-SRC-G-YR	501-KIT-SRC-G-YR	1K-KIT-SRC-G-YR
Source Type	GAS	GAS	GAS
Input Power (Btu/hr)[c]	310,000	408,000	506,000
Source Sensible HG (Ratio)	25%	25%	25%
Source Latent HG (Ratio)	25%	25%	25%

Table 9. Kitchen and Servery Cooking Loads, Full Kitchens with ELECTRIC Cooking

Number of Students Served	401-500	501-1000	1000+
Source Schedule	401-KIT-SRC-E-YR	501-KIT-SRC-E-YR	1K-KIT-SRC-E-YR
Source Type	ELECTRIC	ELECTRIC	ELECTRIC
Input Power (Btu/hr)	174,429	230,627	286,791
Source Sensible HG (Ratio)	25%	25%	25%
Source Latent HG (Ratio)	25%	25%	25%

[a] TOTAL input power for kitchen and servery. If the kitchen and servery are modeled as separate zones, assign the kW to each zone based on the zone area. For example, if the kitchen area is 600 ft^2 and the servery area is 400 ft^2, then 60% of the plug and source load will be assigned to the kitchen, and 40% will be assigned to the servery.
[b] TOTAL input power for kitchen and servery. If the kitchen and servery are modeled as separate zones, assign the kW to each zone based on the zone area. For example, if the kitchen area is 600 ft^2 and the servery area is 400 ft^2, then 60% of the plug and source load will be assigned to the kitchen, and 40% will be assigned to the servery.
[c] TOTAL input power for kitchen and servery. If the kitchen and servery are modeled as separate zones, assign the kW to each zone based on the zone area. For example, if the kitchen area is 600 ft^2 and the servery area is 400 ft^2, then 60% of the plug and source load will be assigned to the kitchen, and 40% will be assigned to the servery.

4.2.2 Warming Kitchen Equipment Loads

Warming kitchens are predominantly used to serve a student population of less than 400 students. The equipment loads are shown in Table 10a and 9b.

Table 10a. Kitchen and Servery Equipment Loads, Warming Kitchens

Number of Students Served	Under 300	301-400
Equipment Schedule	101-WKIT-EQP-YR	301-WKIT-EQP-YR
EQUIPMENT-KW	31.0	33.7

Table 9b. Kitchen and Servery Cooking Loads, Warming Kitchens

Number of Students Served	Under 300	301-400
Source Schedule	101-KIT-SRC-E-YR	301-KIT-SRC-E-YR
Source Type	ELECTRIC	ELECTRIC
Input Power (Btu/hr)	116,013	116,013
Source Sensible HG (Ratio)	25%	25%
Source Latent HG (Ratio)	25%	25%

4.2.3 Walk-in refrigeration equipment loads

The walk-in refrigerator and freezer assembly components should be modeled as a direct load (see Table 35), in combination with the KIT-WALK-IN-YR schedule. This corresponds to a unit having demand defrost controls[d] and 6" enclosure insulation panels[e], per the current SCA design requirements.

The components of the walk-in refrigeration system are usually labeled as follows in the kitchen equipment schedules:

- Refrigeration rack system
- Walk-in freezer (-10F)
- (Freezer) Blower coil
- (Freezer) Controller
- Walk-in refrigerator (+35F)
- (Refrigerator) Blower coil
- (Refrigerator) Controller.

The default input for the walk-in refrigeration system is 25.004 kW. This value and the corresponding KIT-WALKIN-YR operating schedule should be updated once the kitchen equipment schedules are available, using the Kitchen Equipment tab of the Appendix A spreadsheet. The calculation methodology is the same as for the rest of the kitchen equipment described in sections 4.2.1 and 4.2.2.

[d] 2019 SCA LL31 Feasibility Study Phase 2 – Kitchen ECM 3
[e] 2019 SCA LL31 Feasibility Study Phase 2 – Kitchen ECM 4

4.3 Office Equipment Loads

The default minimum equipment power densities are given in Table 5. High load equipment, such as printers and copiers will need to be added based on the actual design. Table 11 details the default source loads and schedules for the printers and copiers. See the How-To Guide for additional guidance.

Table 11. Office Plug Loads

Description	Value	Value	Value
Equipment Type	Printer	Copier	Coffee Maker
Equipment Schedule	OFC-P-EQP-YR	OFC-CP-EQP-YR	OFC-CM-EQP-YR
Equipment Type	Electric	Electric	Electric
Input Power (W/unit)	700	700	780

During early phases of the design, when the actual office equipment is unknown, assume one printer, one copier, and one coffee maker in the central office area. Assume 1 copier in copy rooms.

4.4 Elevator Loads

Elevator loads shall be project specific based upon height and speed. Load shall be modeled the same between the baseline and proposed design. Minimum program requirements are two elevators rated for 3500 lb each. The elevator loads should be determined based on the number and type included in the project. The loads below should be used for buildings of 6 floors or fewer. Project specific analysis should be used for other applications.

Table 12. Standard Elevator Applications, Buildings 6 Floors or Fewer

Elevator Type	**Direct load per elevator (kW)**	**Schedule**	**Annual Energy Use (kWh)**
Standard (3500 lb capacity)	11.93	ELEV-EQP-SCH	6,573
For reduced mobility population (6000 lb capacity)	19.71	ELEV-EQP-SCH	10,862

The elevator equipment schedule assumes approximately 551 full time equivalent hours (FTEh). For buildings greater than 6 stories, the annual elevator use shall be determined using the Thyssen Krupp Elevator energy calculator.

https://design.na.tkelevator.com/tools/energy-calculator

The direct load per elevator that is entered into the eQuest model is:

$$Direct\ Load\ (kW) = \frac{Annual\ Energy\ Use\ (kWh)}{551\ annual\ FTEh}$$

4.5 Lighting Loads

The default lighting power density by space type is given in Table 13.

Per NYCECC 2020 Appendix CA Table 11.5.1#6, the lighting power or lighting power density for each thermal block should be input in the model as shown on the lighting plans. Inputting an average lighting power density by space type or by building is acceptable in earlier stages of the model / design when no plan exists. The same method (space-by-space or whole building average) shall be used in the design and baseline models. When using the space-by-space method all non-corridor Room-Cavity Ratio (RCR)[f] corrections shall be explicitly documented for review. Space-by-space method is recommended where practical, to provide the SCA with better feedback on the breakdown of design lighting power.

Table 13 lists the default lighting power density and lighting controls. Savings due to lighting controls are accounted for in the lighting schedules, which are shown in Table 14. Where the lighting controls differ among the baselines and proposed design, the schedules give 10% reduction for "Automatic full Off" controls and 5% for "Automatic partial off". These types of controls include the standard occupancy or vacancy sensor. The areas where savings should be demonstrated are marked in bold.

At the DD phase, if the project documents do not include interior lighting, a building average of 0.5 W/ft^2 is to be used. If the design documents include partial lighting plans, the unfinished spaces should use the corresponding Proposed Design inputs from the table below. Once the project progresses to the 60% CD phase, the defaults should be replaced with the calculated values per the design documents.

Table 13. Lighting Power Density by Space Type

Space Type	Model Input Lighting Power Density Parameter	Proposed Design		GSG Baseline (ASHRAE 90.1 2010)		NYCECC 2020 Baseline	
		Controls	LPD (W/sq ft)	Controls	LPD* (W/sq ft)	Controls	LPD* (W/sq ft)
Auditorium	AUD-LPD[g]	**Vacancy**	0.63	Timer	0.79	Timer	0.63
Cafeteria	CAFETERIA-LPD	Partial Vacancy	0.53	Timer	0.65	Partial Vacancy	0.53
Cafetorium	CFTRM-LPD	Timer	0.53	Timer	0.65	Timer	0.53
Classrm (1st-8th grade)	CLASS-LPD	Vacancy	0.5	Vacancy	1.24	Vacancy	0.74
Classrm (9th-12 grade)	CLASS-LPD	Vacancy	0.5	Vacancy	1.24	Vacancy	0.74
Classrm (Pre-K & Kindergarten)	CLASS-LPD	Vacancy	0.5	Vacancy	1.24	Vacancy	0.74
Community rooms	COMMUN-LPD	Vacancy	0.7	Vacancy	1.23	Vacancy	0.93
Computer Classroom	COMP-CLASS-LPD	Vacancy	0.74	Vacancy	1.24	Vacancy	0.74
Conference Room	CONF-LPD	Vacancy	0.7	Vacancy	1.23	Vacancy	0.93
Copy Rooms	COPY-LPD	Vacancy	0.5	Vacancy	0.98	Vacancy	0.50
Corridor	CORR-LPD	Partial Vacancy	0.58	Timer	0.66	Partial Vacancy	0.58

[f] The Room Cavity Ratio is a factor that characterizes room configuration as a ratio between the walls and ceiling and is based upon the room dimensions.

[g] General lighting. Exempt stage lighting is project specific and should be entered as task lighting.

Space Type	Model Input Lighting Power Density Parameter	Proposed Design		GSG Baseline (ASHRAE 90.1 2010)		NYCECC 2020 Baseline	
		Controls	LPD (W/sq ft)	Controls	LPD* (W/sq ft)	Controls	LPD* (W/sq ft)
Dance studio/ Exercise	AUX-GYM-LPD	**Vacancy**	0.75	Timer	1.2	Timer	0.75
Electrical	ELEC-LPD	Timer	0.39	Timer	0.95	Timer	0.39
Nurse's Office	NURSE-LPD	Timer	0.8	Timer	1.66	Timer	1.16
Gym Locker Room	LOCKER-G-LPD	Partial Vacancy	0.45	Timer	0.75	Partial Vacancy	0.45
Gymnasium	GYM-LPD	**Vacancy**	0.75	Timer	1.2	Timer	0.75
Gymnatorium	GYMTRM-LPD	**Vacancy**	0.75	Timer	1.2	Timer	0.75
Kitchen	KITCHEN-LPD	Timer	0.8	Timer	0.99	Timer	0.92
Warming Kitchen	KITCHEN-LPD	Timer	0.8	Timer	0.99	Timer	0.92
Laboratory	LAB-CLASS-LPD	Vacancy	1.0	Timer	1.28	Partial Vacancy	1.04
Library - General	LIB-GEN-LPD	**Vacancy**	0.8	Timer	1.24	Timer	0.94
Library - Reading	LIB-READ-LPD	**Vacancy**	0.77	Timer	0.93	Timer	0.77
Library - Stacks	LIB-STAC-LPD	Vacancy	0.8	Timer	1.71	Partial Vacancy	1.20
Elevator Lobby	ELEV-LOB-LPD	Partial Vacancy	0.52	Timer	0.64	Timer	0.52
Lobby	LOBBY-LPD	Partial Vacancy	0.8	Timer	0.9	Partial Vacancy	0.9
MDF/IDF	DATA-LPD	Occupancy	0.39	Timer	0.95	Timer	0.39
Mechanical	MECH-LPD	Timer	0.39	Timer	0.95	Timer	0.39
Media Centers/ TV Studios	MEDIA-LPD	Timer	0.74	Timer	1.24	Timer	0.74
Music Classroom	MUSIC-LPD	Vacancy	0.5	Vacancy	1.24	Vacancy	0.74
Office	OFFICE-LPD	Vacancy	0.6	Vacancy	1.1	Vacancy	0.85
Other Locker Room	LOCKER-O-LPD	Vacancy	0.45	Vacancy	0.75	Vacancy	0.45
Playroom	PLAY-LPD	**Vacancy**	0.75	Timer	1.2	Timer	0.75
Records Room	RECORDS-LPD	Vacancy	0.8	Vacancy	0.98	Vacancy	0.85
Resource Center/ Workroom	RESOURCE-LPD	Vacancy	0.8	Vacancy	1.23	Vacancy	0.93
Restrooms, other	RESTROOM-LPD	Partial Vacancy	0.7	Partial Vacancy	0.98	Partial Vacancy	0.75
Restrooms, staff	RESTRM-PRIV-LPD	Vacancy	0.7	Vacancy	0.98	Vacancy	0.75
Staff lunch/ lounge	LOUNGE-LPD	Vacancy	0.44	Vacancy	0.73	Vacancy	0.44
Stair	STAIR-LPD	Partial Vacancy	0.4	Timer	0.69	Partial Vacancy	0.50
Storage	STORAGE-LPD	Vacancy	0.4	Vacancy	0.63	Vacancy	0.43
Workshop	WORKSHOP-LPD	Timer	0.9	Timer	1.59	Timer	1.09
***Does not include RCR Threshold allowances. Taking such allowances shall be properly documented.**							

Table 14. Lighting Schedules by Space Type

Space Type	Proposed Design	GSG Baseline (ASHRAE 90.1 2010)	NYCECC 2020 Baseline
Auditorium (No extended hrs)	AUD-LT-YR	AUD-LT-TIM-YR	AUD-LT-TIM-YR
Auditor. (Thu, Fri extnd hrs)	AUD-EXT-LT-YR	AUD-LT-E-TIM-YR	AUD-LT-E-TIM-YR
Auditorium Stage Lights	AUD-AUX-LT-YR	AUD-AUX-LT-YR	AUD-AUX-LT-YR
Cafeteria	CAFE-LT-YR	CAFE-LT-TIM-YR	CAFE-LT-YR
Cafetorium	MP-LT-TIM-YR	MP-LT-TIM-YR	MP-LT-TIM-YR
Classroom (ages 5-8)	CLASS-LT-YR	CLASS-LT-YR	CLASS-LT-YR
Classroom (ages 9+)	CLASS-LT-YR	CLASS-LT-YR	CLASS-LT-YR
Community rooms	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR
Computer Classroom	CLASS-LT-YR	CLASS-LT-YR	CLASS-LT-YR
Conference Room	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR
Copy Rooms	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR
Corridor	CORR-LT-YR	CORR-LT-TIM-YR	CORR-LT-YR
Dance studio/ Exercise	AUX-GYM-LT-YR	AUX-GYM-LT-TIM-YR	AUX-GYM-LT-TIM-YR
Electrical	MECH-LT-YR	MECH-LT-YR	MECH-LT-YR
Nurse's Office	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR
Gym Locker Room	GYM-LT-PV-YR	GYM-LT-TIM-YR	GYM-LT-PV-YR
Gymnasium	GYM -LT-YR	GYM-LT-TIM-YR	GYM-LT-TIM-YR
Gymatorium	MP- LT-YR	MP-LT- TIM-YR	MP-LT- TIM-YR
Kitchen/ Warming Kitchen	KITCHEN-LT-YR	KITCHEN-LT-YR	KITCHEN-LT-YR
Laboratory	SCI-LT-YR	SCI-LT-TIM-YR	SCI-LT-TIM-YR
Library - General	CLASS-LT-YR	CLASS-LT-TIM-YR	CLASS-LT-TIM-YR
Library - Reading	CLASS-LT-YR	CLASS-LT-TIM-YR	CLASS-LT-TIM-YR
Library - Stacks	CLASS-LT-YR	CLASS-LT-TIM-YR	CLASS-LT-PV-YR
Elevator Lobby	CORR-LT-YR	CORR-LT-TIM-YR	CORR-LT-YR
Lobby	CORR-LT-YR	CORR-LT-TIM-YR	CORR-LT-YR
MDF/IDF	MECH-LT-V-YR	MECH-LT-YR	MECH-LT-YR
Mechanical	MECH-LT-YR	MECH-LT-YR	MECH-LT-YR
Media Centers/ TV Studios	CLASS-LT-YR	CLASS-LT-YR	CLASS-LT-YR
Music Classroom	CLASS-LT-YR	CLASS-LT-YR	CLASS-LT-YR
Office	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR
Other Locker Room	CLASS-LT-YR	CLASS-LT-YR	CLASS-LT-YR
Playroom	CLASS-LT-YR	CLASS-LT-TIM-YR	CLASS-LT-TIM-YR
Records Room	STORAGE-LT-YR	STORAGE-LT-YR	STORAGE-LT-YR
Resource Center/ Workroom	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR
Restrooms, other	RESTRM-LT-PV-YR	RESTRM-LT-PV-YR	RESTRM-LT-PV-YR
Restrooms, staff	RESTROOM-LT-YR	RESTROOM-LT-YR	RESTROOM-LT-YR
Staff lunch/ lounge	CAFE-LT-YR	CAFE-LT-YR	CAFE-LT-YR
Stair	CORR-LT-YR	CORR-LT-TIM-YR	CORR-LT-YR
Storage	STORAGE-LT-YR	STORAGE-LT-YR	STORAGE-LT-YR

Workshop	OFFICE-LT-YR	OFFICE-LT-YR	OFFICE-LT-YR

Daylighting requirements and controls are covered in Table 15. The SCA DR requires daylight harvesting in all rooms with windows. Daylighting in the baseline is provided in spaces that comply with ASHRAE 90.1-2010 9.4.1.4 & 9.4.1.5 or 2020 NYCECC Section C405.2.2.3.2.

The daylight illuminance settings shown in Table 15 are based on the DR 7.2.1B minimum illuminance requirements and 2020 NYCECC respectively. These values are provided in the Code to assist the modeler and do not represent mandatory illuminance levels. The eQuest daylighting algorithm for California Title 24-2008 can be used to place the sensors and determine the controlled load.

Table 15. Lighting Daylight Controls by Space Type

Space Type	**Minimum Foot Candles for Daylighting Control**
	All Cases- Use 30" as eQuest height input otherwise unless noted
Classroom (ages 5-8)	35
Classroom (ages 9+)	35
Classroom (Pre-K)	35
Auditorium (No extended hours)	40
Auditorium (Thu, Fri extended hrs)	40
Gymnasium	30
Cafetorium	40
Corridor	10 @ 18" AFF
Office	28
Lobby	30
Gym Locker Room	20 @ 18" AFF
Other Locker Room	20 @ 18" AFF
Storage	30
Library - Reading	40
Library - Stacks	20@ 18" AFF
Computer Classroom	40
Music Classroom	35
Mechanical (proposed only)	30
Electrical (proposed only)	30
MDF/IDF (proposed only)	30
Conference Room	40
Gymatorium	40
Cafeteria	30
Kitchen/ Warming Kitchen	50
Dance studio/ Exercise Room	40
Stair	20
Community rooms	50
Copy Rooms	40
Nurse's Office	50

Laboratory	50
Media Centers/ TV Studios	40
Playroom	30
Records Room	20 @ 18” AFF
Workshop	50
Restrooms	35
Staff lunch/ lounge	30
Resource Center/ Workroom	50

4.6 Infiltration Loads

The amount infiltration will depend on the building geometry. General guidance is given in Table 16.

Table 16. Infiltration Defaults

Description	Value
Infiltration Method	Air Change
Schedule	HVAC System Dependent, See Table 20
Air Changes/Hour	0.10, typical spaces with 1 major dimension on an exterior wall 0.075, cafeterias, auditoriums, and other deep spaces with at least 1 major dimension on an exterior wall 0.025, spaces with limited area on exterior walls 0.0, interior zones with no exterior walls 0.30, for vestibules with swinging doors
Infiltration Flow	Default

4.7 Sub-slab depressurization system (SSDS)

Many SCA projects include a sub-slab depressurization system (SSDS) which consists of several fans that run continuously. As such, the fans should be modeled in a realistic manner (using bhp and accounting for the fan motor efficiency), as opposed to conservatively using the motor HP or amperage directly. If the bhp rating is not provided, it should be assumed to be 80% of the motor rating.

The default starting value for this input is 1.748 kW. This should be replaced with the actual calculated value from the design documents as soon as it is available. The SSDS system is not part of the HVAC system, and is typically described in the H-series drawings. If the system is not found in the project drawings it should not be assumed to exist in the project.

Field observations indicate that SSDS fans typically run at 84% of the maximum VFD speed. Using the ASHRAE 90.1 table G3.1.3.15 Part-Load Performance for VAV Fan Systems Method 2, the fan power draw should be modeled as 74.8% of the system brake horsepower.

The SSDS fans are process loads and should be modeled identically between the proposed design and the baselines. Please refer to Section 8.1 table 36 for the appropriate inputs.

5 HVAC THERMAL ZONES

This section describes the default values for the HVAC zones. All schedule details can be found in Appendix A. All inputs are identical in the design and baselines unless otherwise noted.

5.1 Temperature Setpoints

The heating and cooling schedules for each zone, along with the design temperatures are shown in Table 17. If the proposed design uses electric heating, then electric heating schedules should be used. These schedules include a gradual warm-up period which allows the spaces to come to temperature without a substantial and unrealistic morning peak. The space temperature setpoints are the same during the occupied period as the gas heating case. The electric heating schedules are denoted by a "-E" designation, as shown in Table 18. The System Types are described in more detail in Section 6.

Table 17. Heating/Cooling Schedules & System Assignments by Space Type

Space Type	System Type	Heating		Cooling		Heating Schedule	Cooling Schedule
		Set point	Set back	Set point	Set back		
Classrooms	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Auditorium	AUDITOR-SYS	72	55	75	85	AUD-HT-YR	AUD-CL-YR
Gymnasium	GYM-SYS	72	55	75	85	GYM-HT-YR	GYM-CL-YR
Corridor	CLASS-SYS/ CORRIDOR-SYS	72	55	78	85	CORR-HT-YR	CORR-CL-YR
Office	CLASS-SYS	72	55	75	85	OFFICE-HT-YR	OFFICE-CL-YR
Lobby	CLASS-SYS/ CORRIDOR-SYS	72	55	78	85	CORR-HT-YR	CORR-CL-YR
Gym Locker Room	GYM-SYS	72	55	78	85	GYM-HT-YR	GYM-CL-YR
Other Locker Room	CLASS-SYS	72	55	78	85	CLASS-HT-YR	CLASS-CL-YR
Storage	*	55	55	NR	NR	HT-55-YR	NR
Library	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Computer Classroom	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Mechanical	HEAT-ONLY-SYS	55	-	NR	NR	HT-55-YR	NR
Electrical/EMR	DATA-SYS	55	-	85	-	HT-55-YR	CL-85-YR
Data	DATA-SYS	55	-	75	-	HT-55-YR	CL-DATA
Conference Room	CLASS-SYS	72	55	78	85	OFFICE-HT-YR	OFFICE-CL-YR
Gymatorium	MP-SYS	72	55	75	85	MP-HT-YR	CLASS-CL-YR
Cafeteria	K/C-SYS	72	55	75	85	CAFE-HT-YR	CAFE-CL-YR
Kitchen/ Warming Kitchen	K/C-SYS	65	55	78	85	KITCHEN-HT-YR	KITCHEN-CL-YR
Dance studio/ Exercise Room	AUX-GYM-SYS	72	55	78	85	AUX-GYM-HT-YR	AUX-GYM-CL-YR
Stair	HEAT-ONLY-SYS	55	55	NR	NR	STAIR-HT-YR	NR
Community rooms	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Copy Rooms	CLASS-SYS	72	55	78	85	CLASS-HT-YR	CLASS-CL-YR
Nurse's Office	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Laboratory	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR

Media Centers/ TV Studios	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Playroom	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Records Room	CLASS-SYS	72	55	78	85	CLASS-HT-YR	CLASS-CL-YR
Workshop	CLASS-SYS	72	55	78	85	CLASS-HT-YR	CLASS-CL-YR
Restrooms	CLASS-SYS	55	55	85	85	HT-55-YR	CL-85-YR
Staff lunch/ lounge	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR
Resource Center/ Workroom	CLASS-SYS	72	55	75	85	CLASS-HT-YR	CLASS-CL-YR

* Storage rooms may be served indirectly by any system type and should be assigned based on their location in the proposed design.

Table 18. Alternate Heating Schedules for Electric Cases

Heating Schedule	Electric Heating Schedule
AUD-HT-YR	AUD-HT-YR-E
AUX-GYM-HT-YR	AUX-GYM-HT-YR-E
CAFE-HT-YR	CAFE-HT-YR-E
CLASS-HT-YR	CLASS-HT-YR-E
CORR-HT-YR	CORR-HT-YR-E
GYM-HT-YR	GYM-HT-YR-E
HT-55-YR	HT-55-YR (No change)
KITCHEN-HT-YR	KITCHEN-HT-YR-E
MP-HT-YR	MP-HT-YR-E
OFFICE-HT-YR	OFFICE-HT-YR-E
STAIR-HT-YR	STAIR-HT-YR (No Change)

5.2 Ventilation Loads

The ASHRAE 90.1-2010, Appendix G does not allow the GSG Baseline to have higher design ventilation rates than required by code. The 2014 New York City Mechanical Code requirements are given in Table 19 and should be used for both baselines and the proposed design until the mechanical engineer can provide a copy of the final ventilation calculation. For the final model, the actual ventilation air in the Proposed Design should match the design documents, while the GSG baseline should match the code required ventilation. The ventilation air in the NYCECC 2020 Baseline should meet the requirements of NYCECC Appendix CA, Section 6.5.3.7. In general, systems with exhaust energy recovery will have the same ventilation rate as the proposed design. Systems without exhaust energy recovery will have the same ventilation as the proposed design, or 135% of the mechanical code requirement, whichever is less.

In the template, a combined value tied to the occupancy is assigned to zones with both cfm/person and cfm/area requirements.

Table 19. Ventilation Requirements by Space Type

Space Type	Default Area per Person[a] (ft^2)	Outdoor flow (cfm per Person)	Outdoor flow (cfm per ft^2)	Combined OA Rate (cfm per Person)	Exhaust (cfm per ft^2)[f]
Classrm (1st-8th grade)	23	10	0.12	12.8	
Classrm (9th-12 grade+)	22	10	0.12	12.6	
Classrm (Pre-K & kindergarten)[e]	37	10	0.18	16.7	
Auditorium [b]	7	5	0.06	5.4	
Corridor	~	0	0.06	NA-use OA/ft^2	
Office	117	5	0.06	12.0	
Lobby	-	5	0.06	NA-use OA/ft^2	
All Locker Rooms	50	0	0	0	0.5
Storage	300	0	0.12	NA-use OA/ft^2	
Library	25	5	0.12	8.0	
Computer Classroom[g]	27	10	0.12	13.2	
Music Classroom[g]	23	10	0.12	12.8	
Mechanical	-	0	0.06	NA-use OA/ft^2	
Electrical	-	0	0.06	NA-use OA/ft^2	
IDF/MDF	-	0	0.06	NA-use OA/ft^2	
Gymnasium (class period)[c]	21	5	0.06	5.9	
Conference Room	23	5	0.06	6.4	
Gymatorium (multiuse assembly)[d]	21	5	0.06	5.9	
Cafetorium (multiuse assembly)	15	7.5	0.18	10.2	
Cafeteria	15	7.5	0.18	10.2	
Kitchen/ Servery/ Warming Kitchen	174	0	0	NA-Use equipment requirement	0.7
Dance Studio/ Exercise	38	20	0.06	22.3	
Stair	~	0	0.06	NA-use OA/ft^2	
Community rooms	100	7.5	0.06	13.5	
Copy Rooms	-	5	0.06	NA-use OA/ft^2	0.5
Nurse's Office	175	15	0	15.0	
Laboratory[g]	27	10	0.18	14.9	1

Media Centers/ TV Studios	22	10	0.12	12.6	
Playroom[g]	37	10	0.18	16.7	
Records Room	-	0	0.12	NA-use OA/ft^2	
Workshop	50	10	0.18	19.0	0.5
Restrooms	-	0	0	0	70 cfm/fixture[g]
Staff lunch/ lounge	20	7.5	0.18	11.1	
Resource Center/ Workroom	100	5	0.06	11.0	

[a] Values for classrooms are taken from the SCA's Program of Requirements (POR), which is based on the UFT maximum for a classroom and inclusive of staff. For other spaces, the value is to based on the 2014 NYC Egress requirements (Table 1004.1.1). Those values listed as "net" have been converted to "gross" assuming a 15% wall adjustment.
[b] Update based on actual seat count.
[c] Values provide 0.30 cfm/ft^2 as required by mechanical code, and allow for CO2 occupant control in energy model.
[d] Greater of requirements of gymnasium and multiuse assembly
[e] Greater of requirements of cafeteria and multiuse assembly
[f] **Exhaust air is provided via transfer air. Additional outside air is not required in these spaces for ventilation.**
[g] The fixture count only includes urinal + water closet (not lavatory).

6 AIR SIDE SYSTEMS

This section describes the default system types provided in the template. It may be necessary to model more than one of any type of system, and not all systems apply to all buildings. All schedule details can be found in Appendix A. All inputs are identical in the design and baselines unless otherwise noted.

6.1 General Schedules

The fan, outside air, and infiltration schedules are given in Table 20.

Table 20. System Fan and Outside Air Schedules

System Type	Typical Space Types	Fan Schedule	Outside Air Schedule	Infiltration Schedule
CLASS-SYS	Classrooms, offices, corridors	CLASS-FAN-SCH	CLASS-OA-SCH	SCHOOL-INF
GYM-SYS	High school gymnasium	GYM-FAN-SCH	GYM-OA-SCH	GYM-INF-SCH
CORRIDOR-SYS	Corridors in additions to unimproved buildings	CLASS-FAN-SCH	CLASS-OA-SCH	SCHOOL-INF-SCH
HEAT-ONLY-SYS	Mechanical spaces, stairs, vestibules	ALWAYS-OFF-F/D-YR	NO-OA-SCH	NO-INF-SCH
DATA-SYS	Data rooms, EMR	DATA-FAN-SCH	NO-OA-SCH	NO-INF-SCH
MP-SYS	Gymatoriums, multipurpose	MP-FAN-SCH	MP-OA-SCH	SCHOOL-INF-SCH

AUX-GYM	Exercise rooms	AUX-GYM-FAN-SCH	AUX-GYM-OA-SCH	AUX-GYM-INF-SCH
K/C-SYS	Kitchens & cafeterias	CAFE-FAN-SCH	CAFE-OA-SCH	K/C-INF-SCH
AUDITOR-SYS	Auditorium	AUDFAN-SCH	AUD-OA-SCH	SCHOOL-INF

6.2 Inputs for CLASS-SYS

6.2.1 Class System- Natural Gas Heating

The classrooms are served by central air handlers with terminal variable air volume units. All heating and cooling is provided by a boiler and chiller plant in new construction, and where necessary due to design restrictions DX-cooling & indirect gas furnace in major renovations. The terminal units shall be variable air volume boxes. Perimeter spaces shall be served by fin tube radiation (FTR) (eQuest input baseboards).

Table 21. Class System Properties

	Design	**NYCECC 2020 Baseline**		**GSG Baseline**	
eQuest System Type	Variable Air Volume	System Type #4: Packaged Variable Air Volume with reheat		Buildings > 150,000 ft^2 Variable Air Volume Buildings < 150,000 ft^2 Packaged Variable Air Volume	
Fan Control	FAN-EIR-FPLR	FAN-EIR-FPLR		FAN-EIR-FPLR	
Fan EIR = f(PLR)	VSD-RESET-SP	VAR-SPD-FAN		VAR-SPD-FAN	
Minimum Flow Ratio	Greater of Outdoor Air Flow Rate and 20%	Greater of Outdoor Air Flow Rate and 30%		Greater of Outdoor Air Flow Rate and 30%	
Minimum Fan Ratio	Greater of Outdoor Air Flow Rate and 20%	Greater of Outdoor Air Flow Rate and 30%		Greater of Outdoor Air Flow Rate and 30%	
Night Cycle Control	STAY-OFF	CYCLE-ON-ANY		CYCLE-ON-ANY	
Cooling Efficiency, Packaged DX Cases only	EER per NYCECC 2020 for existing construction applications. For new construction applications not applicable, cooling from chiller plant.	Per NYCECC 2020 Appendix CA Table 6.8.1-1		Per ASHRAE 90.1-2010 Table 6.8.1A	
		Max Capacity	EER	Max Capacity	EER
		65 kBtu/h	14.0 SEER	65 kBtu/h	13.0 SEER
		135 kBtu/h	11.0 EER 12.7 IEER	135 kBtu/h	11.0
		240 kBtu/h	12.4 IEER	240 kBtu/h	10.8
		760 kBtu/h	11.4 IEER	760 kBtu/h	9.8
		> 760 kBtu/h	11.0 IEER	> 760 kBtu/h	9.5
				Buildings >150,000 ft^2 will take cooling from the chiller(s)	
Cooling Efficiency, Part Load Curve f(part load ratio)	NA-cooling from chiller	Capacity Range = 135kBtu-240kBtu: NY20-135-CL-EIR-FPLR		A10-CL-EIR-FPLR (all capacities)	

		All other capacities: NY20-CL-EIR-FPLR	
Other cooling curves	NA-cooling from chiller	eQuest default	eQuest default
Heating Efficiency	NA- heating from boiler	NA – heating from boiler	Per ASHRAE 90.1-2010 Table 6.8.1E
			Max Capacity: Efficiency
			225 kBtu/h: 80% Et
			> 225 kBtu/h: 80% Et
Cooling Available	When Chiller runs	As needed	As needed
Economizer Controls	Differential- Enthalpy	For systems >54 kBTUh	No required for Climate Zone 4a
Demand Controlled Ventilation?	Yes, oth space and return CO_2 sensors.	Where required by Section 6.4.3.8. In general, these are spaces larger than 500 sq ft and design occupancy density smaller than 40 sq ft/ person, exceptions exist.	Where required by Section 6.4.3.9. In general, these are spaces larger than 500 sq ft and design occupancy density smaller than 25 sq ft/person, though exceptions exist.
Economizer Control?	Differential-Enthalpy	Differential-Enthalpy with fixed upper dry bulb limit of 75°F	n/a
Energy Recovery Effectiveness (sensible & latent)	Based on Project Documents 50% default[h]50% default for early design, Project specific for later designs	50%	50%
Supply Air Reset Controls	Up to 55°F	5°F higher than design supply airflow under minimal cooling load (61°F)	5°F higher than design supply airflow under minimal cooling load (61°F)
Minimum Supply T	55°F default, update per design documents	56°F	56°F
Zone Entering Maximum Supply T	Greater of 72°F or actual heating supply temperature[i]	92°F	92°F

[h] Design requirement is 75% recovery effectiveness, which includes adjustments for unbalanced flow. eQuest heat recovery effectiveness input should be based on balanced flow. The program will adjust as necessary. If the design shows higher effectiveness at balanced conditions, this value may be used. See the How-To Guide for more information.

[i] False unmet load hours may occur in the model if the supply temperature is below 72°F. Prior to 60% CD, supply temperature may be increased to 92°F in systems with no zone heating to reduce analysis time if the radiator sizes have not been specified. Since all of the heating originates from the boiler, the results should be acceptable for early design evaluation.

Dehumidification	Humidity indirectly controlled via supply temperature. No humidity control modeled.	No humidity control modeled.	No humidity control modeled.

6.2.2 Class System- Electric Heating

Classrooms, offices, most corridors, and other similar spaces will be served by packaged air-source heat pumps with heat recovery wheels and supplemental electric resistance baseboards. The heat pumps will provide heating during the warm-up period. The supply temperature during warm-up is assumed to be 90°F, but may be revised. Electric resistance heating is not expected to be needed during the warm-up. During occupied hours, the heat pump will heat the outdoor air to space temperature, or 72°F. The electric resistance baseboards will pick up any skin loads as needed.

Additional details on modeling air-source heat pumps in eQuest/ DOE2.2 are given in Appendix B of the How-to Guide. The inputs for electric heating are given in Table 22. Items that differ from the gas heating inputs are highlighted in blue.

Table 22. Class System Properties- Electric Heating

	Design		**NYCECC 2020 Baseline**		**GSG Baseline**	
eQuest System Type	Packaged Variable Air Volume		System Type #3: Packaged VAV with parallel fan-powered boxes		Buildings < 150,000 ft^2 System Type 6: Packaged VAV with PFP Boxes Buildings > 150,000 ft^2 System Type 8: VAV with PFP Boxes	
Fan Control	FAN-EIR-FPLR		FAN-EIR-FPLR		FAN-EIR-FPLR	
Fan EIR = f(PLR)	VSD-RESET-SP		VAR-SPD-FAN		VAR-SPD-FAN	
Minimum Flow Ratio	Greater of Outdoor Air Flow Rate and 20%		Greater of Outdoor Air Flow Rate and 30%		Greater of Outdoor Air Flow Rate and 30%	
Minimum Fan Ratio	Greater of Outdoor Air Flow Rate and 20%		Greater of Outdoor Air Flow Rate and 30%		Greater of Outdoor Air Flow Rate and 30%	
Night Cycle Control	CYCLE-ON-ANY		CYCLE-ON-ANY		ZONE-FANS-ONLY	
Zone Fans			0.35 W/cfm		0.35 W/cfm	
Cooling Efficiency, Packaged DX Cases only (Does not apply to GSG >150,000)	Project specific at AHRI conditions, per NYCECC 2020 Appendix CA Table 6.8.1-2 at early phase		Per NYCECC 2020 Appendix CA Table 6.8.1-1		Per ASHRAE 90.1-2010 Table 6.8.1A	
	Max Capacity	EER	Max Capacity	EER	Max Capacity	EER
	65 kBtu/h	14.0 SEER	65 kBtu/h	14.0 SEER	65 kBtu/h	13.0 SEER
	135 kBtu/h	11.0 EER 12.2 IEER	135 kBtu/h	11.0 EER 12.7 IEER	135 kBtu/h	11.0
	240 kBtu/h	10.6 EER 11.6 IEER	240 kBtu/h	12.4 IEER	240 kBtu/h	10.8

	>240 kBtu/h	9.5 EER 10.6 IEER	760 kBtu/h	11.4 IEER	760 kBtu/h	9.8
			> 760 kBtu/h	11.0 IEER	> 760 kBtu/h	9.5
Cooling Efficiency, Chilled Water Plant					Buildings >150,000 ft^2 will take cooling from the chiller(s)	
Cooling Efficiency, Part Load Curve f(part load ratio)	NY20-HP-CL-EIR-FPLR (all capacities)		NY20-CL-EIR-FPLR (all capacities)		A10-CL-EIR-FPLR (all capacities)	
Other cooling curves	eQuest default		eQuest default		eQuest default	
Cooling Available	As needed		As needed		As needed	
Economizer Controls	Differential- Enthalpy		For systems >54 kBTUh		No required for Climate Zone 4a	
Demand Controlled Ventilation?	Yes, Both space and return CO_2 sensors.		Where required by Section 6.4.3.8. In general, these are spaces larger than 500 sq ft and design occupancy density smaller than 40 sq ft/ person, exceptions exist.		Where required by Section 6.4.3.9. In general, these are spaces larger than 500 sq ft and design occupancy density smaller than 25 sq ft/person, though exceptions exist.	
Economizer Control?	Differential-Enthalpy		Differential-Enthalpy with fixed upper dry bulb limit of 75°F		n/a	
Energy Recovery Effectiveness (sensible & latent)	Based on Project Documents 50% default50% default for early design, Project specific for later designs[j]		50%		50%	
Heat Source	Modeled as Hot Water in eQuest as part of work-around. See How-to Guide		Electric Resistance		Electric Resistance	
Heating Efficiency	Project specific at AHRI conditions, per NYCECC 2020 Appendix CA Table 6.8.1-2 at early phase[k]. Input at heat pump chiller, not system. See How-to Guide		NA- Electric Resistance		NA- Electric Resistance	

[j] Design requirement is 75% recovery effectiveness, which includes adjustments for unbalanced flow. eQuest heat recovery effectiveness input should be based on balanced flow. The program will adjust as necessary. If the design shows higher effectiveness at balanced conditions, this value may be used. See the How-To Guide for more information.

[k] Heat pumps must meet mandatory minimum efficiencies at both 47F and 17F, but only the operating characteristics at 47F will be input into eQuest.

	Max Capacity	COP		
	65 kBtu/h	8.0 HSPF		
	135 kBtu/h	3.3 @ 47°F		
	>135 kBtu/h	3.2 @ 47°F		
Baseboard Heating	Hot water (required as part of eQuest work around, even when actual design is electric resistance. See How-to Guide)		NA	NA
Supplemental heat source on temperature (mix HP & electric resistance heating)	20°F (Place holder- use project specific value based on HP selectrion)		NA	NA
Minimum HP Temperature (100% electric resistance heating)	10°F (Place holder- use project specific value based on HP selection)		NA	NA
Supply Air Reset Controls	Up to 55°F		5°F higher than design supply airflow under minimal cooling load (61°F)	5°F higher than design supply airflow under minimal cooling load (61°F)
Minimum Supply T	55°F default, update per design documents		56°F	56°F
Zone Entering Maximum Supply T	Greater of 92°F or actual heating supply temperature		92°F	92°F
Dehumidification	Humidity indirectly controlled via supply temperature. No humidity control modeled.		No humidity control modeled.	No humidity control modeled.

6.2.3 Class System Fan Power

The default design fan power corresponds to approximately 9" of total static on the central air handling unit. Please note that this design case value should be used as a reference point/average only. The actual fan static may be much less depending on those features needed for the design and is dictated by the fan power/BHP used in the design systems as well as the fan efficiency. More details are included in the How-To Guide.

The following credits are from ASHRAE 90.1, Table 6.5.3.1.1B and are applied to the baselines in the default templates. Additional fan credits may be available for return/exhaust airflow control devices or sound attenuation sections.

Please note that the NYC ECC 2020 baseline static pressure should match the final design static pressure and as long as the system fan power does not exceed the ASHRAE allowance, calculated using Table 6.5.3.1.1A and Table 6.5.3.1.1B.

Fan power credits:

Table 23. Class System Fan Power

Device Credit	Adjustment	Airstream Credit Applied
Fully Ducted Return	0.5 in w.c.	Return
Supply MERV filters <9	0.0 in w.c.	No credit
Supply MERV 9-12 filters	0.5 in w.c.	Project specific pre-filter on OA
Supply MERV 13-15 filters	0.9 in w.c.	Supply Airflow
Carbon filter	Clean filter pressure drop	Project Specific, Outdoor Air
Energy Recovery Device #1 (preheat)	2.2 x ER Effectiveness – 0.5 in w.c.	OA and Exhaust/Relief air (fan power credit is applied to both airstreams)
Energy Recovery Device #2 (reheat)	2.2 x ER Effectiveness – 0.5 in w.c.	Project Specific, Supply and Return (fan power credit is applied to both airstreams)
Exhaust Filter	0.24 in w.c.	MERV 7
Sound attenuation section	0.15 in w.c.	Project Specific, Supply

6.3 Inputs for CORRIDOR-SYS

This system is only applicable to corridors serving additions which are connected to existing buildings without envelope renovations. All other corridors will be served by the CLASS-SYS.

Table 24. Corridor System Properties

	Design	**NYCECC 2020 Baseline**	**GSG Baseline**
eQuest System Type	Packaged Variable Air Volume	Packaged Variable Air Volume	NA- no corridor system. Corridors included with CLASS-SYS regardless of design
Fan Control	Variable Air Volume	Variable Air Volume	
Minimum Flow Ratio	30%	30%	
Cooling Efficiency, Packaged DX Cases only	Project specific Default EER is per NYCECC 2020	Per NYCECC 2020 Appendix CA Table 6.8.1-1 See CLASS-SYS	
Cooling Efficiency, Part Load Curve f(part load ratio)	Project specific Default is same as NYC ECC 2020	Capacity Range = 135kBtu-240kBtu: NY20-135-CL-EIR-FPLR All other capacities: NY20-CL-EIR-FPLR	
Other cooling curves	eQuest default	eQuest default	

Heating Efficiency	NA- heating from boiler	NA- heating from boiler	
Cooling Available	As needed	As needed	
Demand Controlled Ventilation?	No	No	
Economizer Control?	Differential-Enthalpy	Differential-Enthalpy with fixed upper drybulb limit of 75°F	
Energy Recovery Efficiency (sensible & latent)	50% default for early design, Project specific for later designs	50%	
Fan Power Credits		Fully ducted return MERV 13 filters Heat recovery device	

6.4 Inputs for Public Assembly Systems: GYM-SYS, MP-SYS (Multi-Purpose), AUDITOR-SYS, AUX-GYM-SYS

6.4.1 Public Assembly Systems- Natural Gas Heating

Table 25. GYM, MP, Auditor, and Aux GYM System Properties, Gas Heat

	Design	**NYCECC 2020 Baseline**	**GSG Baseline**
eQuest System Type	Variable Air Volume (Single Zone)	System Type #11: Packaged Rooftop Air Conditioner, Modeled as Packaged Variable Air Volume	System Type #3: Packaged Single Zone DX, Modeled as Packaged Variable Air Volume
Fan Control	Variable Air Volume	Constant Volume, Two-Speed for units greater than 65k BTUh cooling capacity (model as FAN-EIR)	Constant Volume
Fan EIR = f(PLR)	SZ-VSD-RESET-SP	Constant volume fans: NA 2 Speed fans: 2-SPD-CRV	NA
Minimum Flow Ratio	Greater of Outdoor Air Flow Rate and 20%	Constant volume fans: NA 2 Speed fans: Greater of Outdoor Air Flow Rate and 66%	NA
Minimum Fan Ratio	Greater of Outdoor Air Flow Rate and 20%	Constant volume fans: NA 2 Speed fans: Greater of Outdoor Air Flow Rate and 66%	NA
Night Cycle Control	STAY-OFF	CYCLE-ON-ANY	CYCLE-ON-ANY

Minimum Flow Ratio	Outdoor Air Flow Rate	100% (66% where two speed)		100%	
Cooling Efficiency	NA- cooling from chiller	See CLASS-SYS		See CLASS-SYS	
Cooling Efficiency, Part Load Curve f(part load ratio)	NA-cooling from chiller	See CLASS-SYS		See CLASS-SYS	
Other cooling curves	NA-cooling from chiller	eQuest default		eQuest default	
Heating Efficiency	NA- heating from boiler	Per NYCECC 2020 Appendix CA Table 6.8.1-5		Per ASHRAE 90.1-2010 Table 6.8.1E	
		Max Capacity	Efficiency	Max Capacity	Efficiency
		225 kBtu/h	80% Et	225 kBtu/h	80% Et
		> 225 kBtu/h	81% Et	> 225 kBtu/h	80% Et
Cooling Available	When Chiller runs	As needed		As needed	
Demand Controlled Ventilation?	Yes, CO_2-based	Where required by Section 6.4.3.8.		No	
Economizer Control?	Differential-Enthalpy	Differential Enthalpy with fixed dry-bulb temp of 75°F		None (not required)	
Energy Recovery Efficiency (sensible & latent)	50% for early design, Project specific for later designs	50%		50%	
Fan Power Credits		Fully ducted return MERV 13 filters Heat recovery device Exhaust Filter		Fully ducted return MERV 13 filters Heat recovery device Exhaust Filter	

6.4.2 Public Assembly Systems- Electric Heating

Table 26. GYM, MP, Auditor, and Aux GYM System Properties, Electric Heat

	Design	**NYCECC 2020 Baseline**	**GSG Baseline**
eQuest System Type	Packaged Variable Air Volume (Single Zone)	System Type #9: Packaged Rooftop Heat Pump, Modeled as Packaged Variable Air Volume	System Type #4: Packaged Rooftop Heat Pump, Modeled as Packaged Variable Air Volume
Fan Control	Variable Air Volume	Constant Volume, Two-Speed for units greater than 65k BTUh cooling capacity (model as FAN-EIR)	Constant Volume
Fan EIR = f(PLR)	SZ-VSD-RESET-SP	Constant volume fans:	NA

		NA 2 Speed fans: 2-SPD-CRV	
Minimum Flow Ratio	Greater of Outdoor Air Flow Rate and 20%	Constant volume fans: NA 2 Speed fans: Greater of Outdoor Air Flow Rate and 66%	NA
Minimum Fan Ratio	Greater of Outdoor Air Flow Rate and 20%	Constant volume fans: NA 2 Speed fans: Greater of Outdoor Air Flow Rate and 66%	NA
Night Cycle Control	CYCLE-ON-ANY	CYCLE-ON-ANY	CYCLE-ON-ANY
Minimum Flow Ratio	Outdoor Air Flow Rate	100% (66% where two speed)	100%
Cooling Efficiency	Project specific at AHRI conditions in later phase, per NYCECC 2020 at early phase.	Per NYCECC 2020 Appendix CA Table 6.8.1-2 Max Capacity: EER 65 kBtu/h: 14.0 SEER 135 kBtu/h: 11.0 EER, 12.2 IEER 240 kBtu/h: 10.6 EER, 11.6 IEER >240 kBtu/h: 9.5 EER, 10.6 IEER	See CLASS-SYS
Cooling Efficiency, Part Load Curve f(part load ratio)	NY20-HP-CL-EIR-FPLR (all capacities)	NY20-HP-CL-EIR-FPLR (all capacities)	A10-HP-EIR-FPLR (all capacities)
Other cooling curves	eQuest default	eQuest default	eQuest default
Heat Source	Hot Water (as part of work-around, see How-to Guide)	Hot Water (as part of work-around, see How-to Guide)	Hot Water (as part of work-around, see How-to Guide)
Heating Efficiency	Project specific at AHRI conditions in later phase, per NYCECC 2020 Appendix CA Table 6.8.1-2 early phase[l]. Efficiency at heat pump chiller (see How-to Guide)	Per NYCECC 2020 Appendix CA Table 6.8.1-2. Efficiency input at heat pump chiller (see How-to Guide)	Per ASHRAE 90.1-2010 Table 6.8.1B. Efficiency input at heat pump chiller (see How-to Guide)

[l] Heat pumps must meet mandatory minimum efficiencies at both 47F and 17F, but only the operating characteristics at 47F will be input into eQuest.

	Max Capacity	COP	Max Capacity	COP	Max Capacity	COP
	65 kBtu/h	8.0 HSPF	65 kBtu/h	8.0 HSPF	65 kBtu/h	7.7 HSPF
	135 kBtu/h	3.3 @ 47°F	135 kBtu/h	3.3 @ 47°F	135 kBtu/h	3.3 @ 47°F
	>135 kBtu/h	3.2 @ 47°F	>135 kBtu/h	3.2 @ 47°F	>135 kBtu/h	3.2 @ 47°F
Baseboard Heating	Electric		NA		NA	
Supplemental heat source on temperature (mix HP & electric resistance heating)	20°F (Place holder- use project specific value based on HP selection)		40°F		40°F	
Minimum HP Temperature (100% electric resistance heating)	10°F (Place holder- use project specific value based on HP selection)		10°F		10°F	
Cooling Available	As needed		As needed		As needed	
Demand Controlled Ventilation?	Yes, CO_2-based		Where required by Section 6.4.3.8.		No	
Economizer Control?	Differential-Enthalpy		Differential Enthalpy with fixed dry-bulb temp of 75°F		None (not required)	
Energy Recovery Efficiency (sensible & latent)	50% default for early design, Project specific for later designs		50%		50%	
Fan Power Credits			Fully ducted return MERV 13 filters Heat recovery device Exhaust Filter		Fully ducted return MERV 13 filters Heat recovery device Exhaust Filter	

6.5 Inputs for K/C-SYS

This system serves the cafeteria and the kitchen, and provides make-up air to the kitchen hood. The design team may elect to use demand-controlled ventilation instead of or in addition to energy recovery. It is important to note that demand control ventilation is only available when the kitchen hood is off, otherwise the outdoor air rate is fixed to meet the kitchen make-up air requirements. Energy is not recovered from the air exhausted through the kitchen hood in the design.

The electric heating cases are modeled in a similar manner as the Public Assembly systems.

Table 27. Cafeteria and Kitchen System Properties

	Design	NYCECC 2020 BASELINE		GSG Baseline	
eQuest System Type	Variable Air Volume (Single Zone)	System Type #11: Packaged Rooftop Air Conditioner, Modeled as Packaged Variable Air Volume		System Type #3: Packaged Single Zone DX, Modeled as Packaged Variable Air Volume	
Fan Control	Variable Volume	Constant Volume, Two-Speed for units greater than 65k BTUh cooling capacity		Constant Volume	
Minimum Flow Ratio	Kitchen Hood Exhaust Rate or, if KX off, Cafeteria demand control outdoor air rate	100% (66% where two speed)		100%	
Cooling Efficiency	NA- cooling from chiller	Per NYCECC 2020 Appendix CA Table 6.8.1-1		Per ASHRAE 90.1-2010 Table 6.8.1A	
		Max Capacity	EER	Max Capacity	EER
		65 kBtu/h	14.0 SEER	65 kBtu/h	13.0 SEER
		135 kBtu/h	12.7 IEER	135 kBtu/h	11.0
		240 kBtu/h	12.2 IEER	240 kBtu/h	10.8
		760 kBtu/h	11.4 IEER	760 kBtu/h	9.8
		> 760 kBtu/h	11.0 IEER	> 760 kBtu/h	9.5
Cooling Efficiency, Part Load Curve f(part load ratio)	NA-cooling from chiller	Capacity Range =135kBtu-240kBtu: NY20-135-CL-EIR-FPLR All other capacities: NY20-CL-EIR-FPLR		A10-CL-EIR-FPLR (all capacities)	
Other cooling curves	NA-cooling from chiller	eQuest default		eQuest default	
Heating Efficiency	NA- heating from boiler	Per NYCECC 2020 Appendix CA Table 6.8.1-5		Per ASHRAE 90.1-2010 Table 6.8.1E	
		Max Capacity	Efficiency	Max Capacity	Efficiency
		225 kBtu/h	80% Et	225 kBtu/h	80% Et
		> 225 kBtu/h	80% Et	> 225 kBtu/h	80% Et
Cooling Available	When chiller runs	As needed		As needed	
Demand Controlled Ventilation?	Yes, CO_2-based when kitchen hood off	No due to make-up air requirements		No	
Economizer Control?	Differential-Enthalpy	Differential Enthalpy with fixed dry-bulb temp of 75°F		None (not required)	

Heat Recovery Efficiency	50% default for early design, Project specific for later designs	50%	50%
Fan Power Credits		Fully ducted return MERV 13 filters Heat recovery device Exhaust filter	Fully ducted return MERV 13 filters Heat recovery device Exhaust filter

6.6 Inputs for DATA-SYS

This system type is intended to serve spaces that require minimal heating and may require year-round cooling, such as data rooms, electrical rooms, or elevator machine rooms. The standard proposed design is an air source heat pump with electric back-up. Since these units typically do not provide much heating, the heating source and efficiency are of little consequence.

Table 28. Data, Electrical, and Elevator Room System Properties

	Design		**NYCECC 2020 BASELINE**		**GSG Baseline**	
System Type	Proposed system a single zone split heat pump (modeled as PSZ or PTAC)		System Type #11: Packaged Rooftop Air Conditioner		System Type #3: Packaged Single Zone DX	
Fan Control	Constant Volume		Constant Volume		Constant Volume	
Minimum Flow Ratio	100%		100%		100%	
Cooling Efficiency	Per NYCECC 2020 Appendix CA Table 6.8. 1-2 (split system)		Per NYCECC 2020 Appendix CA Table 6.8. 1-2 (split system)		Per ASHRAE 90.1-2010 Table 6.8.1A	
	Max Capacity	EER	Max Capacity	EER	Max Capacity	EER
	65 kBtu/h	14.0 SEER	65 kBtu/h	14.0 SEER	65 kBtu/h	13.0 SEER
	135 kBtu/h	11.0 EER 12.2 IEER	135 kBtu/h	12.0 IEER	135 kBtu/h	11.0
	240 kBtu/h	10.6 EER 11.6IEER	240 kBtu/h	11.4 IEER	240 kBtu/h	10.8
					760 kBtu/h	9.8
	>240 kBtu/h	9.5 EER 10.6 IEER	> 240 kBtu/h	9.4 IEER	> 760 kBtu/h	9.5
Heating Efficiency*	Per NYCECC 2020 Appendix CA Table 6.8.1-2 (heating mode 47°F design)		Per NYCECC 2020 Appendix CA Table 6.8.1-2 (heating mode 47°F design)		Per ASHRAE 90.1-2010 Table 6.8.1E (gas heat). Electric heating cases per Table 6.8.1B, see Public Assembly Systems	
	Max Capacity	Efficiency	Max Capacity	Efficiency	Max Capacity	Efficiency
	65 kBtu/h	8.2 HSPF	65 kBtu/h	8.2 HSPF	225 kBtu/h	80% Et

	135 kBtu/h	3.3 COP	135 kBtu/h	3.3 COP		
	>135 kBtu/h	3.2 COP	>135 kBtu/h	3.2 COP	>225 kBtu/h	80% Et
Cooling Available	As needed		As needed		As needed	
Demand Controlled Ventilation?	No		No		No	
Economizer Control?	No		No		No	
Heat Recovery Efficiency	NA		NA		NA	
Fan Power Credits			None		None	

7 WATER-SIDE HVAC

7.1 General

No stand-by equipment shall be included in the model. For chilled water loops, primary pumps shall be attached to the chiller, and secondary pumps, if present, shall be attached to the loop. For hot water loops with primary-only pumps, the pumps shall be attached to the loop. If the hot water loop has primary and secondary pumps, the primary pumps shall be attached to the boiler and the secondary pumps shall be attached to the loop.

7.2 Chiller

The proposed chillers have a 30% propylene glycol solution. The modeled efficiency should reflect a 4% to 6% reduction of performance efficiency due to the propylene glycol. The proposed design is an air-cooled chiller, so the NYCECC 2020 baseline does not use chillers, and no NYCECC baseline information is provided in this section.

Table 29. Chiller Properties

	Design	**GSG Baseline**	
Type	Air cooled w/ 30% propylene glycol solution in primary loop	Size Dependent	
		Max Capacity	Type
		300 tons	1 screw chiller
		600 tons	2 screw chillers
		> 600 tons	2 centrifugal
Full Load Cooling Efficiency	Per Design Documents. Default is minimum full load efficiency per 2020 NYCECC Appendix CA Table 6.8.1-3, but adjusted downwards by 4-6% to account for 30% propylene glycol.	Size Dependent, per ASHRAE 90.1-2010 Table 6.8.1C, Path A	
		Chiller Capacity	Efficiency
		75 tons	0.780 kW/ton
		150 tons	0.775 kW/ton
		300 tons	0.680 kW/ton
		600 tons	0.576 kW/ton
		> 600 tons	0.570 kW/ton

	If Design Documents do not include effect of glycol, reduce efficiency by 5%		
Integrate/ Normalized Part Load Value (Cooling Efficiency)	Based on design documents. Default is Minimum part load efficiency per 2020 NYCECC Appendix CA Table 6.8.1-3 but adjusted downwards by 4% to 6% to account for 30% propylene glycol. This value will affect the project specific performance curve (see How-To Guide). Part load performance information is required.	Size Dependent, per ASHRAE 90.1-2010 Table 6.8.1C, Path A	
		Chiller Capacity	Efficiency
		75 tons	0.630 kW/ton
		150 tons	0.615 kW/ton
		300 tons	0.580 kW/ton
		600 tons	0.549 kW/ton
		> 600 tons	0.539 kW/ton
Loop DT	12°F (44 °F LWT, 56 °F EWT)	12°F(44 °F LWT, 56 °F EWT)	
Water Temp. Reset Controls	Fixed	Outdoor air – supply water temp reset. 44 °F water @ 80 °F and above, 54 °F water @ 60 °F and below	
Oversizing Factor	Sized per Design Documents	No oversizing	
Performance Curve f(t evap leaving, t cond entering)	RecipAir-EIR-fCHWT&DBT (required for project specific calculator to work)	Default eQuest curve for water-cooled reciprocal	
Performance Curve f(part load ratio)	AC-MULTISTACK-PLR or project specific curve (see How-To Guide)	Size Dependent	
		<75 tons	A10-RCHW-U75-FPLR
		75-150 ton	A10-RCHW-75T-FPLR
		150-300 ton	A10-RCHW-150T-FPLR
		300+ ton	A10-RCHW-300T-FPLR
Cooling Capacity	RecipAir-Cap-fCHWT&DBT	Default eQuest curve for water-cooled reciprocal	

7.3 Boiler

The standard proposed design boilers are condensing so their efficiency will depend on the design return water temperature from the FTR, reheat coils, and preheat coils.

Table 30. Boiler Properties

	Design	NYCECC 2020 Baseline	GSG Baseline
Boiler Type	Modulating Condensing w/ 30% propylene glycol solution in primary loop	Gas Fired, spark ignition, Hot Water	Gas Fired, Hot Water
Full Load Rated Efficiency	AHRI Rating Conditions: 97% (80°F RWT)	Per NYCECC 2020 Appendix CA Table 6.8.1-6	Per ASHRAE 90.1-2010 Table 6.8.1F

	Design Conditions: 93% (@120°F return) 88% (@140°F return) Model input: **89.3% accounting for seasonal efficiency and glycol**	<300 kBTU	82% AFU	<300 kBTU	80% AFU
		<2500kBTU	80% E_t	<2500kBTU	80% E_t
		>2500kBTU	82% E_c	>2500kBTU	82% E_c
Water Temp. Reset Controls	Outdoor air – *supply* water temp reset. 160°F water @ 20°F OAT and below, 120 °F water @50°F OAT and above	Outdoor air – supply water temp reset. 180°F water @ 20°F and below, 150°F water @50°F and above		Outdoor air – supply water temp reset. 180°F water @ 20°F and below, 150°F water @50°F and above	
Loop DT	Primary Loop: 40°F (160°F LWT, 120°F RWT) Secondary Loops: *FTR – 20°F* *DIU – 7°F* *Air Handler – 40°F*	50°F		50°F	
Oversizing Factor	Sized per Design Documents	100%		100%	

7.4 Domestic Hot Water Heaters

The standard proposed design domestic hot water heaters will be electric heat pumps. The DHW load will be based on the number of students and the number of kitchen meals served. The DHW loads should be calculated using the SCA Calculations Spreadsheet. The modeled hot water temperature should be based on the outlet temperature from the DHW heater. The fixture outlet temperature has been accounted for in the calculation spreadsheet.

All DHW heaters should be modeled as located "OUTDOOR", regardless of its actual location. This is to account for additional heat required to preheat the outdoor air. In reality, this heat is provided by the HVAC system space heater located in the same room as the heat pump domestic water, but eQuest does not account for this additional heat when the DHW is modeled within a zone.

Table 31. DHW Loop Load Inputs

Load	Schedule	Description
Restroom Hot Water Load	DHWSCH	Hot water load from faucets and showers calculated based on W2.1P and W2.2P GSG credits.
Kitchen Hot Water Loads	KITHW-SCH	Based on number of meals served.

Table 32. Domestic Hot Water Heater Properties

	Design	NYCECC 2020 Baseline	GSG Baseline
DHW Type	Electric Heat Pump	Electric	Electric
Capacity	Per design documents	Same capacity as design	Same capacity as design, increase as necessary to meet demand
Electric Input Ratio	1/EF as defined by design documents	1/EF, defined by NYCECC 2020 Appendix CA Table F-2	1/EF, defined by ASHRAE 90.1-2010, Table 7.8
Location	Outdoor	Outdoor	Outdoor
Max-HP-T	Per design documents, 100F as default	NA	NA

7.5 Pump

Table 33. Pump Properties

	Design	NYCECC 2020 Baseline	GSG Baseline
Hot Water Loop			
Pump Configuration	Project specific	Match Proposed Design, unless no hot water plant in proposed, then Primary only.	Primary Only
Pump Power Density	Project specific (typical total value 35 W/gpm)	Match Proposed Design W/GPM unless no hot water plant, then 19 W/GPM	19 W / gpm
Flow Controls	Project specific, at minimum variable speed drives on primary and secondary pumps	Variable speed drives as required by 6.5.4.2 Two-way valves on coils.	Variable speed drives for buildings over 120,000 sq ft. Otherwise ride pump curve. Two-way valves on coils.
Chilled Water Loop			
Pump Configuration	Project specific	n/a DX cooling	Primary / Secondary
Pump Power Density	Project specific (typical total value 50 W/gpm)	n/a DX cooling	22 W / gpm split between the primary and secondary. Split power evenly if no proposed plant, otherwise
Flow Controls	Project specific, at minimum variable speed drives on primary and secondary pumps	n/a DX cooling	Constant speed primary pumps, variable speed secondary pumps. Two-way valves on coils
Condenser Water Loop			
Pump Configuration	n/a air cooled chiller	n/a DX cooling	One pump per chiller
Pump Power Density	n/a air cooled chiller	n/a DX cooling	19 W/gpm
Flow Controls	n/a air cooled chiller	n/a DX cooling	Constant speed
Water Source Heat Pump Loop (work around required for air-source heat pumps)			

Pump Configuration	Primary Only	Primary Only	Primary Only
Pump Power Density	Minimum allowed by eQuest	Minimum allowed by eQuest	Minimum allowed by eQuest
Flow Controls	Variable Speed	Variable Speed	Variable Speed

7.6 Heat Rejection

Applicable to GSG Baseline > 150,000 ft^2 only.

Table 34. Heat Rejection Properties

	Design	**NYCECC 2020 Baseline**	**GSG Baseline**
Cooling Tower Type	Project Specific (not typical)	n/a	Two Speed – Axial Fan, open tower
Rating Conditions	n/a	n/a	85 deg F leaving water temp, or a 10 deg F approach to design day wet bulb temperature, whichever is smaller
Reset Controls	n/a	n/a	Reset leaving water temp down to 70 deg F minimum. (Modeled as a wet-bulb reset schedule)
Fan Sizing	n/a	n/a	Assume 3 gpm / ton design cooling, Table 6.8.1G 38.2 gpm/ Hp

8 UTILITY & ECONOMICS

8.1 Electric Meters

The electric meters included in the template are detailed below. The site-to-source conversion rate for electricity is 2.55.

Table 35. Electric Meters

Meter Name	Description	Type	Loads
ME-MAIN-ELEC-METER	Main electric meter	Utility	All electric loads, including regulated and non-regulated loads
ELEV-METER	Meter for elevator use	Submeter to ME-MAIN-ELEC-METER	Elevators
KIT-MISC-METER	Meter for kitchen hood exhaust and return fans	Submeter to ME-MAIN-ELEC-METER	Kitchen hoods and kitchen return fans. All loads on this meter should be ZERO for

			schools that don't have kitchen hoods.
HP-FAN-METER (Heat pump heating with electric resistance baseboards only)	Meter for baseboard fan work-around in electric Case	Submeter to ME-MAIN-ELEC-METER	Heat pump fan power for morning warm-up baseboard work-around. (See How-To Guide)

The following interior direct loads should be included.

Table 36. Interior Direct Load

Meter	Load	Schedule	End Use
ME-MAIN-ELEC-METER	Restroom exhaust per design documents	CLASS-FAN-EU-SCH	VENT-FANS * Do not include for GSG baseline unless exhaust is decoupled from main AHU's
ELEV-METER	Elevator load per Table 12	ELEV-EQP-SCH	MISC-EQUIP
KIT-MISC-METER	Ventilation hood load per kitchen equipment schedule	KIT-HOOD-YR	VENT-FANS
KIT-MISC-METER	Kitchen Return fan power per mechanical schedule	KIT-RETURN-YR	VENT-FANS
KIT-MISC-METER	Walk-in refrigeration compressor per design documents	KIT-WALK-IN-YR	MISC-EQUIP

The following exterior direct loads should be included.

Table 37. Exterior Direct Loads

Meter	Load	Schedule	End Use
ME-MAIN-ELEC-METER	Exterior lighting per design documents	EXT-LT-SCH	EXTERIOR-USAGE
SSDS-METER	SSDS system	ALWAYS-ON-F-YR	MISC-EQUIP

8.2 Fuel Meters

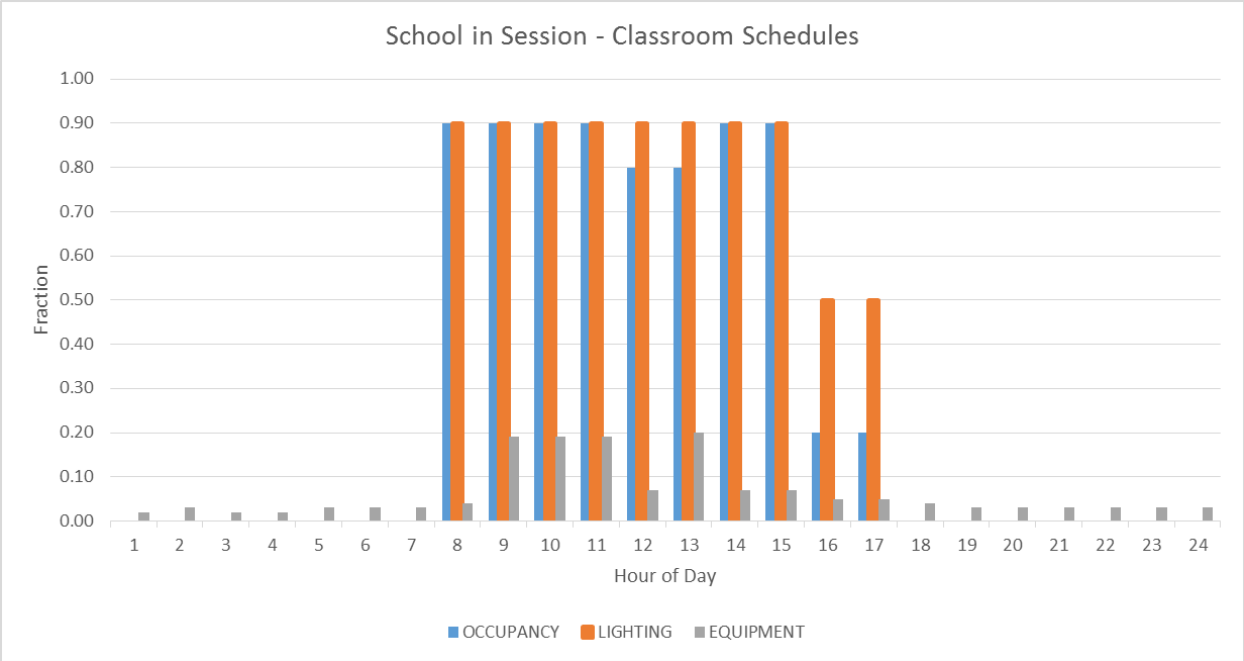
The fuel meters included in the template are detailed below. The site-to-source conversion rate for natural gas is 1.05.

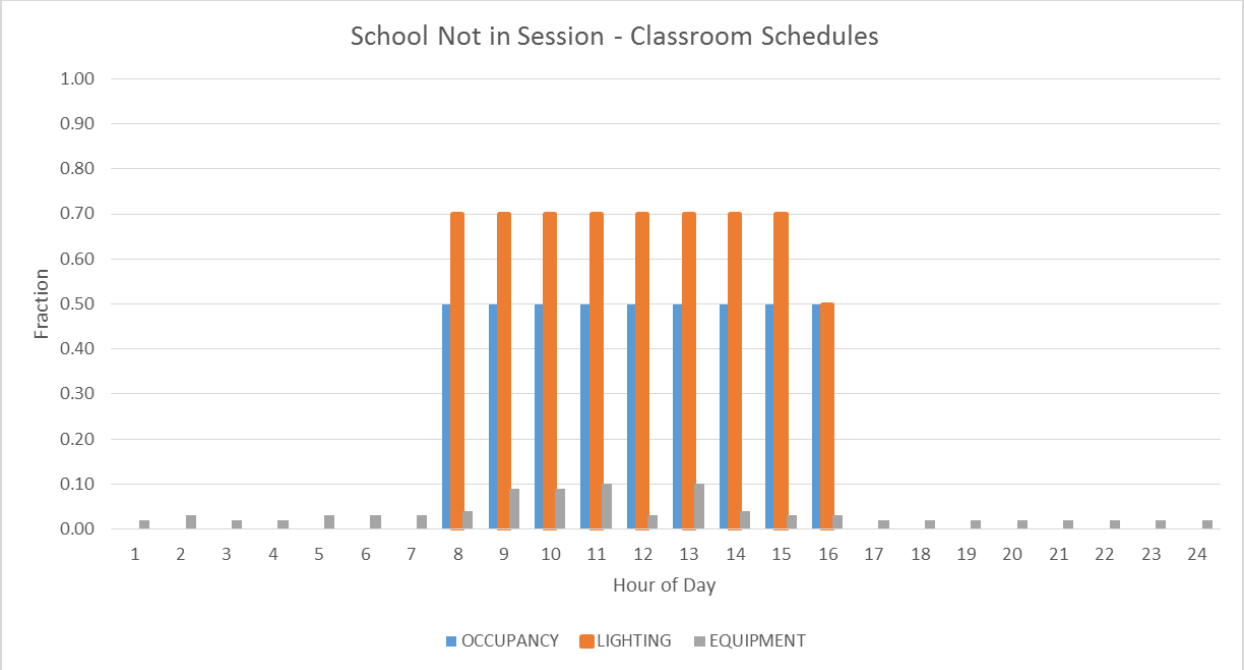
Table 38. Fuel Meter

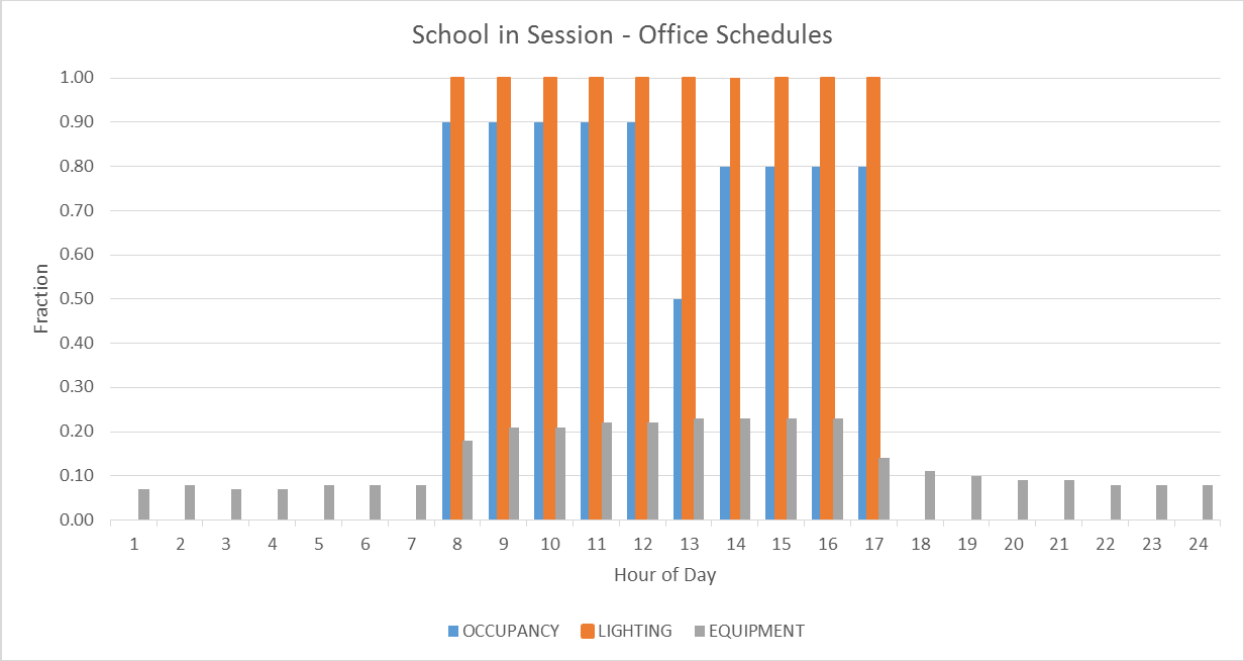
Meter Name	Description	Type	Loads
MF-MAIN-FUEL-MET	Fuel meter	Utility	All fuel loads

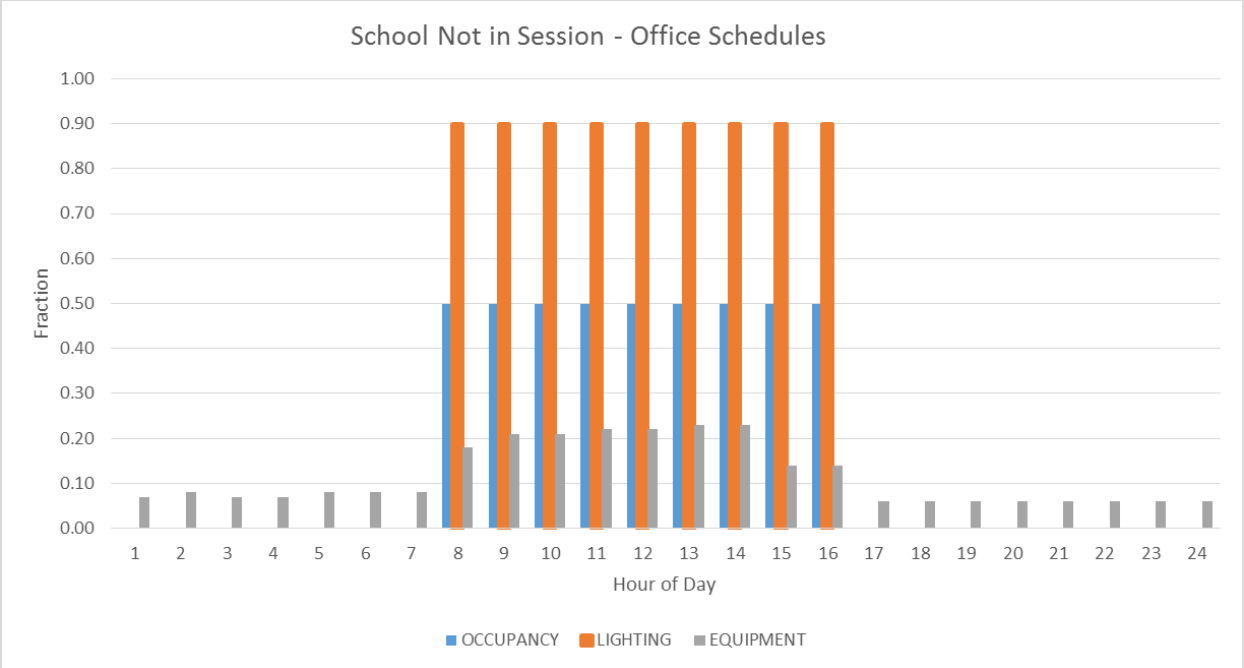
APPENDIX A. IS/HS SCHOOL SCHEDULE DETAILS

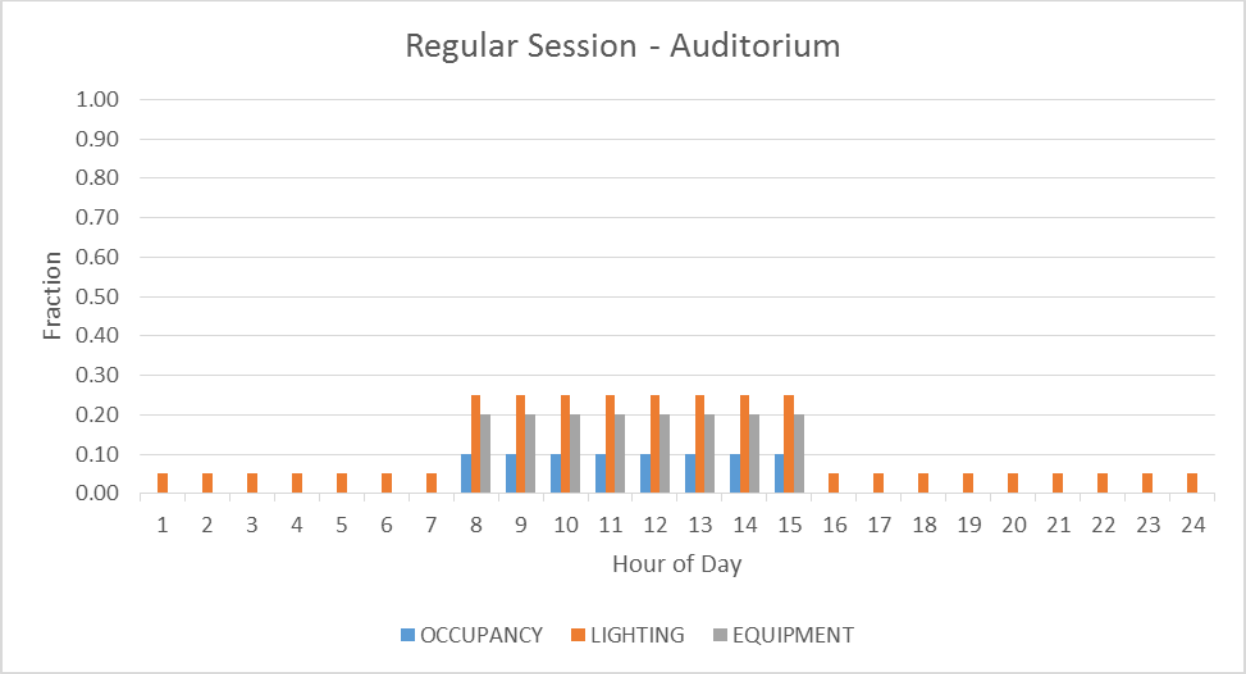
A1. SCHEDULE FOR TYPICAL SPACES

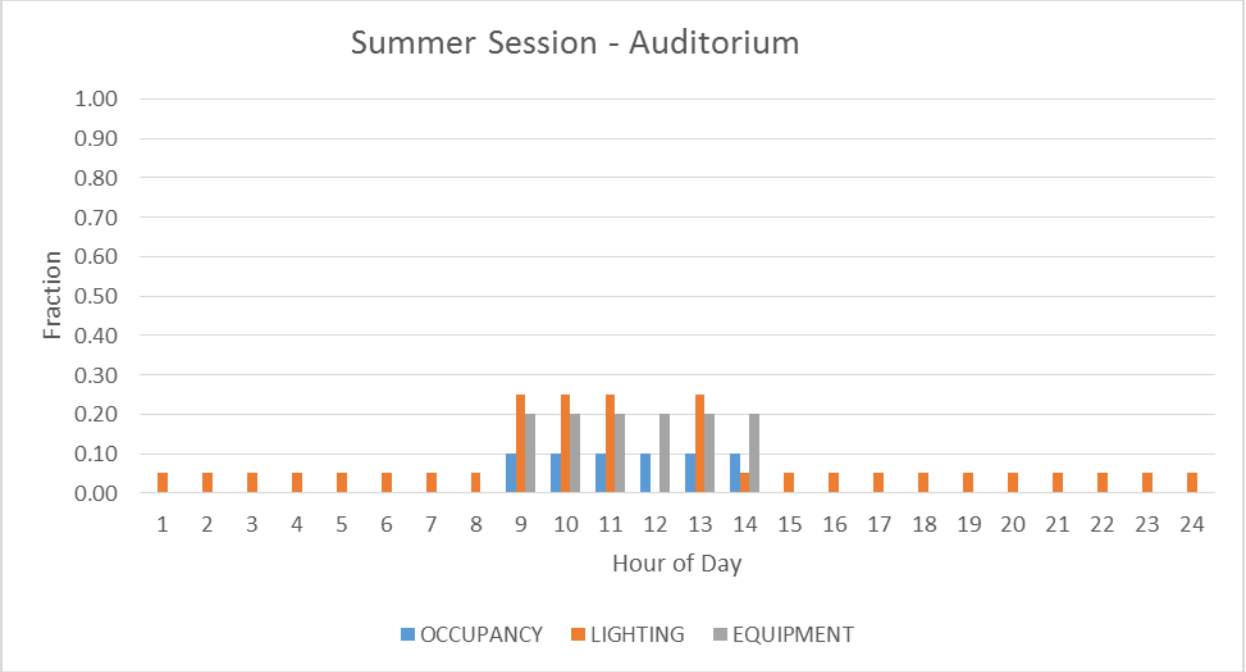


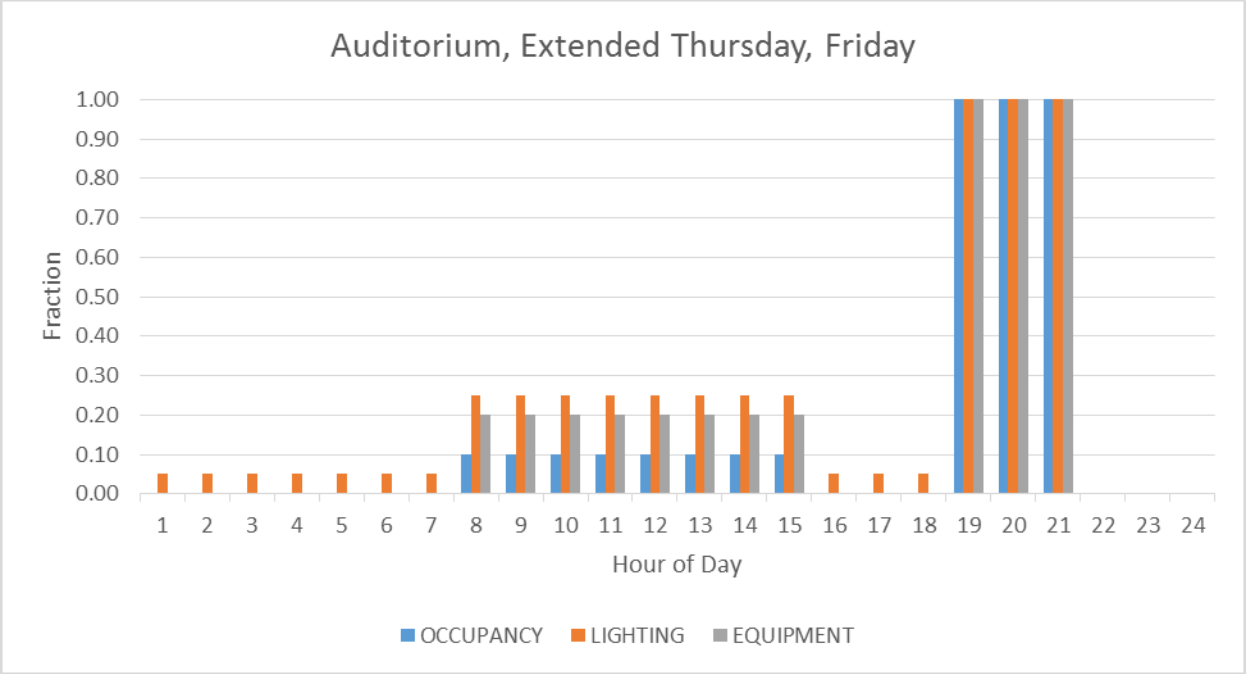


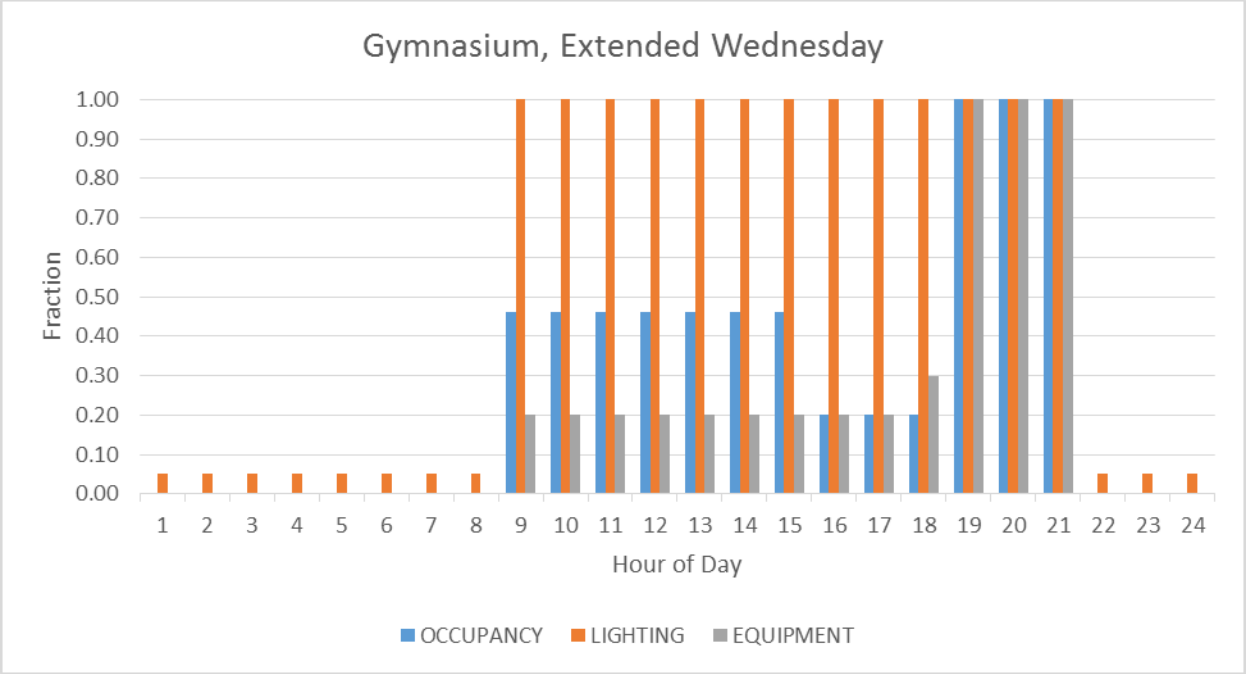

School in Session - Office Schedules
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT

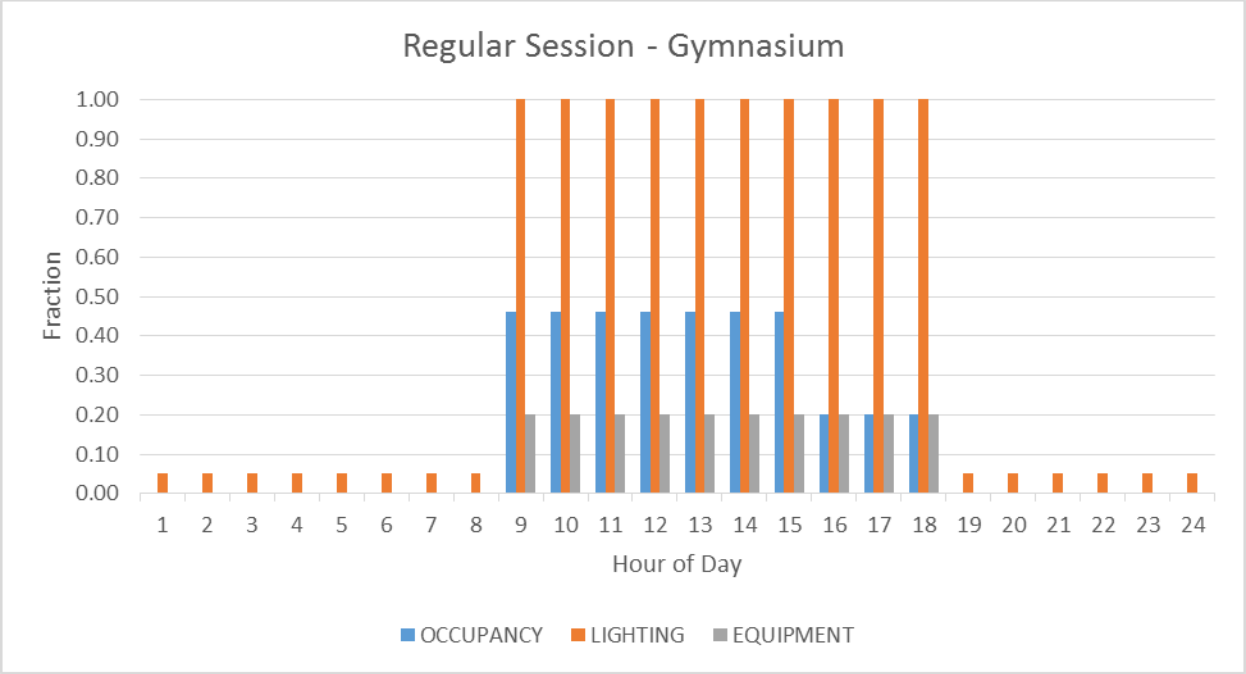

School Not in Session - Office Schedules
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT

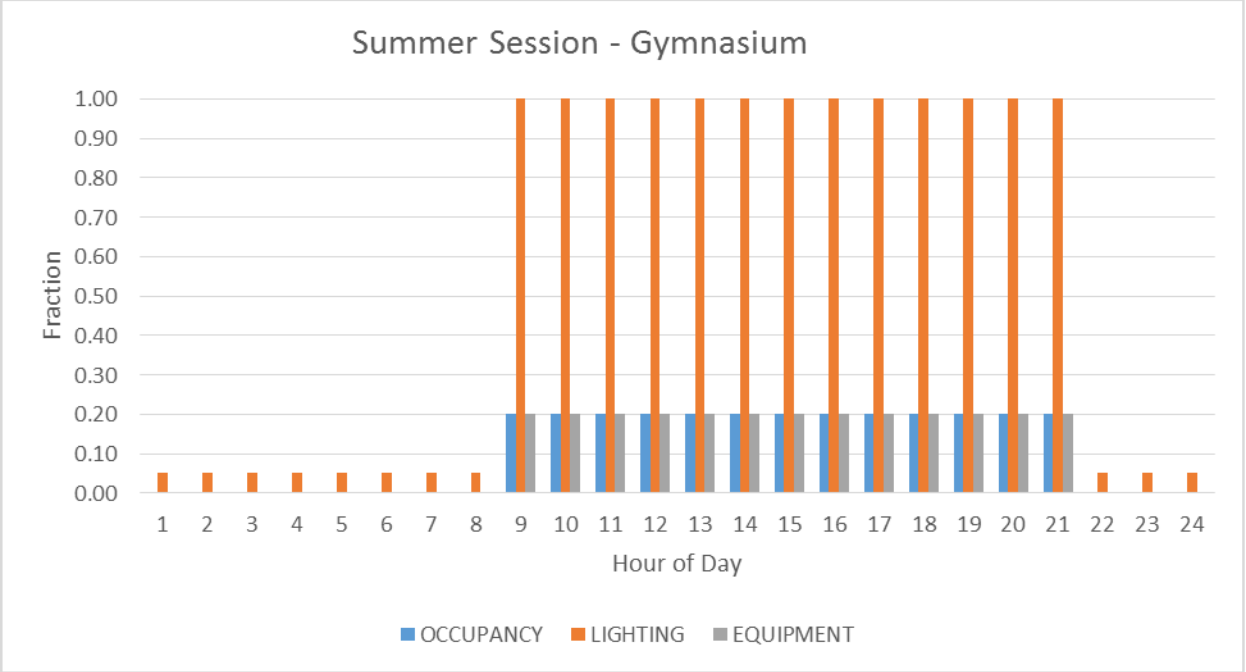

Regular Session - Auditorium
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Fraction
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT

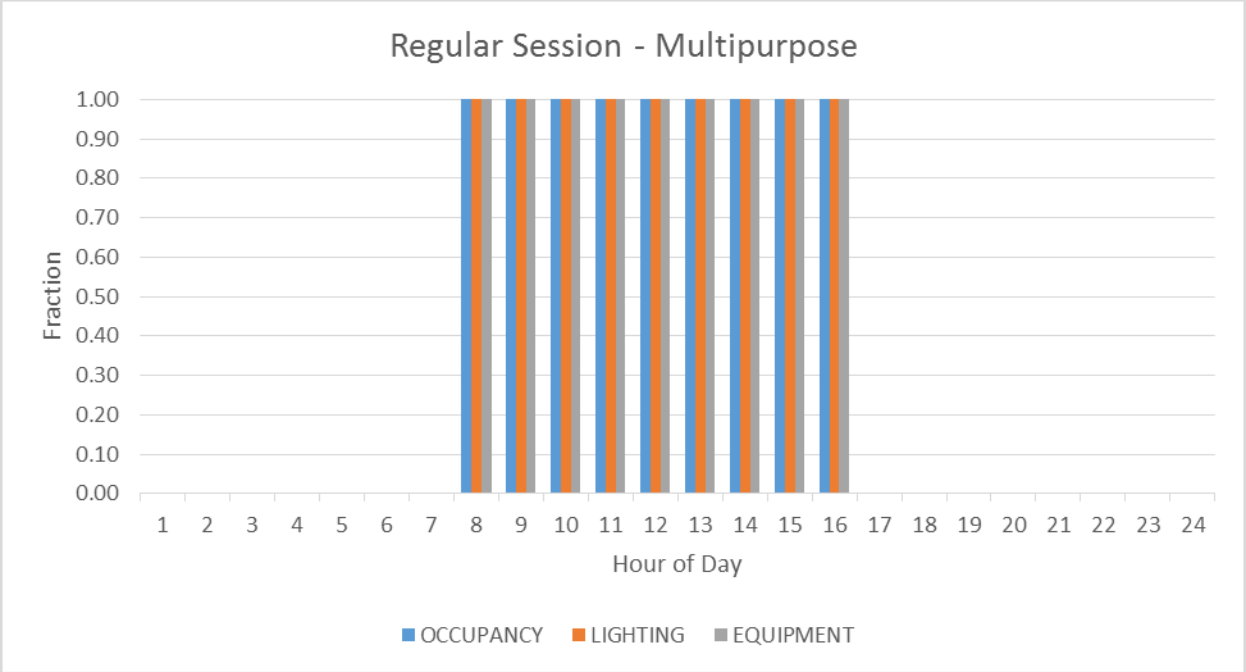

Summer Session - Auditorium
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Fraction
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT

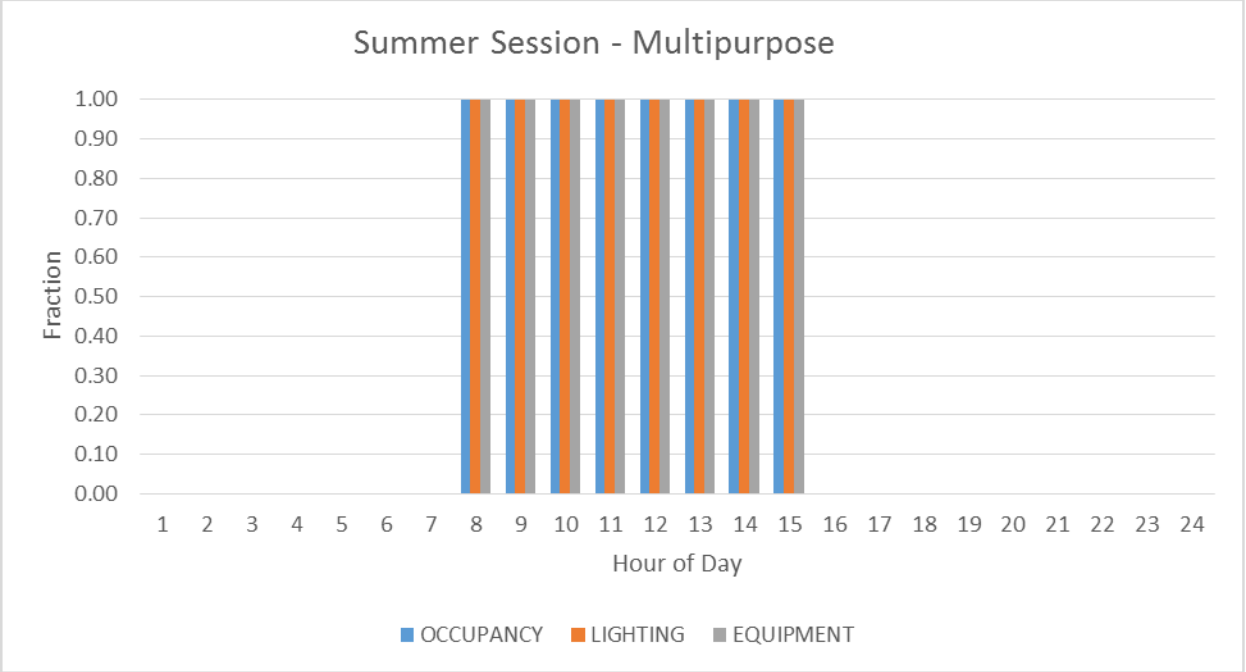

Auditorium, Extended Thursday, Friday
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Gymnasium, Extended Wednesday
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Regular Session - Gymnasium
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Summer Session - Gymnasium
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Regular Session - Multipurpose
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Summer Session - Multipurpose
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT

A2. IS/HS SCHOOL TEMPLATE SCHEDULES

Table A 1. IS/HS School Schedules

Schedule Name	Effective	12-1 am	*1-2 am*	2-3 am	3-4 am	4-5 am	5-6 am	6-7 am	7-8am	8-9 am	9-10 am	10-11 am	11-noon	noon-1 pm	1-2 pm	2-3 pm	3-4 pm	4-5 pm	5-6pm	6-7pm	7-8pm	8-9pm	9-10 pm	10-11 pm	11-12 mid
ALWAYS-OFF-FAN	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ALWAYS-OFF-F-YR	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ALWAYS-OFF-MCR	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ALWAYS-ON-FAN	**All days**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ALWAYS-ON-F-YR	**All days**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AUD-AUX-EQP-YR	**Regular, M-W**	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0
AUD-AUX-EQP-YR	**Regular, Th-Fri**	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	1	1	1	0	0	0
AUD -LT-YR	**Regular, M-W**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
AUD-LT-YR	**Regular, Th-Fri**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.05	0.05	0.05	1	1	1	0.05	0.05	0.05
AUD-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.25	0.25	0	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
AUD-OCC-YR	**Regular, M-W**	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0
AUD-OCC-YR	**Regular, Th-Fri**	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	1	1	1	0	0	0
AUD-OCC-YR	**Summer**	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0
AUD-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	78	78	78	85	85	85
AUD-CL-YR	**Heating Season**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85
AUD-EQP-YR	**Regular**	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0
AUD-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0	0
AUD-FAN-SCH	**Regular, M-W**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
AUD-FAN-SCH	**Regular, Th-Fri**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	0	0
AUD-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
AUD-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55	55	55
AUD-OA-SCH	**Regular, M-W**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0	0	0
AUD-OA-SCH	**Regular, Th-Fri**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	-999	-999	-999	0	0	0
AUD-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0	0	0
AUX-GYM-CL-YR	**Regular**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
AUX-GYM-CL-YR	**Summer**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
AUX-GYM-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0

Table A 1. IS/HS School Schedules

AUX-GYM-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
AUX-GYM-HT-YR	**Heating Season**	55	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55
AUX-GYM-OA-SCH	**Regular**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0
AUX-GYM-OA-SCH	**Summer**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0
CAFE-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
CAFE-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
CAFE-EQP-YR	**Regular**	0	0	0	0	0	0	0	0.5	0.2	0.2	0.2	1	1	1	0.2	0.2	0	0	0	0	0	0	0
CAFE-EQP-YR	**Summer**	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.75	0.75	0.75	0.2	0.2	0	0	0	0	0	0	0
CAFE-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
CAFE-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
CAFE-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55
CAFE-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	0.5	0.5	1	1	1	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CAFE-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	0.5	0.5	1	1	1	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CAFE-OA-SCH	**Regular**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
CAFE-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
CAFE-OCC-YR	**Regular**	0	0	0	0	0	0	0	1	0.1	0.1	0.1	1	1	1	0.1	0.1	0	0	0	0	0	0	0
CAFE-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.1	0	0	0	0	0	0	0
CL-85-YR	**All days**	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
CLASS-CL-YR	**Cooling Season**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85
CLASS-EQP-YR	**Regular**	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.06	0.20	0.21	0.22	0.12	0.27	0.09	0.08	0.09	0.09	0.05	0.04	0.04	0.03	0.02	0.02	0.02
CLASS-EQP-YR	**Summer**	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.06	0.10	0.10	0.11	0.06	0.13	0.05	0.04	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
CLASS-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
CLASS-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
CLASS-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
CLASS-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05
CLASS-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CLASS-OA-SCH	**Regular**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
CLASS-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
CLASS-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.1	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.2	0.2	0.2	0	0	0	0	0	0
CLASS-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0
CL-DATA	**All days**	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
CL-MECH	**All days**	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
CL-RESTRM	**Regular**	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
CL-RESTRM	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
CL-STOR	**All days**	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
COOLOFF	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COOL-ON-YR	**All days**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
COOLSEASON-DATA	**All days**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table A 1. IS/HS School Schedules

COPY-EQP-YR	**Regular**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04
COPY-EQP-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
CORR-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
CORR-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
CORR-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
CORR-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05
CORR-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05
DATA-EQP-YR	**Regular**	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.15	0.15	0.15	0.15	0.15	0.15
DATA-EQP-YR	**Summer**	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.15	0.15	0.15	0.15	0.15	0.15
DATA-FAN-SCH	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
DHWSCH	**All days**	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.3	0.3	0.2	0.2	0.5	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.01	0.01	0.01	0.01
GYM-EQP-YR	**Regular, M,Tu,Th,Fri**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0
GYM-EQP-YR	**Regular, W**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	1	1	1	0	0	0
GYM-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0
GYM-LT-YR	**Regular, M,Tu,Th,Fri**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05
GYM-LT-YR	**Regular, W**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	1	1	1	1	1	0.05	0.05	0.05
GYM-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
GYM-OCC-YR	**Regular, M,Tu,Th,Fri**	0	0	0	0	0	0	0	0	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.2	0.2	0.2	0	0	0	0	0
GYM-OCC-YR	**Regular, W**	0	0	0	0	0	0	0	0	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.2	0.2	0.2	1	1	1	0	0	0
GYM-OCC-YR	**Summer**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0
GYM-CL-YR	**Regular, W**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	78	78	78	78	85	85	85
GYM-CL-YR	**Summer**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	78	78	78	78	85	85	85
GYM-FAN-SCH	**Regular, M,Tu,Th,Fri**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
GYM-FAN-SCH	**Regular, W**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
GYM-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
GYM-HT-YR	**Heating Season**	55	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
GYM-HT-YR	**Heating Season, W**	55	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	72	72	55	55	55
GYM-OA-SCH	**Regular, M,Tu,Th,Fri**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
GYM-OA-SCH	**Regular, W**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0
GYM-OA-SCH	**Summer**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0
HT-60-YR	**All days**	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
HT-DATA	**All days**	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
HT-RESTRM	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55	55
KITCHEN-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	85
KITCHEN-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85	85

Table A 1. IS/HS School Schedules

KITCHEN-EQP-YR	**Regular**	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.17	0.18	0.31	0.31	0.21	0.21	0.20	0.18	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
KITCHEN-EQP-YR	**Summer**	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.17	0.18	0.31	0.31	0.21	0.21	0.20	0.18	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
KITCHEN-HT-YR	**Heating Season**	55	55	55	55	55	55	55	65	65	65	65	65	65	65	55	55	55	55	55	55	55	55	55
KITCHEN-INF	**Regular**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
KITCHEN-INF	**Summer**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
KITCHEN-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
KITCHEN-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
KITCHEN-OCC-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
KITCHEN-OCC-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
KITHW-SCH	**All days**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.4	0.4	0.4	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
KIT-SOURCE-YR	**Regular**	0	0	0	0	0	0	0	0.27	0.27	0.29	0.29	0.27	0.27	0	0	0	0	0	0	0	0	0	0
KIT-SOURCE-YR	**Summer**	0	0	0	0	0	0	0	0.27	0.27	0.29	0.29	0.27	0.27	0	0	0	0	0	0	0	0	0	0
LIB-EQP-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.05	0.05	0.05	0.05	0.05
LIB-EQP-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05
LOBBY-EQP-YR	**Regular**	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.42	0.45	0.46	0.51	0.75	0.79	0.59	0.59	0.59	0.59	0.38	0.02	0.01	0.01	0.01	0.01
LOBBY-EQP-YR	**Summer**	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.42	0.45	0.46	0.51	0.75	0.79	0.59	0.59	0.59	0.30	0.19	0.02	0.01	0.01	0.01	0.01
LOUNGE-EQP-YR	**Regular**	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.10	0.13	0.13	0.13	0.42	0.43	0.13	0.13	0.05	0.04	0.02	0.02	0.02	0.02	0.02	0.02
LOUNGE-EQP-YR	**Summer**	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.10	0.13	0.13	0.13	0.42	0.43	0.13	0.05	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.02
MECH-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MECH-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MP-EQP-YR	**Regular, M,T,T,F**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
MP-EQP-YR	**Regular, Wed**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
MP-EQP-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
MP-HT-YR	**Heating Season, M, T, T, F**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55
MP-HT-YR	**Heating Season Wed**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	72	72	55	55	55
MP-LT-YR	**Regular, M,T,T,F**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MP-LT-YR	**Regular, Wed**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05
MP-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MP-OCC-YR	**Regular, M,T,T,F**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
MP-OCC-YR	**Regular, Wed**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
MP-OCC-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
MP-OA-YR	**Regular, M,T,T,F**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0

Table A 1. IS/HS School Schedules

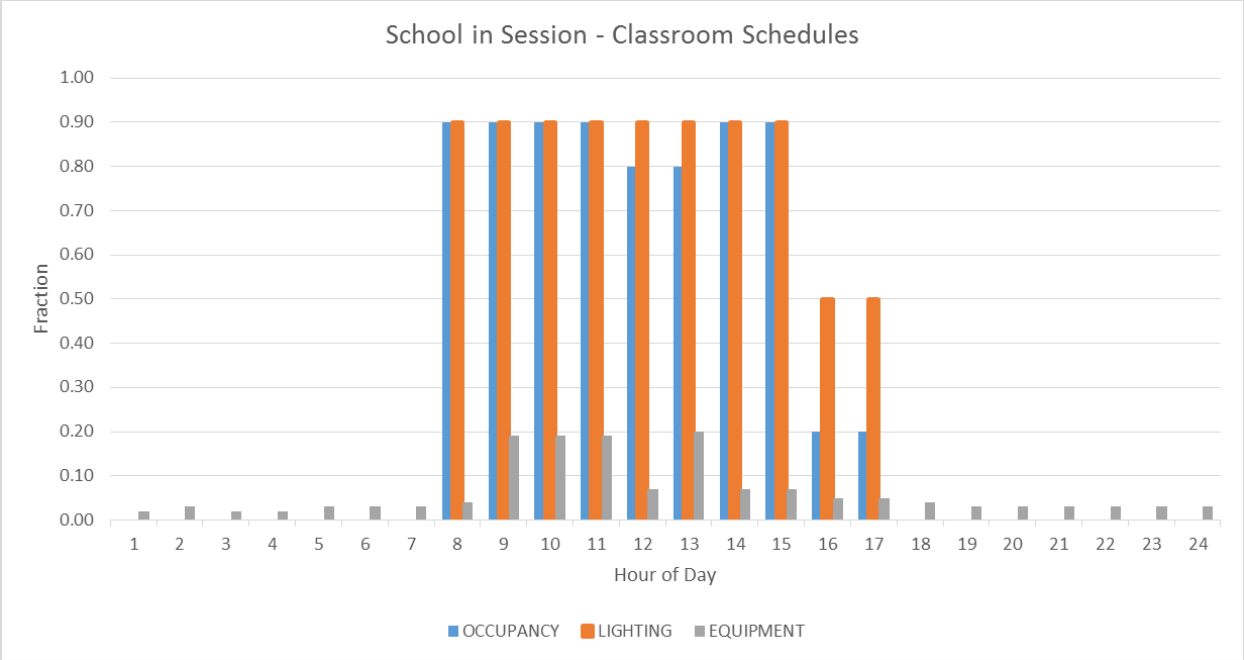
MP-OA-YR	**Regular, Wed**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0
MP-OA-YR	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0	0	0
MP-FAN-YR	**Regular, M,T,T,F**	0	0	0	0	0	-999	-999	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
MP-FAN-YR	**Regular, Wed**	0	0	0	0	0	-999	-999	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
MP-FAN-YR	**Summer**	0	0	0	0	0	-999	-999	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
MUSIC-EQP-YR	**Regular**	0.02	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.19	0.19	0.19	0.07	0.20	0.07	0.07	0.05	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03
MUSIC-EQP-YR	**Summer**	0.02	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.09	0.09	0.10	0.03	0.10	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
NO-OA-SCH	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NULL-OCC-YR	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NURSE-OCC-YR	**Regular**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.08	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04
NURSE-OCC-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
OFFICE-CL-YR	**Regular**	85	85	85	85	85	85	85	75	75	75	75	75	75	75	75	75	75	75	85	85	85	85	85	85
OFFICE-CL-YR	**Summer**	85	85	85	85	85	85	85	75	75	75	75	75	75	75	75	75	75	75	85	85	85	85	85	85
OFFICE-EQP-YR	**Regular**	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.21	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.05	0.02	0.02	0.02	0.02	0.01	0.01	0.01
OFFICE-EQP-YR	**Summer**	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.21	0.23	0.23	0.23	0.24	0.24	0.24	0.05	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
OFF-P-EQP-YR	**Regular**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04
OFF-P-EQP-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
OFFICE-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
OFFICE-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
OFFICE-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
OFFICE-LT-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0.5	0.1	0.1	0	0	0	0
OFFICE-LT-YR	**Summer**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.1	0.1	0	0	0	0
OFFICE-OA-SCH	**Regular**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
OFFICE-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
OFFICE-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.5	0.8	0.8	0.8	0.8	0.5	0	0	0	0	0	0
OFFICE-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0
PREK-EQP-YR	**Regular**	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.05	0.06	0.06	0.07	0.10	0.19	0.17	0.07	0.08	0.08	0.04	0.04	0.03	0.02	0.02	0.02	0.02
PREK-EQP-YR	**Summer**	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.05	0.03	0.03	0.03	0.05	0.10	0.08	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02
RESTROOM-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05
RESTROOM-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05
SCHOOL-INF	**Regular**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SCHOOL-INF	**Summer**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SCI-AUX-EQP-YR	**Regular**	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
SCI-AUX-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
SCI-EQP-YR	**Regular**	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.31	0.31	0.31	0.23	0.31	0.23	0.23	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21
SCI-EQP-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.09	0.09	0.09	0.05	0.09	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
SCI-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SCI-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SCI-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.25	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
SCI-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.25	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0

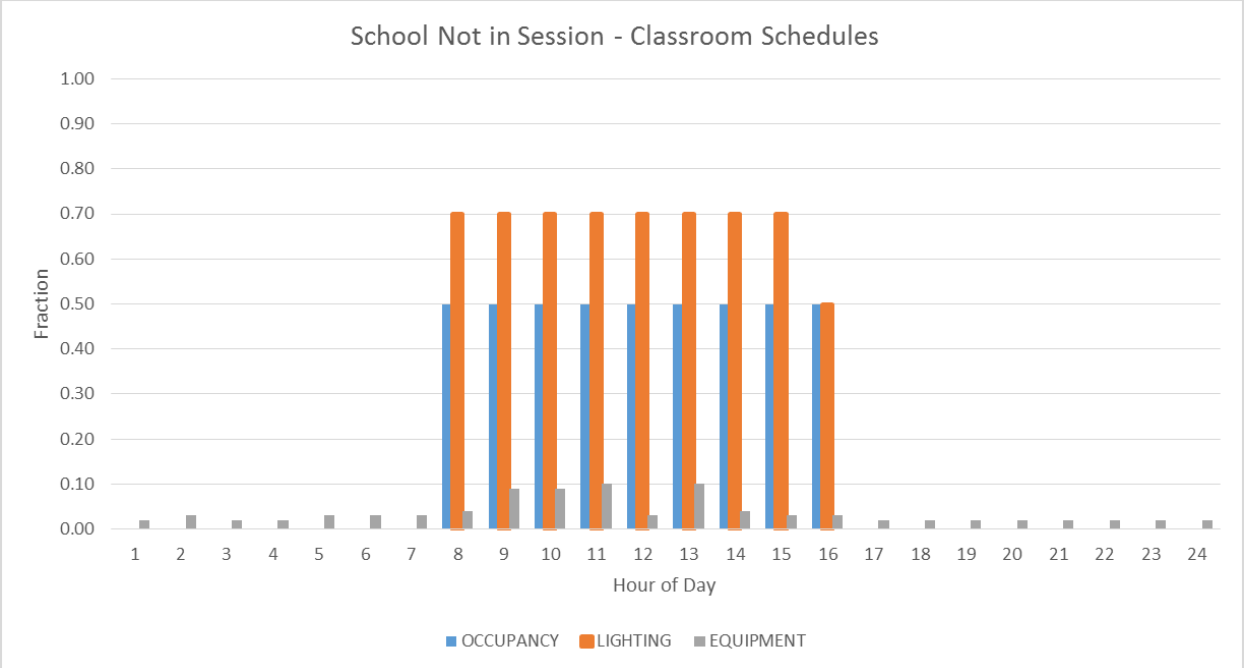
Table A 1. IS/HS School Schedules

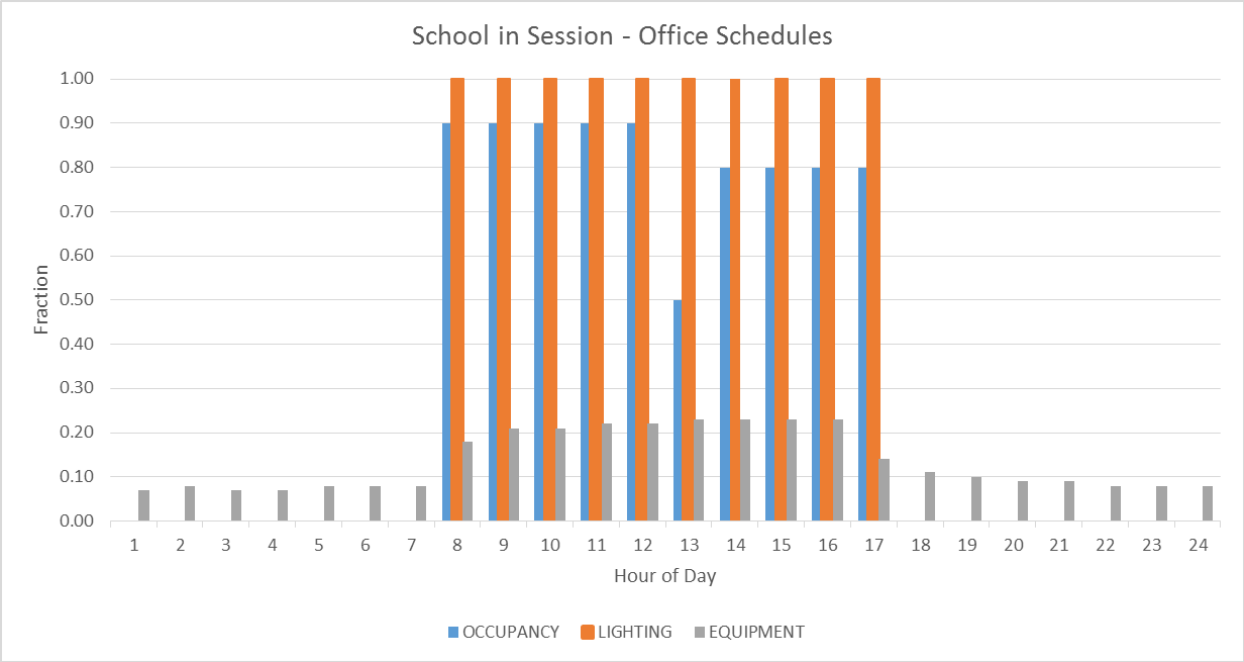
SHOP-EQP-YR	**Regular**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHOP-EQP-YR	**Summer**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STORAGE-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05
STORAGE-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05
STORAGE-EQP-YR	**All days**	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TECH-EQP-YR	**Regular**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TECH-EQP-YR	**Summer**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TECH-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TECH-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TECH-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
TECH-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0
DHWSCH	**Mon-Fri**	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.3	0.3	0.2	0.2	0.5	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.01	0.01	0.01	0.01
DHWSCH	**Wknd, Holiday**	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
WKIT-EQP-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.12	0.12	0.24	0.24	0.15	0.15	0.10	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
WKIT-EQP-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.12	0.12	0.24	0.24	0.15	0.15	0.10	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

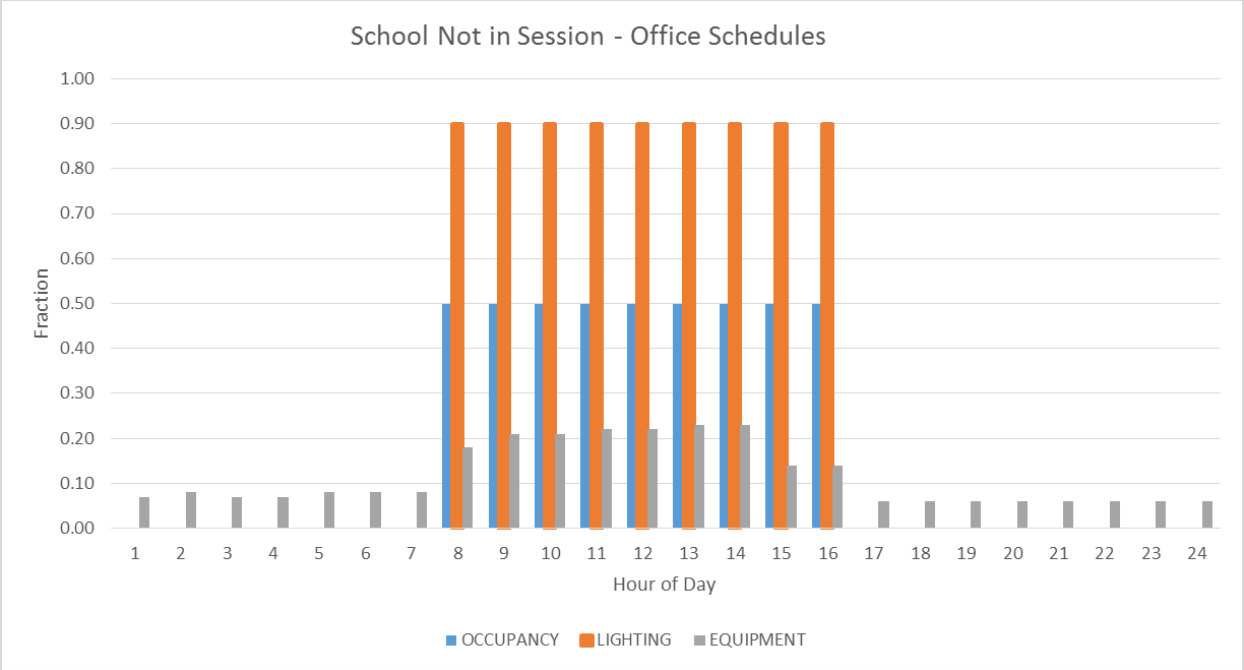
APPENDIX B. PS/ECC SCHEDULE DETAILS

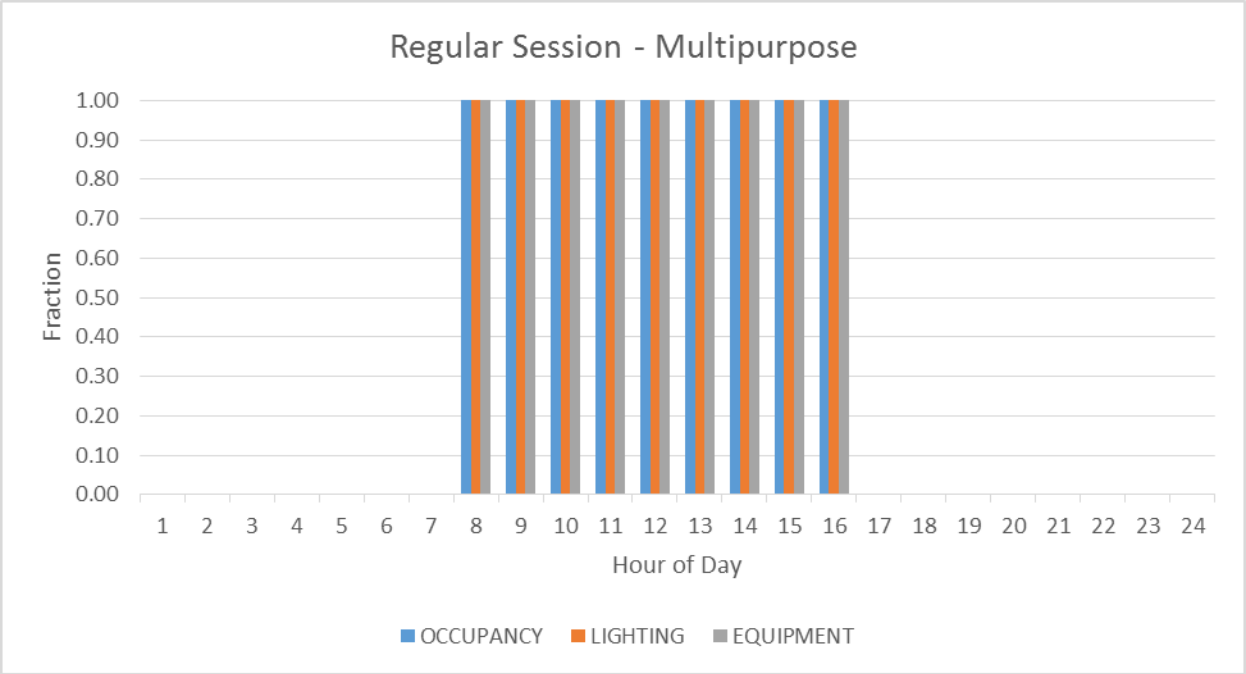
B1. SCHEDULE FOR TYPICAL SPACES, PS/ECC SCHOOLS

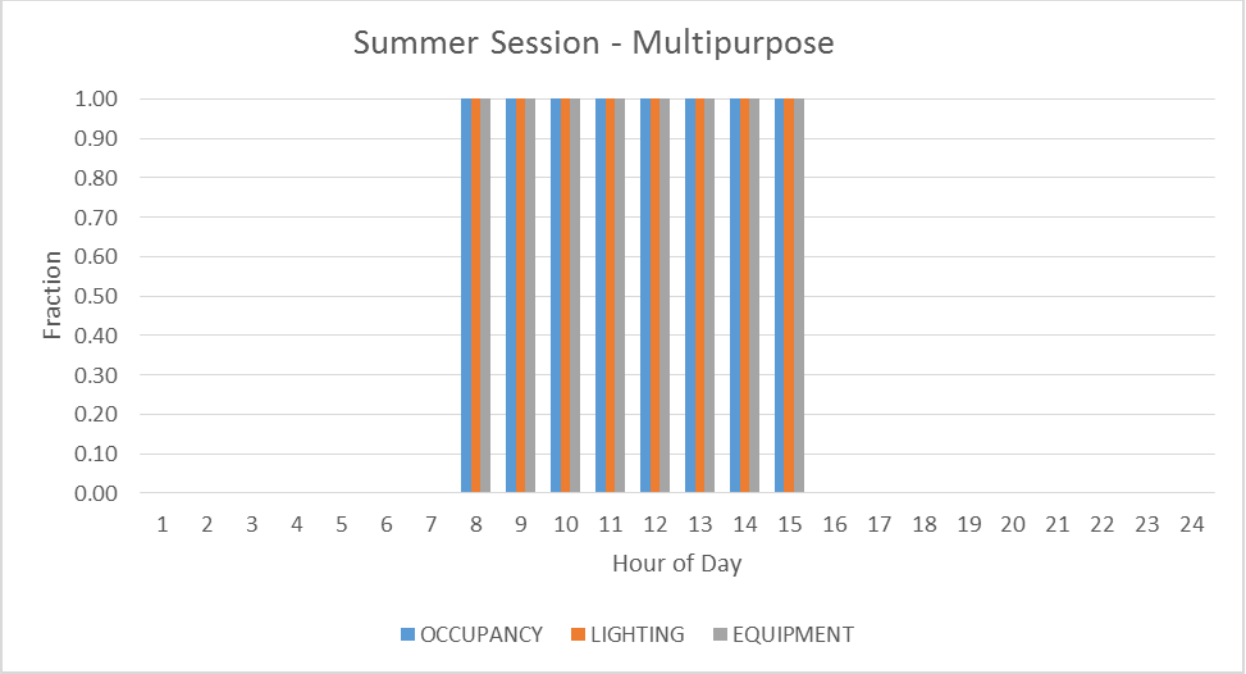





School in Session - Office Schedules
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


School Not in Session - Office Schedules
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Regular Session - Multipurpose
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT


Summer Session - Multipurpose
Fraction
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of Day
OCCUPANCY
LIGHTING
EQUIPMENT

B2. PS/ECC SCHOOL TEMPLATE SCHEDULES

Table B. 1 PS/ECC School Template Schedules

Schedule Name	Effective	12-1 am	1-2 am	2-3 am	3-4 am	4-5 am	5-6 am	6-7 am	7-8am	8-9 am	9-10 am	10-11 am	11-noon	noon-1 pm	1-2 pm	2-3 pm	3-4 pm	4-5 pm	5-6pm	6-7pm	7-8pm	8-9pm	9-10 pm	10-11 pm	11-12 mid
ALWAYS-OFF-F-YR	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ALWAYS-OFF-MCR	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ALWAYS-ON-FAN	**All days**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ALWAYS-ON-F-YR	**All days**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AUD-AUX-EQP-YR	**Regular M-W**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUD-AUX-EQP-YR	**Regular, Th-Fri**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
AUD-AUX-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUD-AUX-LT-YR	**Regular M-W**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
AUD-AUX-LT-YR	**Regular, Th-Fri**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	0	0	0
AUD-AUX-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
AUD-AUX-OCC-YR	**Regular M-W**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUD-AUX-OCC-YR	**Regular, Th-Fri**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
AUD-AUX-OCC-YR	**Summer**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUD-CL-YR	**Regular, M-W**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85
AUD-CL-YR	**Regular, Th-Fri**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	78	78	78	85	85	85
AUD-CL-YR	**Summer**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85	85
AUD-EQP-YR	**Regular**	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0
AUD-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0	0
AUD-FAN-SCH	**Regular M-W**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
AUD-FAN-SCH	**Regular, Th-Fri**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	0	0
AUD-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
AUD-HT-YR	**Heating Season, M-W**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55	55	55
AUD-HT-YR	**Heating Season, T-F**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	55	55	55	72	72	72	55	55	55
AUD-LT-YR	**Regular M-W**	0	0	0	0	0	0	0	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0	0	0	0	0	0	0	0	0
AUD-LT-YR	**Regular Th-Fri**	0	0	0	0	0	0	0	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0	0	0	1	1	1	0	0	0
AUD-LT-YR	**Summer**	0	0	0	0	0	0	0	0	0.25	0.25	0.25	0.25	0.25	0.25	0	0	0	0	0	0	0	0	0	0

Table B. 1 PS/ECC School Template Schedules

AUD-OA-SCH	**Regular M-W**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0	0
AUD-OA-SCH	**Regular Th-Fri**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	-999	-999	-999	0	0	0
AUD-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0	0	0
AUD-OCC-YR	**Regular M-W**	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0
AUD-OCC-YR	**Regular, Th-Fri**	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	1	1	1	0	0	0
AUD-OCC-YR	**Summer**	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0
AUX-GYM-CL-YR	**Regular**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
AUX-GYM-CL-YR	**Summer**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
AUX-GYM-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
AUX-GYM-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
AUX-GYM-HT-YR	**Heating Season**	55	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
AUX-GYM-OA-SCH	**Regular**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
AUX-GYM-OA-SCH	**Summer**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
AUX-GYM-LT-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0
AUX-GYM-LT-YR	**Summer**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0	0
CAFE-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
CAFE-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
CAFE-EQP-YR	**Regular**	0	0	0	0	0	0	0	0.5	0.2	0.2	0.2	1	1	1	0.2	0.2	0	0	0	0	0	0	0	0
CAFE-EQP-YR	**Summer**	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.75	0.75	0.75	0.2	0.2	0	0	0	0	0	0	0	0
CAFE-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
CAFE-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
CAFE-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
CAFE-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	0.5	0.5	1	1	1	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CAFE-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	0.5	0.5	1	1	1	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CAFE-OA-SCH	**Regular**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
CAFE-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
CAFE-OCC-YR	**Regular**	0	0	0	0	0	0	0	1	0.1	0.1	0.1	1	1	1	0.1	0.1	0	0	0	0	0	0	0	0
CAFE-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.1	0	0	0	0	0	0	0	0
CL-85-YR	**All days**	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
CLASS-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
CLASS-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
CLASS-EQP-YR	**Regular**	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.06	0.20	0.21	0.22	0.12	0.27	0.09	0.08	0.09	0.09	0.05	0.04	0.04	0.03	0.02	0.02	0.02
CLASS-EQP-YR	**Summer**	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.06	0.10	0.10	0.11	0.06	0.13	0.05	0.04	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03
CLASS-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
CLASS-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
CLASS-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
CLASS-LT-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0	0	0	0	0	0	0
CLASS-LT-YR	**Summer**	0	0	0	0	0	0	0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0	0	0	0	0	0	0	0
CLASS-OA-SCH	**Regular**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
CLASS-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0

Table B. 1 PS/ECC School Template Schedules

CLASS-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.2	0.2	0	0	0	0	0	0
CLASS-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0
CL-DATA	**All days**	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
CL-MECH	**All days**	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
CL-RESTRM	**Cooling Season**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
CL-STOR	**All days**	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
COPY-EQP-YR	**Regular**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04
COPY-EQP-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.03
CORR-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
CORR-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
CORR-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
CORR-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05
CORR-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DATA-EQP-YR	**Regular**	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.15	0.15	0.15	0.15	0.15	0.15
DATA-EQP-YR	**Summer**	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.15	0.15	0.15	0.15	0.15	0.15	0.15
DATA-FAN-SCH	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
GYM-CL-YR	**Regular**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85
GYM-CL-YR	**Summer**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
GYM-EQP-YR	**Regular**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0
GYM-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0
GYM-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
GYM-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	-999	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
GYM-HT-YR	**Heating Season**	55	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
GYM-LT-YR	**Regular**	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
GYM-LT-YR	**Summer**	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
GYM-OA-SCH	**Regular**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0
GYM-OA-SCH	**Summer**	0	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
GYM-OCC-YR	**Regular**	0	0	0	0	0	0	0	0	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.2	0.2	0	0	0	0	0	0
GYM-OCC-YR	**Summer**	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0
HT-60-YR	**All days**	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
HT-DATA	**All days**	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
HT-RESTRM	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55
KITCHEN-CL-YR	**Regular**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85
KITCHEN-CL-YR	**Summer**	85	85	85	85	85	85	85	78	78	78	78	78	78	78	85	85	85	85	85	85	85	85	85
KITCHEN-EQP-YR	**Regular**	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.17	0.18	0.31	0.31	0.21	0.21	0.20	0.18	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
KITCHEN-EQP-YR	**Summer**	0.14	0.14	0.14	0.15	0.14	0.14	0.14	0.17	0.18	0.31	0.31	0.21	0.21	0.20	0.18	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.14
KITCHEN-HT-YR	**Heating Season**	55	55	55	55	55	55	55	65	65	65	65	65	65	65	55	55	55	55	55	55	55	55	55
KITCHEN-INF	**Regular**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
KITCHEN-INF	**Summer**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
KITCHEN-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
KITCHEN-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	1	1	1	1	1	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
KITCHEN-OCC-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
KITCHEN-OCC-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
KIT-SOURCE-YR	**Regular**	0	0	0	0	0	0	0	0.27	0.27	0.29	0.29	0.27	0.27	0	0	0	0	0	0	0	0	0	0

Table B. 1 PS/ECC School Template Schedules

KIT-SOURCE-YR	**Summer**	0	0	0	0	0	0	0	0.27	0.27	0.29	0.29	0.27	0.27	0	0	0	0	0	0	0	0	0	0
LIB-EQP-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05
LIB-EQP-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
LOBBY-EQP-YR	**Regular**	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.42	0.45	0.46	0.51	0.75	0.79	0.59	0.59	0.59	0.59	0.38	0.02	0.01	0.01	0.01	0.01	0.01
LOBBY-EQP-YR	**Summer**	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.42	0.45	0.46	0.51	0.75	0.79	0.59	0.59	0.59	0.30	0.19	0.02	0.01	0.01	0.01	0.01	0.01
LOUNGE-EQP-YR	**Regular**	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.10	0.13	0.13	0.13	0.42	0.43	0.13	0.13	0.05	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02
LOUNGE-EQP-YR	**Summer**	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.10	0.13	0.13	0.13	0.42	0.43	0.13	0.05	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
MECH-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MECH-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MP-CL-YR	**Regular**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85
MP-CL-YR	**Summer**	85	85	85	85	85	85	85	85	78	78	78	78	78	78	78	78	85	85	85	85	85	85	85	85
MP-EQP-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
MP-EQP-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
MP-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55	55
MP-LT-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0
MP-LT-YR	**Summer**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0	0
MP-OCC-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
MP-OCC-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
MUSIC-EQP-YR	**Regular**	0.02	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.19	0.19	0.19	0.07	0.20	0.07	0.07	0.05	0.05	0.04	0.03	0.03	0.03	0.03	0.03	0.03
MUSIC-EQP-YR	**Summer**	0.02	0.03	0.02	0.02	0.03	0.03	0.03	0.04	0.09	0.09	0.10	0.03	0.10	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
NO-OA-SCH	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NULL-OCC-YR	**All days**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OFFICE-CL-YR	**Regular**	85	85	85	85	85	85	85	75	75	75	75	75	75	75	75	75	75	85	85	85	85	85	85	85
OFFICE-CL-YR	**Summer**	85	85	85	85	85	85	85	75	75	75	75	75	75	75	75	75	75	85	85	85	85	85	85	85
OFFICE-EQP-YR	**Regular**	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.21	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.05	0.02	0.02	0.02	0.02	0.01	0.01	0.01
OFFICE-EQP-YR	**Summer**	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.21	0.23	0.23	0.23	0.24	0.24	0.24	0.05	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
OFF-P-EQP-YR	**Regular**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04
OFF-P-EQP-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
OFFICE-FAN-SCH	**Regular**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
OFFICE-FAN-SCH	**Summer**	0	0	0	0	-999	-999	-999	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
OFFICE-HT-YR	**Heating Season**	55	55	55	55	55	55	55	72	72	72	72	72	72	72	72	72	72	55	55	55	55	55	55	55
OFFICE-LT-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
OFFICE-LT-YR	**Summer**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0
OFFICE-OA-SCH	**Regular**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
OFFICE-OA-SCH	**Summer**	0	0	0	0	0	0	0	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	0	0	0	0	0	0	0
OFFICE-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.5	0.8	0.8	0.8	0.8	0	0	0	0	0	0	0
OFFICE-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0
PREK-EQP-YR	**Regular**	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.05	0.06	0.06	0.07	0.10	0.19	0.17	0.07	0.08	0.08	0.04	0.04	0.03	0.02	0.02	0.02	0.02
PREK-EQP-YR	**Summer**	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.05	0.03	0.03	0.03	0.05	0.10	0.08	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02
RESTROOM-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05
RESTROOM-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SCHOOL-INF	**Regular**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SCHOOL-INF	**Summer**	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SCI-AUX-EQP-YR	**Regular**	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
SCI-AUX-EQP-YR	**Summer**	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
SCI-EQP-YR	**Regular**	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.31	0.31	0.31	0.23	0.31	0.23	0.23	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.21	0.21

Table B. 1 PS/ECC School Template Schedules

SCI-EQP-YR	**Summer**	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.09	0.09	0.09	0.05	0.09	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
SCI-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SCI-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SCI-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0	0
SCI-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0
SHOP-EQP-YR	**Regular**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHOP-EQP-YR	**Summer**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STAIR-HT-YR	**Heating Season**	55	55	55	55	55	55	55	60	60	60	60	60	60	60	60	60	60	60	55	55	55	55	55	55	55
STORAGE-LT-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
STORAGE-LT-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
STORAGE-EQP-YR	**All days**	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
TECH-EQP-YR	**Regular**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TECH-EQP-YR	**Summer**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TECH-LT-YR	**Regular**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
TECH-LT-YR	**Summer**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
TECH-OCC-YR	**Regular**	0	0	0	0	0	0	0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0	0	0	0	0	0	0	0	0
TECH-OCC-YR	**Summer**	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0	0	0	0
DHWSCH	**Mon-Fri**	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.3	0.3	0.2	0.2	0.5	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.01	0.01	0.01	0.01
DHWSCH	**Wknd, Holiday**	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
WKIT-EQP-YR	**Regular**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.12	0.12	0.24	0.24	0.15	0.15	0.10	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
WKIT-EQP-YR	**Summer**	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.12	0.12	0.24	0.24	0.15	0.15	0.10	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05