
PERFORMANCE CONTRACTING AGREEMENT

between

Town of Camden

and

Siemens Industry, Inc.

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PERFORMANCE CONTRACTING AGREEMENT

Number: SAP JOB NUMBER

Article 1 AGREEMENT

THIS **PERFORMANCE CONTRACTING AGREEMENT** ("Agreement") is made this day of , (the "Effective Contract Date", defined below), by and between Siemens Industry, Inc. ("SIEMENS") and the party identified below as the CLIENT.

The CLIENT: **Town of Camden, Maine**
29 Elm St, PO Box 1207
Camden, ME 04843

DESIGNATED REPRESENTATIVE: Audra Caler
PHONE: 207-236-3353 FAX: 207-236-7956

Siemens Industry, Inc.
1000 Deerfield Parkway
Buffalo Grove, Illinois 60089

With offices at: 66 Mussey Rd.
Scarborough, ME 04074

DESIGNATED REPRESENTATIVE: Denny Webber
PHONE: 207-205-9149 FAX:

For Work and Services in connection with the following project (the "Project"):

For Facility Improvement Measures in the town buildings, specifically the Opera House, Snow Bowl, Public Works, Public Safety and Library

The CLIENT considered performing the following FIMs but at this time, has determined to exclude them from the Scope of Work and Services, Exhibit A:

[List FIMS not part of this project that were considered and may be performed via amendment at a later date]

PERFORMANCE CONTRACTING AGREEMENT

Articles and Attachments

This Agreement consists of this document, which includes the following articles and exhibits which are acknowledged by the CLIENT and SIEMENS and incorporated into the Agreement by this reference:

Articles

1. Agreement
2. Glossary
3. General
4. Performance Guarantee
5. Work BY SIEMENS
6. The CLIENT's Responsibilities
7. Changes and Delays
8. Compensation
9. Acceptance
10. Insurance and Allocation of Risk
11. Hazardous Material Provisions
12. Miscellaneous Provisions
13. Maintenance Services Program

Exhibits

Exhibit A	Scope of Work and Services Appendix 1 – Lighting Retrofit Schedule Appendix 2 - Drawings
Exhibit B	Payment Schedule(s)
Exhibit C	Performance Assurance
Exhibit D1	Form of Certificate of Substantial Completion
Exhibit D2	Form of Certificate of Final Completion

This Agreement, when executed by an authorized representative of the CLIENT and authorized representatives of SIEMENS, constitutes the entire, complete and exclusive agreement between the Parties relative to the project scope stated in Exhibit A. This Agreement supersedes all prior and contemporaneous negotiations, statements, representations, agreements, letters of intent, awards, or proposals, either written or oral relative to the same, and may be modified only by a written instrument signed by both Parties.

COMPENSATION/TERMS OF PAYMENT:

As full consideration for the performance of the Work and Services set forth in Exhibit A, and for the Performance Assurance set forth in Exhibit C, the CLIENT shall pay SIEMENS in such manner and amounts as agreed to in Exhibit B.

Agreed for **Town of Camden**

(Signature) by: _____

Print Name and Title: _____

(Signature) by: _____

Print Name and Title: _____

Agreed for **Siemens Industry, Inc.**

(Signature) by: _____

Print Name and Title: _____

(Signature) by: _____

Print Name and Title: _____

PERFORMANCE CONTRACTING AGREEMENT

Article 2

Glossary

The following terms shall for all purposes have the meanings stated herein, unless the context otherwise specifies or requires, or unless otherwise defined in the Agreement:

Acceptance means the CLIENT has signed, or is deemed to have signed, a Certificate of Final Completion.

Acceptance Date means the date on which the CLIENT signs or is deemed to have signed a Certificate of Final Completion.

Annual Performance Assurance Report means the document prepared by SIEMENS and submitted to the CLIENT as part of the Performance Assurance Service Program, which identifies the Savings achieved for the applicable Annual Period.

Annual Period means a twelve (12) month period beginning on the Guarantee Date or on any anniversary date thereof.

Annual Realized Savings means the actual Savings achieved by the CLIENT during an Annual Period, calculated as the sum of the Measured & Verified Savings plus the Stipulated Savings.

Applicable Law means all applicable laws, including Environmental Laws, treaties, ordinances, rules, regulations and interpretations of any Governmental Authority having jurisdiction over the design, engineering, fabrication, manufacturing, Delivery, assembly, erection, installation, and/or the performance of the Parties' obligations under this Agreement.

Applicable Permits means the permits, clearances, licenses, authorizations, consents, filings, exemptions or approvals from or required by any Governmental Authority that are necessary for the performance of the Parties' obligations under this Agreement.

Baseline means the measurements of Facility energy usage taken prior to the Effective Contract Date, and the Facility operating practices in effect prior to the Effective Contract Date, as set forth in the Performance Assurance, Exhibit C.

Baseline Period means the period of time from which data is provided to SIEMENS to derive the Baseline measurements. The Baseline Period is set forth in the Performance Assurance, Exhibit C.

BTU means a British Thermal Unit and is a unit of thermal energy.

Capital Off-Set Savings means a sub-category of Operational Savings where Savings will result in a cost-effective upgrade to the Facility to address one or more of the following issues: potential future increased costs, comfort, code non-compliance, usage requirements, user needs and/or expectations.

Certificate of Final Completion means a document, in the form attached as Exhibit D2 hereto, indicating that the Work identified in Article 1 of the Scope of Work and Services-Exhibit A has been completed in accordance with the Agreement, including all items in the Outstanding Items List(s).

Certificate of Substantial Completion means a document, in the form attached as Exhibit D1 hereto, indicating that the Work, or a designated portion of the Work, is Substantially Complete in accordance with the Agreement. A Certificate of Substantial Completion may be accompanied by an Outstanding Items List.

CLIENT Representative means the person identified to SIEMENS by the CLIENT as the person authorized to make decisions on behalf of the CLIENT as set forth in Section 6.1(a) hereof.

Construction Period means the period between the Effective Contract Date and the first day of the month following the Acceptance Date.

Construction Period Savings means the actual accumulated Measured & Verified Savings plus the Stipulated Savings achieved from the Effective Contract Date until the Guarantee Date.

Contracted Baseline means the post-FIM-implementation Facility operating profile based on parameters described in Exhibit C, which the CLIENT shall maintain throughout the Performance Guarantee Period and are relied upon by SIEMENS for the calculation of Guaranteed Savings as provided in the Performance Assurance, Exhibit C. The Contracted Baseline must also include stipulated hours of operation and plug-loads for all Facilities, and must include stipulated blended, or non-blended, utility rates.

Deferred Maintenance means a sub-category of Operational Savings where Savings result from a reduction of current or potential future repair and maintenance costs due to certain work being performed hereunder where such work had been previously postponed.

Deliverables shall mean collectively, (a) any Equipment and any Software Product deliverable to CLIENT from SIEMENS under or in connection with the Work, and (b) any Work Product Deliverables.

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Effective Contract Date is the date appearing at the top of this Agreement, unless specifically indicated otherwise.

Energy Conservation Measure or ECM means the SIEMENS Products and/or other third-party equipment, devices, materials and/or software as installed by SIEMENS at the Facilities, or as repaired or replaced by SIEMENS or the CLIENT hereunder, for the purpose of improving the efficiency of utility consumption.

Environmental Laws means applicable national, state/commonwealth, municipal, and local laws as well as all rules, regulations, codes, standards, permits, directives, or ordinances that impose liability or standards of conduct (including disclosure or notification requirements) concerning the protection of human health or the environment, including, without limitation, all laws affecting, controlling, limiting, regulating, pertaining, or relating to the manufacture, possession, presence, use, generation, storage, transportation, detection, monitoring, treatment, Release, disposal, abatement, cleanup, removal, remediation, or handling of Hazardous Materials.

Equipment means the installed physical equipment to be provided by SIEMENS as described in the Scope of Work and Services, Exhibit A.

Escalation Rate means an annual percentage increase to be applied to the previous Annual Period's energy savings, operational savings and service pricing, beginning and occurring on dates outlined in the Performance Assurance, Exhibit C. A different Escalation Rate may be applied to differing Savings calculations and/or payment schedules depending on the percentage agreed upon by the Parties.

Facility or Facilities means the building(s) or structure(s) where Work will be installed or implemented.

Facility Improvement Measures or FIMs means the (i) Instruments, know-how and Intellectual Property, including but not limited to methods and techniques for energy conservation, owned or licensed by SIEMENS and employed by SIEMENS to perform the Work and Services under this Agreement; and, (ii) the installation of Equipment and Software Products with the intent of generating net savings or efficiencies at or in connection with the operation of the Facilities. A FIM may include one or multiple ECMs as well as any non-conservation-related activities, means or methods.

FEMP means the Federal Energy Management Program managed by the United States Department of Energy.

FEMP Guidelines means the FEMP M&V Guidelines v. 3.0 published by FEMP as M&V Guidelines; Measurement and Verification for Federal Energy Management Projects.

Governmental Authority means any federal, state/commonwealth, local or other governmental, judicial, public or statutory instrumentality, tribunal, agency, authority, body or entity, or any political subdivision thereof, having legal jurisdiction over the matter or Person in question.

Guarantee Date means the first day of the month following the date on which the CLIENT executes, or is deemed to have executed, the Certificate of Final Completion.

Guaranteed Annual Savings are the Guaranteed Measured & Verified Savings plus the Stipulated Savings that SIEMENS guarantees will be achieved in an Annual Period of the Performance Guarantee Period.

Guaranteed Measured & Verified Savings means the Measured & Verified Savings that SIEMENS guarantees will be achieved, as described in the Performance Assurance, Exhibit C.

Guaranteed Savings means the amount of Savings that SIEMENS guarantees will be achieved at the Facility during the Performance Guarantee Period. as identified in the Performance Assurance, Exhibit C as subject to the limitation identified in Section 4.8.

Hazardous Materials means any material, substance, or waste, that, by reason of its composition or characteristics, is hazardous to human health and/or the environment, including any "solid waste" or "hazardous waste," as those terms are defined by the Resource Conservation and Recovery Act of 1976, as amended, any "hazardous substance," as that term is defined by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, and any other hazardous, toxic or radioactive chemical, waste, byproduct, pollutant, contaminant, compound, product, material or substance, including without limitation, Asbestos, Asbestos containing materials ("ACM"), polychlorinated biphenyls, petroleum (including crude oil or any fraction or byproduct thereof), hydrocarbons, radon, urea, urea formaldehyde, and any other material that is prohibited, controlled, limited or regulated in any manner under any Environmental Laws..

Instruments means all know-how, tools and related documentation owned or licensed by SIEMENS and used by SIEMENS to install or commission Equipment and Software Products for operation at the Facility, including but not limited to tools for installing any Software Products in Equipment, performing diagnostics on Equipment as installed in the Facility as well as any reports, notes, calculations, data, drawings, estimates, specifications, manuals, documents, all computer programs, codes and computerized materials prepared by or for SIEMENS and used by SIEMENS to provide an ECM or a FIM. Instruments excludes Work Product Deliverables.

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Intellectual Property Rights or Intellectual Property means all trade secrets, patents and patent applications, trademarks (whether registered or unregistered and including any goodwill acquired in such trademarks), services marks, trade names, internet domain names, copyrights (including rights in computer software), moral rights, database rights, design rights, rights in know-how, rights in inventions (whether patentable or not) including, but not limited to, any and all renewals or extensions thereof, and all other proprietary rights (whether registered or unregistered, and any application for the foregoing), and all other equivalent or similar rights which may subsist anywhere in the world, including, but not limited to, any and all renewals or extensions thereof.

IPMVP means the International Performance Measurement and Verification Protocol, Volume 1, EVO 10000-1.2007 as prepared by the Efficiency Valuation Organization.

kW and **kWh** mean kilowatt and kilowatt hour, respectively.

Maintenance Services Program or MSP means the Services performed by SIEMENS to maintain the Equipment in good working order. The MSP may also contain Services unrelated to the maintenance of the Equipment. If applicable, the MSP is more fully described in the Scope of Work and Services, Exhibit A.

Material Change means a measurable deviation in the Contracted Baseline such that there is an adverse impact on the Annual Realized Savings which results or will result in a Savings Shortfall.

Measured & Verified Savings means those Savings that can be calculated and ascertained by the methodology set forth in the Performance Assurance, Exhibit C.

Operational Savings means Savings derived from reduced operational expenses, including but not limited to, Deferred Maintenance, or Capital Off-Set Savings. Operational Savings can only be expressed in monetary value and are Stipulated Savings.

Outstanding Items List means a list of items in need of completion or correction that relates to the Work, or a designated portion thereof that is Substantially Complete. The absence of such items does not deprive the CLIENT of the ability to put such Work, or a designated portion thereof to beneficial use. An Outstanding Items List may be attached to a Certificate of Substantial Completion.

Parties means the CLIENT and SIEMENS.

Performance Assurance is the process of ascertaining whether the FIMs are performing at the level necessary to achieve the Guaranteed Savings.

Performance Assurance Services Program or PASP means the Services required to monitor the operation of the FIMs so that SIEMENS can provide the Annual Performance Assurance Report detailing the Annual Realized Savings and comparing the same to the Annual Guaranteed Savings based upon the calculations agreed to by the Parties in the Performance Assurance, Exhibit C. The Services provided under the PASP are described in the Scope of Work and Services, Exhibit A.

Performance Guarantee means the guarantee that SIEMENS makes to the CLIENT which is reconciled and confirmed through the Performance Assurance process set forth in the Performance Assurance, Exhibit C.

Performance Guarantee Period means the timeframe from the Guarantee Date to the last day of the final Annual Period as described in Table 1.1 of the Performance Assurance, Exhibit C, or the period from the Guarantee Date until the termination of this Agreement, whichever occurs earlier.

Permitted Users means the CLIENT, its employees and agents.

Person or Persons means any individual, corporation, partnership, limited liability company, association, joint stock company, trust, unincorporated organization, joint venture, government or political subdivision or agency thereof.

Release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of any Hazardous Materials into the environment, including the abandonment or discard of barrels, containers, and other closed receptacles containing any Hazardous Materials.

Savings means the Parties' intended result from implementing all FIMs. Savings can be derived from reductions in energy or utility consumption, reductions in operating expenses, a changed utility rate classification or a combination thereof. The Savings that are achieved from reduced energy or utility consumption are converted to a dollar figure based upon the calculation in Article 4.1.1 and as detailed in the Performance Assurance, Exhibit C. When converted to a dollar figure, these Savings become energy cost savings. Operational Savings are only expressed in a dollar figure.

Savings Shortfall means the Annual Realized Savings less the Guaranteed Annual Savings for the Annual Period resulting in an amount less than zero.

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Services means those services to be provided by SIEMENS as described in the Scope of Work and Services, Exhibit A.

SIEMENS Permits means the Applicable Permits that SIEMENS is required to obtain in SIEMENS's name in order to perform the Work under Applicable Law (as it exists on the Effective Date).

SIEMENS Pre-existing Intellectual Property means any Intellectual Property: (i) that has been conceived or developed by an employee or subcontractor of SIEMENS before SIEMENS performs any Work or Services under this Agreement; (ii) that is conceived or developed by such employee or subcontractor at any time wholly independently of SIEMENS performing the Work under this Agreement; or, (iii) if developed while performing the Work under this Agreement, where the development of Intellectual Property for the benefit of the CLIENT is not expressly identified as a FIM or part of a FIM. SIEMENS Pre-existing Property is included in all reports, notes, calculations, data, drawings, estimates, specifications, manuals, documents, all computer programs, codes and computerized materials prepared by or for SIEMENS.

SIEMENS Product means a product, including Software Product and/or Equipment, offered for sale or license by SIEMENS or its affiliates or subsidiaries and developed prior to performing the Work or SIEMENS rendering services in connection with this Agreement. A SIEMENS Product also includes improvements or modifications to any Equipment and any Software Product developed by SIEMENS or developed as part of the Work, including any SIEMENS Product that is configured or modified for operation at a site specified by the CLIENT. Any information that is provided by the CLIENT and incorporated into a SIEMENS Product is not, by itself, a SIEMENS Product. A compilation of such information and the product of such compilation, however, is a SIEMENS Product.

Software Product means any software that is owned or licensed by SIEMENS or its affiliates and that is either separately deliverable for use in the Equipment or for use in a computer system owned by the CLIENT or delivered as firmware embedded in the Equipment.

Stipulated Savings are a sub-category of Guaranteed Savings that do not require post-FIM implementation measurement and verification because they are agreed upon by the Parties based upon representations made to SIEMENS by the CLIENT and through the application of generally accepted analytical formulae. As such, Stipulated Savings are agreed upon in advance by the Parties and cannot be changed. When used as a methodology for representing a FIM's energy savings, such methodology is not recognized as a measurement and verification methodology under IPMVP. Therefore, where the IPMVP measurement methodologies are required, a methodology other than Stipulated Savings must be used to calculate energy savings.

Substantial Completion or Substantially Complete means the Work, or any identifiable portion thereof, which is sufficiently complete, in accordance with the provisions of this Agreement relating to the Scope of the Work and Services, Exhibit A, such that the CLIENT will be able to realize from such Work substantially all of the practical benefits intended to be gained therefrom, or otherwise employ the Work or the FIMs for their intended purposes.

Therm is a measure of energy equal to 100,000 BTUs.

Total Guaranteed Savings means the sum of the Savings that are guaranteed for all Annual Periods during the Performance Guarantee Period (inclusive of the Construction Period, if applicable). The Total Guaranteed Savings are reflected in Tables 1.1 and 1.2 in the Performance Assurance, Exhibit C.

Work means collective labor, Equipment and services comprising the FIMs to be performed by SIEMENS, as described in the Scope of Work and Services, Exhibit A.

Work Product Deliverable means the tangible form of a report or drawing specifically developed for, commissioned by and deliverable to the CLIENT in connection with the Work to be performed by SIEMENS under this Agreement.

Article 3

General

- 3.1 The Parties hereto acknowledge and agree that this Agreement has been negotiated at arm's length and among the Parties equally sophisticated and knowledgeable as to the subject matter of this Agreement. Each party has conferred, or has had the opportunity to confer, with their respective legal counsel. Accordingly, in the event any claim is made relating to any conflict, omission, or ambiguity in this Agreement, no presumption, burden of proof, or persuasion shall be implied by virtue of the fact that this Agreement was drafted by or at the request of a particular party or its legal counsel.
- 3.2 The CLIENT hereby retains SIEMENS as an independent contractor, not an agent or employee of the CLIENT, to perform and provide, or cause to be performed and provided, and SIEMENS hereby agrees to perform and provide, or cause to be performed or provided, the Work and Services set forth in Exhibit A all in accordance with the terms and conditions of this Agreement. No employee or agent of SIEMENS shall be, or shall be deemed to be, an employee or agent of the CLIENT.

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- 3.3 SIEMENS shall have exclusive control of the manner and means of performing the Work in accordance with the requirements of the Agreement. SIEMENS, however, has no authority to act or make any agreements or representations on behalf of the CLIENT.
- 3.4 SIEMENS represents, warrants and covenants to the CLIENT that:
- (a) It has all requisite corporate power to enter into this Agreement, and that its execution hereof has been duly authorized and does not and will not constitute a breach or violation of any of SIEMENS organizational documents, any Applicable Law, or any agreements with third parties;
 - (b) It has done and will continue to do all things necessary to preserve and keep in full force and effect its existence and the Agreement;
 - (c) This Agreement is the legal, valid and binding obligation of SIEMENS, in accordance with its terms, and all requirements have been met and procedures have been followed by SIEMENS to ensure the enforceability of the Agreement;
 - (d) To SIEMENS best knowledge, there is no pending or threatened, suit, action, litigation or proceeding against or affecting SIEMENS that affects the validity or enforceability of this Agreement; and,
 - (e) It is duly authorized to do business in all locations where the Work and Services are to be performed.
- 3.5 The CLIENT represents, warrants and covenants to SIEMENS that:
- (a) It has all requisite corporate power and/or statutory authority to enter into this Agreement, and that its execution hereof has been duly authorized and does not and will not constitute a breach or violation of any of the CLIENT's organizational documents, any Applicable Law, or any agreements with third parties;
 - (b) It has done and will continue to do all things necessary to preserve and keep in full force and effect its existence and the Agreement;
 - (c) This Agreement is the legal, valid and binding obligation of the CLIENT, in accordance with its terms, and all requirements have been met and procedures have been followed by the CLIENT to ensure the enforceability of the Agreement;
 - (d) To the CLIENT's best knowledge, there is no pending or threatened, suit, action, litigation or proceeding against or affecting the CLIENT that affects the validity or enforceability of this Agreement; and,
 - (e) The CLIENT has consulted with its legal counsel and is relying on the advice of its counsel concerning all legal issues related to this Agreement, and is not relying on SIEMENS in this regard.

Article 4

Performance Guarantee

- 4.1 The Annual Realized Savings generated during each Annual Period will be no less than the Guaranteed Annual Savings as shown in Tables 1.1 and 1.2 of the Performance Assurance, Exhibit C, subject to the limits in Section 4.8. The measurement and verification calculation methodology for determining the Savings is set forth in the Performance Assurance, Exhibit C.
- 4.1.1 General. Except as otherwise provided, energy savings will be calculated for each month of each Annual Period as the product of (a) "units of energy saved" (kWh, Therms, GJ, etc.) multiplied by (b) "cost of energy."
- (a) Units of energy saved are calculated by 1) assuming the Contracted Baseline has been maintained per Section 4.3 below, and 2) subtracting the then current period measured units of energy consumed from the Baseline units of energy defined in Article 5 of Exhibit C.
 - (b) Costs of energy are defined in Article 6 of Exhibit C-Utility Rate Structures and Escalation Rates.
- 4.2 Any future Escalation Rates to be applied to utility, energy or other costs are set forth in Exhibit C. SIEMENS and the CLIENT agree that the Baseline data set forth in Exhibit C is a full and accurate reflection of the existing Facility, equipment, operation, business use and energy usage, and that such Baseline data will be the basis on which all future energy use will be compared in order to determine the Annual Realized Savings.
- 4.3 SIEMENS and the CLIENT agree that the Contracted Baseline fully described in Exhibit C will represent the new operating and/or equipment profile of the Facility resulting from the FIM implementation. The Performance Guarantee is dependent upon and is subject to the express condition that the CLIENT operates and maintains its Facilities within the Contracted Baseline parameters, as may be adjusted in accordance with the terms herein, during the entire term of the Performance Guarantee Period.

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- 4.4 The CLIENT agrees to notify SIEMENS prior to or within thirty (30) days of CLIENT's knowledge of any Material Change.
- 4.5 Within thirty (30) days of notice of a Material Change, SIEMENS' discovery of a Material Change and with prompt notice to CLIENT, SIEMENS will either:
- (a) Require an adjustment to the Performance Assurance and the Performance Guarantee as a result of the Material Change; or,
 - (b) Where a commercially reasonable adjustment to the Performance Guarantee is unavailable, terminate both the Performance Assurance and the Performance Guarantee.
- 4.6 A Performance Guarantee Period savings reconciliation as identified in Section 4.1 will be performed at the end of each Annual Period as follows:
- (a) Within ninety (90) days of the Guarantee Date, the Construction Period Savings shall be reconciled and applied to the calculation of the first Annual Period's Annual Realized Savings.
 - (b) At the conclusion of each Annual Period, SIEMENS will calculate the Annual Realized Savings and compare the calculated amount to the applicable Guaranteed Annual Savings amount.
 - (c) Where the Annual Realized Savings are less than the Guaranteed Annual Savings, a Savings Shortfall shall be recorded for the applicable Annual Period.
 - (d) A Savings Shortfall shall be paid by SIEMENS within sixty (60) days following the CLIENT's acceptance of the reconciliation and once paid SIEMENS shall have fulfilled its obligations under the Performance Guarantee for the applicable Annual Period.
- 4.6.1 As the mutual goal of the Parties is to maximize Savings, if SIEMENS can correct a Savings Shortfall through an operational improvement at no expense or material inconvenience to the CLIENT and without future operational expenses, and the CLIENT declines to allow such operational improvement, then any future Savings Shortfall that the improvement would have corrected will be negated by deeming the value of the Savings Shortfall as Savings achieved and adding the amount of same to the Annual Realized Savings calculations for each Annual Period thereafter.
- 4.7 The Performance Guarantee is dependent upon and is subject to the express condition that the CLIENT maintains the PASP during the entire Performance Guarantee Period. If the CLIENT fails to maintain, breaches, cancels or otherwise causes the termination of the PASP then; (a) The Performance Guarantee shall terminate immediately and be void and of no force or effect; or, (b) Where termination of the Performance Guarantee acts to render the Agreement in violation of Applicable Law, all Guaranteed Savings thereafter shall be determined to have been achieved and SIEMENS shall have been deemed to have met its Performance Guarantee obligations under this Agreement for each and every Annual Period thereafter without the obligation to provide the CLIENT, or any third-party as the case may be, with any further Annual Performance Assurance Reports.
- 4.8 The payments and credits based on Savings Shortfalls, if any, are the sole remedy of the CLIENT under this Performance Guarantee. ANY PAYMENTS MADE OR TO BE MADE TO THE CLIENT UNDER THE TERMS OF THIS PERFORMANCE GUARANTEE SHALL NOT EXCEED THE PAYMENTS ACTUALLY MADE BY CLIENT TO EITHER SIEMENS AND/OR A THIRD-PARTY (IN THE EVENT THAT THE CLIENT HAS FINANCED THE TRANSACTION) FOR THE AGGREGATE OF: THE PRICE, AS DEFINED IN EXHIBIT B, ARTICLE 1.1; THE PASP PAYMENTS; THE MSP PAYMENTS, IF ANY; AND, IF APPLICABLE, THE CLIENT'S COST OF FINANCING THE WORK. The CLIENT's cost of financing the Work is the cost of financing calculated either: (a) On the date that the escrow account is funded in accordance with Exhibit B, Article 1.2; or, (b) On the Effective Contract Date if the escrow requirement is expressly waived by SIEMENS.
- 4.9 The CLIENT represents that all existing equipment that is not installed by SIEMENS under this Agreement but is deemed necessary to achieve the Performance Guarantee, is in satisfactory working condition. Prior to the beginning of the Performance Guarantee Period, SIEMENS will have inspected all such existing equipment and reported any deficiencies to the CLIENT. To the extent that the deficiencies are not remedied by the CLIENT prior to the Guarantee Date, the adverse effect on the ability of the Project to attain the necessary Guaranteed Savings shall be factored into the Annual Performance Assurance Report and, if necessary, the Performance Guarantee shall be adjusted accordingly.
- 4.10 If the Equipment or the existing equipment is altered or moved by any person (including the CLIENT) other than SIEMENS or a person authorized by SIEMENS, the CLIENT shall immediately notify SIEMENS in writing, and SIEMENS reserves the right to perform a reacceptance test on, or if necessary a re-commissioning of, the system at the CLIENT's expense in order to determine if a Material Change has occurred.

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- 4.11 SIEMENS will have no liability or obligation to continue providing PASP Services or any Guaranteed Savings under the Performance Guarantee in the event that the CLIENT fails to:
- (a) Authorize a re-acceptance test or re-commissioning that SIEMENS reasonably deems necessary in order to determine if a Material Change has occurred;
 - (b) Provide access to any Facility where Work is to be performed;
 - (c) Service and maintain all Equipment in accordance with the manufacturers' recommendations in order to prevent a Savings Shortfall; or,
 - (d) Provide SIEMENS with accurate Facility operating information as soon as such information becomes reasonably available to the CLIENT, including energy usage and cost, executed preventive maintenance and repair records, building or equipment additions, and occupancy levels during each Annual Period.
- 4.12 Unless expressly contrary to Applicable Law, should the CLIENT decide to discontinue the PASP before the end of the Performance Guarantee Period, the CLIENT will give SIEMENS thirty (30) days prior written notice and in such notice indicate that the CLIENT has selected one of the following:
- (a) The CLIENT will re-invest the avoided cost of cancellation of the PASP into Facility improvements and services that improve the overall Facility's performance and which improvements and services are implemented by SIEMENS; or,
 - (b) The CLIENT will pay to SIEMENS 100% of the remaining value left in the PASP Annual Period, as a liquidated damage and not as a penalty, to compensate SIEMENS for SIEMENS' up-front costs and expenses in preparing to perform the PASP as contracted for the Annual Period.
- 4.13 Unless expressly contrary to Applicable Law, any disputes concerning the calculation of the Annual Realized Savings or changes to the Contracted Baseline that are not resolved by negotiation between the Parties within thirty (30) days of the notice of the dispute, will be resolved by a third-party professional engineering firm which is reasonably acceptable to both SIEMENS and the CLIENT. The determination of such firm will be final and binding upon CLIENT and SIEMENS. SIEMENS and the CLIENT will each be responsible for half of the fees of such firm.

Article 5

Work by SIEMENS

- 5.1 SIEMENS will perform the Work expressly described in this Agreement and in any work release documents or change orders that are issued under this Agreement and signed by both Parties. The Work performed by SIEMENS shall be conducted in a workmanlike manner.
- 5.2 SIEMENS shall perform the Work during its normal hours, Monday through Friday inclusive, excluding holidays, unless otherwise agreed herein. The CLIENT shall make the Facility available so Work may proceed in an efficient manner.
- 5.3 SIEMENS is not required to conduct safety, reacceptance or other tests, install new devices or equipment or make modifications to any Equipment unless expressly made a part of the Work identified in the Scope of Work and Services, Exhibit A. Any CLIENT request to change the scope or the nature of the Work or Services must be in the form of a mutually agreed change order, effective only when executed by the Parties.
- 5.4 All Work Product Deliverables shall become the CLIENT's property upon receipt by CLIENT. SIEMENS may retain file copies of such Work Product Deliverables. If any Instruments are provided to the CLIENT under this Agreement, any such Instruments shall remain SIEMENS' property, including the Intellectual Property conceived or developed by SIEMENS in the Instruments. All SIEMENS' Pre-existing Intellectual Property that may be included in the Deliverables provided to the CLIENT under this Agreement shall also remain SIEMENS property including the SIEMENS Pre-existing Intellectual Property included in the Work Product Deliverables. All Work Product Deliverables and any Instruments provided to the CLIENT are for Permitted Users' use and only for the purposes disclosed to SIEMENS. SIEMENS hereby grants the CLIENT a royalty-free (once payments due under this Agreement are paid to SIEMENS), non-transferable, perpetual, nonexclusive license to use any SIEMENS Pre-existing Intellectual Property solely as incorporated into the Deliverables and SIEMENS' Intellectual Property as incorporated into any Instruments provided to the CLIENT under this Agreement. Under such license, and following agreement to be bound to such separate confidentiality provisions that may exist between the Parties, Permitted Users shall have a non-exclusive, non-transferable, limited license right to:
- (a) Use, in object code form only, the Software Products included in the Deliverables ("Software Deliverables");
 - (b) Make and retain archival and emergency copies of such Software Deliverables (subject to any confidentiality provisions) except if the Software Deliverable is embedded in the Equipment; and,

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- (c) Use all such Deliverables and such Instruments, provided however, the Deliverables and Instruments shall not be used or relied upon by any parties other than Permitted Users, and such use shall be limited to the particular project and location for which the Deliverables are provided. All Deliverables provided to the CLIENT are for Permitted Users' use only for the purposes disclosed to SIEMENS, and the CLIENT shall not transfer them to others or use them or permit them to be used for any extension of the Work or any other project or purpose, without SIEMENS' express written consent.
- 5.4.1 Any reuse of such Deliverables or such Instruments for other projects or locations without the written consent of SIEMENS, or use by any party other than Permitted Users will be at Permitted Users' risk and without liability to SIEMENS; and, the CLIENT shall indemnify, defend and hold SIEMENS harmless from any claims, losses or damages arising therefrom.
- 5.4.2 In consideration of such license, CLIENT agrees not to reverse engineer any Equipment or Software Product to reconstruct or discover any source code, object code, firmware, underlying ideas, or algorithms of such Equipment or Software Product even to the extent such restriction is allowable under Applicable Law.
- 5.4.3 Nothing contained in this Agreement shall be interpreted or construed to convey to the CLIENT the pre-existing Intellectual Property rights of any third party incorporated into the Deliverables. CLIENT agrees to take delivery of any Software Deliverables subject to any applicable SIEMENS or third party end-user license agreement (EULA) accompanying such Software Deliverable, or if no EULA or third party license accompanies such SIEMENS software, the EULA posted at www.usa.siemens.com/btcpseula (SIEMENS' EULA web site) for such SIEMENS software. Notwithstanding the foregoing, in the event of any inconsistency between the terms of the Agreement and the EULA for such SIEMENS software, the terms of the Agreement shall govern over the EULA except for the use and metric restrictions set forth in the EULA for such SIEMENS software shall take precedence and supersede the terms of the Agreement.
- 5.5 SIEMENS shall obtain and maintain the SIEMENS Permits. If any SIEMENS Permit (or application therefor) requires action by the CLIENT, the CLIENT shall, upon the request of SIEMENS, take such action as is reasonably appropriate.
- 5.6 SIEMENS shall be responsible for any portion of the Work performed by any subcontractor of SIEMENS. SIEMENS shall not have any responsibility, duty or authority to direct, supervise or oversee any contractor of the CLIENT or their work or to provide the means, methods or sequence of their work or to stop their work. SIEMENS' work and/or presence at the Facility shall not relieve others of their responsibility to the CLIENT or to others.
- 5.7 SIEMENS warrants that:
- (a) Unless otherwise agreed, all Equipment shall be new and of good quality. Until one year from the date the Equipment is installed, all Equipment manufactured by SIEMENS or bearing its nameplate will be free from defects in material and workmanship arising from normal use and service.
 - (b) Labor for all Work, excluding PASP or MSP Services, is warranted to be free from defects in workmanship for one year after the Work is performed and approved as substantially complete. PASP Services and MSP Services are warranted to be free from defects in workmanship for ninety (90) days after the Services are performed.
- 5.8 Warranty Limitation:
- (a) The limited warranties set forth in Section 5.7 will be void as to, and shall not apply to, any Equipment (i) repaired, altered or improperly installed by any person other than SIEMENS or its authorized representative; (ii) which the CLIENT or a third party subjects to unreasonable or improper use or storage, uses beyond rated conditions, operates other than per SIEMENS or the manufacturer's instructions, or otherwise subjects to improper maintenance, negligence or accident; (iii) damaged because of any use of the Equipment after the CLIENT has, or should have had, knowledge of any defect in the Equipment; or (iv) not manufactured, fabricated and assembled by SIEMENS or not bearing SIEMENS nameplate. However, SIEMENS assigns to the CLIENT, without recourse, any and all assignable warranties available from any manufacturer, supplier, or subcontractor of such Equipment.
 - (b) Any claim under the limited warranty granted above must be made in writing to SIEMENS within thirty (30) days after discovery of the claimed defect unless discovered directly by SIEMENS. Such limited warranty only extends to the CLIENT and not to any subsequent owner of the Equipment. The CLIENT's sole and exclusive remedy for any Equipment or Services not conforming with this limited warranty is limited to, at SIEMENS' option: (i) repair or replacement of defective components of covered Equipment; (ii) re-performance of the defective portion of the Services; or (iii) to the extent previously paid and itemized, the issuance of a credit or refund for the original purchase price of such defective component or portion of the Equipment or Services.

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- (c) SIEMENS shall not be required to repair or replace more than the component(s) of the Equipment or the portion of the Work and Services actually found to be defective. SIEMENS' warranty liability shall not exceed the purchase price of such item. Repaired or replaced Equipment or Services will be warranted hereunder only for the remaining portion of the original warranty period.
- 5.9 THE EXPRESS LIMITED WARRANTIES PROVIDED ABOVE ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, STATUTORY, EXPRESS, OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED. THE LIMITED EXPRESS WARRANTIES AND REPRESENTATIONS SET FORTH IN THIS AGREEMENT MAY ONLY BE MODIFIED OR SUPPLEMENTED IN A WRITING EXECUTED BY A DULY AUTHORIZED SIGNATORY OF EACH PARTY.
- 5.10 SIEMENS will not be responsible for the maintenance, repair or replacement of, or Services necessitated by reason of:
- (a) Non-maintainable, non-replaceable or obsolete parts of the Equipment, including but not limited to: ductwork, shell and tubes, heat exchangers, coils, unit cabinets, casings, refractory material, electrical wiring, water and pneumatic piping, structural supports, cooling tower fill, slats and basins, etc., unless covered by the warranty provisions herein or otherwise specifically stated herein; or
 - (b) The CLIENT's or a third-party's negligence, abuse, misuse, improper or inadequate repairs or modifications, improper operation, lack of operator maintenance or skill, corrosion, erosion, improper or inadequate water treatment, electrolytic action, chemical action, failure to comply with manufacturer's operating and environmental requirements, Acts of God, or other reasons beyond SIEMENS' control. Unless expressly agreed in writing, SIEMENS is not responsible for the removal or reinstallation of replacement valves, dampers, or waterflow and tamper switches with respect to pipes and ductwork, including vent or drain system. SIEMENS ASSUMES NO RESPONSIBILITY FOR ANY SERVICE PERFORMED ON ANY EQUIPMENT OTHER THAN THAT PERFORMED BY SIEMENS OR ITS AGENTS.
- 5.11 SIEMENS may suspend its performance of the Work at the Facility, if, in the reasonable opinion of SIEMENS, based upon industry standards and SIEMENS' applicable safety programs, conditions at the Facility for which SIEMENS is not responsible become unsafe for the continued performance of the Work and such conditions are not rectified by CLIENT immediately. SIEMENS shall resume its performance of the Work promptly after the unsafe conditions are rectified by CLIENT.

Article 6

CLIENT Responsibilities

- 6.1 The CLIENT, without cost to SIEMENS, shall:
- (a) Designate a contact person with authority to make decisions for the CLIENT regarding the Work and provide SIEMENS with information sufficient to contact such person in an emergency;
 - (b) Coordinate the work of contractors under CLIENT's sole control so as not to disrupt the Work and Services proceeding in an efficient manner;
 - (c) Provide or arrange for 24 hour, 7 day per week access and make all reasonable provisions for SIEMENS to enter any Facility where Work is to be performed so that Work may proceed in an efficient manner;
 - (d) Permit SIEMENS to control and/or operate all building controls, systems, apparatus, equipment and machinery necessary to perform the Work;
 - (e) Furnish SIEMENS with blueprints, surveys, legal descriptions, waste management plans and all other available information pertinent to the Work and any Facility where the Work is to be performed as may be reasonably requested by SIEMENS. Such plans and blueprints, along with an executed copy of this Agreement, with its Exhibits, shall be kept and maintained in CLIENT's files for a period of fifteen (15) years from the Effective Contract Date;
 - (f) Furnish SIEMENS with all approvals, permits and consents from Governmental Authorities and others as may be required for performance of the Work, except for SIEMENS Permits;
 - (g) In accordance with Article 11 hereof, promptly notify SIEMENS of all known or suspected Hazardous Materials at the Facility, of any contamination of the Facility by Hazardous Material, and of any other conditions requiring special care or which may reasonably be expected to affect the Work, and provide SIEMENS with any available documents describing the quantity, nature, location and extent of such materials, contamination or conditions;

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- (h) Comply with Applicable Law and provide any notices required to be given to any Governmental Authority in connection with the Work, except such notices SIEMENS has expressly agreed in writing to give;
 - (i) Provide SIEMENS with legally required materials and information (including but not limited to Material Safety Data Sheets) related to all Hazardous Materials located at any Facility where the Work is to be performed;
 - (j) Furnish SIEMENS with any contingency plans, safety programs and other policies, plans or programs related to any Facility where the Work is to be performed;
 - (k) Operate, service and maintain all Equipment according to the manufacturer's recommendations including those set forth in the manufacturer's operating manuals or instructions, as well as all requirements of Applicable Law or of authorities having jurisdiction. The CLIENT shall furnish all needed servicing and parts for said FIMs, which parts shall become part of the FIMs. Such Equipment shall be operated only in the specified operating environment, which shall be supplied by the CLIENT, including without limitation: (1) suitable electrical service, including clean, stable, properly conditioned power, to all Equipment; (2) telephone lines, capacity and connectivity as required by such Equipment; and (3) heat, light, air conditioning or other environmental controls, and other utilities in accordance with the specifications for the Equipment;
 - (l) Promptly notify SIEMENS of any unusual operating conditions, hours of usage, system malfunctions, installed equipment or building alterations that may affect the Equipment or energy usage or any Services; and,
 - (m) If applicable, provide and pay for a dedicated voice grade dial-up phone line, or a mutually agreed communication method, and install a terminal block, or an equivalent communication mechanism, in a mutually agreed upon location. All on-line service Equipment (excluding the phone line) will remain the property of SIEMENS unless otherwise stated herein.
- 6.2 Unless contrary to Applicable Law, the CLIENT acknowledges that the technical and pricing information contained in this Agreement is confidential and proprietary to SIEMENS and agrees not to disclose it or otherwise make it available to others without SIEMENS' express written consent.
- 6.3 The CLIENT acknowledges that it is now and shall at all times remain in control of the Facility. Except as expressly provided herein, SIEMENS shall not be responsible for the adequacy of the health or safety programs or precautions related to the CLIENT's activities or operations, the CLIENT's other contractor(s), the work of any other person or entity, or Facility conditions. SIEMENS shall not be responsible for inspecting, observing, reporting or correcting health or safety conditions or deficiencies of the CLIENT or others at the Facility. So as not to discourage SIEMENS from voluntarily addressing health or safety issues while at the Facility, in the event SIEMENS does address such issues by making observations, reports, suggestions or otherwise, the CLIENT shall not hold, or attempt to hold, SIEMENS liable or responsible on account thereof.

Article 7

Changes and Delays

- 7.1 As the Work is performed, Applicable Law or conditions (as they exist on the Effective Date) may change, or circumstances outside SIEMENS' reasonable control may develop, which would require SIEMENS to expend additional costs, effort or time to complete the Work, in which case SIEMENS will notify the CLIENT and an equitable adjustment will be made to SIEMENS' compensation and the time for performance. In the event such changes require the Work to be suspended or terminated, SIEMENS shall be compensated for Work previously performed and for costs reasonably incurred in connection with the suspension or termination.
- 7.2 Either party may request additions, deletions, modifications or changes to the Work. Any such requests shall only become effective upon execution of a written agreement by authorized representatives of both Parties.
- 7.3 SIEMENS may, in its sole discretion, substitute alternative parts, goods or equipment in the performance of the Work, provided that any such substitution shall be of an equal or better quality.
- 7.4 SIEMENS shall not be responsible for loss, delay, injury, damage or failure of performance that may be caused by circumstances beyond its control, including but not restricted to acts or omissions by the CLIENT or its employees, agents or contractors, Acts of God, war, civil commotion, acts or omissions of government authorities, fire, theft, corrosion, flood, water damage, lightning, freeze-ups, strikes, lockouts, differences with workmen, riots, explosions, quarantine restrictions, delays in transportation, or shortage of vehicles, fuel, labor or materials. In the event of such delay or failure, the time for performance shall be extended by a period equal to the time lost plus a reasonable recovery period and the compensation shall be equitably adjusted to compensate for additional costs SIEMENS incurs due to such delay. If any such delay exceeds sixty (60) days, SIEMENS may terminate this Agreement upon three (3) days' notice to the CLIENT

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and the CLIENT shall promptly pay SIEMENS for the allocable portion of the Work completed, for any costs and expenses of termination, and for any loss or damage incurred with respect to materials, equipment, tools and machinery, including reasonable overhead and profit.

Article 8

Compensation

- 8.1 The aggregate amount paid by CLIENT provides for and is solely in consideration of the Scope of Work and Services described in Exhibit A, and is detailed in Exhibit B.
- 8.2 SIEMENS will invoice the CLIENT in accordance with the schedules set forth in Exhibit B. Unless otherwise agreed in writing, invoices are due and payable upon receipt by the CLIENT. If the CLIENT disagrees with any portion of an invoice, it shall notify SIEMENS in writing of the amount in dispute and the reason for its disagreement within 21 days of receipt of the invoice, and shall pay the portion not in dispute.
- 8.3 SIEMENS may suspend or terminate the Work or Services at any time if payment is not received when due. In such event, SIEMENS shall be entitled to compensation for the Work or Services previously performed and for costs reasonably incurred in connection with the suspension or termination.
- 8.4 On amounts not paid within thirty (30) days of invoice date, the CLIENT shall pay interest from invoice date until payment is received at the lesser of 12% per annum or the maximum rate allowed by law. The CLIENT shall reimburse SIEMENS for SIEMENS' costs and expenses (including reasonable attorney and witness fees) incurred for collection under this Agreement.
- 8.5 Except to the extent expressly agreed herein, SIEMENS' fees do not include any taxes, excises, fees, duties, tariffs charged on the importation of goods into the United States, or other government charges related to the Work or Services. The CLIENT shall pay such amounts or reimburse SIEMENS for any such amounts SIEMENS pays to the extent such charges are lawfully due and payable by CLIENT and have been paid or incurred by SIEMENS in furtherance thereof. If the CLIENT claims that the Work or Services is subject to a tax exemption or direct payment permit, it shall provide SIEMENS with a valid exemption certificate or permit and, unless specifically prohibited by law, shall indemnify, defend and hold SIEMENS harmless from any taxes, costs and penalties arising out of the use or acceptance of same.
- 8.6 All other work or services requested by the CLIENT, including but not limited to the following, shall be separately billed or surcharged on a time and materials basis:
 - (a) Emergency services, if inspection does not reveal any deficiency covered by the Scope of Work and Services, Exhibit A;
 - (b) Work and/or services performed at times other than during SIEMENS' normal working hours, unless otherwise agreed to in Exhibit A; or
 - (c) Work and/or services performed on equipment not covered by the Scope of Work and Services, Exhibit A.
- 8.7 No invoice shall be paid unless it is accompanied by a waiver of liens from SIEMENS and applicable contractors, subcontractors, material suppliers, and others associated with the Work being invoiced. Such lien waivers shall provide that SIEMENS will indemnify and hold harmless CLIENT from claims, losses, and damages, including reasonable attorney fees and costs, that may arise from CLIENT's reliance on the representations in the lien waivers.

Article 9

Acceptance

- 9.1 When SIEMENS believes that all or an independent definable phase or portion of the Work is Substantially Complete, SIEMENS will submit a Certificate of Substantial Completion to the CLIENT which shall be subject to the following:
 - (a) If the CLIENT concurs that the described portion of the Work as performed is Substantially Complete, the CLIENT will sign the Certificate of Substantial Completion and return it to SIEMENS;
 - (b) A Certificate of Substantial Completion may include, as an attachment to it, an Outstanding Items List prepared by SIEMENS;
 - (c) If the CLIENT does not concur that the Work is Substantially Complete, then, within ten (10) business days of receiving the Certificate of Substantial Completion, the CLIENT shall notify SIEMENS in writing of the reasons it believes the Work is not Substantially Complete;

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- (d) If SIEMENS disagrees with the CLIENT as to whether the Work is Substantially Complete, SIEMENS shall notify the CLIENT of a dispute and such dispute shall be resolved in accordance with Section 9.3 herein;
 - (e) If, within ten (10) business days of receiving the Certificate of Substantial Completion the CLIENT fails to sign the Certificate, and within the same period the CLIENT's Representative does not deliver to SIEMENS a written notice of the reasons the CLIENT believes that the Work is not Substantially Complete, then in the mutual interests of the Project proceeding in a timely manner, the CLIENT will be deemed to have agreed to, signed and returned the Certificate of Substantial Completion.
- 9.2 After the CLIENT signs and returns, or is deemed to have signed and returned to SIEMENS all of the Certificates of Substantial Completion relating to the Work, and after SIEMENS corrects and completes all of the items on all of the Outstanding Items Lists, if any, SIEMENS will submit to the CLIENT a Certificate of Final Completion which shall be subject to the following:
- (a) If the CLIENT concurs that all of the items on all of the Outstanding Items Lists have been completed or corrected, the CLIENT will indicate its final acceptance of the Work by signing the Certificate of Final Completion and returning it to SIEMENS;
 - (b) If the CLIENT does not concur that all of the items on all of the Outstanding Items Lists have been completed or corrected, then the CLIENT shall, within ten (10) business days of receiving the Certificate of Final Completion, identify the items that, it believes, were not completed or corrected;
 - (c) If SIEMENS disagrees that the items identified by the CLIENT have not been completed or corrected, SIEMENS shall notify the CLIENT of a dispute and such dispute shall be resolved in accordance with section 9.3 herein;
 - (d) If, within ten (10) business days of receiving a Certificate of Final Completion, the CLIENT fails to sign that Certificate, and, within the same period the CLIENT's Representative does not deliver to SIEMENS a written notice identifying the items on the Outstanding Items List(s) that, the CLIENT believes, were not completed or corrected, then the CLIENT will be deemed to have agreed to and signed and returned the Certificate of Final Completion.
- 9.3 Any disputes concerning the Substantial Completion or the Final Completion of the Work will be resolved by submitting the issue to a third party professional engineering firm and which is reasonably acceptable to both SIEMENS and the CLIENT. The determination of this firm with respect to Final Completion or Substantial Completion will be final and binding upon the Parties. SIEMENS and the CLIENT shall share equally the costs or fees for such firm in connection with such dispute resolution process.

Article 10

Insurance and Allocation of Risk

10.1 SIEMENS shall maintain in full force and effect the following insurance coverage and limits specified below commencing ten (10) days after the Effective Contract Date or, where applicable, the date that the CLIENT closes its financing, whichever is later, and continuing until the date of the Certificate of Final Completion. The required limits of insurance may be satisfied with any combination of primary and excess coverage. SIEMENS or SIEMENS' insurance carrier shall endeavor to provide the CLIENT with thirty (30) days' prior notice of cancellation, termination or material alteration of any insurance coverage set forth in this Article 10.1. In addition, SIEMENS' insurance shall be maintained with insurance companies having an A.M. Best rating of "A-" or better and a financial size category of "VII" or higher (or a comparable rating by any other rating entity reasonably acceptable to the CLIENT and evidenced by the CLIENT's written confirmation, which acceptance shall not be unreasonably withheld). SIEMENS shall provide the CLIENT applicable insurance certificates of such coverage prior to SIEMENS' commencement of any Work at the Facility.

10.1.1 SIEMENS has the responsibility and obligation to procure and maintain the following insurance policies:

- (a) Workers' Compensation Insurance in accordance with Applicable Law;
- (b) Employer's Liability Insurance with a limit of One Million Dollars (\$1,000,000) per accident, per employee for occupational disease, and in the aggregate for occupational disease;
- (c) Commercial General Liability Insurance with coverage written for bodily injury and broad form property damage on an "occurrence" basis with a limit of Five Million Dollars (\$5,000,000) per occurrence and Five Million Dollars (\$5,000,000) aggregate. This policy shall include blanket contractual coverage, railroad protective liability coverage, and coverage for premises, operations, explosion, collapse and underground (XCU) hazards, and products/completed operations;
- (d) Contractual Liability insuring the obligations assumed by SIEMENS in this Agreement; and,

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- (e) Broad Form Property Damage (including Completed Operations).
- 10.1.2 SIEMENS shall name the CLIENT as an additional insured to the extent bodily injury (including death) or third party property damage results from the negligent acts or omissions of SIEMENS and require that this policy contain a "separation of insureds" clause.
- 10.1.3 SIEMENS shall require its subcontractors performing Work at the Facility to maintain the types, coverage and limits of insurance which are reasonable in accordance with prudent industry practice and commensurate with the Work to be performed by such subcontractor.
- 10.1.4 Notwithstanding any provision herein, the CLIENT shall retain all rights and defenses under and through the Maine Tort Claims Act.
- 10.2 The CLIENT shall maintain in full force and effect the insurance coverage and limits specified below from the date of SIEMENS' commencement of Work at the Facility and continuing until the end of the warranty period set forth in Section 5.7(a). The CLIENT or the CLIENT's insurance carrier shall endeavor to provide SIEMENS with thirty (30) Days' prior notice of cancellation, termination or material alteration of any insurance coverage set forth in this Section 10.2. In addition, the CLIENT's insurance shall be maintained with insurance companies having an A.M. Best rating of "A- " or better and a financial size category of "VII" or higher (or a comparable rating by any other rating entity reasonably acceptable to SIEMENS and evidenced by SIEMENS' written confirmation, which acceptance shall not be unreasonably withheld). The CLIENT shall provide SIEMENS applicable insurance certificates of such coverage prior to SIEMENS' commencement of any Work at the Facility. The required limits of insurance may be satisfied with any combination of primary and excess coverage.
- (a) Workers' Compensation Insurance in accordance with Applicable Law applicable to the jurisdiction in which the Work is performed.
- (b) Employer's Liability Insurance with a limit of One Million Dollars (\$1,000,000) per accident, per employee for occupational disease, and in the aggregate for occupational disease;
- (c) Commercial General Liability Insurance with a limit of Five Million Dollars (\$5,000,000) per occurrence and Five Million Dollars (\$5,000,000) annual aggregate. This policy shall include blanket contractual coverage, railroad protective liability coverage, and coverage for premises, operations, explosion, collapse and underground (XCU) hazards, and products/completed operations. The CLIENT shall name SIEMENS and its subcontractors as additional insureds to the extent bodily injury (including death) or third party property damage results from the negligent acts or omissions of CLIENT or CLIENT's other contractors, if any. This policy shall contain a "separation of insureds" clause.
- 10.3 In regard to insurance maintained by either Party, including any property insurance, each such Party hereby waives, for itself and its insurers, all rights of recovery and subrogation which may arise against the other Party and its Affiliates as a result of a payment made by an insurer.
- 10.4 Title to the Equipment shall pass to the CLIENT on delivery of the Equipment to the Facility. SIEMENS warrants that legal title to and ownership of the Equipment (excluding, however, the Intellectual Property Rights) shall upon such delivery be free and clear of any and all liens, claims, security interests or other encumbrances, subject to any lien of SIEMENS that may arise under Applicable Law that is not otherwise prohibited hereunder.
- 10.5 Irrespective of the passage of title as provided in Section 10.4, and except for loss or damage due to uninsurable events for which the CLIENT shall be responsible, SIEMENS shall bear the risk of loss and damage with respect to the Work to be supplied by SIEMENS, or Equipment that is within the care, custody and control of SIEMENS, wherever located, that have been or will be incorporated into the Work, until Substantial Completion of such Work. Upon Substantial Completion of such Work, risk of loss and damage shall transfer to the CLIENT and the CLIENT shall assume full and exclusive custody and control of such components of the Work other materials, Equipment and components supplied by SIEMENS, and of all such Work; *provided that*, CLIENT's assumption of risk of loss and damage shall not obviate SIEMENS' obligations to correct any warranty non-conformances in accordance with Article 5.
- 10.6 SIEMENS shall indemnify the CLIENT from and against all third party claims alleging bodily injury, death or damage to a third party's tangible property, but only to the extent caused by SIEMENS' negligent acts or omissions. If the injury or damage is caused by the parties' joint or contributory negligence, the loss and/or expenses shall be borne by each party in proportion to its degree of fault. No part of the Equipment(s) or the Facility is considered third party property. The CLIENT shall provide SIEMENS with prompt written notice of and shall not acknowledge any third party claims covered by this Section 10.6. SIEMENS has the unrestricted right to select and hire counsel and the exclusive right to conduct

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the legal defense and/or settle the claim on the CLIENT's behalf. The CLIENT shall not make any admission(s) which might be prejudicial to SIEMENS and shall not enter into a settlement without the express permission of SIEMENS.

- 10.7 UNLESS CONTRARY TO APPLICABLE LAW, IN NO EVENT SHALL THE CLIENT OR SIEMENS BE LIABLE UNDER THIS INDEMNITY OR OTHERWISE UNDER THIS AGREEMENT FOR SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES, INCLUDING COMMERCIAL LOSS, LOSS OF USE, OR LOST PROFITS, HOWEVER CAUSED.
- 10.8 IN ANY EVENT, UNLESS CONTRARY TO APPLICABLE LAW, SIEMENS' MAXIMUM LIABILITY FOR ANY AND ALL CLAIMS, LOSSES OR EXPENSES ARISING OUT OF THIS AGREEMENT, OR OUT OF ANY GOODS OR SERVICES FURNISHED UNDER THIS AGREEMENT, WHETHER BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, AGENCY, WARRANTY, TRESPASS, INDEMNITY OR ANY OTHER THEORY OF LIABILITY, SHALL BE LIMITED TO THE TOTAL COMPENSATION RECEIVED BY SIEMENS FROM THE CLIENT UNDER THIS AGREEMENT. The preceding limit shall not apply to the CLIENT's remedy under the Performance Guarantee as such is limited by Section 4.8.
- 10.9 THE CLIENT AGREES THAT THE EXCLUSIONS AND LIMITATIONS IN SECTIONS 10.7 AND 10.8 WILL PREVAIL OVER ANY CONFLICTING TERMS AND CONDITIONS IN THIS AGREEMENT AND MUST BE GIVEN FULL FORCE AND EFFECT, WHETHER OR NOT ANY OR ALL SUCH REMEDIES ARE DETERMINED TO HAVE FAILED OF THEIR ESSENTIAL PURPOSE. THESE LIMITATIONS OF LIABILITY ARE EFFECTIVE EVEN IF SIEMENS HAS BEEN ADVISED BY THE CLIENT OF THE POSSIBILITY OF SUCH DAMAGES. THE WAIVERS AND DISCLAIMERS OF LIABILITY, RELEASES FROM LIABILITY AND LIMITATIONS ON LIABILITY EXPRESSED IN SECTION 10.7 AND 10.8 EXTEND TO SIEMENS' AFFILIATES (AND THEIR EMPLOYEES), PARTNERS, PRINCIPALS, SHAREHOLDERS, DIRECTORS, OFFICERS, EMPLOYEES, SUPPLIERS OF ANY TIER (AND THEIR EMPLOYEES), AGENTS, AND SUCCESSORS AND ASSIGNS.
- 10.10 As to Patents and Copyrights:
- (a) SIEMENS will, at its option and expense, defend or settle any suit or proceeding brought against the CLIENT based on an allegation that any Work or use thereof for its intended purpose constitutes an infringement of any Patent Cooperation Treaty country member's patent or misappropriation of a third party's trade secret or copyright in the country where the Work is delivered by SIEMENS. The CLIENT will promptly give SIEMENS written notice of the suit or proceeding and the authority, information, and assistance needed to defend the claims. The CLIENT shall not acknowledge any such third party proceedings defined under this Section 10.10. SIEMENS shall have the full and exclusive authority to defend and settle such claim(s) and will pay the damages and costs awarded in any suit or proceeding so defended. The CLIENT shall not make any admission(s) which might be prejudicial to SIEMENS and shall not enter into a settlement without SIEMENS' consent. SIEMENS is not responsible for any settlement made without its prior written consent. If the Work, or any part thereof, as a result of any suit or proceeding so defended is held to constitute infringement or its use by the CLIENT is enjoined, SIEMENS will, at its option and expense, either: (i) procure for the CLIENT the right to continue using said Work; (ii) replace it with substantially equivalent non-infringing Work; or (iii) modify the Work so it is non-infringing.
 - (b) SIEMENS will have no duty or obligation under 10.10(a) if the Work is: (i) supplied according to the CLIENT's design or instructions and compliance therewith has caused SIEMENS to deviate from its normal course of performance; (ii) modified by the CLIENT or its contractors after delivery; or (iii) combined by the CLIENT or its contractors with devices, methods, systems or processes not furnished hereunder and by reason of said design, instruction, modification, or combination a suit is brought against the CLIENT. In addition, if by reason of such design, instruction, modification or combination, a suit or proceeding is brought against SIEMENS, the CLIENT must protect SIEMENS in the same manner and to the same extent that SIEMENS has agreed to protect the CLIENT under Section 10.10(a).
 - (c) THIS SECTION 10.10 IS AN EXCLUSIVE STATEMENT OF SIEMENS' DUTIES AND THE CLIENT'S REMEDIES RELATING TO PATENTS, TRADE SECRETS AND COPYRIGHTS, AND DIRECT OR CONTRIBUTORY INFRINGEMENT THEREOF.
- 10.11 The Parties acknowledge that the price for which SIEMENS has agreed to perform the Work and obligations under this Agreement was calculated based upon the foregoing allocations of risk, and that each Party has expressly relied on and would not have entered into this Agreement but for such allocations of risk.

Article 11

Hazardous Materials Provisions

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- 11.1 The Work does not include directly or indirectly performing or arranging for the detection, testing, handling, storage, removal, treatment, transportation, disposal, monitoring, abatement or remediation of any contamination of any Facility at which Work is performed and any soil or groundwater at the Facility by Hazardous Materials, including without limitation: ionization smoke detectors, ballasts, mercury bulb thermostats, used oil, contaminated filters, contaminated absorbents, and refrigerant. Except as expressly disclosed pursuant to Section 11.2, the CLIENT represents and warrants that, to the best of its knowledge following due inquiry, there are no Hazardous Materials present where the Work is to be performed. SIEMENS will notify the CLIENT immediately if it discovers or reasonably suspects the presence of any previously undisclosed Hazardous Material. All Work and Services have been priced and agreed to by SIEMENS in reliance on the CLIENT's representations as set forth in this Article. The discovery or reasonable suspicion of Hazardous Materials or hazardous conditions at a Facility where SIEMENS is to perform Work, or of contamination of the Facility by Hazardous Materials not previously disclosed pursuant to Section 11.2, shall entitle SIEMENS to suspend the Work immediately, subject to mutual agreement of terms and conditions applicable to any further Work, or to terminate the Work and to be paid for Work previously performed.
- 11.2 The CLIENT warrants that, prior to the execution of the Agreement, it notified SIEMENS in writing of any and all Hazardous Materials, to the best of its knowledge following due inquiry, known to be present, potentially present or likely to become present at the Facility and provided a copy of any Facility safety policies and information, including but not limited to lock-out and tag procedures, chemical hygiene plan, material safety data sheets, and other items covered or required to be disclosed or maintained by Applicable Law.
- 11.3 Regardless of whether Hazardous Material was disclosed pursuant to Section 11.2, the CLIENT shall be solely responsible for properly testing, abating, encapsulating, removing, disposing, remedying or neutralizing such Hazardous Materials, and for the costs thereof. Even if an appropriate change order has been entered into pursuant to Section 11.1, SIEMENS shall have the right to stop the Work until the Facility is free from Hazardous Materials. In such event, SIEMENS will receive an equitable extension of time to complete the Work, and compensation for delays caused by Hazardous Materials remediation. In no event shall SIEMENS be required or construed to take title, ownership or responsibility for such Hazardous Materials. The CLIENT shall sign any required waste manifests in conformance with all government regulations, listing the CLIENT as the generator of the waste. If someone other than the CLIENT is the generator of the waste, the CLIENT shall arrange for such other person to sign such manifests.
- 11.4 Except where expressly prohibited by Applicable Law, for separate consideration of \$10 and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the CLIENT shall indemnify, defend and hold SIEMENS harmless from and against any damages, losses, costs, liabilities or expenses (including attorneys' fees) arising out of any Hazardous Materials or from the CLIENT's breach of, or failure to perform its obligations under this Article.
- 11.5 For purposes of this Article 11, in the context of the phrase "to the best of its knowledge following due inquiry"; "knowledge" means actual awareness of the facts by the CLIENT's directors, officers, employees or agents, or the presence of relevant information contained in the CLIENT's books or records; and, "due inquiry" means inquiry of those Persons under the CLIENT's control who should have knowledge of the subject matter of such inquiry.

Article 12

Miscellaneous Provisions

- 12.1 Notices between the Parties shall be in writing and shall be hand-delivered or sent by certified mail, express courier, or acknowledged telefax properly addressed to the appropriate party. Any such notice shall be deemed to have been received when delivered in-person or when sent by telefax, or five (5) business days subsequent to deposit in the U.S. mails, or one (1) day after deposit with express courier.
- 12.2 Neither the CLIENT nor SIEMENS shall assign or transfer any rights or obligations under this Agreement, except that either party may assign this Agreement to its affiliates and SIEMENS may use subcontractors in the performance of the Work or Services. Nothing contained in this Agreement shall be construed to give any rights or benefits to anyone other than the CLIENT and SIEMENS without the express written consent of both Parties.
- 12.3 This Agreement is governed by and construed in accordance with the laws of the State or Commonwealth in which the Facility is located, without regard to its conflict of laws principles. The application of the United Nations Convention on Contracts for the International Sale of Goods is excluded. BOTH SIEMENS AND THE CLIENT KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVE ALL RIGHTS TO A JURY TRIAL IN ANY ACTION OR PROCEEDING RELATED IN ANY WAY TO THIS AGREEMENT. Each Party agrees that claims and disputes arising out of this Agreement, with the exception of disputes arising under Article 4 or Article 9, must be decided exclusively in a federal or

PERFORMANCE CONTRACTING AGREEMENT

state court of competent jurisdiction located in the State or Commonwealth in which the Facility is located. Each Party submits to the personal jurisdiction of such courts for the purpose of litigating any claims or disputes.

- 12.4 The following Sections of this Agreement shall survive the termination, expiration or cancellation of this Agreement: 5.4, 5.7, 5.8, 5.9, 5.10, 8.1, 8.4, 10.3, 10.6, 10.7, 10.8, 10.9, 10.10, 11.4, 12.5, 12.7 and 12.8.
- 12.5 SIEMENS' performance of the Work and Services is expressly conditioned on the Parties assenting to all of the terms of this Agreement, notwithstanding any different or additional terms contained in any writing at any time submitted or to be submitted by a Party to the other Party relating to the Work or Services, even if signed by the Parties, unless the written statement expressly indicates that such terms supersede the terms of this Agreement
- 12.6 Any provision of this Agreement found to be invalid, unlawful or unenforceable by a court of law shall be ineffective to the extent of such invalidity, and deemed severed herefrom, without invalidating the remainder of this Agreement. All other provisions hereof shall remain in full force and effect.
- 12.7 The waiver by a party of any breach by the other party of any term, covenant or condition hereof shall not operate as a waiver of any subsequent breach hereof. No waiver shall operate or be effective unless made in writing and executed by the party to be bound thereby.
- 12.8 In accordance with Section 871 of Title 14 of the Maine Revised Statutes, , SIEMENS shall provide a performance and payment bond in the amount of \$2,407,781.00. The performance and payment bond will solely apply to the Work performed during the Construction Period and to the required statutory lien filing period thereafter. The performance and payment bond will not apply to any of the obligations included in the Performance Assurance, Exhibit C. Furthermore, the CLIENT's funding source may be named as "Co-Obligee" on the performance bond if so requested by the CLIENT.
- 12.9 Any amendments or supplements to this Agreement may be executed in any number of counterparts (including by means of email or other electronic signature), each of which when executed, shall be deemed to be an original and all of which together will be deemed to be one and the same instrument binding on the parties. Delivery of an executed counterpart of a signature page to this Agreement by email or other electronic signature shall be effective as delivery of a manually executed counterpart of this Agreement.
- 12.10 SIEMENS will conduct the Work according to a plan that minimizes the disruption of school activities.
- 12.11 SIEMENS acknowledges that it has been provided access to a copy of the CLIENT'S AHERA plan.
- 12.12 Any indemnification by the CLIENT of SIEMENS or a third party provided in this Agreement shall be to the extent permitted by law and to the extent of the CLIENT'S applicable insurance coverage.
- 12.13 The CLIENT's responsibility to make payments under this Agreement is subject to non-appropriation of funds.

Article 13

Maintenance Services Program

- 13.1 If applicable, the scope of Services provided by SIEMENS for the Maintenance Services Program is stated in Exhibit A.
- 13.2 The CLIENT represents that all equipment not installed by SIEMENS under this Agreement and subject to a MSP is in satisfactory working condition. SIEMENS will have inspected all such equipment within the first thirty (30) days of MSP commencement or no later than the first scheduled inspection. Testing and inspection will not be deemed to be complete until all such equipment has been so tested and inspected.
- 13.3 If the equipment is altered or moved by any person, including the CLIENT, other than SIEMENS or a person authorized by SIEMENS, the CLIENT shall immediately notify SIEMENS in writing, and SIEMENS reserves the right to perform a reacceptance test on, or if necessary, a re-commissioning of, the system at the CLIENT's expense.
- 13.4 If SIEMENS reasonably determines as a result of such inspection and/or testing that any equipment requires repair or replacement, the CLIENT will be so notified and shall take corrective action within thirty (30) days, or such equipment shall be removed from coverage hereunder without further action by the Parties. SIEMENS is not liable or responsible for the continued testing, maintenance, repair, replacement or operating capabilities of any portion of the equipment until it has been inspected and/or tested and has been, if necessary, restored to an acceptable initial condition at the CLIENT's sole expense. Any services provided by SIEMENS in the course of such restoration will be separately charged on a time and materials basis, and not included in fees paid hereunder. If individual items of equipment cannot, in SIEMENS' sole determination, be properly repaired or replaced due to age, obsolescence, lack of availability of refrigerant gas, halon gas, necessary parts, materials, compatibility or otherwise, or as a result of excessive wear or deterioration, SIEMENS

PERFORMANCE CONTRACTING AGREEMENT

may, within ten (10) days of such inspection, give written notice that it is withdrawing such items from coverage under the MSP and adjust the MSP payments due hereunder accordingly.

- 13.5 If the removal of equipment from coverage would compromise or impair the integrity of the Work, Services or compliance with law of any system, then SIEMENS will provide a written statement thereof for execution by the CLIENT. The CLIENT's failure to execute such statement within ten (10) days will void the MSP and release SIEMENS from any further obligations with respect to the MSP.
- 13.6 If the MSP scope of Services provides for equipment maintenance, repairs and/or replacements of equipment by SIEMENS, those Services are limited to restoring the proper working condition of such equipment. SIEMENS will not be obligated to provide replacement equipment that represents significant capital improvement compared to the original. Exchanged components become the property of SIEMENS, except Hazardous Materials, which under all circumstances remain the property and responsibility of the CLIENT.

Article 1: Scope of Work

- 1.1 *Description:* Except as otherwise expressly provided herein, SIEMENS shall provide each and every item of cost and expense necessary for: The Project to include Lighting Retrofits, Building Envelope Improvements, Building Automation, HVAC improvements including Boiler Upgrades, Geothermal system, Electrical Panel upgrades and O2 Prime installation as defined below.
- 1.2 *Specific Elements:* The Work shall include the following: SIEMENS shall upgrade the existing heating, cooling, and ventilation, as described below for FIM-4 per the drawing sets listed below; hereafter referred to as “Drawings”, see Appendix 2 for details”.
 Drawing(s)
- Camden Public Library Boiler Replacement, Bennett Engineering Job # 4614, Dated 10/24/2020
 - M1.0
 - M1.1
 - Camden Snow Bowl Lodge Renovations, Bennett Engineering Job # 4544, Dated 11/05/2020
 - E0.0
 - E1.0
 - M1.0
 - M1.1
 - M1.2
 - M1.3

1.2.1 FIM-1 Lighting Retrofit

The Lighting Retrofit scope of work to be implemented by SIEMENS includes a list of interior and exterior lighting to be retrofitted. A detailed list of this lighting arranged by building location is included in **Appendix 1- Lighting Retrofit Schedule**.

Locations:

Building	Facility Type	Address	City	
OPERA HOUSE / TOWN HALL	Office / Opera House	29 Elm Street	Camden	ME
CAMDEN TOWN LIBRARY	Library	93 Water Village Rd	Camden	ME
CAMDEN PUBLIC SAFETY	Police / Fire Department	93 Water Village Rd	Camden	ME
CAMDEN PUBLIC WORKS	Public Works Dept.	56 John St, Camden,	Camden	ME
CAMDEN SNOW BOWL	Recreation	20 Barnestown Road	Camden	ME
WASTEWATER TREATMENT PLANT	Wastewater Treatment Plant	20 Lions Lane	Camden	ME

Scope of Work:

- SIEMENS shall install the lighting retrofits identified in Appendix 1- Lighting Retrofit Schedule. (Some quantities may change based on field verification during construction).
- SIEMENS will install Lighting Control Sensors identified in Appendix I – Lighting Replacement Schedule Tables.
- The Building Management System shall utilize the occupancy sensors to schedule the associated VAV box’s for Day Night control.
- The scope includes disposal of lamps and ballasts by SIEMENS per Applicable Law.

Commissioning Strategy:

- Lighting: Commissioning will consist of random inspections of new fixture installations, inspection of wiring and branch circuit layout, and inspections and physical testing of various fixture retrofits, ballast wiring, conditions of socket pins, lenses, fasteners, and the cleanliness of the fixtures.
- Lighting Controls: Commissioning will consist of random inspections of new fixture installations, inspection of wiring and branch circuit layout, and inspections and physical testing of occupancy sensors, switching, and dimming controls.
- Sensor Commissioning will consist of inspection of 25% of each type of the new sensor installations, inspection of wiring and inspections and physical testing of occupancy sensors, switching, dimming controls

Clarification and Exclusions for this FIM:

- In the event asbestos is discovered in or on existing components, scheduled to be removed, demolition and removal of these components will need to be conducted by a certified abatement contractor contracted directly by the CLIENT. Abatement of asbestos, lead paint and other existing hazardous materials is excluded from this scope.
- If additional asbestos or lead in paint is encountered during construction, SIEMENS will stop work and seek direction from the CLIENT.
- SIEMENS will not be responsible for replacement of existing ceiling tiles, ceiling grid, floor tiles or broken lenses that have been damaged or are in poor condition prior to any work done under this Agreement. SIEMENS will notify CLIENT in the case of discovery of any pre-existing damage.
- SIEMENS will be responsible for replacement or repair of any ceiling tiles, ceiling grid, flooring tiles or broken lenses damaged as part of the Work done under this Agreement.
- SIEMENS will not be responsible for wiring code issues not directly associated with Work done under this Agreement
- CLIENT shall work with SIEMENS to provide access as needed to meet schedule and complete work in timely fashion.
- CLIENT shall provide all labor associated with lamp changes during the warranty period.

FIM-2 Building Envelope Improvements

The building envelope scope of work includes a list of weather- stripping and insulation measures to be implemented. A detailed list arranged by school building location is as follows:

Locations:

Building	Facility Type	Address	City	
OPERA HOUSE / TOWN HALL	Office / Opera House	29 Elm Street	Camden	ME
CAMDEN TOWN LIBRARY	Library	93 Water Village Rd	Camden	ME
CAMDEN PUBLIC WORKS	Public Works Dept.	56 John St, Camden,	Camden	ME
CAMDEN SNOW BOWL	Recreation	20 Barnestown Road	Camden	ME

OPERA HOUSE / TOWN HALL

Scope of Work:

- Install a sealed crawlspace liner, reaching down the wall onto the floor of the basement below the Town Manager's office, 7' H x 75' L on the walls and 13' W x 75' L on the floor,
- Completely seal the middle basement floor with a sealed crawlspace liner or EPDM membrane and 7' H walls,
- Seal base of 9 columns tying into liner, installing stainless steel capillary breaks
- Install indoor/outdoor carpeting for walkways and storage in this area,
- Roof sealing and repair
 - Remove existing slate roofing. Save and re-use as many as possible. Mix in used slates that match to cover for broken slates.
 - Install ice and water shield on all flashings.
 - Install roof guard on the rest of the roof.
 - Replace valley flashing and ridge cap on the two dormers with 16oz. copper.
 - Re-install the slate shingles with copper ring nails. Match up the shingle lines with the existing shingles.
- Furnish and Install a new 30"x36" Roof Hatch

CAMDEN TOWN LIBRARY

- Weatherstrip nonstandard-sized, 3' W x 8' H, exterior doors with surface mounted kits, and Q-Lon seals black or mill,
- Weatherstrip double entry door with spring bronze center and two solid bronze sweeps,
- Air-seal the 17 windows, 1 line, along the sash
- Air seal open-topped walls,
- Insulate slumped wall insulation with 6" of injected cellulose to 2.5# density,
- Repair vaulted ceiling insulation with an additional 12" of cellulose,

CAMDEN PUBLIC WORKS

Doors

- (3) Weatherstrip standard-sized exterior doors with surface mounted Q-Lon kits; brushed-metal or black will be fine,
 - (3) Weatherstrip sweep only,
- Overhead Doors
- (5) Weatherstrip 16' W x 14' H overhead doors

CAMDEN SNOW BOWL

- (3) Weatherstrip standard-sized exterior doors,
- (1) Repair hinge on door, replace as necessary
- Frame and finish Lower portion of front wall approximately 8" x 15'
 - (3) Remove & dispose of storefront units. The outside looking in center and dividing mullion to remain in place.
 - Frame a 3' 2x6, 16" OC insulated knee wall for new window units
 - Interior wall to be finished with a GWB, primed and painted (2 coats) in a color of CLIENT's choosing.

- Exterior Siding will be Hand-split cedar shingles similar to existing, installed over 5/8 sheathing wrapped in an Ice & Water membrane. The bottom edge and 3' face of the sheathing to be wrapped with ice & water.
- (3) Replacement windows Harvey's Slimline, White, Composite, Low-E/Argon picture frame windows with fin-flange and j-channel. Frame Size: 60"x 60". Interior window returns (jambs & header) to be finished with GWB & paint. Windowsill to be painted poplar.
- Brighten Existing Shakes
 - The existing shakes on parking lot side of building are to be power washed and bleached to lighten their color.

Commissioning Strategy for this FIM:

- SIEMENS and the CLIENT will perform a visual inspection of the building envelope improvements.

Clarification and Exclusions for this FIM

- In the event asbestos is discovered in or on existing components, scheduled to be removed, demolition and removal of these components will need to be conducted by a certified abatement contractor contracted directly by the CLIENT. Abatement of asbestos, lead paint and other existing hazardous materials is excluded from this scope.
- If additional asbestos or lead in paint is encountered during construction, SIEMENS will stop work and seek direction from the CLIENT.
- CLIENT shall work with SIEMENS to provide access as needed to meet schedule and complete work in timely fashion.

FIM -3 Building Automation

Locations:

Building	Facility Type	Address	City	
OPERA HOUSE / TOWN HALL	Office / Opera House	29 Elm Street	Camden	ME
CAMDEN TOWN LIBRARY	Library	93 Water Village Rd	Camden	ME

Measure Description:

The existing EMS systems are a mix of, line voltage, low voltage, and Barber Coleman DDC. The DDC upgrade will include as part of the project to install WiFi Thermostats and Tridium based DDC as defined below

- The new system shall be supplied with the necessary software to perform the specified functions.
- Details and characteristics of system software shall be included as part of the technical proposal and shop drawing submittals. The following system software shall be supplied as a minimum:
 - 365-day Zone Scheduling
 - Optimum Start
 - Historical Tracking Database
 - Full Color Graphics
 - Logical programming functions

OPERA HOUSE / TOWN HALL

- (5) Upgrade existing T-Stats to WIFI T-Stats
- (4) Upgrade existing T-Stats to WIFI T-Stats with remote sensors
- Provide installation supervision, technician startup, and checkout of system upon completion.

CAMDEN TOWN LIBRARY

System Requirements

- Replace existing Barber Coleman System 8000 EMS system with a new Tridium high-speed, peer-to-peer network of DDC controllers and a web-based operator interface matching existing points with the addition of points identified below. The mechanical system and building floor plan shall be controlled by a point-and-click graphic. A web server with a network interface card shall gather data from this system and generate web pages accessible through a conventional web browser on each PC connected to the network
- The system shall directly control HVAC equipment as per a Sequence of Operations designed as part of this energy conservation project.
 - Each zone and equipment controller shall provide occupied and unoccupied modes of operation by individual zone, see Exhibit C for schedules.
 - Heating Plant
 - The hot water system shall be enabled when the outdoor air temperature falls below the outdoor temperature enable set point. The hot water pumps P-1 and P-2 shall operate in lead lag mode based on the lead pump being the one with the least run time. The lead pump shall switch weekly. If the lead pump is enabled and indicates an alarm condition the lag pump shall be enabled, and an alarm is generated to the EMS. On a call for heat the boiler shall call for the combustion damper to open and upon proof via end switch the boiler will be allowed to fire.
 - The hot water set point shall be calculated using the outdoor temperature. When the outdoor temperature is at 0° degrees the hot water set point shall be 170°. And when the outdoor temperature is at 60° the hot water set point shall be 120°. The system shall modulate the 3-way mixing valve to maintain supply hot water temperature at calculated hot water set point.
 - HVAC-1 In addition to the existing point count a return CO2 sensor will be provided.
 - HVAC-1 shall operate in Occupied, unoccupied, morning warmup, night setback and safety modes.
 - Occupied Mode: The supply fan and EF-1 shall be commanded on and run continuously. The supply fan VFD shall modulate to maintain required CFM to support the 11 VAV Box flow requirements. The supply air set point shall be set a 55° (adj.). When heating is required the hot water control valve shall modulate to maintain supply air set point. When cooling is enabled the unit using comparative enthalpy shall enable economizer when the outdoor enthalpy is lower than the return enthalpy. When economizer is available the mixing dampers shall modulate to maintain supply air set point. If additional cooling is required, the 2 stages of DX shall cycle in sequence to maintain supply set point. If economizer is not available, the mixed air dampers shall be set at minimum position and the 2 stages of DX shall cycle in sequence to maintain supply set point. The unit shall monitor the return air CO2 level. The CO2 control shall adjust the damper minimum position set point from 0% when CO2 is below CO2 set point of 900PPM (adj.) to the unit original minimum position (20%) (adj.)

- Humidification: When the unit is in occupied mode and the return humidity is below humidity set point the humidifier shall be enabled. loss of supply air flow and supply humidity of greater that 85% will disable the enable command. The system shall modulate the humidifier to maintain 30% return Humidity.
- Dehumidification: When the space humidity exceeds the dehumidification set point of 50% (adj.) the system shall enable dehumidification mode. The economizer and stages of mechanical cooling shall be enabled and the VAV box reheats shall remain enabled to maintain space humidity below dehumidification set point.
- Unoccupied Mode: In unoccupied mode the supply fan and EF-1 shall be commanded off. The mixed air dampers shall be set to 0% outdoor air, the 2 stages of cooling shall be commanded off and the heating coil valve shall be closed to the heating coil.
- Night Heating Mode: The unit shall monitor the 11 VAV box room temperatures and select the lowest temperature as the control point for night heating. When the lowest room temperature drops below the night heating set point 60° (adj.) the supply fan shall be commanded on and to supply VFD shall modulate to maintain required supply air flow. EF-1 shall remain off. The mixed air dampers shall remain closed to the outdoor air, the DX cooling shall remain off and the hot water valve shall modulate to maintain 85° (adj.) supply temperature. When the lowest VAV box room temp rises above 62° (adj.) the unit shall revert to unoccupied mode.
- Morning Warm-up: When HVAC-1 starts up and the return temperature is below warmup set point (65°) (adj.) the unit shall be set to warm-up mode. This mode is only available once per day upon initial start-up. The supply fan shall be commanded on and to supply VFD shall modulate to maintain required supply air flow. EF-1 shall remain off. The mixed air dampers shall remain closed to the outdoor air, the DX cooling shall remain off and the hot water valve shall modulate to maintain 85° (adj.) supply temperature. When the return temperature exceeds warmup, set point the unit shall transition to normal occupied mode sequence.
- Safety Mode: If the unit detects a low discharge condition either by low supply temperature or low temperature detection device the unit shall be commanded off, The mixed air dampers shall be set to 0% outdoor air, the 2 stages of cooling shall be commanded off and the heating coil valve shall modulate to maintain mixed air temperature of 75°(adj.). If the fire alarm system or the duct smoke detectors indicate an alarm condition the supply fan and EF-1 shall be commanded off. The mixed air dampers shall be set to 0% outdoor air, the 2 stages of cooling shall be commanded off and the heating coil valve shall be closed to the heating coil.
- Radiant Heating Zones 1 & 2
 - The radiant floor system shall be enabled by Time of Day Schedule.
 - Occupied Mode: Pumps P-4, P-5 & P-6 are commanded on when the outdoor air temperature is below the outdoor temperature set point of 70° (adj.) The 4-way manifold valve modulates to maintain supply water set point. The supply water set point is reset by the associated room temperature sensors for each manifold to maintain occupied mode set point
 - Unoccupied Mode: Pumps P-4, P-5 & P-6 are commanded on when the outdoor air temperature is below the outdoor temperature set point of 70° (adj.) The 4-way manifold valve modulates to maintain supply water set point. The supply water set point is reset by the associated room temperature sensors for each manifold to maintain night setback temperature
- Radiant Heating Zones 3, 4 & 5

- The radiant floor system shall be enabled by Time of Day Schedule.
- Occupied Mode: Pumps P-7, P-8 & P-9 are commanded on when the outdoor air temperature is below the outdoor temperature set point of 70° (adj.) The 4-way manifold valve modulates to maintain supply water set point. The supply water set point is reset by the associated room temperature sensors for each manifold to maintain occupied mode set point
- Unoccupied Mode: Pumps P-7, P-8 & P-9 are commanded on when the outdoor air temperature is below the outdoor temperature set point of 70° (adj.) The 4-way manifold valve modulates to maintain supply water set point. The supply water set point is reset by the associated room temperature sensors for each manifold to maintain night setback temperature
- Snow Melt
 - The snowmelt system is not controlled by the EMS but has an independent controller. There is a loop water temperature sensor for monitoring only
- VAV Box Control In addition to the existing point count plan to provide a digital input for occupancy from an occ sensor provided by the lighting controls.
 - The DDC system will determine the operating mode. The DDC controls on the box will give complete status to the front end. All setpoints are adjustable. The box will operate as follows:
 - Occupied: The box will provide heating or cooling as required to maintain the occupied space temperature setpoint as sensed by the wall mounted temperature sensor. The occupant has the capability to change the setpoint with setpoint dial on the wall mounted sensor. This application is only applicable in certain areas. The areas are to be coordinated with the owner. On a call for cooling the damper modulates between the minimum and maximum to satisfy the space. The hot water coil will be closed. On a call for heating the damper will go to minimum and the hot water coil modulates to satisfy the space.
 - Standby Mode: If the system is in occupied mode and the signal from the light system indicates no occupancy the VAV box damper shall be set to 20% (adj.) and reheat shall modulate to maintain occupied heating set point.
 - Unoccupied: The damper and the hot water valve will be closed. Some spaces will have the night setback option. If the space goes falls below the night setback temperature setpoint the box will switch occupied mode for a predetermined time.
 - (11) VAV boxes shall be balanced.

Training and Commissioning for this FIM:

- Total of (40) hours of operator training will be provided to orient CLIENT staff on the Equipment and the use of the new sequences of operation.
- SIEMENS standard commissioning book and point-to-point checkout procedure shall be implemented. The commissioning book shall be turned over to CLIENT for review as requested.

Clarification and Exclusions for this FIM:

- The above defined EMS Strategies are some of the strategies SIEMENS will be implementing; however, all of these strategies may not be implemented on all equipment if not applicable to the mechanical system.
- CLIENT is responsible for providing network drops for EMS panels.
- Wiring in mechanical rooms shall be in EMT, wiring in concealed spaces shall be plenum rated cable.

- Block wall wiring shall be in wire mold.
- SIEMENS will use existing end-devices such as valves, damper actuators, smoke detectors, etc., unless the device is being changed based on mechanical scope or specified above. If failed end devices are found, SIEMENS will consult the CLIENT for replacement.
- In the event asbestos is discovered in or on existing components scheduled to be removed, demolition and removal of these components will need to be conducted by a certified abatement contractor contracted directly with the CLIENT. Abatement of asbestos, lead paint and other existing hazardous materials is excluded from this scope.
- If asbestos or lead in paint is encountered during construction, SIEMENS will stop work and seek direction from the CLIENT.
- CLIENT shall work with SIEMENS to provide access as needed to meet schedule and complete work in timely fashion.

Energy Management System (EMS) Trending and Reporting

Provide set up of trending and trend reporting required for determining Measured and Verified Savings as set forth in this Agreement’s Performance Assurance, Exhibit C and as follows:

- a. EMS points required per Exhibit C will be trended continuously at 15-minute intervals.
- b. Trend reports will be scheduled and generated automatically by the EMS.
- c. Each report will be capable of storing 1 month of interval data for up to 50 points.
- d. Trend report files to be stored electronically on EMS server in text- or comma-delimited format capable of being imported into Excel.
- e. CLIENT to provide remote and email connection as per Exhibit C, Article 3 of this Agreement. SIEMENS will make best effort to establish remote access to collect trend reports and monitor system activity. **If remote access cannot be supported by the CLIENT then additional cost to the M&V reporting may be applied.**

FIM 4 - HVAC Systems Upgrades

Locations:

Building	Facility Type	Address	City	
OPERA HOUSE / TOWN HALL	Office / Opera House	29 Elm Street	Camden	ME
CAMDEN TOWN LIBRARY	Library	93 Water Village Rd	Camden	ME
CAMDEN SNOW BOWL	Recreation	20 Barnestown Road	Camden	ME

OPERA HOUSE / TOWN HALL

Scope of work O2 Prime

- (4) Install O2 Prime Air Ionization Unit Model # GPS-FC48-AC on Existing Air Handling Unit AC-1, AC-2, AC-3 and AC-4

CAMDEN TOWN LIBRARY

Scope of Work: Boiler Replacement

Measure Description: The scope of this measure is to demo (1) of the existing HB Smith boiler and Taco system pumps and install a (2) propane fired condensing boilers and (2)Boiler pumps and (2) self-sensing system pumps; See Appendix 2 for Drawings.

- (2) Propane fired Vitodens B2HA-80 or equal boiler package, high efficiency gas-fired, condensing boiler.
- (2) Grundfos model UPS 32-160/2 or equal boiler pumps
- (2) Grundfos model Magna3 65-15- GF 230V or equal system pumps
- (1) Caleffi model NA549562A or equal air separator
- (1) ASME rated expansion tank
- Demo and remove (1) existing oil-fired boilers including breeching, heat exchanger and ancillary devices as described in referenced Drawings
- Disconnect electrically and remove conduit and wire back to source.
- Disconnect fuel oil piping and cap. See Clarifications and Exclusions in this section.
- Cap discontinued breeching connections at chimney.
- Install blind flanges on discontinued supply and return connections.
- Install exhaust stack and combustion air per manufacturer's specifications.
- Furnish and install boiler venting system.
- Furnish and install new gas piping, tanks, regulators, vents and valves as required to connect to new boiler from second stage regulator.
- New hot water supply and return piping for system connection
- Insulate new hot water piping and exposed existing piping within the boiler room.
- Complete electrical tie-ins for new boilers, motorized damper, mixing temperature control valve, pumps VFD's, etc.
- Start-up of new boiler and associated equipment.
- Hydro test or pressure test new hot water piping and clean and flush new equipment. The hot water strainer shall be cleaned prior to commissioning.
- Pressure test new gas piping with compressed air and blow off pipelines.
- SIEMENS and its subcontractors shall conduct training for designated personnel in the maintenance, service, and operation of the system.

Scope of work O2 Prime

- (1) Install O2 Prime Air Ionization Unit Model # O2P-IC in ductwork of HVAC-1 serving the Reading Room
- (2) Install O2 Prime Air Ionization Unit Model # O2PAH-72 in HVAC 1

CAMDEN SNOW BOWL

Scope of work Geothermal system

Measure Description: Geothermal heating and cooling system to replace existing oil-fired boiler and unit heaters. Install (6) closed loop geo-thermal wells, see Drawings for more detailed scope.

- (1) 2-ton Daikin model WGS0241 or equal water source heat pump with 5-KW of electric duct heater
- (1) 3-ton Daikin model WGS0361 or equal water source heat pump with 10-KW electric duct heater
- (2) 4-ton Daikin model WGS0481 or equal water source heat pump with 15-KW electric duct heater
- (2) Grundfos model TPE3 40-240 or equal system pumps
- (1) Taco Model CBX-84 or equal expansion tank
- (1) Caleffi model NA546 050A or equal air separator
- Double check back flow preventor and pressure reducing valve

- Air purging, pressure testing and filling of all piping with 25% propylene glycol / 75% water solution
- (6) 400' closed loop geothermal wells looped with 1 ¼ piping
- Pipe, valves, fittings, ductwork controls, wiring, etc. as required for a complete system.
- System startup of geothermal system and associated control system.
- SIEMENS and its subcontractors shall conduct training for designated personnel in the maintenance, service, and operation of the system.

Clarification and Exclusions for this FIM:

- In the event asbestos is discovered in or on existing components scheduled to be removed, demolition and removal of these components will need to be conducted by a certified abatement contractor contracted directly with the CLIENT. Abatement of asbestos, lead paint and other existing hazardous materials is excluded from this scope.
- If asbestos or lead in paint is encountered during construction, SIEMENS will stop work and seek direction from the CLIENT.
- The CLIENT will be responsible for contracting with a propane gas supplier to provide propane gas at all sites listed above that need new propane supply. Additions for the furnishing and installation of any propane gas storage tanks and the propane gas piping up to and including the gas regulator at the building(s) is the responsibility of the CLIENT.
- SIEMENS will be responsible for installation of propane gas piping from the regulator(s) to the appliances listed above.
- Propane gas fuel contracts, delivery and installation schedules are the responsibility of the CLIENT.
- The CLIENT will be responsible for the cleaning and removal of all existing oil tanks, if required by the State of Maine.
- SIEMENS is not responsible for any environmental permitting requirements by Local Conversation Commission or Department of Environmental Protection. Any environmental permitting shall be the responsibility of the CLIENT. SIEMENS will not be held responsible for any delay in completion that is due to a delay in permitting approval.
- SIEMENS assumes that all existing equipment valves, pipes, fittings, devices, etc. are in good working order. Failure of such components that SIEMENS is not replacing shall be the responsibility of the CLIENT.
- CLIENT shall work with SIEMENS to provide access as needed to meet schedule and complete work in timely fashion

Commissioning:

- SIEMENS and the CLIENT shall verify and document performance of Equipment and systems. SIEMENS to ensure that the O&M and commissioning documentation left on site is completed.
- On site start up and training of the CLIENT'S personnel will be provided by the boiler manufacturer. (One session for start-up and training per location)
- Commissioning procedure will include the visual inspection of the new systems to verify the Equipment installed matches the specifications.
- SIEMENS will perform the installation check to verify following variables (as required).
 - a. General installation

- i. General appearance good, no apparent damage
 - ii. Proper vibration isolators installed and adjusted
 - iii. Pipe fittings and accessories complete.
 - iv. Venting complete.
- b. Electrical and controls installation
- i. Power disconnects in place and labeled
 - ii. All new electric connections tight
 - iii. Proper grounding installed for components and unit
 - iv. Starter overload breakers installed and correct size
 - v. Safeties in place and operable

Article 2: Work Implementation Period

2.1 Commencement of Work:

- 2.1.1 SIEMENS shall commence the Work 21 calendar days from the Effective Contract Date, or when financing is in place, whichever comes later and shall perform the Work diligently and shall complete the Work no later than 365calendar days from the day of commencement.

Article 3: Scope of Services-Performance Assurance Services Program

- 3.1 The PATSP will provide the CLIENT with a Performance Assurance report within sixty (60) days of the end of each Annual Period (“Annual Performance Assurance Report”).
- 3.1 Performance Assurance Services are all labor activities, site visits, monitoring and analyses necessary to calculate the Realized Annual Savings achieved by the Project, and to prepare and present the Annual Performance Assurance Report for the respective Annual Period.
- 3.2 Each Annual Performance Assurance Report shall include:
 - 3.2.1 The Measured and Verified Savings for the respective Annual Period, including supporting documentation required to complete the Measurement and Verification Plan outlined in Article 4, Exhibit C of this Agreement.
 - 3.2.2 The Realized Annual Savings achieved by the Project for each respective Annual Period.
 - 3.2.3 A comparison of the Annual Realized Savings and Guaranteed Annual Savings to determine whether there is a Savings Shortfall for the respective Annual Period, pursuant to Article 4 of the Performance Contracting Agreement.
- 3.3 Performance Assurance Digital Services to include quarterly monitoring and reporting of key performance indicators through the SIEMENS digital monitoring platform or monitoring tools.

Article 4: Scope of Services-Maintenance Services Program

CLIENT has elected to self-implement maintenance. Therefore, SIEMENS shall not perform any on-going maintenance services, although the Parties may negotiate a separate agreement for such services at a later date. CLIENT agrees that it will maintain the equipment per manufacturer specifications and that it will operate the Equipment in accordance with the Contracted Baseline described in Article 7 of Exhibit C. If CLIENT fails to properly maintain or operate the Equipment, SIEMENS shall have the right to modify the Performance Guarantee pursuant to Article 4 of the Agreement.

By signing below, this Exhibit is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT: Town of Camden
Signature: _____
Printed Name: _____
Title: _____
Date: _____

SIEMENS: Siemens Industry, Inc.
Signature: _____
Printed Name: _____
Title: _____
Date: _____

Signature: _____
Printed Name: _____
Title: _____
Date: _____

Article 1: Payment for Scope of Work

- 1.1 **Price:** As full consideration of the Work as described in Exhibit A, Article 1: Scope of Work, the CLIENT shall pay to SIEMENS \$2,407,781.00 (plus taxes, if applicable).
- 1.2 **Escrow:** The CLIENT has agreed to deposit the Price into an Escrow Account at a financial institution satisfactory to both the CLIENT and SIEMENS. All expenses to establish the Escrow Account shall be the complete responsibility of the CLIENT and the CLIENT will receive all interest earnings from the Escrow Account. SIEMENS will submit periodic invoices to the CLIENT based on the Payment Schedule in Table B.1 below. The CLIENT shall be responsible for submitting the necessary documents to the Escrow Agent to allow for timely disbursements from the Escrow Account. The funding of the Escrow Account in an amount equal to or greater than the Price stated in Article 1.1 above shall be a condition precedent to SIEMENS obligation to perform or to continue the performance of the Work. If the Escrow Account is not funded within thirty (30) days of the execution of this Agreement, this Agreement shall be null and void. This thirty (30) day funding period may be extended as mutually agreed in writing by the Parties. In the event that the Agreement becomes null and void as described in this paragraph and CLIENT has previously authorized SIEMENS to proceed with the Work, the CLIENT shall be obligated to reimburse SIEMENS either: (i) for the Work performed to date; or (ii) for the Work specifically authorized by the CLIENT.
- 1.3 **Timely Payments:** The CLIENT agrees to pay SIEMENS per Table B.1 below. CLIENT agrees to pay all invoices submitted by SIEMENS per Article 8 of the Agreement.

Table B.1 – FIM Work Payment Schedule

Project Phase	Payments (\$)	Payments (%)	Schedule
Mobilization	\$240,778.00	10%	January 2021
	\$240,778.00	10%	February 2021
	\$120,389.00	5%	March 2021
	\$120,389.00	5%	April 2021
	\$481,556.00	20%	May 2021
	\$481,556.00	20%	June 2021
	\$361,167.00	15%	July 2021
	\$240,778.00	10%	August 2021
	\$120,390.00	5%	September 2021
PROJECT TOTAL:	\$2,407,781.00	100%	

Article 1 of Exhibit B is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT: Town of Camden, ME
 Signature: _____
 Printed Name: _____
 Title: _____
 Date: _____

SIEMENS: Siemens Industry, Inc.
 Signature: _____
 Printed Name: _____
 Title: _____
 Date: _____

Signature: _____
 Printed Name: _____
 Title: _____
 Date: _____

Article 2: Payment for Performance Assurance Services Program (PASP)

- 2.1 **Price:** As full consideration of the Services as described in Exhibit A, Article 3, the CLIENT shall pay to SIEMENS the amounts identified in Table B.2 plus taxes, if applicable, on the dates identified therein.
- 2.2 **Performance Assurance Services Program Term:** The term of the PASP shall commence on the Guarantee Date and shall extend for either: (a) the term of the Performance Guarantee Period where multi-year obligations are allowed; or (b) for twelve (12) month periods corresponding to the term of each Annual Period.
- 2.3 **Automatic Renewal:** Where the PASP term is limited to an Annual Period, the PASP shall automatically renew for successive Annual Periods beginning on the anniversary date of Guarantee Date. Either party may request to amend the PASP at the end of an Annual Period by giving the other party at least sixty (60) days prior written notice of such amendments and such amendment shall be mutually negotiated by the Parties and effective upon a written amendment signed by both Parties prior to commencement of the next Annual Period. Each automatic renewal shall be and remain subject to the terms and conditions of this Agreement. SIEMENS obligations under the Performance Guarantee are dependent upon and subject to the express condition that the CLIENT maintains the PASP during the entire Performance Guarantee Period.
- 2.4 **Termination:** See Section 4.7 of the Agreement.

Table B.2 – Performance Assurance Program Payment Schedule

Date	Annual Payments (\$)	Notes
Annual Period 1	\$5,981.90	3% escalation annually
Annual Period 2	\$6,161.36	
Annual Period 3	\$6,346.20	
Annual Period 4	\$6,536.58	
Annual Period 5	\$6,732.68	
Annual Period 6	\$6,934.66	
Annual Period 7	\$7,142.70	
Annual Period 8	\$7,356.98	
Annual Period 9	\$7,577.69	
Annual Period 10	\$7,805.02	
Annual Period 11	\$8,039.17	
Annual Period 12	\$8,280.35	
Annual Period 13	\$8,528.76	
Annual Period 14	\$8,784.62	
Annual Period 15	\$9,048.16	
Annual Period 16	\$9,319.61	
Annual Period 17	\$9,599.19	

Article 2 of Exhibit B is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

Exhibit B – Payment Schedules
Town of Camden, Maine

CLIENT: Town of Camden, ME
Signature: _____
Printed Name: _____
Title: _____
Date: _____

SIEMENS: Siemens Industry, Inc.
Signature: _____
Printed Name: _____
Title: _____
Date: _____

Signature: _____
Printed Name: _____
Title: _____

Articles and Tables

The following Articles and Tables are hereby included and made part of this Exhibit C:

Article 1	Total Guaranteed Savings
Article 2	Measurement and Verification Options
Article 3	Performance Guarantee Period Responsibilities of CLIENT
Article 4	Measurement and Verification Plan
Article 5	Baseline Data
Article 6	Utility Rate Structures and Escalation Rates
Article 7	Contracted Baseline Data

This Exhibit C provides the methodology to be used to determine the Annual Realized Savings and the reconciliation of these calculated Savings with the Guaranteed Annual Savings for each Annual Period of the Performance Guarantee Period. The Scope of Services for the Performance Assurance Service Program is provided in Article 3 of Exhibit A.

Article 1: Total Guaranteed Savings

Performance Period	Electric Energy Saved (kWh)	Electric Power Saved (kW)	Propane Saved (Gallons)	No. 2 Fuel Oil Saved (Gallons)
Annual Period 1	107,278	518	(5,311)	7,987

- 1.1 Only Annual Period 1 is shown as the energy/utility unit Savings will remain constant for each Annual Period of the Performance Guarantee Period as the CLIENT will operate the Facility in accordance with the Contracted Baseline identified in Article 7.

Table 1.2 – Total Guaranteed Savings (Cost)

Performance Period	Energy/Utility Savings	Operational Savings	Total Savings
Annual Period 1	\$32,079	\$14,075	\$46,154
Annual Period 2	\$33,041	\$14,497	\$47,538
Annual Period 3	\$34,032	\$14,932	\$48,964
Annual Period 4	\$35,053	\$15,380	\$50,433
Annual Period 5	\$36,105	\$15,842	\$51,946
Annual Period 6	\$37,188	\$16,317	\$53,505
Annual Period 7	\$38,304	\$16,806	\$55,110
Annual Period 8	\$39,453	\$17,310	\$56,763
Annual Period 9	\$40,636	\$17,830	\$58,466
Annual Period 10	\$41,855	\$18,365	\$60,220
Annual Period 11	\$43,111	\$18,916	\$62,027
Annual Period 12	\$44,404	\$19,483	\$63,888
Annual Period 13	\$45,737	\$20,068	\$65,804
Annual Period 14	\$47,109	\$20,670	\$67,778
Annual Period 15	\$48,522	\$21,290	\$69,812
Annual Period 16	\$49,978	\$21,928	\$71,906
Annual Period 17	\$51,477	\$22,586	\$74,063
TOTALS	\$698,083	\$306,294	\$1,004,378

- 1.2 Table 1.2 shows the CLIENT'S guaranteed cost Savings for each Annual Period that are extrapolated from the guaranteed energy/utility unit Savings shown in Table 1.1 by multiplying the energy/utility Savings by the Baseline energy/utility rates including the stipulated Escalation Rates found in Article 6.
- 1.3 SIEMENS cannot and does not predict fluctuations in utility rates or the cost of energy. Therefore, the CLIENT and SIEMENS agree that the energy/utility cost Savings for each Annual Period will be calculated by multiplying the verified units of energy/utility Savings by the Annual Period's stipulated energy/utility rate and Escalation Rates and not the Annual Period's actual utility rate.
- 1.4 The determination of energy/utility Savings will follow current best practice, as defined in the IPMVP, or the FEMP Guidelines where required, unless otherwise agreed to by the Parties.
- 1.5 The Performance Guarantee does not operate to guarantee the Savings per-FIM. Rather, the calculation of Savings is based on aggregate performance of all of the FIMs contained in the Project. The projected value of such aggregate performance is contained in Table 1.2 above representing the Total Guaranteed Savings as monetized.

This Exhibit C, comprising 37 pages, is attached to and made a part of the Agreement between SIEMENS and the CLIENT.

CLIENT: **Town of Camden, Maine**
Signature: _____
Printed Name: _____
Title: _____
Date: _____

SIEMENS: **Siemens Industry, Inc.**
Signature: _____
Printed Name: _____
Title: _____
Date: _____

Signature: _____
Printed Name: _____
Title: _____
Date: _____

Article 2: Measurement and Verification Options

2.1 Measurement and Verification Options: There are five measurement and verification options to measure and verify energy/utility Savings: Option A - Retrofit Isolation: Key Parameter Measurement; Option B - Retrofit Isolation: All Parameter Measurement; Option C - Whole Facility; and, Option D – Calibrated Simulation. Options A through and including D are part of the IPMVP. Option E-Stipulated is based on industry accepted engineering standards and is the Option used for purposes of calculating Operational Savings.

Option A - Retrofit Isolation: Key Parameter Measurement. Savings are determined by field measurement of the key performance parameter(s) which define the energy use of the FIM's affected system(s) and/or the success of the Project. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the measured parameter and the length of the reporting period. Parameters not selected for field measurement are estimated. Estimates can be based on historical data, manufacturer's specifications, or engineering judgment. Documentation of the source or justification of the estimated parameter is required. The plausible savings error arising from estimation rather than measurement is evaluated. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option B – Retrofit Isolation: All Parameter Measurement. Savings are determined by field measurement of the energy use of the FIM-affected system. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the savings and the length of the reporting period. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option C - Whole Facility: Savings are determined by measuring energy use at the whole Facility or sub-Facility level. Continuous measurements of the entire Facility's energy use are taken throughout the reporting period. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option D - Calibrated Simulation: Savings are determined through simulation of the energy use of the whole Facility, or of a sub-Facility. Simulation routines are demonstrated to adequately model actual energy performance measured in the Facility. This Option usually requires considerable skill in calibrated simulation. If applicable, the predetermined schedule for data collection, evaluation, and reporting is defined in Exhibit A, Article 3-Performance Assurance Services Program.

Option E – Stipulated: This Option is the method of measurement and verification applicable to FIMS consisting either of Operational Savings or where the end use capacity or operational efficiency; demand, energy consumption or power level; or manufacturer's measurements, industry standard efficiencies or operating hours are known in advance, and used in a calculation or analysis method that will stipulate the outcome. Both CLIENT and SIEMENS agree to the stipulated inputs and outcome(s) of the analysis methodology. Based on the established analytical methodology the Savings stipulated will be achieved upon completion of the FIM and no further measurements or calculations will be performed

during the Performance Guarantee Period. If applicable, the methodology and calculations to establish Savings value will be defined in Section 4.6 of this Exhibit C.

2.2 Table 2.1 below summarizes the first Annual Period’s Guaranteed Savings (See Article 1, Tables 1.1 and 1.2) utilizing the applicable Measurement and Verification Options as applied to the referenced FIMs valued pursuant to the agreed upon amounts identified in Article 6 hereof.

Table 2.1 – Savings for First Annual Period by Option

FIM Name or Type	Energy/Utility Savings \$						Operational Savings \$	Total Savings \$
	Measurement and Verification Options							
	A Retrofit Isolation: Key Parameter Measurement	B Retrofit Isolation: All Parameter Measurement	C Whole Facility	D Calibrated Simulation	E Stipulated	Total Energy/Utility Savings	E Stipulated	
Lighting Retrofit	\$21,660	\$0	\$0	\$0	\$0	\$21,660	\$14,075	\$35,735
Building Envelope Improvements	\$1,596	\$0	\$0	\$0	\$0	\$1,596	\$0	\$1,596
HVAC System Upgrade - Geothermal System	\$2,990	\$0	\$0	\$0	\$0	\$2,990	\$0	\$2,990
HVAC System Upgrade - Boiler Replacement	\$1,487	\$0	\$0	\$0	\$0	\$1,487	\$0	\$1,487
Building Automation - Town Hall Programmable Thermostats	\$1,254	\$0	\$0	\$0	\$0	\$1,254	\$0	\$1,254
Building Automation - Library	\$3,092	\$0	\$0	\$0	\$0	\$3,092	\$0	\$3,092
TOTALS	\$32,079	\$0	\$0	\$0	\$0	\$32,079	\$14,075	\$46,154

2.3 Table 2.2 identifies the source of Operational Savings defined and quantified by the Parties. The Parties affirm that such amounts are Stipulated Savings for purposes of calculating Annual Realized Savings and acknowledge that the Guaranteed Savings identified herein have been based on CLIENT’S affirmation. **OPERATIONAL SAVINGS SHALL NOT BE MEASURED OR MONITORED DURING THE PERFORMANCE GUARANTEE PERIOD.**

Description	Annual Cost \$	# of Annual Periods Savings Are Applied	Annual Period Savings Begin
Lighting Retrofit	\$14,075	17	1

- 2.4 SIEMENS has explained to the CLIENT and the CLIENT has satisfied itself as to how Operational Savings are incorporated into the Annual Realized Savings.
- 2.5 The Escalation Factor applicable to the Operational Savings is 3%.

BY SIGNING BELOW, THE PARTIES CONFIRM THAT THEY HAVE REVIEWED THE INCLUDED MEASUREMENT AND VERIFICATION OPTIONS AND THEIR APPLICATION TO BE USED IN CALCULATING SAVINGS UNDER THE AGREEMENT.

CLIENT: **Town of Camden, Maine**
Signature: _____
Printed Name: _____
Title: _____
Date: _____

SIEMENS: **Siemens Industry, Inc.**
Signature: _____
Printed Name: _____
Title: _____
Date: _____

Signature: _____
Printed Name: _____
Title: _____
Date: _____

Article 3: Performance Guarantee Period Responsibilities of the CLIENT

In addition to the CLIENT'S responsibilities under Article 6 of the Agreement, this Article details the responsibilities of the CLIENT in connection with the management and administration of the Performance Guarantee.

- 3.1 The CLIENT will provide a representative at each Facility to coordinate work and provide required data described below.
- 3.2 The CLIENT will provide SIEMENS with accurate Facility operating information as defined below and in the Contracted Baseline article of this Exhibit C during each Annual Period, within thirty (30) days of any Material Change that may increase or decrease energy usage.
- 3.3 If applicable, the CLIENT will provide SIEMENS with copies of utility bills within thirty (30) days of receipt by the CLIENT or provide access to utility vendor information to allow SIEMENS to include a utility bill analysis in the Annual Performance Assurance Report. The utility bill analysis does not take the place of the Measurement and Verification Plan identified in Article 4 of this Exhibit C and is not used to measure the Project's performance.
- 3.4 If required for the Work, CLIENT will provide telephone/data remote access, through Tridium Niagara software package or otherwise, as SIEMENS reasonably requests. All charges related to telephone/data line installation, activation and communication services are the responsibility of the CLIENT.
- 3.5 If required for the Work, CLIENT will provide and coordinate utility meter upgrade for interface with SIEMENS metering and data collection. All charges related for these upgrades are the responsibility of the CLIENT.

Article 4: Measurement and Verification Plan

The following information is applicable to this Agreement:

- Article 4.1 General Overview
- Article 4.2 Option A - Retrofit Isolation: Key Parameter Measurement
- Article 4.3 Option B - Retrofit Isolation: All Parameter Measurement
- Article 4.4 Option C - Whole Facility
- Article 4.5 Option D - Calibrated Simulation
- Article 4.6 Option E – Stipulated-Energy/Utility Savings

4.1 **General Overview –**

The purpose of the Measurement and Verification (M&V) Plan is to identify the methods, measurements, procedures and tools that will be used to verify the Savings for each FIM which has energy/utility Savings. Savings are determined by comparing prior usage, consumption or efficiencies (defined as the “Baseline”) against the post-FIM implementation usage, consumption or efficiencies. The Baseline usage, consumption or efficiencies are described in this Exhibit C, Article 5. The post-FIM implementation usage, consumption or efficiencies is defined as the Contracted Baseline and are described in this Exhibit C, Article 7.

4.2 **Option A - Retrofit Isolation: Key Parameter Measurement**

4.2.1 **Lighting Retrofit**

Location(s): Opera House/Town Hall, Camden Town Library, Camden Public Safety, Camden Public Works, Camden Snow Bowl (Existing Trail & Lodge and Parking Lot), Wastewater Treatment Plant

Overview:

SIEMENS will retrofit existing interior and exterior fixtures and lamps with more energy-efficient fixtures and lamps. SIEMENS will also install occupancy sensor controls in selected locations at the Camden Town Library as per Exhibit A, Appendix 1 – Lighting Retrofit Schedule. Verification of electric energy Savings (kWh) achieved by the lighting retrofit shall be based upon a one-time measurement of the lighting power capacity under existing conditions (completed and detailed in Exhibit A, Appendix 1 – Lighting Retrofit Schedule), a one-time measurement of the lighting power capacity upon completion of the lighting retrofit project, and agreed-upon annual operating hours. Spot wattage measurements of a random sample of baseline and post-installation fixture types or fixture circuits will be used to establish demand. Sample size for wattage measurements will be determined based on FEMP guidelines for sample size determination. Manufacturer’s specified wattage will be used for all other fixture types.

Pre-Retrofit Measurement Calculations:

$$kWh_{pre} = \sum_{i=1}^n kWh_{pre,1} + kWh_{pre,2} + \dots + kWh_{pre,n}$$

$$kWh_{pre,x} = kW_{pre,x} \times Quantity_{pre,x} \times AOH_{pre,x}$$

Where:

- kWh_{pre} = pre-retrofit annual electric consumption for each fixture type, “x” (kWh/yr)
- kW_{pre} = Instantaneous kW based on random sample of existing lighting fixture types as provided in Exhibit A, Appendix A
- Quantity_{pre} = Count of each fixture-type “x” based on as-built survey
- AOH_{pre} = Pre-Retrofit Annual Operating Hours for fixture type “x”, stipulated per Exhibit A, Appendix A

Post-Retrofit Measurement Calculations:

$$kWh_{post} = \sum_{i=1}^n kWh_{post,1} + kWh_{post,2} + \dots + kWh_{post,n}$$

$$kWh_{post,x} = kW_{post,x} \times Quantity_{post,x} \times AOH_{post,x}$$

$$kW_{post} = \sum_{i=1}^n kW_{post,1} + kW_{post,2} + \dots + kW_{post,n}$$

$$kWh_{post,x} = kW_{post,x} \times Quantity_{post,x}$$

Where:

- kWh_{post} = post-retrofit annual electric consumption for each fixture type, “x” (kWh/yr)
- kW_{post} = Instantaneous kW based on random sample of the installed/retrofitted lighting-fixture types
- Quantity_{post} = Count of each fixture-type “x” based on as-built survey
- AOH_{post} = Post-Retrofit Annual Operating Hours of each fixture type “x”, stipulated per Exhibit A, Appendix 1

Savings Calculations:

Electric Savings (kWh/yr):

$$kWh_s = kWh_{pre} - kWh_{post}$$

Where:

kWh_s = Annual electric savings from lighting retrofit (kWh/yr)

Demand Savings (kW/yr):

$$kW_s = \sum_{Dec}^{Jan} (kW_{month, x} - \sum kW_{post, x})$$

Where:

- kW_s = Annual electric demand savings from lighting retrofit (kW/yr)
- kW_{month} = Monthly peak demand per utility baseline by location “x” per Table 4.2.1.1

4.2.1.1 – Baseline Electric Demand by Month

Baseline Electric Demand by Month (kW_{Month})					
Month	Camden Public Safety	Wastewater Treatment Plant	Camden Town Library	Camden Snow Bowl - Lodge	Opera House/Town Office
January	14.53	88.16	31.2	24.16	7.04
February	18.13	92.48	30.1	24.05	17.36
March	16.34	87.2	31.2	21.21	26.56
April	15.24	78.08	32.4	14.74	19.04
May	17.75	70.56	40.0	8.15	40.16
June	14.65	74.56	53.3	9.86	69.92
July	21.29	70.4	59.8	12.76	67.36
August	19.2	83.36	61.4	12.13	71.36
September	21.4	57.6	62.1	13.16	62.4
October	17.19	9.28	51.9	12.6	49.92
November	16.98	90.72	37.0	12.37	8.32
December	12.42	94.56	33.3	20.18	24.16

Heating Penalty (Gal_P/yr): Camden Public Library

$$HPP = (kWh_s \times HS \times CCH) \times (1 - REG) \times \frac{3,412}{HVP \div \eta}$$

Where:

HPP = Heating Penalty in gallons of propane (Gal_P/yr)

HS = Percentage of heating season per year = 60%

CCH = Conducted/convected heat = 30%

REG = Percentage of lighting exhaust heat regained by space = 60%

HVP = Heat value of propane = 92,500 BTU/Gal_P

η = Heating system efficiency = 85%

Heating Penalty (Gal_{FO}/yr): Opera House/Town Hall, Camden Public Safety, Camden Public Works, Wastewater Treatment Plant

$$HPF = (kWh_s \times HS \times CCH) \times (1 - REG) \times \frac{3,412}{HVFO \div \eta}$$

Where:

HPF = Heating Penalty in gallons of fuel oil (Gal_{FO}/yr)

HS = Percentage of heating season per year = 60%

CCH = Conducted/convected heat = 30%

REG = Percentage of lighting exhaust heat regained by space = 60%

HVFO = Heat value of fuel oil = 138,500 BTU/Gal_{FO}

η = Heating system efficiency = 85%

Heating Penalty (kWh/yr): Camden Snow Bowl Lodge

$$HPE = (kWh_s \times HS \times CCH) \times (1 - REG) \times \frac{HVE}{\eta}$$

Where:

HPE = Heating Penalty in kWh of electricity (kWh/yr)

HS = Percentage of heating season per year = 60%

CCH = Conducted/convected heat = 30%

REG = Percentage of lighting exhaust heat regained by space = 60%

HVE = Heat value of electricity = 12,000 BTU/Ton

η = Heating system efficiency = 1.1 kW/Ton

Cost Savings (\$/yr):

$$\begin{aligned} \$_s = & (kWh_s - HPE \times \$/kWh) + (kW_s \times \$/kW) - (HPP \times \$/Gal_p) \\ & - (HPF \times \$/Gal_o) \end{aligned}$$

Where:

$\$_s$ = Total annual cost savings

$\$/kWh$ = Contracted unit price for electricity as per Article 6 of this Exhibit C

$\$/kW$ = Contracted unit price for electric demand as per Article 6 of this Exhibit C

$\$/Gal_p$ = Contracted unit price for propane as per Article 6 of this Exhibit C

$\$/Gal_o$ = Contracted unit price for fuel oil as per Article 6 of this Exhibit C

4.2.2 Building Envelope Improvements – Air Sealing

Location(s): Camden Town Library, Camden Public Works, Camden Snow Bowl

Overview:

Energy savings are based on reducing the infiltration of unconditioned air through gaps and cracks in the building envelope by various air sealing methods. These savings will be verified by visual inspection of gap closure at door, windows, wall, and roof penetrations. The methodology shown below will be applied to each building where envelope improvements are to be implemented.

Pre-Retrofit Measurement\Calculations:

Area = Pre-retrofit estimate of total leakage through penetrations in doors, windows, walls, and roof wall interface per Table 4.2.2.1

A = stack coefficient, based on number of building floors per Table 4.2.2.1

B = wind coefficient, based on number of building floors per Table 4.2.2.1

Table 4.2.2.1 – Pre-Retrofit Operating Parameters

Location (x)	Scope	Area (ft ²)	A	B
Camden Town Library	Sweep and W/S non-standard doors: 4 doors with 88 total lineal feet x 1/16 in. crack	0.458	0.0299	0.0086
	Seal Windows 448 lineal feet x 1/64 in. crack	0.583		
	Double Doors, sweep & center W/S spring bronze: 1 door sets x 13' perimeter x 1/16 in. crack	0.068		
	Block open-topped walls, slopes, and/or floor joists 310 lineal feet x 1/8in. crack	3.229		
	TOTAL	4.34		
Camden Public Works	Single door - sweep & W/S: 3 doors x 20' perimeter x 1/16 in. crack	0.313	0.0150	0.0065
	Single door - sweep only: 1 doors x 3' x 1/16 in. crack	0.016		
	Overhead Doors (Sectional) W/S sides only: 140 lineal ft x 1/8 in. crack	1.458		
	Overhead Doors (Sectional) W/S top only: 80 lineal ft x 1/8 in. crack	0.833		
	Overhead Doors (Sectional) W/S bottom only: 80 lineal ft x 1/8 in. crack	0.833		
	TOTAL	3.45		
Camden Snow Bowl	Single door - sweep & W/S: 3 doors x 20' perimeter x 1/16 in. crack	0.313	0.0299	0.0157
	Door Repair - 7 total lineal feet x 1/16 in. crack	0.036		
	TOTAL	0.35		

Post-Retrofit Measurement/Calculations:

$$HLOCC = Area \times EFL \times WD \times \sqrt{[A \times (HTSP_{Occ} - OAHT)] + (B \times Vel^2)}$$

$$HLUNOCC = Area \times EFL \times WD \times \sqrt{[A \times (HTSP_{Unocc} - OAHT)] + B \times Vel^2}$$

$$CLOCC = Area \times EFL \times WD \times \sqrt{[A \times (CLSP - OACT)] + B \times Vel^2}$$

Where:

HLOCC = Occupied heating leakage rate

EFL = conversion from ft² to in² = 144 in²/ft²

WD = Percent infiltration versus exfiltration = 50%

HTSP_{Occ} = Average occupied space heating temperature (°F) per Table 4.2.2.2

OAHT = Average outside air temperature during heating season = 35.22°F

Vel = Average wind speed = 7.183 mph

HLUNOCC = Unoccupied heating leakage rate

HTSP_{Unocc} = Average unoccupied space heating temperature (°F) per Table 4.2.2.2

CLOCC = Occupied cooling leakage rate
 CLSP = Cooling discharge temperature (°F) per Table 4.2.2.2
 OACT = Average outside air temperature during cooling season = 71.51°F

Table 4.2.2.2 – Pre-Retrofit Operating Parameters

Location (x)	HTSP _{Occ} (°F)	HTSP _{Unocc} (°F)	CLSP (°F)
Camden Town Library	66.25	60.00	70.75
Camden Public Works	65.00	60.00	N/A
Camden Snow Bowl	68.00	60.00	72.00

Savings Calculations:

Electric Savings (kWh/yr):

Camden Town Library, Camden Snow Bowl, Camden Public Works:

$$kWh_s = \sum_{i=0}^n kWh_{CoolS} + kWh_{HeatS}$$

$$kWh_{HeatS} = kWh_{Occ} + kWh_{Unocc}$$

$$kWh_{Occ} = \alpha \times HLOCC \times (HTSP_{Occ} - OACT) \times (HRSOCC \div 168 \text{ hrs/wk} \times HHPYO) \div (1 - EOSH) \div HHVE$$

$$kWh_{Unocc} = \alpha \times HLUNOCC \times (HTSP_{Unocc} - OACT) \times [HHPYU - (HRSOCC \div 168 \text{ hrs/wk} \times HHPYU)] \div (1 - EOSH) \div HHVE$$

Camden Town Library, Camden Snow Bowl:

$$kWh_{CoolS} = (CLOCC \times BTU \times \frac{HRSOCC}{50} \times 1,000,000 \text{ BTU/MMBTU} \div 12,000 \text{ BTU/Ton}) \times kW/Ton$$

Where:

kWh_S = Annual electric savings from air sealing (kWh/yr)

kWh_{Cool} = Annual electric cooling savings from air sealing (kWh/yr)

kWh_{Heat} = Annual electric heating savings from air sealing (kWh/yr)

kWh_{Occ} = Occupied heating propane savings (Gal_P/yr)

kWh_{Unocc} = Unoccupied heating propane savings (Gal_P/yr)

α = Conversion factor = 1.08 BTUH * Min / ft³ * °F

HHPYO = Total occupied heating hours per year = 2,092 hours/year

HHPYU = Total unoccupied heating hours per year = 3,703 hours/year

EOSH = Losses of heating system = 10%

BTU = Cooling BTU required to cool 1,000 CFM/Year per Table 4.2.2.3
 HRSOCC = Weekly building occupied hours (hrs/wk) per Table 4.2.2.3
 kW/Ton = Average chiller efficiency per Table 4.2.2.3

Table 4.2.2.3 – Post-Retrofit Operating Parameters

Location (x)	BTU	HRSOCC	kW/Ton
Camden Town Library	13.2	61.50	1.20
Camden Public Works	N/A	60.00	N/A
Camden Snow Bowl	12.2	45.00	1.11

Propane Savings (Gal_P/yr): Camden Town Library

$$Propane_s = Propane_{Occ} + Propane_{Unocc}$$

$$Propane_{Occ} = \alpha \times HLOCC \times (HTSP_{Occ} - OAHT) \times HRSOCC \times HHPYO \div 168^{hrs/wk} \div (1 - EOSH) \div HHVP$$

$$Propane_{Unocc} = \alpha \times HLUNOCC \times (HTSP_{Unocc} - OAHT) \times [HHPY - (HRSOCC \times HHPYU \div 168^{hrs/wk})] \div (1 - EOSH) \div HHVP$$

Where:

Propane_s = Annual propane savings from air sealing (Gal_P/yr)
 Propane_{Occ} = Occupied heating propane savings (Gal_P/yr)
 Propane_{Unocc} = Unoccupied heating propane savings (Gal_P/yr)
 HHVP = High heating value of propane = 92,500 Btu/Gal_P

Fuel Oil Savings (Gal_O/yr): Camden Public Works

$$Fuel_s = Fuel_{Occ} + Fuel_{Unocc}$$

$$Fuel_{Occ} = \alpha \times HLOCC \times (HTSP_{Occ} - OAHT) \times HRSOCC \times HHPYO \div 168^{hrs/wk} \div (1 - EOSH) \div HHVO$$

$$Fuel_{Unocc} = \alpha \times HLUNOCC \times (HTSP_{Unocc} - OAHT) \times [HHPY - (HRSOCC \times HHPYU \div 168^{hrs/wk})] \div (1 - EOSH) \div HHVO$$

Where:

Fuel_s = Annual fuel oil savings from air sealing (Gal_O/yr)
 Fuel_{Occ} = Occupied heating fuel oil savings (Gal_O/yr)
 Fuel_{Unocc} = Unoccupied heating fuel oil savings (Gal_O/yr)
 HHV = High heating value of fuel oil = 138,500 Btu/Gal_O

Cost Savings (\$/yr):

$$\$_s = (kWh_s \times \$/kWh) + (Propane_s \times \$/GAL_P) + (Fuel_s \times \$/Gal_O)$$

Where:

$\$S$ = Total annual cost savings

$\$/kWh$ = Contracted unit price for electricity as per Article 6 of this Exhibit C

$\$/Gal_P$ = Contracted unit price for propane as per Article 6 of this Exhibit C

$\$/Gal_o$ = Contracted unit price for fuel oil as per Article 6 of this Exhibit C

4.2.3 Building Envelope Improvements – Insulation

Location(s): Camden Public Library

Overview:

Energy savings are based on reducing the loss of heat through the building envelope by increasing the thermal value of the existing attic insulation. These savings will be verified by manufacturer’s specification or product literature of the u-value of envelope enclosure of the added insulation. The methodology shown below will be applied to each building where envelope improvements are to be implemented.

Pre-Retrofit Measurement/Calculations:

$$Fuel_{pre} = \sum_{i=0}^n HLOCC_{pre} + HLUNOCC_{pre}$$

$$HLOCC_{pre} = \frac{Area \times U_{pre} \times (HTSP_{Occ} - OAHT_{Occ}) \times HHPYO \times PCT_{Occ}}{HHVP \times \eta \times DE}$$

$$HLUNOCC_{pre} = \frac{Area \times U_{pre} \times (HTSP_{Unocc} - OAHT_{Unocc}) \times HHPYU \times (1 - PCT_{Occ})}{HHVP \times \eta \times DE}$$

Where:

$Fuel_{pre}$ = Pre-retrofit annual propane consumption due to heat loss through building envelope = 282.78 Gal/yr

$HLOCC_{Pre}$ = Pre-retrofit occupied heating leakage rate (Gal/yr)

$HLOCC_{Post}$ = Post-retrofit occupied heating leakage rate (Gal/yr)

Area = Estimated surface area (ft²) of repair to insulation per Table 4.2.3.1

U_{Pre} = Existing thermal transmittance of envelope enclosure (W/ft²·°F) per Table 4.2.3.1

$HTSP_{Occ}$ = Average occupied space heating temperature = 66.25°F

$HTSP_{Unocc}$ = Average unoccupied space heating temperature = 60.00°F

$OAHT_{Occ}$ = Average occupied outside air temperature during heating season = 36.85°F

$OAHT_{Occ}$ = Average unoccupied outside air temperature during heating season = 35.22°F

$HHPYO$ = Total occupied heating hours per year = 2,092 hours/year

$HHPYU$ = Total unoccupied heating hours per year = 3,703 hours/year

PCT_{Occ} = Percent of time space is occupied = 36.61%

$HHVP$ = High heating value of propane = 92,500 Btu/Gal_P

η_h = Heating system efficiency = 90%
DE = Heating distribution efficiency = 75%

$$kWh_{pre} = \sum_{i=0}^n CLOCC_{pre} + CLUNOCC_{pre}$$

$$CLOCC_{pre} = \frac{Area \times U_{pre} \times (CLSP_{Occ} - OACT_{Occ}) \times CHPYO \times PCT_{Occ}}{HHVE \times \eta_h \times DE}$$

$$CLUNOCC_{pre} = \frac{Area \times U_{pre} \times (CLSP_{Unocc} - OACT_{Unocc}) \times CHPYU \times (1 - PCT_{Occ})}{HHVE \times \eta_c \times DE}$$

Where:

kWh_{pre} = Pre-retrofit annual electric consumption due to cooling loss through building envelope = 260.50 kWh/yr
 $CLOCC_{Pre}$ = Pre-retrofit occupied cooling leakage rate (kWh/yr)
 $CLOCC_{Post}$ = Post-retrofit occupied cooling leakage rate (kWh/yr)
 $CLSP_{Occ}$ = Average occupied space heating temperature = 70.75°F
 $CLSP_{Unocc}$ = Average occupied space heating temperature = 78.00°F
 $OACT_{Occ}$ = Average occupied outside air temperature during heating season = 72.90°F
 $OACT_{Unocc}$ = Average unoccupied outside air temperature during heating season = 69.50°F
 $CHPYO$ = Total occupied heating hours per year = 668 hours/year
 $CHPYU$ = Total unoccupied heating hours per year = 462 hours/year
 $HHVE$ = High heating value of electricity = 3,412 Btu/kWh
 η_c = Heating system efficiency = 100%

Table 4.2.3.1 – Pre-Retrofit Parameters

Scope	Area	U_{Pre}
Insulate slumped wall insulation with 6" of injected cellulose to 2.5# density	1,572	0.25
Repair vaulted ceiling insulation with an additional 12" of cellulose	420	0.167

Post-Retrofit Measurement/Calculations:

$$Fuel_{post} = Fuel_{pre} \times \frac{U_{post}}{U_{pre}}$$

Where:

$Fuel_{post}$ = Post-retrofit propane consumption due to heat loss through building envelope (Gal/yr)
 U_{post} = Thermal transmittance of envelope enclosure with added insulation as verified in manufacturer's specification or product literature

$$kWh_{post} = kWh_{pre} \times \frac{U_{post}}{U_{pre}}$$

Where:

kWh_{post} = Post-retrofit electric consumption due to cooling loss through building envelope (kWh/yr)

Savings Calculations:

Propane Savings (Gal_p/yr):

$$Fuel_s = Fuel_{pre} - Fuel_{post}$$

Where:

$Fuel_s$ = Annual propane savings from insulation improvements (Gal_p/yr)

Electric Savings (kWh/yr):

$$kWh_s = kWh_{pre} - kWh_{post}$$

Where:

kWh_s = Annual electric savings from insulation improvements (kWh/yr)

Cost Savings (\$/yr):

$$\$_s = (kWh_s \times \$/kWh) + (Fuel_s \times \$/GAL_p)$$

Where:

$\$_s$ = Total annual cost savings

$\$/kWh$ = Contracted unit price for electricity as per Article 6 of this Exhibit C

$\$/Gal_p$ = Contracted unit price for propane as per Article 6 of this Exhibit C

4.2.4 Building Envelope Improvements – New Windows

Location(s): Camden Snow Bowl - Lodge

Overview:

Energy savings are based on reducing the loss of heat through the storefront windows in the locker room by replacing them with new smaller windows with a higher thermal value (U). These savings will be verified by manufacturer's specification or product literature of the u-value of new windows.

Pre-Retrofit Measurement/Calculations:

$Area_{pre}$ = pre-retrofit window area (ft²) = 92.72 ft²

$Perimeter_{pre}$ = pre-retrofit window perimeter (ft) = 67.67 ft

U_{pre} = pre-retrofit insulation factor (Btu/(h*ft²*°F)) = 1.22

HTSP = occupied indoor heating temperature = 68°F

Hours = hours per each OAT bin, as defined in Table 4.2.4.1

OAT = outdoor air temperature, as defined in Table 4.2.4.1

OAE = outdoor air enthalpy, as defined in Table 4.2.4.1

IAE = indoor air enthalpy, as defined in Table 4.2.4.1

AIR_{pre} = pre-retrofit Air Infiltration and Leakage (Reference ASHRAE / ANSI) = 0.07 cfm/ft²

HC_{pre} = pre-retrofit heating conduction (Btu), as defined in Table 4.2.4.1

HI_{pre} = pre-retrofit heating infiltration (Btu), as defined in Table 4.2.4.1
 CC_{pre} = pre-retrofit cooling conduction (Btu), as defined in Table 4.2.4.1
 CI_{pre} = pre-retrofit cooling infiltration (Btu), as defined in Table 4.2.4.1

Table 4.2.4.1 – Bin Analysis for Pre-retrofit Measurements and Data

OAT (°F)	Hours (Hrs/yr)	OAE (btu/#)	HC _{pre} (Btu/yr)	HI _{pre} (Btu/yr)	CC _{pre} (Btu/yr)	CI _{pre} (Btu/yr)
87.5	7	34.2	0	0	15,440	16,920
82.5	70	31.9	0	0	114,809	134,881
77.5	190	28.8	0	0	204,168	240,561
72.5	289	28.2	0	0	147,103	328,946
67.5	574	26.9	32,463	14,682	0	0
62.5	951	24.7	591,636	267,571	0	0
57.5	884	21.9	1,049,912	474,830	0	0
52.5	691	19.2	1,211,493	547,906	0	0
47.5	666	17	1,544,327	698,433	0	0
42.5	859	14.8	2,477,676	1,120,547	0	0
37.5	1116	12.6	3,850,128	1,741,248	0	0
32.5	984	10.6	3,951,251	1,786,981	0	0
27.5	507	8.7	2,322,598	1,050,412	0	0
22.5	391	7	2,012,330	910,091	0	0
17.5	215	5.5	1,228,120	555,426	0	0
12.5	144	3.9	903,996	408,839	0	0
7.5	123	2.4	841,728	380,677	0	0
2.5	63	1.1	466,759	211,095	0	0
-2.5	31	-0.3	247,208	111,801	0	0
-7.5	5	-1.5	42,700	19,311	0	0
Total	8,760		22,774,325	10,299,851	466,081	721,308

Post-Retrofit Measurements\Calculations:

Calculated and Summed for all outdoor air temperature bins less than or equal to 68° in Table 4.2.4.1:

$$HC_{post} = U_{post} * Area_{Post} * (STPT - OAT) * Hours$$

$$HI_{post} = \xi * AIR_{Post} * Perimeter_{Post} * (STPT - OAT) * Hours$$

Where:

- HC_{post} = post-retrofit heating conduction (Btu/yr)
- U_{post} = Thermal transmittance of new window as verified in manufacturer's specification or product literature
- Area_{Post} = post-retrofit window area (ft²) = 75 ft²
- α = conversion factor = 1,000 BTU/MBTU
- HI_{post} = post-retrofit heating infiltration (Btu/yr)
- ξ = conversion factor = 1.085 BTU/hr-°F-CFM
- AIR_{pre} = pre-retrofit Air Infiltration and Leakage (Reference ASHRAE / ANSI) = 0.07 cfm/ft²
- Perimeter_{Post} = post-retrofit window perimeter (ft) = 60 ft

Calculated and Summed for all outdoor air temperature bins greater than 68°F in Table 4.2.4.1:

$$CC_{\text{post}} = U_{\text{post}} * \text{Area}_{\text{Post}} * (\text{OAT} - \text{STPT}) * \text{Hours}$$
$$CI_{\text{post}} = \xi * \text{AIR}_{\text{Post}} * \text{Perimeter}_{\text{Post}} * (\text{OAE} - \text{IAE}) * \text{Hours}$$

Where:

$$CC_{\text{post}} = \text{post-retrofit cooling conduction (Btu/yr)}$$
$$CI_{\text{post}} = \text{post-retrofit cooling infiltration (Btu/yr)}$$

Where:

$$\text{Overall U Factor} = \text{Overall U Factor [Btu/(h*ft}^2*\text{°F)}] = 0.353 \text{ Btu/(h*ft}^2*\text{°F)}$$
$$\eta = \text{Avg. Boiler Efficiency} = 85\%$$
$$\text{Area} = \text{Total Envelope Area (ft}^2) = 7,200 \text{ ft}^2$$
$$\rho = \text{conversion factor} = 138.5 \text{ Mbh/Gal}_0$$

Savings Calculations:

Energy Savings (kWh/yr):

$$\text{kWh}_S = \text{kWh}_{\text{Cool}} + \text{kWh}_{\text{Heat}}$$

$$\text{kWh}_{\text{Cool}} = [(\text{CC}_{\text{pre}} + \text{CI}_{\text{pre}}) - (\text{CC}_{\text{post}} + \text{CI}_{\text{post}})] * \text{Cooling Efficiency} / \beta$$

$$\text{kWh}_{\text{Heat}} = [(\text{HC}_{\text{pre}} + \text{HI}_{\text{pre}}) - (\text{HC}_{\text{post}} + \text{HI}_{\text{post}})] * \text{Heating Efficiency} / \beta$$

Where:

$$\text{kWh}_S = \text{Total annual electric savings (kWh/yr)}$$

$$\text{kWh}_{\text{Cool}} = \text{Cooling electric savings (kWh/yr)}$$

$$\text{kWh}_{\text{Heat}} = \text{Heating electric savings (kWh/yr)}$$

$$\beta = \text{conversion factor} = 12,000 \text{ Btu/Ton}$$

$$\text{Heating Efficiency} = 1.11 \text{ kW/Ton}$$

$$\text{Cooling Efficiency} = 0.57 \text{ kW/Ton}$$

Cost Savings(\$/yr):

$$\$_S = (\text{kWh}_S * \$/\text{kWh})$$

Where:

$$\$_S = \text{Total annual cost savings}$$

$$\$/\text{kWh} = \text{contracted unit price for electricity as per Article 6 of this Exhibit C}$$

4.2.5 Building Automation – Programmable Thermostat

Locations: Opera House/Town Office

Overview:

SIEMENS will use the four newly installed programmable thermostats to optimize the schedule and heating and cooling unoccupied set point on the first floor of the Opera House in the Town Offices. Electric and thermal energy savings are achieved by reducing the space heating temperature set point or increasing the space cooling set point it, during unoccupied periods. Prior to the retrofit the average space temperature set point of the Town Office during heating was 69°F during occupied and 65°F during unoccupied periods. During cooling the room's set point was 72°F during occupied and 78°F during unoccupied periods. The Office pre-retrofit schedule was 7AM-6PM Monday through Saturday. The heating

and cooling set points and schedule will be verified, and photo documented one-time during the first annual period.

Post-retrofit, if contracted baseline schedules for this equipment, as established in Article 7 of this Exhibit C, are modified by the CLIENT and result in a loss of energy savings, the Guaranteed Savings for this FIM will be deemed achieved.

Pre-Retrofit Measurements\Calculations:

- DAY HT SP_{pre} = Occupied heating set point pre-retrofit = 69°F
- NGT HT SP_{pre} = Unoccupied heating set point pre-retrofit = 65°F
- DAY CL SP_{pre} = Occupied cooling set point pre-retrofit = 72°F
- NGT CL SP_{pre} = Unoccupied cooling set point pre-retrofit = 78°F
- OHours = occupied hours, as defined in Table 4.2.5.1
- UHours = unoccupied hours, as defined in Table 4.2.5.1
- HC_{pre} = pre-retrofit heating conduction (MBH), as defined in Table 4.2.5.1
- HI_{pre} = pre-retrofit heating infiltration (MBH), as defined in Table 4.2.5.1
- CC_{pre} = pre-retrofit cooling conduction (MBH), as defined in Table 4.2.5.1
- CI_{pre} = pre-retrofit cooling infiltration (MBH), as defined in Table 4.2.5.1

Table 4.2.5.1 – Bin Analysis for Pre-retrofit Measurements and Data

OAT (°F)	OHours _{pre} (Hrs/yr)	UHours _{pre} (Hrs/yr)	HC _{pre} (MMBtu/yr)	HI _{pre} (MMBtu/yr)	CC _{pre} (MMBtu/yr)	CI _{pre} (MMBtu/yr)
87.5	7	0	0	0	276	17
82.5	62	8	0	0	1,748	107
77.5	159	31	0	0	2,185	133
72.5	190	99	0	0	0	0
67.5	250	324	0	0	0	0
62.5	360	591	9,712	593	0	0
57.5	312	572	20,042	1,224	0	0
52.5	260	431	24,620	1,503	0	0
47.5	265	401	32,347	1,975	0	0
42.5	349	510	52,721	3,219	0	0
37.5	398	718	82,125	5,015	0	0
32.5	352	632	84,939	5,187	0	0
27.5	179	328	50,189	3,065	0	0
22.5	125	266	43,547	2,659	0	0
17.5	54	161	26,530	1,620	0	0
12.5	53	91	19,772	1,207	0	0
7.5	38	85	18,379	1,122	0	0
2.5	14	49	10,159	620	0	0
-2.5	4	27	5,364	328	0	0
-7.5	1	4	932	57	0	0
Total	3,432	5,328	481,378	29,396	4,209	257

Post-Retrofit Measurements\Calculations:

- NGT HT SP_{post} = Unoccupied heating set point post-retrofit, visually verified one-time post-retrofit
- DAY HT SP_{post} = Occupied heating set point post-retrofit, visually verified one-time post-retrofit
- NGT CL SP_{post} = Unoccupied cooling set point post-retrofit, visually verified one-time post-retrofit

DAY CL SP_{post} = Occupied cooling set point post-retrofit, visually verified one-time post-retrofit

Calculated and Summed for all outdoor air temperature bins in Table 4.2.5.1:
 $HC_{post} = U \text{ Factor} * \text{Area} * [((\text{NGT HT SP}_{post} - \text{OAT}) * \text{UHours}) + ((\text{DAY HT SP}_{post} - \text{OAT}) * \text{OHours})] / \alpha$
 $HI_{post} = \xi * \text{AIR} * \text{Area} * [((\text{NGT HT SP}_{post} - \text{OAT}) * \text{UHours}) + ((\text{DAY HT SP}_{post} - \text{OAT}) * \text{OHours})] / \alpha$

Where:

HC_{post} = post-retrofit heating conduction (MBtu/yr)
 HI_{post} = post-retrofit heating infiltration (MBtu/yr)

Calculated and Summed for all outdoor air temperature bins in Table 4.2.5.1:
 $CC_{post} = U \text{ factor} * \text{Area} * [(\text{OAT} - \text{DAY CL SP}_{post}) * \text{OHours}) + (\text{OAT} - \text{NGT CL SP}_{post}) * \text{UHours}] / \alpha$
 $CI_{post} = \xi * \text{AIR} * \text{Area} * [(\text{OAT} - \text{NGT CL SP}_{post}) * \text{UHours}) + ((\text{OAT} - \text{DAY CL SP}_{post}) * \text{OHours})] / \alpha$

Where:

CC_{post} = post-retrofit cooling conduction (MBtu/yr)
 CI_{post} = post-retrofit cooling infiltration (MBtu/yr)

Where:

OAT = outdoor air temperature, as defined in Table 4.2.5.1
Overall U Factor = Overall U Factor [Btu/(h*ft²*°F)] = 0.353 Btu/(h*ft²*°F)
 η = Avg. Boiler Efficiency = 85%
Area = Total Envelope Area (ft²) = 7,200 ft²
AIR = Air Infiltration and Leakage (Reference ASHRAE / ANSI) = 0.02 cfm/ft²
 ρ = conversion factor = 138.5 Mbh/Gal_o
 ξ = conversion factor = 1.085 BTU/hr-°F-CFM
 α = conversion factor = 1,000 BTU/MBTU
 β = conversion factor = 12 MBtu/Ton
Chiller Efficiency = 0.80 kW/Ton

Savings Calculations:

Energy Savings (kWh/yr):

$kWh_S = [(CC_{pre} + CI_{pre}) - (CC_{post} + CI_{post})] * \text{Chiller Efficiency} / \beta$

Where:

kWh_S = Total annual electric savings (kWh/yr)

Fuel Oil Savings (Gal/yr):

$Fuel_S = [(HC_{pre} + HI_{pre}) - (HC_{post} + HI_{post})] / (\eta * \rho)$

Where:

$Fuel_S$ = Total annual fuel oil savings (Gal/yr)

Cost Savings(\$/yr):

$$\$S = (\text{kWh}_S * \$/\text{kWh}) + (\text{Fuels}_S * \$/\text{Gal}_O)$$

Where:

$\$S$ = Total annual cost savings

$\$/\text{kWh}$ = contracted unit price for electricity as per Article 6 of this Exhibit C

$\$/\text{Gal}_O$ = contracted unit price for fuel oil as per Article 6 of this Exhibit C

4.2.6 Building Automation – Demand Controls Ventilation

Location(s): Camden Public Library

Overview:

SIEMENS will install CO2 sensors and add programming to control outdoor air dampers to more closely match the CO2 needs of the spaces served by HVAC-1. Electric energy and propane savings are achieved by the reduction in airflow through the system which consequently reduces the air heating and cooling requirements on the system. Energy savings will be verified by estimating ventilation air used by continuously trending the post-retrofit outdoor air damper position and comparing it to the pre-retrofit outdoor damper position.

If the Contracted Baseline operation for this equipment, as established in Article 7 of this Exhibit C, is modified by the CLIENT and results in a loss of energy savings, the Guaranteed Savings for this FIM will be deemed achieved as if the Contracted Baseline was followed.

Pre-Retrofit Measurements/Calculations:

$OA\%_{pre}$ = Pre-retrofit minimum ventilation percent airflow of HVAC equipment = 20%

CFM_{pre} = Total pre-retrofit design airflow of all HVAC equipment = 6,493 CFM

kWh_{pre} = Pre-retrofit ventilation cooling requirement = 4,264 kWh/yr

$Fuel_{pre}$ = Pre-retrofit ventilation heating requirement = 1,286 Gal/yr

$$MAT_{pre,n} = [OA\%_{pre} \times (-RAT_n + OAT_n)] + RAT_n$$

$$MAH_{pre,n} = [OA\%_{pre} \times (-RAH_n + OAH_n)] + RAH_n$$

Where:

$MAT_{pre,n}$ = Pre-retrofit mixed air temperature at each OAT 'n' (°F), as per Tables 4.2.6.1

OAT_n = Outdoor air temperature n (°F), as per Tables 4.2.6.1

RAT_n = Return air temperature at each OAT n (°F), as per Tables 4.2.6.1

$MAH_{pre,n}$ = Pre-retrofit mixed air enthalpy at each OAT 'n' (°F), as per Tables 4.2.6.1

OAH_n = Outdoor air enthalpy n (°F), as per Tables 4.2.6.1

RAH = Return air enthalpy = 28.3 btu/# air

Table 4.2.6.1 – Pre-retrofit Bin Analysis, HVAC-1

Outside Air Temp (OAT)	Return Air Temp (RAT)	Supply Air Temp (SAT)	Annual Operating Hours (AOH)	Pre-Retrofit Mixed Air Temp (MAT _{pre})	Pre-Retrofit Mixed Air Enthalpy (MAH _{pre})	Pre-Retrofit Cooling Energy (kWh _{pre})	Pre-Retrofit Fuel Use (Fuel _{pre})
87.5	72	55	7	75.10	29.5	84.79	-
82.5	72	55	62	74.10	29.0	697.79	-
77.5	72	55	159	73.10	28.4	1,605.66	-
72.5	70	55	190	70.50	28.3	1,876.20	-
67.5	70	55	250	69.50	0.0	-	-
62.5	70	55	360	68.50	0.0	-	-
57.5	70	60	312	67.50	0.0	-	-
52.5	68	60	260	64.90	0.0	-	-
47.5	68	60	265	63.90	0.0	-	-
42.5	68	60	349	62.89	0.0	-	-
37.5	68	70	398	61.89	0.0	-	272
32.5	68	70	352	60.89	0.0	-	270
27.5	68	70	179	59.89	0.0	-	152
22.5	68	80	125	58.89	0.0	-	222
17.5	68	80	54	57.89	0.0	-	101
12.5	68	80	53	56.89	0.0	-	103
7.5	68	90	38	55.89	0.0	-	109
2.5	68	90	14	54.89	0.0	-	41
-2.5	68	90	4	53.89	0.0	-	12
-7.5	68	90	1	52.88	0.0	-	3
Total:						4,264	1,286

Post-Retrofit Measurements/Calculations:

OA%_{post} = Average post-retrofit outdoor air damper position (%) during non-economizer periods, trended continuously via EMS

$$MAT_{post,n} = [OA\%_{post} \times (-RAT_n + OAT_n)] + RAT_n$$

$$MAH_{post,n} = [OA\%_{post} \times (-RAH_n + OAH_n)] + RAH_n$$

$$kWh_{post} = \sum \left[\frac{\alpha \times (SAT_n - MAT_{post,n}) \times CFM_{post} \times AOH_{post}}{12 \div \eta_{cool}} \right]_{OAT_n \geq 70^\circ F}$$

$$Fuel_{post} = \sum \left[\frac{\alpha \times (SAT_n - MAT_{post,n}) \times CFM_{post} \times AOH_{post}}{HHV \div \eta_{heat}} \right]_{OAT_n \leq 45^\circ F}$$

Where:

kWh_{post} = Post-retrofit ventilation cooling requirement (kWh/yr)

Fuel_{post} = Post-retrofit ventilation heating requirement (gallons/yr)

MAT_{post,n} = Post-retrofit mixed air temperature at each OAT 'n' (°F)

MAH_{post,n} = Post-retrofit mixed air enthalpy at each OAT 'n' (°F)

AOH_n = Annual operating hours for heating season at each OAT 'n' (hrs), as per Tables 4.2.6.1

SAT_n = Supply air temperature at each OAT 'n' (°F), as per Tables 4.2.6.1

SAH = Supply air enthalpy = 23 btu/# air

CFM_{post} = Total post-retrofit design airflow of all HVAC equipment, as per Table 4.2.6.1

α = Conversion factor = 1.08 (BTUH * Min / ft³ * °F)

HHVP = High heating value of propane = 92.5 Mbtu/Gal

η_{heat} = Heating system efficiency = 90.0%

η_{cool} = Cooling system efficiency = 0.85 kW/ton

Savings Calculations:

Electric Savings (kWh/yr):

$$kWh_s = kWh_{pre} - kWh_{post}$$

Where:

kWh_s = Annual electric savings from demand control ventilation (kWh/yr)

Propane Savings (Gal/yr):

$$Fuel_s = Fuel_{pre} - Fuel_{post}$$

Where:

$Fuel_s$ = Annual propane savings from demand control ventilation (Gal/yr)

Cost Savings (\$/yr):

$$\$_s = (kWh_s \times \$/kWh) + (Fuel_s \times \$/GAL_P)$$

Where:

$\$_s$ = Total annual cost savings

$\$/kWh$ = Contracted unit price for electricity as per Article 6 of this Exhibit C

$\$/GAL_P$ = Contracted unit price for propane as per Article 6 of this Exhibit C

4.2.7 Building Automation – Enthalpy Economizer

Location(s): Camden Town Library

Overview:

Electric energy savings will result from using outdoor air for cooling instead of mechanical cooling when the enthalpy of the outdoor air enthalpy is below the outdoor enthalpy set point. Verification of energy savings will be based on continuously trending the average outdoor air enthalpy enable set point during the first annual period.

If the Contracted Baseline operation for this equipment, as established in Article 7 of this Exhibit C, is modified by the CLIENT and results in a loss of energy savings, the Guaranteed Savings for this FIM will be deemed achieved as if the Contracted Baseline was followed.

Pre-Retrofit Measurements\Calculations:

$$kWh_{pre} = \sum_{62.5}^{87.5} Load_{pre} \times \frac{Hours}{Bin} \times \frac{1}{\beta} \times \eta_{cool}$$

$$Load_{pre,x} = \frac{4.5 CFM \cdot Btu}{\circ F} \times SCFM \times (MAH - SAH)$$

$$MAH = [OA\% \times (OAH - RAH)] - RAH$$

Where:

kWh_{pre} = Pre-retrofit electric energy consumption due to cooling needs = 33,029 kWh

β = Conversion factor = 12,000 Btu/Ton

η = Cooling efficiency = 0.85 kW/Ton

Load_{pre} = Pre-retrofit cooling load (MBH/yr) calculated for each bin at or above outdoor air temperature enable, as shown in Table 4.2.7.1

SCFM = Supply air flow rate = 11,361 CFM

SAH = Cooling supply air enthalpy = 23.0 Btu/lb air

MAH = Mixed air enthalpy calculated for each bin at or above outdoor air temperature enabled, as shown in Table 4.2.7.1

OAH = Outside air enthalpy, as shown in Table 4.2.7.1

RAH = Return air enthalpy = 22.8 Btu/lb air

OA% = Percent ventilation air = 12.6%

Table 4.2.7.1 – Pre-retrofit Bin Table

Outdoor Air Temp	Hours (Hours/ Bin)	Outdoor Air Enthalpy (OAH)	Mixed Air Enthalpy (MAH)	Wet Bulb Economizer Status	Pre-retrofit Cooling Load (Load _{Pre})
87.5	7	34.2	29.1	Cooling	2,170
82.5	70	31.9	28.8	Cooling	20,669
77.5	190	28.8	28.4	Cooling	52,316
72.5	289	28.2	28.3	Cooling	78,461
67.5	574	26.9	28.1	Cooling	151,040
62.5	951	24.7	27.9	Cooling	236,795
Total:					466,297

Post-Retrofit Measurements\Calculations:

$$kWh_{post} = \sum_x^{87.5} Load_{post} \times \frac{Hours}{Bin} \times \frac{1}{\beta} \times \eta_{cool}$$

$$Load_{post,x} = \frac{4.5 CFM \cdot Btu}{\circ F} \times SCFM \times (MAH - SAH)$$

Where:

kWh_{post} = Post-retrofit electric energy consumption due to cooling needs

x = Temperature at the unit enters economizer mode as determined by continuous trending of the economizer status at 15-minute intervals each Annual Period

$Load_{post}$ = Post-retrofit cooling load (MBH/yr) calculated for each bin at or above outdoor air temperature enabled, as shown in Table 4.2.7.2

Table 4.2.7.2 – Post-retrofit Bin Table

Outdoor Air Temp	Hours (Hous/ Bin)	Outdoor Air Enthalpy (OAH)	Mixed Air Enthalpy (MAH)	Wet Bulb Economizer Status	Post-retrofit Cooling Load ($Load_{Post}$)
87.5	7	34.2	29.1	Based on Trending	Calculated
82.5	70	31.9	28.8	Based on Trending	Calculated
77.5	190	28.8	28.4	Based on Trending	Calculated
72.5	289	28.2	28.3	Based on Trending	Calculated
67.5	574	26.9	28.1	Based on Trending	Calculated
62.5	951	24.7	27.9	Based on Trending	Calculated
Total:					TBD

Savings Calculations:

Electric Savings (kWh/yr):

$$kWh_s = kWh_{pre} - kWh_{post}$$

Where:

$$kWh_s = \text{Annual energy savings from enthalpy economizer (kWh/yr)}$$

Cost Savings (\$/yr):

$$\$_s = kWh_s \times \$/kWh_x$$

Where:

$$\$_s = \text{Total annual cost savings}$$

$$\$/kWh = \text{contracted unit price for electricity as per Article 6 of this Exhibit C}$$

4.2.8 Building Automation – Variable Air Volume Occupancy Control

Location(s): Camden Town Library

Overview:

SIEMENS will add occupancy control to variable air volume fan control system to modulates the supply air flow based on the space’s demand for heating and cooling. Using the lighting occupancy sensors located in each VAVs zone the flow rate will be reduced to 20%. When in heating and cooling mode the zone dampers will modulate their flow rate in accordance with design. Verification of the energy savings will be achieved through 15-minute continuous trending of the supply fan speed to determine the operating load shape of all related equipment.

SIEMENS reserves the right to adjust baseline consumption to reflect post-retrofit changes in operating hours or load factors that exceed the pre-retrofit conditions

Pre-Retrofit Measurement/Calculations:

$$Fan\ kWh_{pre} = \sum_{39}^{100} HP_x \times LF_x \times (Flow_{pre}^{Exp}) \times 0.746\ kW/HP \div \eta \times (\%Time@Flow_{pre} \times AOH)$$

$$Cooling\ kWh_{pre}$$

$$= 4.5 \times CFM_x \times Flow_{pre} \times (h_{in} - h_{out}) \times AOH \times \%Time@Flow_{pre} \times \left(\frac{COH}{AOH}\right) \times CFL$$

$$\div 12,000\ Btu/Ton \times \eta_c$$

$$Fuel_{pre} = 1.08 \times CFM \times Flow_{pre} \times (T_{out} - T_{in}) \times AOH \times \%Time@Flow_{pre} \left(\frac{HOH}{AOH}\right) \times HFL$$

$$\div 92,500\ Btu/Gal \times \eta_h$$

Where:

Fan kWh_{pre} = Pre-retrofit annual electrical consumption of fans = 28,077 kWh/yr

HP = Fan horsepower = 10 HP

LF_x = Fan motor load factor = 70%

Flow_{pre} = Percentage of airflow as shown in Table 4.2.8.1

Exp = Fan exponent from fan affinity laws = 2.8

η = Rated efficiency per component = 90%

%Time@Flow_{pre} = Pre-retrofit amount of time spent at each pre-retrofit flow rate as shown in Table 4.2.8.1

AOH = Annual operating hours = 8,760 hrs/yr

Cooling kWh_{pre} = Pre-retrofit annual electrical consumption of the cooling system, as shown in Table 4.2.8.2

CFM_x = Air flow rate per component “x”, as shown in Table 4.2.8.1

h_{in} = Cooling coil entering air enthalpy = 27.85 Btu/lb air

h_{out} = Cooling coil leaving air enthalpy = 23.00 Btu/lb air

η_c = Rated efficiency of the chiller = 1.2 kW/ton

COH = Cooling operating hours = 1,130 hrs

CFL = Cooling full load percentage = 35 %

Fuel_{pre} = Pre-retrofit annual natural gas consumption of the heating system, as shown in Table 4.2.8.2

T_{out} = Heating coil leaving air temperature = 100.00 °F

T_{in} = Heating coil entering air temperature = 60.00 °F

η_H = Rated heating efficiency = 90%

HOH = Heating operating hours = 5,795 hrs

HFL = Heating full load percentage = 35 %

Table 4.2.8.1 – Pre-retrofit HVAC Configurations

Component (x)	% Airflow (Flow _{Pre})	%Time@Flow _{Pre}
Cooling Max Flow Rate	100%	15%
Heating Max Flow Rate	91%	48%
Cooling Min Flow Rate	39%	8%
Heating Min Flow Rate	39%	26%

Table 4.2.8.2 – Pre-retrofit HVAC Fuel Consumption

Unit	kWh _{pre,SF} (kWh)	kWh _{pre,Cooling} (kWh)	Fuel _{pre,Heating} (Gal)
Library	28,077	7,173	6,036
Total:	28,077	7,173	6,036

Post-retrofit measurements/calculations:

Flow_{post} = Post-retrofit supply air fan speed (%) measured continuously via the BAS

$$Fan kWh_{pre} = \sum_{70}^{100} HP_x \times LF_x \times (Flow_{post}^{Exp}) \times 0.746 kW/HP \div \eta \times (\%Time@Flow_{post} \times AOH)$$

Cooling kWh_{pre}

$$= 4.5 \times CFM_x \times Flow_{pre} \times (h_{in} - h_{out}) \times AOH \times \%Time@Flow_{post} \times \left(\frac{COH}{AOH}\right) \times CFL$$

$$\div 12,000 Btu/Ton \times \eta_c$$

$$Fuel_{pre} = 1.08 \times CFM \times Flow_{post} \times (T_{out} - T_{in}) \times AOH \times \%Time@Flow_{post} \left(\frac{HOH}{AOH}\right) \times HFL$$

$$\div 92,500 Btu/Gal \times \eta_h$$

Where:

Fan kWh_{post} = Post-retrofit annual electrical consumption of fans, kWh

Cooling kWh_{post} = Post-retrofit annual electrical consumption of the cooling system, kWh

Fuel_{post} = Post-retrofit annual natural gas consumption of the heating system, CCF

Table 4.2.8.3 – Post-retrofit HVAC Configurations

Component (x)	% Airflow (Flow _{Post})	%Time@Flow _{Post}
Weighted Average Supply Fan Speed	Measured continuously	100%

Savings Calculations:

Electricity Savings (kWh/yr):

$$kWh_s = (Fan kWh_{pre} + Cooling kWh_{pre}) - (Fan kWh_{post} + Cooling kWh_{post})$$

Where:

$$kWh_s = \text{Annual electric savings from VAV upgrade (kWh/yr)}$$

Propane Savings (Gal/yr):

$$Fuel_s = Fuel_{pre} - Fuel_{post}$$

Where:

$$Fuel_s = \text{Annual propane savings from VAV upgrade (Gal/yr)}$$

Cost Savings (\$/yr):

$$\$_s = (kWh_s \times \$/kWh) + (Fuel_s \times \$/GAL_p)$$

Where:

$$\$_s = \text{Total annual cost savings}$$

$$\$/kWh = \text{contracted unit price for electricity as per Article 6 of this Exhibit C}$$

$$\$/Gal = \text{contracted unit price per gallon of propane as per Article 6 of this Exhibit C}$$

4.2.9 HVAC System Upgrades – Boiler Replacements

Location(s):

Camden Town Library

Overview:

Energy savings expected from an efficiency increase by replacing the existing HB Smith oil-fired hot water boiler system with two propane fired condensing high efficiency hot water boiler system. Savings will be verified by a post-retrofit combustion efficiency test taken one-time of the boiler during the heating season.

Pre-Retrofit Measurement/Calculations:

$$Fuel_{pre} = \text{Average Pre-retrofit fuel usage from utility invoices} = 4,831 \text{ Gal}_o/\text{yr}$$

$$\eta_{C_{Post}} = \text{Pre-retrofit boiler combustion efficiency} = 86\%$$

Post-Retrofit Measurement/Calculations:

$$Fuel_{Post} = Fuel_{Pre} * (\eta_{C_{Pre}} / \eta_{C_{Post}}) * (HHVF/HHVP)$$

Where:

$$\eta_{C_{Post}} = \text{Post-retrofit boiler combustion efficiency measured one-time during the first annual heating season}$$

$$HHVP = \text{High heating value of propane} = 92,500 \text{ Btu/Gal}_p$$

$$HHVF = \text{High heating value of fuel oil} = 138,500 \text{ Btu/Gal}_o$$

Savings Calculations:

Cost Savings(\$/yr):

$$\$_s = (Fuel_{pre} \times \$/GAL_o) - (Fuel_{post} \times \$/GAL_p)$$

Where:

$\$S$ = Total annual cost savings

$\$/Gal_P$ = Contracted unit price for propane as per Article 6 of this Exhibit C

$\$/Gal_o$ = Contracted unit price for fuel oil as per Article 6 of this Exhibit C

4.2.10 HVAC System Upgrades – Geothermal System

Location(s): Camden Snow Bowl

Overview:

Energy and cost savings will be achieved by replacing the existing oil-fired boiler hydronic heating systems with a high efficiency ground source heat pump system. There will be in total four heat pumps, one 3 Ton unit serving the Locker Room, two 4 Ton units serving the Main Lodge, and one 2 Ton unit serving the Loft Office. Fuel oil savings will result from the removal of the oil boiler. The energy consumed by the new geothermal system will be calculated based on the heating (COP) and cooling efficiency (EER) of the installed equipment as stated by the manufacturer.

Pre-Retrofit Measurements\Calculations:

$Fuel_{pre}$ = Pre-retrofit fuel oil consumption from utility invoices (Gal/yr) = 2,636 Gal

Post-Retrofit Measurements\Calculations:

$kW/Ton_{Post, cooling, month}$ = one-time measurement of cooling efficiency for each month based on manufacturer specifications of installed unit

$COP_{Post, heating, n}$ = one-time measurement of heating efficiency for each degree bin based on manufacturer specifications of installed unit

$kW_{input, n}$ = one-time measurement of kW input at each degree bin based on manufacturer specifications of installed unit

$BTU_{output, n}$ = one-time measurement of system btu output at each heating degree bin based on manufacturer specifications of installed unit

$kWh_{post, cooling} = Tons * AOH_{month} * SCH * kW/Ton_{post, cooling, month}$

$kWh_{post, heating} = kW_{hp} + kW_{electric}$

$kW_{hp} = THL_n / BTU_{Total, n} * kW_{input, n} * AOH_n$

$BTU_{Total, n} = (BTU_{output, n} * AOH_n)_{OAT < 60}$

$BTU_{Total, n} = (BTU_{output, n} * AWH_n)_{OAT = 60}$

$kW_{electric} = (THL_n - BTU_{Total, n} / 3,412 \text{ kWh/btu})$ if $THL > BTU_{Total}$

Where:

kWh_{post} = Post-retrofit electric consumption (kWh/yr)

$kWh_{post, heating}$ = Pre-retrofit heating electric consumption (kWh/yr)

AOH_{month} = Annual operating hours each summer month

June = 250

July = 293

August = 332
September = 210
Tons = cooling system capacity = 14 Tons
SCH = Schedule usage = 100%
THL = Total Heat Loss at each OAT bin per Table 4.2.10.1 – Table 4.2.10.3
AOH_n = Total Annual hours at each OAT bin per Table 4.2.10.1 – Table 4.2.10.3
BTU_{Total, n} = The total BTU output at each OAT bin
AWH_n = Total Annual Work Hours = 24 hrs

Table 4.2.10.1 – Post-retrofit Locker Room HVAC Parameters

Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
60	60.5	59.5	141	65,060	Calculated	Calculated
59	59.5	58.5	185	130,547	Calculated	Calculated
58	58.5	57.5	130	124,018	Calculated	Calculated
57	57.5	56.5	247	271,740	Calculated	Calculated
56	56.5	55.5	75	72,581	Calculated	Calculated
55	55.5	54.5	238	303,014	Calculated	Calculated
54	54.5	53.5	188	504,212	Calculated	Calculated
53	53.5	52.5	66	194,501	Calculated	Calculated
52	52.5	51.5	174	593,669	Calculated	Calculated
51	51.5	50.5	63	224,659	Calculated	Calculated
50	50.5	49.5	149	610,612	Calculated	Calculated
49	49.5	48.5	80	319,877	Calculated	Calculated
48	48.5	47.5	220	1,021,979	Calculated	Calculated
47	47.5	46.5	97	476,088	Calculated	Calculated
46	46.5	45.5	248	1,390,650	Calculated	Calculated
45	45.5	44.5	285	1,692,568	Calculated	Calculated
44	44.5	43.5	67	425,599	Calculated	Calculated
43	43.5	42.5	252	1,660,377	Calculated	Calculated
42	42.5	41.5	61	428,987	Calculated	Calculated
41	41.5	40.5	197	1,482,479	Calculated	Calculated
40	40.5	39.5	70	550,296	Calculated	Calculated
39	39.5	38.5	338	2,676,257	Calculated	Calculated
38	38.5	37.5	83	686,515	Calculated	Calculated
37	37.5	36.5	280	2,434,316	Calculated	Calculated
36	36.5	35.5	344	3,052,383	Calculated	Calculated
35	35.5	34.5	81	778,344	Calculated	Calculated
34	34.5	33.5	320	3,079,491	Calculated	Calculated
33	33.5	32.5	89	901,009	Calculated	Calculated
32	32.5	31.5	229	2,408,563	Calculated	Calculated
31	31.5	30.5	60	635,687	Calculated	Calculated
30	30.5	29.5	257	2,791,467	Calculated	Calculated
29	29.5	28.5	64	710,235	Calculated	Calculated

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Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
28	28.5	27.5	190	2,201,186	Calculated	Calculated
27	27.5	26.5	147	1,784,736	Calculated	Calculated
26	26.5	25.5	58	722,433	Calculated	Calculated
25	25.5	24.5	136	1,726,792	Calculated	Calculated
24	24.5	23.5	41	540,809	Calculated	Calculated
23	23.5	22.5	91	1,216,819	Calculated	Calculated
22	22.5	21.5	41	574,016	Calculated	Calculated
21	21.5	20.5	80	1,092,460	Calculated	Calculated
20	20.5	19.5	40	574,694	Calculated	Calculated
19	19.5	18.5	64	916,257	Calculated	Calculated
18	18.5	17.5	42	624,844	Calculated	Calculated
17	17.5	16.5	30	445,252	Calculated	Calculated
16	16.5	15.5	44	669,572	Calculated	Calculated
15	15.5	14.5	30	495,402	Calculated	Calculated
14	14.5	13.5	41	666,184	Calculated	Calculated
13	13.5	12.5	25	419,838	Calculated	Calculated
12	12.5	11.5	26	452,707	Calculated	Calculated
11	11.5	10.5	18	317,844	Calculated	Calculated
10	10.5	9.5	19	338,175	Calculated	Calculated
9	9.5	8.5	29	522,849	Calculated	Calculated
8	8.5	7.5	27	494,725	Calculated	Calculated
7	7.5	6.5	23	421,194	Calculated	Calculated
6	6.5	5.5	17	321,910	Calculated	Calculated
5	5.5	4.5	16	303,612	Calculated	Calculated
4	4.5	3.5	18	346,985	Calculated	Calculated
3	3.5	2.5	15	289,719	Calculated	Calculated
2	2.5	1.5	18	361,894	Calculated	Calculated
1	1.5	0.5	9	182,641	Calculated	Calculated
0	0.5	-0.5	9	182,980	Calculated	Calculated
-1	-0.5	-1.5	7	147,401	Calculated	Calculated
-2	-1.5	-2.5	7	149,773	Calculated	Calculated
-3	-2.5	-3.5	6	128,086	Calculated	Calculated
-4	-3.5	-4.5	3	65,060	Calculated	Calculated
-5	-4.5	-5.5	3	66,076	Calculated	Calculated
-6	-5.5	-6.5	1	22,364	Calculated	Calculated
-7	-6.5	-7.5	1	22,703	Calculated	Calculated
Total			6,750	52,507,773	Calculated	Calculated

Table 4.2.10.2 – Post-retrofit Main Lodge HVAC Parameters

Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
60	60.5	59.5	141	311,728	Calculated	Calculated
59	59.5	58.5	185	716,471	Calculated	Calculated
58	58.5	57.5	130	716,343	Calculated	Calculated

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Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
57	57.5	56.5	247	1,649,692	Calculated	Calculated
56	56.5	55.5	75	502,287	Calculated	Calculated
55	55.5	54.5	238	2,031,322	Calculated	Calculated
54	54.5	53.5	188	2,415,891	Calculated	Calculated
53	53.5	52.5	66	931,937	Calculated	Calculated
52	52.5	51.5	174	2,844,517	Calculated	Calculated
51	51.5	50.5	63	1,076,435	Calculated	Calculated
50	50.5	49.5	149	2,925,696	Calculated	Calculated
49	49.5	48.5	80	1,532,662	Calculated	Calculated
48	48.5	47.5	220	4,896,726	Calculated	Calculated
47	47.5	46.5	97	2,281,134	Calculated	Calculated
46	46.5	45.5	248	6,663,184	Calculated	Calculated
45	45.5	44.5	285	8,109,796	Calculated	Calculated
44	44.5	43.5	67	2,039,220	Calculated	Calculated
43	43.5	42.5	252	7,955,556	Calculated	Calculated
42	42.5	41.5	61	2,055,456	Calculated	Calculated
41	41.5	40.5	197	7,103,175	Calculated	Calculated
40	40.5	39.5	70	2,636,698	Calculated	Calculated
39	39.5	38.5	338	12,823,057	Calculated	Calculated
38	38.5	37.5	83	3,289,379	Calculated	Calculated
37	37.5	36.5	280	11,663,819	Calculated	Calculated
36	36.5	35.5	344	14,625,234	Calculated	Calculated
35	35.5	34.5	81	3,729,370	Calculated	Calculated
34	34.5	33.5	320	14,755,120	Calculated	Calculated
33	33.5	32.5	89	4,317,107	Calculated	Calculated
32	32.5	31.5	229	11,540,427	Calculated	Calculated
31	31.5	30.5	60	3,045,841	Calculated	Calculated
30	30.5	29.5	257	13,375,075	Calculated	Calculated
29	29.5	28.5	64	3,403,030	Calculated	Calculated
28	28.5	27.5	190	10,546,794	Calculated	Calculated
27	27.5	26.5	147	8,551,411	Calculated	Calculated
26	26.5	25.5	58	3,461,479	Calculated	Calculated
25	25.5	24.5	136	8,273,778	Calculated	Calculated
24	24.5	23.5	41	2,591,238	Calculated	Calculated
23	23.5	22.5	91	5,830,286	Calculated	Calculated
22	22.5	21.5	41	2,750,349	Calculated	Calculated
21	21.5	20.5	80	5,234,431	Calculated	Calculated
20	20.5	19.5	40	2,753,596	Calculated	Calculated
19	19.5	18.5	64	4,390,168	Calculated	Calculated
18	18.5	17.5	42	2,993,887	Calculated	Calculated
17	17.5	16.5	30	2,133,388	Calculated	Calculated
16	16.5	15.5	44	3,208,200	Calculated	Calculated
15	15.5	14.5	30	2,373,678	Calculated	Calculated
14	14.5	13.5	41	3,191,964	Calculated	Calculated
13	13.5	12.5	25	2,011,619	Calculated	Calculated

Exhibit C – Performance Assurance
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Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
12	12.5	11.5	26	2,169,107	Calculated	Calculated
11	11.5	10.5	18	1,522,921	Calculated	Calculated
10	10.5	9.5	19	1,620,336	Calculated	Calculated
9	9.5	8.5	29	2,505,188	Calculated	Calculated
8	8.5	7.5	27	2,370,431	Calculated	Calculated
7	7.5	6.5	23	2,018,113	Calculated	Calculated
6	6.5	5.5	17	1,542,404	Calculated	Calculated
5	5.5	4.5	16	1,454,730	Calculated	Calculated
4	4.5	3.5	18	1,662,549	Calculated	Calculated
3	3.5	2.5	15	1,388,163	Calculated	Calculated
2	2.5	1.5	18	1,733,986	Calculated	Calculated
1	1.5	0.5	9	875,111	Calculated	Calculated
0	0.5	-0.5	9	876,735	Calculated	Calculated
-1	-0.5	-1.5	7	706,259	Calculated	Calculated
-2	-1.5	-2.5	7	717,624	Calculated	Calculated
-3	-2.5	-3.5	6	613,714	Calculated	Calculated
-4	-3.5	-4.5	3	311,728	Calculated	Calculated
-5	-4.5	-5.5	3	316,599	Calculated	Calculated
-6	-5.5	-6.5	1	107,156	Calculated	Calculated
-7	-6.5	-7.5	1	108,780	Calculated	Calculated
Total			6,750	252,881,281	Calculated	Calculated

Table 4.2.10.3 – Post-retrofit Loft HVAC Parameters

Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
60	60.5	59.5	141	49,144	Calculated	Calculated
59	59.5	58.5	185	114,294	Calculated	Calculated
58	58.5	57.5	130	114,734	Calculated	Calculated
57	57.5	56.5	247	265,206	Calculated	Calculated
56	56.5	55.5	75	81,467	Calculated	Calculated
55	55.5	54.5	238	328,793	Calculated	Calculated
54	54.5	53.5	188	380,862	Calculated	Calculated
53	53.5	52.5	66	146,919	Calculated	Calculated
52	52.5	51.5	174	448,434	Calculated	Calculated
51	51.5	50.5	63	169,699	Calculated	Calculated
50	50.5	49.5	149	461,232	Calculated	Calculated
49	49.5	48.5	80	241,622	Calculated	Calculated
48	48.5	47.5	220	771,962	Calculated	Calculated
47	47.5	46.5	97	359,618	Calculated	Calculated
46	46.5	45.5	248	1,050,442	Calculated	Calculated
45	45.5	44.5	285	1,278,499	Calculated	Calculated
44	44.5	43.5	67	321,480	Calculated	Calculated
43	43.5	42.5	252	1,254,183	Calculated	Calculated
42	42.5	41.5	61	324,040	Calculated	Calculated

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Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
41	41.5	40.5	197	1,119,806	Calculated	Calculated
40	40.5	39.5	70	415,672	Calculated	Calculated
39	39.5	38.5	338	2,021,538	Calculated	Calculated
38	38.5	37.5	83	518,566	Calculated	Calculated
37	37.5	36.5	280	1,838,786	Calculated	Calculated
36	36.5	35.5	344	2,305,649	Calculated	Calculated
35	35.5	34.5	81	587,930	Calculated	Calculated
34	34.5	33.5	320	2,326,126	Calculated	Calculated
33	33.5	32.5	89	680,586	Calculated	Calculated
32	32.5	31.5	229	1,819,333	Calculated	Calculated
31	31.5	30.5	60	480,173	Calculated	Calculated
30	30.5	29.5	257	2,108,563	Calculated	Calculated
29	29.5	28.5	64	536,483	Calculated	Calculated
28	28.5	27.5	190	1,662,688	Calculated	Calculated
27	27.5	26.5	147	1,348,119	Calculated	Calculated
26	26.5	25.5	58	545,698	Calculated	Calculated
25	25.5	24.5	136	1,304,350	Calculated	Calculated
24	24.5	23.5	41	408,505	Calculated	Calculated
23	23.5	22.5	91	919,137	Calculated	Calculated
22	22.5	21.5	41	433,589	Calculated	Calculated
21	21.5	20.5	80	825,201	Calculated	Calculated
20	20.5	19.5	40	434,101	Calculated	Calculated
19	19.5	18.5	64	692,104	Calculated	Calculated
18	18.5	17.5	42	471,982	Calculated	Calculated
17	17.5	16.5	30	336,326	Calculated	Calculated
16	16.5	15.5	44	505,769	Calculated	Calculated
15	15.5	14.5	30	374,207	Calculated	Calculated
14	14.5	13.5	41	503,209	Calculated	Calculated
13	13.5	12.5	25	317,129	Calculated	Calculated
12	12.5	11.5	26	341,957	Calculated	Calculated
11	11.5	10.5	18	240,086	Calculated	Calculated
10	10.5	9.5	19	255,444	Calculated	Calculated
9	9.5	8.5	29	394,940	Calculated	Calculated
8	8.5	7.5	27	373,695	Calculated	Calculated
7	7.5	6.5	23	318,153	Calculated	Calculated
6	6.5	5.5	17	243,158	Calculated	Calculated
5	5.5	4.5	16	229,336	Calculated	Calculated
4	4.5	3.5	18	262,099	Calculated	Calculated
3	3.5	2.5	15	218,842	Calculated	Calculated
2	2.5	1.5	18	273,361	Calculated	Calculated
1	1.5	0.5	9	137,960	Calculated	Calculated
0	0.5	-0.5	9	138,216	Calculated	Calculated
-1	-0.5	-1.5	7	111,341	Calculated	Calculated
-2	-1.5	-2.5	7	113,132	Calculated	Calculated
-3	-2.5	-3.5	6	96,751	Calculated	Calculated

Mid-pts	DB (F)	DB (F)	Total Hours	Total Heat Loss	Heat Pump Total BTU Output	Heat Pump Consumption kWh
-4	-3.5	-4.5	3	49,144	Calculated	Calculated
-5	-4.5	-5.5	3	49,911	Calculated	Calculated
-6	-5.5	-6.5	1	16,893	Calculated	Calculated
-7	-6.5	-7.5	1	17,149	Calculated	Calculated
Total			6,750	39,885,529	Calculated	Calculated

Savings Calculations:

Cost Savings (\$/yr):

$$\$S = \text{Fuel}_{\text{Pre}} * \$/\text{Gal}_o - \text{kWh}_{\text{Post}} * \$/\text{kWh}$$

Where:

$\$S$ = Total annual cost savings

$\$/\text{kWh}$ = contracted unit price for electricity per Article 6 of this Exhibit C

$\$/\text{Gal}_o$ = Contracted unit price for fuel oil as per Article 6 of this Exhibit C

- 4.3 **Option B - Retrofit Isolation: All Parameter Measurement – Not Applicable**
- 4.4 **Option C - Whole Facility – Not Applicable**
- 4.5 **Option D – Calibrated Simulation – Not Applicable**
- 4.6 **Option E - Stipulated-Energy/Utility Savings – Not Applicable**

Article 5: Baseline Data

5.1 The year(s) selected as the Baseline Period starts on January 2019 and ends in December 2019. Table 5.1 outlines the utility consumption that occurred during this Baseline Period. This Baseline Period’s Facility utility consumption will be used as the reference for comparing the Facility’s utility consumption during the Performance Guarantee Period in order to determine the Annual Realized Savings.

Table 5.1 – Baseline Utility Consumption

Location (x)	Electric Consumption (kWh/yr)	Electric Demand (kW/yr)	Fuel Oil Consumption (Gal/yr)
Opera House	96,163	464	9,701
Camden Public Library	138,474	515	4,831
Camden Snow Bowl Lodge	40,188	185	2,636
Waste Water Treatment Plant	338,720	908	2,366
Public Safety	75,337	205	4,212
Public Works	32,117	0	1,850
Total	720,999	2,277	25,595

5.2 The operating practices during the Baseline Period determine the utility consumption shown in Table 5.1. This data indicates the operating characteristics that were in effect during the Baseline Period. The Guaranteed Savings provided under this Agreement are based on the efficiencies gained by implementing the Work and implementing the Contracted Baseline in Article 7 of this Exhibit C.

Table 5.2 – Baseline Operating Parameters – Opera House/Town Offices

Day of Week	Avg Occ Run Hours	Avg Unocc Run Hours	Avg Occ Heating Temps	Avg Unocc Heating Temps	Avg Occ Cooling Temps	Avg Unocc Cooling Temps
Weekday (M-F)	55	113	69	65	72	78
Saturday	11	13	69	65	72	78
Sunday	N/A	24	N/A	65	N/A	78

Table 5.3 – Baseline Operating Parameters – Camden Snow Bowl Lodge

Day of Week	Average Occ Run Hours/ Week	Average Unocc Run Hours/ Week	Avg Occ Heating Temps	Avg Unocc Heating Temps	Avg Occ Cooling Temps	Avg Unocc Cooling Temps
January	54	114	68	60	N/A	N/A
February	54	114	68	60	N/A	N/A
March	54	114	68	60	N/A	N/A
April	40	128	68	60	N/A	N/A
May	40	128	68	60	N/A	N/A
June	40	128	68	60	N/A	N/A

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July	40	128	68	60	N/A	N/A
August	40	128	68	60	N/A	N/A
September	40	128	68	60	N/A	N/A
October	40	128	68	60	N/A	N/A
November	40	128	68	60	N/A	N/A
December	58	110	68	60	N/A	N/A

Table 5.4 – Baseline Operating Parameters – Camden Public Library

Day of Week	Average Occ Run Hours/ Week	Average Unocc Run Hours/ Week	Avg Occ Heating Temps	Avg Unocc Heating Temps	Avg Occ Cooling Temps	Avg Unocc Cooling Temps
Weekday (M-F)	41.00	79.00	66.25	60.00	70.75	78.00
Saturday	10.25	13.75	66.25	60.00	70.75	78.00
Sunday	0	24.00	N/A	60.00	N/A	78.00

- 5.3 Applicable codes - Federal, State, County or Municipal codes or regulations are applicable to the use and operation of the Facility. SIEMENS will maintain the current level of Facility compliance relative to applicable codes unless specifically outlined to the contrary below. Unless specifically set forth in the Scope of Work and Services, Exhibit A, nothing herein should be construed as to require SIEMENS to provide additional work or services in the event that the current applicable code or regulation is modified.

Article 6: Utility Rate Structures and Escalation Rates

6.1 Utility costs used for Savings calculations will be based on the utility rates and Escalation Rates, as provided in the table(s) below. Each Escalation Rate will be applied annually to the utility rate.

Table 6.1 – Utility Rate Structures and Escalation Rates

Location (x)	Incremental Electric Cost	Electric Demand Cost	Propane Cost	Fuel Oil Cost
	\$/kWh _i	\$/kWh	\$/Gal _p	\$/Gal _o
Opera House	\$0.1477	\$13.2880		\$2.20
Camden Public Library	\$0.0866	\$13.2915	\$1.60	\$2.70
Camden Snow Bowl Lodge	\$0.0692	\$13.1304		\$2.18
Wastewater Treatment Plant	\$0.1318	\$13.2516		\$2.16
Public Safety	\$0.1027	\$13.2184		\$2.19
Public Works	\$0.1451			\$2.20
<i>Escalation Rate</i>	<i>3.00%</i>	<i>3.00%</i>	<i>3.00%</i>	<i>3.00%</i>

Article 7: Contracted Baseline Data

7.1 The following tables detail the Facility operating parameters that are required to be implemented on the Guarantee Date or on such time as agreed upon by the Parties. This specific configuration of Facility operating parameters is the Contracted Baseline and failure of the CLIENT to maintain the Contracted Baseline may result in a Material Change which may require a modification of the Performance Guarantee pursuant to Article 4 of the Agreement.

Table 7.1 – Contracted Baseline Operating Parameters – Opera House/Town Offices

Day of Week	Average Occ Run Hours/ Week	Average Unocc Run Hours/ Week	Avg Occ Heating Temps	Avg Unocc Heating Temps	Avg Occ Cooling Temps	Avg Unocc Cooling Temps
Weekday (M-F)	55	113	68	60	72	78
Saturday	11	13	N/A	60	N/A	78
Sunday	N/A	24	N/A	60	N/A	78

Table 7.2 – Contracted Baseline Operating Parameters – Camden Snow Bowl Lodge

Day of Week	Average Occ Run Hours/ Week	Average Unocc Run Hours/ Week	Avg Occ Heating Temps	Avg Unocc Heating Temps	Avg Occ Cooling Temps	Avg Unocc Cooling Temps
January	54	114	68	60	N/A	N/A
February	54	114	68	60	N/A	N/A
March	54	114	68	60	N/A	N/A
April	40	128	68	60	N/A	N/A
May	40	128	68	60	N/A	N/A
June	40	128	68	60	N/A	N/A
July	40	128	68	60	N/A	N/A
August	40	128	68	60	N/A	N/A
September	40	128	68	60	N/A	N/A
October	40	128	68	60	N/A	N/A
November	40	128	68	60	N/A	N/A
December	58	110	68	60	N/A	N/A

Table 7.3 – Contracted Baseline Operating Parameters – Camden Public Library

Day of Week	Average Occ Run Hours/ Week	Average Unocc Run Hours/ Week	Avg Occ Heating Temps	Avg Unocc Heating Temps	Avg Occ Cooling Temps	Avg Unocc Cooling Temps
Weekday (M-F)	41.00	79.00	66.25	60.00	70.75	78.00
Saturday	10.25	13.75	66.25	60.00	70.75	78.00
Sunday	0	24.00	N/A	60.00	N/A	78.00