Monroe County Crime Lab

LEED Case Study

Submitted To:

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October 2011

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Introduction

Established in 1961, the Crime Lab moved to a facility on the fifth floor of the Monroe County Public Safety Building in 1963. Although the Crime Lab has been able to provide a very high quality of forensic analysis over the years, the Public Safety Building (PSB) had not undergone major renovations since 1963, resulting in a lack of space at the facility. In addition, many mechanical and electrical building systems had become progressively inadequate as they did not meet current codes and forensic laboratory standards. Additionally, due to the aging of the PSB facility the Crime Lab was not able to keep pace with the increased demand for services, resulting in a significant backlog of cases. In 2005 the Monroe County Legislature authorized studies to be done and eventually the final design for the construction of a new building.

The mission of the Crime Lab is to provide high quality scientific analysis of forensic evidence for law enforcement and public safety agencies. The Crime Lab also supports federal prosecution in the Monroe County area. The new lab will provide much needed additional space and give staff the state-of-the art tools that they need to process evidence efficiently and effectively. The lab serves seven other counties, with the City of Rochester being the largest user, and is the only regional Crime Lab in upstate New York. The new laboratory can now provide expanded firearm and forensic services in the areas of biology (including DNA), trace analysis, fire debris and controlled substances to the region it serves. The project will increase the information for the Alcohol Tobacco and Firearms (ATF) database which will in turn increase the number of cases the lab is able to link to other cases and suspects. Also new lab sections that have been added include, High Sensitivity DNA Section, Computer Forensics and Crime Scene Response & Vehicle Exam.

The Crime Lab also provides forensic consultation and training regarding the collection, examination and use of physical evidence in the judicial system to all law enforcement agencies it serves. In addition, the County wanted to make the facility a demonstration project to help educate the community and visitors about environmentally responsible building design. Monroe County representatives and the project team balanced aesthetics, cost, constructability and reliability to create an environmentally responsible building.

Green Building

The environmental impact of the building design, construction and operation industry is significant. Buildings annually consume more than 30% of the total energy and more than 60% of the electricity used in the U.S. Each day five billion gallons of potable water is used solely to flush toilets. A typical North American commercial construction project generates up to 2.5 pounds of solid waste per square foot of completed floor space. Development shifts land usage away from natural, biologically diverse habitats to hardscape that is impervious and devoid of biodiversity. The far-reaching influence of the built environment necessitates action to reduce its impact. Green building practices can substantially reduce or eliminate negative environmental impacts and improve existing unsustainable design, construction and operational practices. As an added benefit, green design measures reduce operating costs, enhance building marketability, increase worker productivity, and reduce potential liability resulting from indoor air quality problems.

Monroe County Crime Laboratory

Owner
Monroe County, New York
Monroe County Department of Environmental Services
- Monroe County Green Building Design Review Team

Monroe County Department of Public Safety
Monroe County Crime Laboratory

Design Team
LaBella Associates – Architecture, Structure, Interior Design
DeWolff Partnership Architects – Design Architect
McClaren, Wilson & Lawrie, Inc. – Lab Architect
ME Engineering – MEP Engineer of Record
Larsen Engineers – Civil Engineer of Record
SPC (Sustainable Performance Consulting, Inc.) – Sustainability Consultant
McCord Landscape Architecture – Landscape Architect
Pathfinder Engineers & Architects, LLP – Enhanced Commissioning Consultant
Camroden Associates, Inc. – Envelope Commissioning Consultant

Construction Manager
The Pike Company

LEED

LEED®, which stands for Leadership in Energy and Environmental Design, is a third-party Green Building Rating System and is the nationally accepted benchmark for the design, construction and operations of high performance green buildings. The LEED Green Building Rating System is a voluntary, consensus-based, market driven building rating system based on existing proven technology. It evaluates environmental performance from a whole building perspective over a building's lifecycle, providing a definitive standard for what constitutes a "green building." The development of the LEED Green Building Rating System was initiated by the United States Green Building Council (USGBC) Membership, representing all segments of the building industry and has been open to public scrutiny. The rating system is organized into five environmental categories with 7 required Prerequisites (PR) and 69 optional credits (Cr):

An additional category, *Innovation & Design Process*, addresses sustainable building expertise as well as design measures not covered under the five environmental categories

LEED is a measurement system designed for rating new and existing commercial, institutional and residential buildings. It is based on accepted energy and environmental principles and strikes a balance between known established practices and emerging concepts. It is a

performance-oriented system where credits are earned for satisfying criterion designed to address specific environmental impacts inherent in the design, construction and operations and maintenance of buildings. Different levels of green building certification are awarded based on the total credits earned.

The USGBC has four levels of LEED certification:

Certified - 26-32 points
Silver- 33-38 points
Gold -39-51 points
Platinum -52-69 points

Sustainable Design at the Monroe County Crime Lab

The Monroe County Crime Lab has achieved a "Platinum" level of certification in the LEED for New Construction Rating System, Version 2.2, as awarded by the United States Green Building Council (USGBC), through the Green Building Certification Institute (GBCI).

The USGBC's mission is to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.

Sustainable Sites (SS)

Sustainable site development and landscaping involves preparing a physical site for construction and later planting and maintaining the site while lessening the impact on the environment. Sustainable site development strategies include site selection, Brownfield or soil remediation and erosion control, and stormwater management. Sustainable landscaping involves selecting plants that are native to the region and that require fewer inputs such as water and chemicals. These efforts are an important component of green building because they conserve natural resources and limit on-site toxins.

The Monroe County Crime Lab earned 12 of 14 possible rating system points in the category of Sustainable Sites.

SS Prerequisite 1: Construction Activity Pollution Prevention

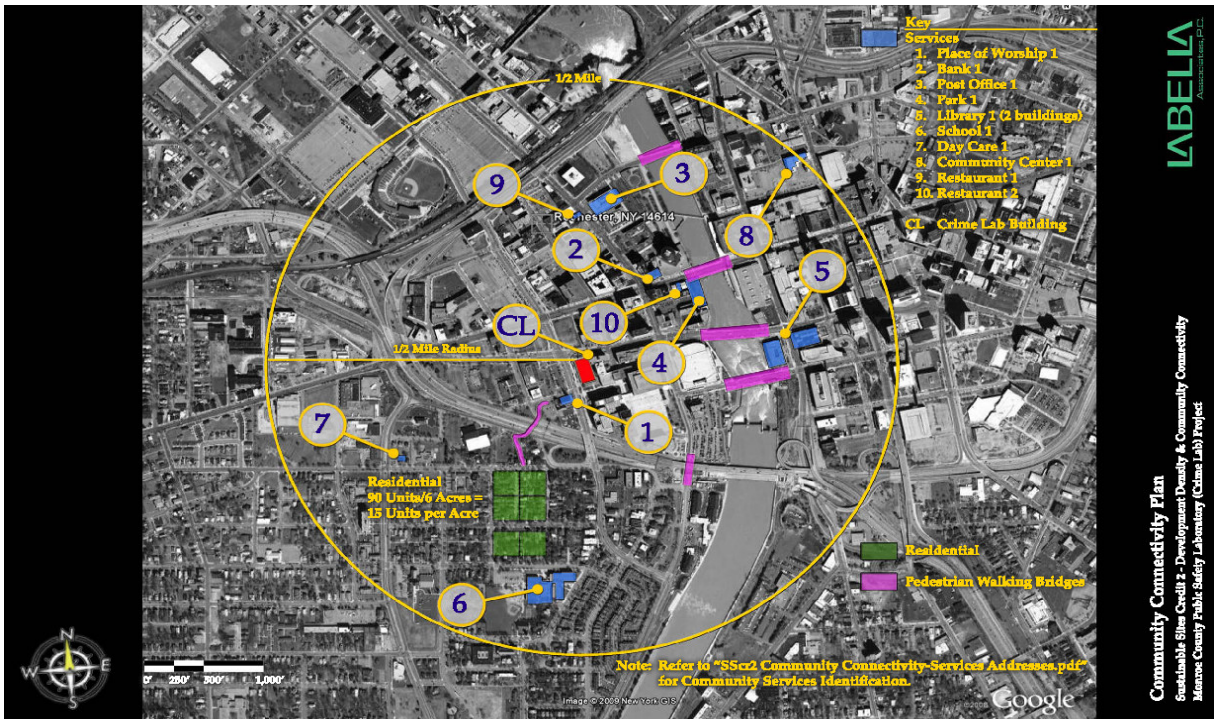
The project's erosion and sedimentation control plan conforms to the 2003 EPA Construction General Permit, which outlines the provisions necessary to comply with Phase I and Phase II of the NPDES program to manage erosion and runoff during construction. The permit has been issued by New York's SPDES (State Pollutant Discharge Elimination System). The permit issued by the DEC for the project is equal to and meets all National NPDES requirements.

SS Credit 1: Site Selection

The building site qualifies for this credit as it is not prime farmland, not previously undeveloped land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA, is not previously undeveloped land within 50 feet of a water body, is not identified as a habitat for any endangered species, is not within 100 feet of a wetland, and is not acquired public parkland.

SS Credit 2: Development Density and Community Connectivity

This credit requires construction to be implemented on a previously developed site AND within 1/2 mile of a residential zone or neighborhood with an average density of 10 units per acre net AND within 1/2 mile of at least 10 Basic Services, with pedestrian access between the building and the services. The project site is located within one half mile of ten community services and one residential district, with a density of 15 units per acre.



SS Credit 3: Brownfield Development

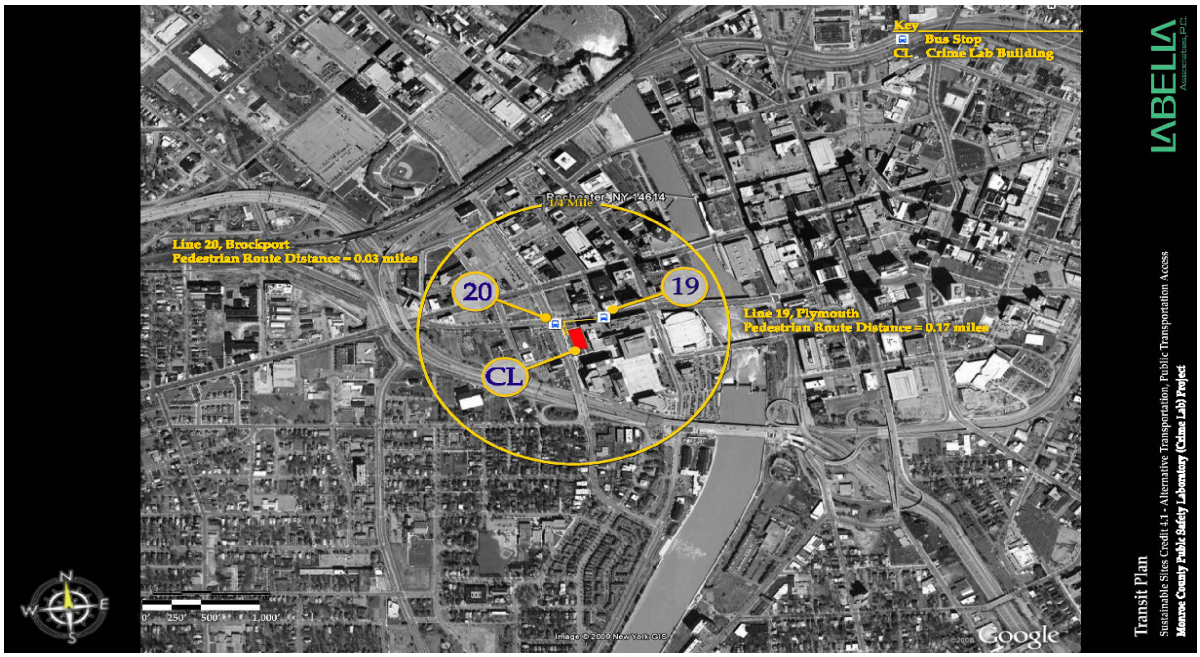
This credit requires the development on a site documented as contaminated (by means of an ASTM E1903-97Phase II Environmental Site Assessment or a local Voluntary Cleanup Program) OR on a site defined as a Brownfield by a local, state or federal government agency. The project is located on a previously contaminated site, as documented by a Phase II Environmental Site Assessment. Environmental site analysis was performed and remediation efforts were undertaken prior to construction of the project.

A Soil Management Plan (SMP) was developed and implemented to properly manage fill materials and other potential soil impacts that could be encountered for any ground intrusive work. The SMP provides procedures for proper reuse of suspect fill materials onsite, or proper off-site disposal including sampling requirements. The SMP also includes air monitoring procedures implemented and procedures for addressing orphan tanks, should any be

encountered. In order to minimize the potential for vapor intrusion issues related from any low-level residual impacts in the subsurface, a sub-slab vapor mitigation system is included and all fill material was removed from beneath the footprint of the building.

SS Credit 4.1: Alternative Transportation: Public Transportation Access

Locate project within 1/4 mile of one or more stops for two or more public or campus bus lines usable by building occupants to reduce pollution and land development impacts from automobile use. The project is served by two bus lines within 0.25 miles of the project site.



SS Credit 4.2: Alternative Transportation – Bicycle Storage & Changing Rooms

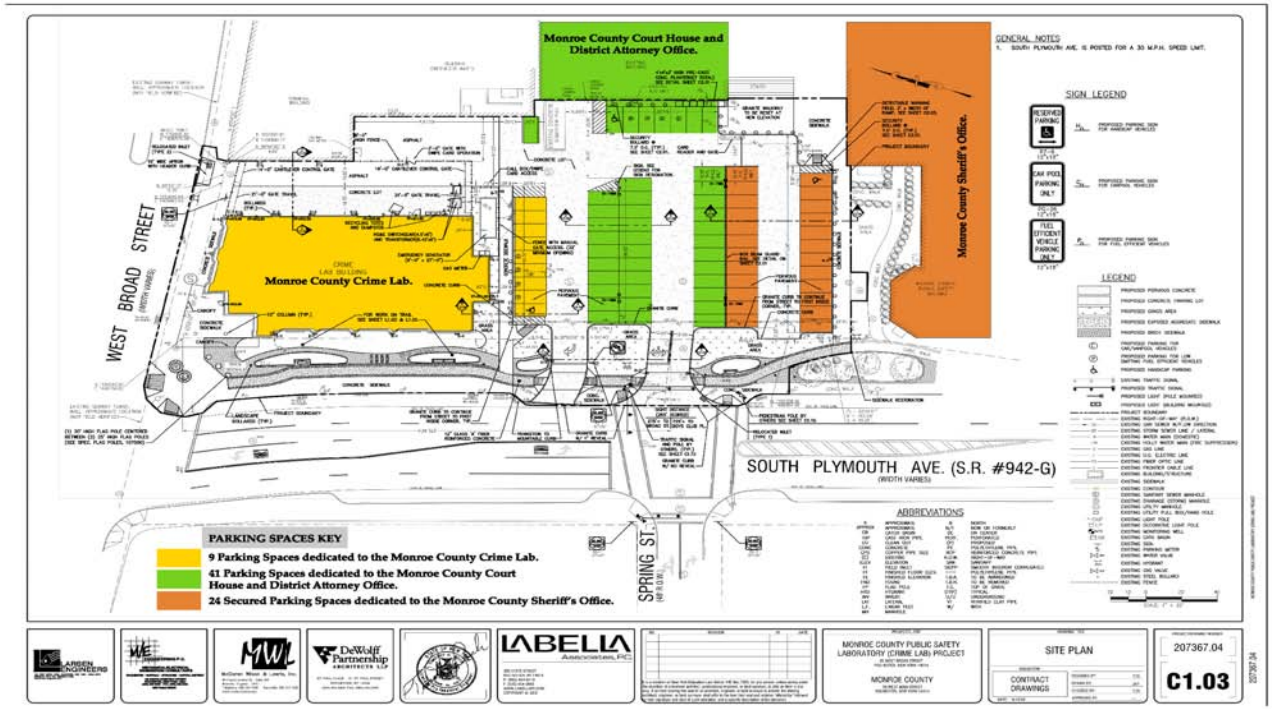
The requirement of this credit for commercial buildings is to provide secure bicycle racks and/or storage(within 200 yards of a building entrance) for 5% or more of all building users and to provide shower and changing facilities in the building, or within 200 yards of a building entrance, for 0.5% of Full-Time Equivalent (FTE)occupants. Bicycle storage facilities were provided to serve 5% of FTE building occupants, and shower facilities for 0.5% of the FTE building occupants. Plans were provided showing the location of the shower/changing facilities and the bike storage facilities.

SS Credit 4.3: Alternative Transportation – Low-Emission & Fuel Efficient Vehicles

Option 2 was chosen which requires providing preferred parking for low-emitting and fuel-efficient vehicles for 5% of the total vehicle parking capacity of the site. Four preferred parking spots have been provided and labeled for LE/FE vehicles.

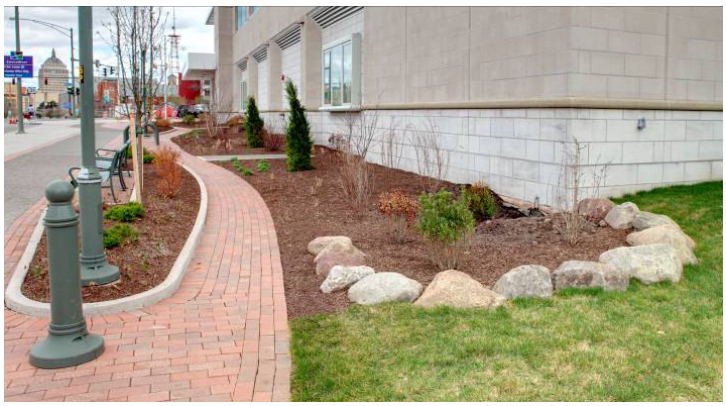
SS Credit 4.4: Alternative Transportation – Parking Capacity

Option 1 was chosen which requires the parking capacity to be sized to not exceed minimum local zoning requirements and provide preferred parking for carpools or vanpools for 5% of the total provided parking spaces. On-site provided parking does not exceed the minimum local zoning requirements, and car/van pool parking has been reserved for 4 spaces.



SS Credit 6.1: Stormwater Design – Quantity Control

The project has implemented a stormwater management plan which results in an 82% decrease (rate and quantity) in runoff from calculated pre-project conditions. Calculations were provided to demonstrate compliance with the requirements of this credit. The project's Stormwater Management Plan includes the installation of pervious concrete pavement, grass areas and a rain garden. Pervious concrete payment provides an alternative to conventional asphalt and is designed to infiltrate rainfall through the surface, thereby eliminating stormwater runoff from the site. The rain gardens and grassy areas also assist in reducing impacts of impervious cover by augmenting the recharge of groundwater through infiltration, providing some pollutant uptake in underlying soils. A Rainwater harvesting system is also incorporated into the project to further reduce the sites stormwater quantity.



SS Credit 6.2: Stormwater Design – Quality Control

The project has implemented a stormwater management plan, which reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from 100% of the average annual rainfall using acceptable Best Management Practices (BMPs). The project's BMPs are capable of removing 80-90% of the total suspended solids (TSS) from the average annual post-development runoff. The stormwater runoff for more than 90% of the average annual rainfall is captured and treated such that 80% of the average annual post-development Total Suspended Solids (TSS) are removed. The pervious concrete will be part of a maintenance plan for the new building and will receive planned cleaning to maintain the filtering characteristics. To treat the remaining 10% of annual stormwater runoff, an on-site cistern has also been designed and installed to capture and reuse roof stormwater runoff that is not stored in the rainwater harvesting system. Stormwater runoff is also captured and filtered through the grassy areas and rain gardens located around the site.

SS Credit 7.1: Heat Island Effect – Non-Roof

Paving materials with a Solar Reflectance Index (SRI) of 35, which consists of new grey concrete, have been incorporated in 78% of the site's hardscape areas. Open grid pavement systems (pervious concrete) have been incorporated into 18% of the sites hardscape areas. A total of 78% of the site's hardscape areas have been designed to mitigate heat island effect in this urban site.

SS Credit 7.2: Heat Island Effect – Roof

The roofing materials used on the project have a minimum Solar Reflectance Index (SRI) value of 100 for 92% of the roof surface. The building has incorporated a white roof membrane with an additional Pyramic coating which is a white, non-toxic, fire retardant roof coating formulated from water-based, pure acrylic, self-curing latex. Pyramic coatings preserve asphaltic surfaces and reduce under roof temperatures and heat island effects for surrounding areas.

SS Credit 8: Light Pollution Reduction

The project's interior and exterior lighting has been designed in accordance with the requirements of this credit.

Interior Lighting: the non-emergency interior lighting fixtures have been automatically controlled to turn off during non-business hours. Manual override capability has been provided for after hours use.

Exterior Lighting Power: the lighting power densities (LPD) for exterior area fixtures do not exceed 80% of the ASHRAE recommendations and the LPD of exterior facade/landscape lighting does not exceed 50% of the referenced ASHRAE Standard recommendations.

Light Trespass: the project is located in LZ-3 lighting zone. (Medium Commercial/Industrial, High-Density Residential). Photometric IES files were obtained from each lighting manufacturer for each of the luminaries utilized. Specific items included in the analysis were luminarie ballast factor, lamp depreciation and dirt depreciation. The project site is adjacent to existing city streets and sidewalks to the north and west directions. In the south and east directions the project is adjacent to existing Monroe County buildings, parking lots, and sidewalks all being utilized by the same owner and in some cases sharing of parking areas. The vertical foot-candles at the project site boundary range from 0 to .2 fc (foot candle). The horizontal foot-candles at the project site boundary range from 0 to .1 fc and at 15' beyond the project site boundary is 0 fc.

Water Efficiency (WE)

Using large volumes of water increases maintenance and lifecycle costs for building operations and increases consumer costs for additional municipal supply and treatment facilities. Conversely, facilities that use water efficiently can reduce costs through lower water use fees, lower sewage volumes to treat energy and chemical use reductions, and lower capacity charges and limits. Many water conservation strategies involve either no additional cost or rapid paybacks.

The Monroe County Crime Lab earned 5 out of 5 possible rating system points in the category of Water Efficiency

WE Credit 1: Water Efficient Landscaping

No permanent irrigation system has been installed. All plantings on the site are tolerant of drought conditions that periodically occur in this region. There have not been any plantings specified that have any special irrigation needs regionally. Rain Garden plantings thrive in both temporarily inundated conditions as well as temporary drought conditions. The Rain Garden areas will be watered by runoff from adjacent paved areas including a connection to the under-pavement stormwater collection system in the parking lot. Plantings will only be watered using designated exterior hose bibs which are fed by the rain water harvesting system during the initial plant establishment period.

WE Credit 2: Innovative Wastewater Technologies

Water use calculations have been provided stating that the project has reduced potable water use for sewage conveyance by 70.7% from a calculated baseline design through the installation of dual flush toilets and harvested rainwater use. The rainwater harvesting system utilizes a single 1500 gallon rain water storage tank. The tank is sized for the anticipated area rainwater and building water usage. Annual rainfall data was collected from the National Weather Service. The tank will store storm water collected from the building roof. The water will be utilized for the supply to water closets and several exterior hose bibs. In the event there is not enough storm water for this use a potable water system will be used.

WE Credit 3: Water Use Reduction

The project has reduced potable water use by 57% from a calculated baseline design (EPAct 1992) through the installation of dual flush toilets, low flow faucets and showers, and harvested rainwater use.

Energy & Atmosphere (EA)

Buildings consume approximately 37% of the energy and 68% of the electricity produced in the United States annually, according to the US Department of Energy. Electricity generated from fossil fuels – oil and coal – impact the environment in a myriad of adverse ways, beginning with their extraction, transportation, refining and distribution. Green buildings address these issues in two primary ways: by reducing the amount of energy required, and by using more benign forms. The better the energy performance of a project, the lower the operational costs.

The Monroe County Crime Lab earned 13 out of 17 possible rating system points in the category of Energy & Atmosphere.

EA Prerequisite 1: Fundamental Commissioning of Building Energy Systems

The project implemented Commissioning to verify that the building's energy related systems were installed, calibrated and performing according to the owner's project requirements, basis of design and construction documents. Commissioning for the following systems was completed: Heating ventilating, air conditioning, refrigeration and associated controls; lighting controls, domestic hot water systems, renewable energy systems (photovoltaic panels).

EA Prerequisite 2: Minimum Energy Performance

The project complies with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) of ASHRAE 90.1-2004. The project has used a computer energy simulation model to confirm satisfaction of this prerequisite. The ASHRAE standard is equivalent to the local building codes.

EA Prerequisite 3: Fundamental Refrigerant Management

The base building HVAC and Refrigeration systems provided on the project use no CFC-based refrigerants. This reduces ozone depletion in the environment.

EA Credit 1: Optimize Energy Performance

The project has achieved an energy cost savings of 35.7% and an energy use savings of 47% using the ASHRAE 90.1-2004 Appendix G methodology through computer model simulation with annual electric and natural gas consumptions of 1,097,703 kWh and 32,791 therms, respectively. The annual savings is projected $79,741 annually. Energy efficiency measures include an improved thermal envelope, high efficiency glazing, reduced lighting power density, and energy efficient HVAC systems.

Energy savings from the building design will provide societal benefits in the form of reduced emissions from power generating plants including nitrogen oxides(NOx), sulfur oxides (SOx) and carbon dioxide (CO_2).

714 pounds of nitrogen oxides (NOx)
274 pounds of sulfur oxides (SOx)
387 tons of carbon dioxide (CO2)

These savings are equivalent to removing 77 cars from the road.

EA Credit 2: On-Site Renewable Energy

2.51% of the project's energy cost is being offset by renewable site generated energy and that the design team utilized a computer energy model simulation to document improved building energy performance under EA Credit 1. Building mounted photovoltaic panels are installed on the roof surface to offset building energy cost and reduce environmental and economic impacts associated with fossil fuel energy use.

EA Credit 3: Enhanced Commissioning

In addition to the fundamental Commissioning implemented on this project, additional activities after building system performance verification was completed. These activities included: Commissioning agent reviews and comments on the design phase documents; contractor submittals applicable to systems being commissioned for compliance with the design documents, development of a systems manual to provide for future operating staff the information needed to understand and optimally operate the building systems; verification that training for operating personnel and building occupants are completed; and reviewing the building operation within 10 months after substantial completion with the operating staff and occupants to identify any problems in operating the building as originally intended.

EA Credit 4: Enhanced Refrigerant Management

The project selected refrigerants and HVAC and Refrigeration equipment that minimize the emission of compounds, which contribute to ozone depletion and global warming. The completed Refrigerant Impact Calculation indicates that the project's total refrigerant impact is 95.4 per ton, which is less than the maximum allowable value of 100.

EA Credit 5: Measurement & Verification

The project implemented a Measurement & Verification plan to provide for the ongoing accountability of building energy consumption over time. Metering equipment was installed to measure energy use. Performance will be tracked by comparing predicted performance to actual performance, broken down by system. Energy efficiency will be evaluated by comparing actual performance to computer simulated energy model predicted performance.

EA Credit 6: Green Power

35% of the building's annual electricity consumption is provided from renewable sources through the engagement in a two-year renewable energy contact with One Energy Renewables for wind power.

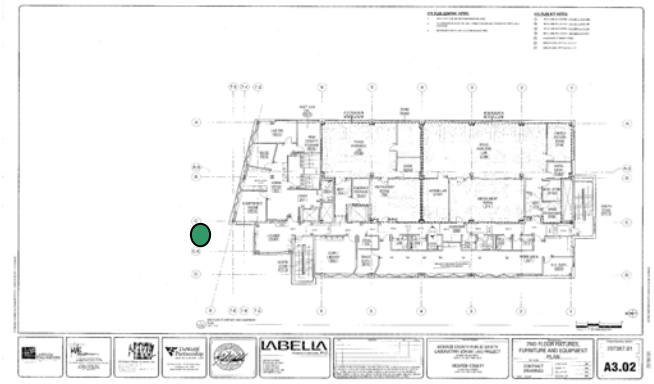
Materials & Resources (MR)

Building materials choices are important in sustainable design because of the extensive network of extraction, processing and transportation steps required to process them. Activities to create building materials may pollute the air and water, destroy natural habitats and deplete natural resources. Construction and demolition wastes constitute about 40% of the total solid waste stream in the United States.

The Monroe County Crime Lab earned 8 out of 13 possible rating system points in the category of Materials & Resources.

MR Prerequisite 1: Storage & Collection of Recyclables

The project has provided appropriately sized dedicated areas throughout the building for the collection and storage of recycling materials, including cardboard, paper, plastic, glass, and metals to reduce the waste stream that is hauled to and disposed of in landfills.



MR Credit 2: Construction Waste Management

The project diverted 98% of construction and demolition debris from disposal in landfills and incinerators. Recyclable recovered resources were redirected back to the manufacturing process. Reusable materials were directed to appropriate sites for reuse. Materials recycled or reused include the following: concrete, asphalt removed from the existing site, steel, drywall, metal studs, ceiling grid and tile, wood, carpeting, to name a few.

MR Credit 4: Recycled Content

The project utilized materials with recycled content for 30% of all materials used by cost, to increase the demand for building products that incorporate recycled content materials thereby reducing impacts resulting from extraction and processing of virgin materials. The project team identified materials and suppliers that allowed the project to achieve these goals. Some of the materials with recycled content utilized were: building steel, concrete, drywall, metal studs, ceiling tile and grid, masonry, ceramic tile, insulation to name a few.

MR Credit 5: Regional Materials

The project utilized materials and products that were extracted and manufactured with the region (500 mile radius to the project site), thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation. The project utilized 30% of materials by cost that were extracted and manufactured regionally. Some of these materials include: landscaping materials, concrete and aggregate, insulation, gypsum board, carpet, casework, lumber, wood doors, and some steel to name a few.

MR Credit 7: Certified Wood

To encourage environmentally responsible forest management, the project installed 50% of all wood-based materials and products that were certified in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria for wood building components. These components include general dimensional framing, wood doors to name a few.

Indoor Environmental Quality (EQ)

Americans spend an average of 90% of their time indoors, where the Environmental Protection Agency reports that levels of pollutants may run two to five times higher than outdoor levels. Preventing indoor environmental quality problems is generally much less expensive than identifying and solving them after they occur. Using higher ratios of filtered outside air, increasing ventilation rates, managing moisture, and controlling the level of contaminants in the building products used can provide optimal air quality for building occupants. Occupant well being can also be improved by providing the ability to control their personal thermal environment can raise occupant satisfaction levels which can lead to an increase in productivity.

The Monroe County Crime Lab earned 13 out of 15 possible rating system points in the category of Materials & Resources.

EQ Prerequisite 1: Minimum IAQ Performance

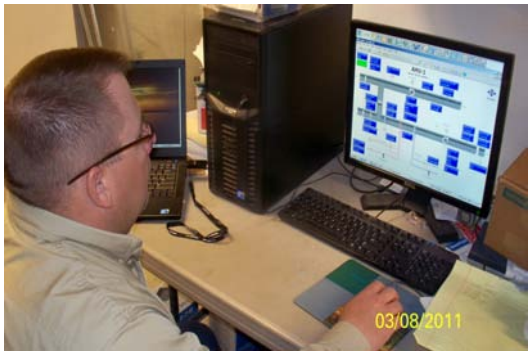
The project complies with the minimum requirements of ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality, using the Ventilation Rate Procedure. The purpose of this standard is to specify minimum ventilation rates and indoor air quality that will be acceptable to human occupants and is intended to minimize the potential for adverse health effects. The Standard establishes minimum requirements for the ventilation air rates for various types of occupied zones and building ventilation systems. The design meets the requirements of the standard and exceeds them, as demonstrated in credits to follow.

EQ Prerequisite 2: Environmental Tobacco Smoke Control

Smoking is prohibited inside building and smoking areas have been located at least 25 feet away from building openings and air intakes.

EQ Credit 1: Outdoor Air Delivery Monitoring

Carbon dioxide concentrations are monitored within all densely occupied spaces in the building, and direct airflow measurement devices have been provided for each mechanical ventilation system serving non-densely occupied spaces. Monitoring equipment has been configured to generate an alarm through the Building Automation System when conditions vary by 10% or more from the set point to trigger alarms that inform building operators of a deficiency in outdoor air delivery.



EQ Credit 2: Increased Ventilation

The project has increased breathing zone outdoor air ventilation rates to all occupied spaces by 30% above the minimum rates required by ASHRAE Standards 62.1-2004. The building ventilation system will utilize the main building Air Handling Units (AHUs) and associated Variable Air Volume (VAV) distribution system to provide ventilation and conditioning to the building. By using a higher outdoor air minimum setting and higher occupied minimum VAV box settings a 30% improvement on the ASHRAE 62.1 requirements was achieved for all spaces. In addition, Carbon Dioxide (CO2) sensors and control sequences were incorporated, to increase ventilation rates based on demand, which will further increase ventilation rates provided to the building at specific times when occupancy levels exceed that of the norm.

EQ Credit 3.1: Construction IAQ Management Plan - During Construction

To reduce indoor air quality problems resulting from the construction process in order to help sustain the comfort and well being of construction works and building occupants, the project team developed and implemented an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building. The plan included measures such as protecting the HVAC system during construction by having the ductwork delivered to the project site wrapped to prohibit contamination during construction, controlling pollutant sources and interrupt contamination pathways. Sequencing the installation of materials to avoid contamination of absorptive materials such as insulation, carpeting, ceiling tile and gypsum wallboard. Also, the building heating and ventilation systems were not used during the construction period.

EQ Credit 3.2: Construction IAQ Management Plan – Before Occupancy

To further reduce indoor air quality problems resulting from the construction process, an IAQ Management Plan for the pre-occupancy phase was developed. After construction was completed, prior to occupancy and with all interior finishes installed, a building flush-out was performed. A total air volume of 14,000 cubic feet of out door air per square foot of floor area was provided while maintaining an internal temperature of 60 degrees Fahrenheit and a relative humidity no higher than 60%.

EQ Credit 4.1: Low Emitting Materials - Adhesives & Sealants

In order to reduce the quantity of indoor air contaminants that are odorous, irritating and harmful to the comfort and well being of installers and occupants, all adhesives and sealants used on the interior of the building complied with the South Coast Air Quality Management District (SCAQMD) Rule #1168 which provides limits on Volatile Organic Compounds (VOC) products may contain. All adhesives and sealants installed within the building fell below or were in compliance with this standard.

EQ Credit 4.2: Low Emitting Materials – Paints & Coatings

In order to reduce the quantity of indoor air contaminants that are odorous, irritating and harmful to the comfort and well being of installers and occupants, all paints and coatings used on the interior of the building complied with the Green Seal Standard GS-11 which provides limits on Volatile Organic Compounds (VOC) products may contain. All paints and coating installed within the building fell below or were in compliance with this standard.

EQ Credit 4.3: Low Emitting Materials – Carpet Systems

In order to reduce the quantity of indoor air contaminants that are odorous, irritating and harmful to the comfort and well being of installers and occupants, all carpet systems installed in the interior of the building complied with the Carpet and Rug Institute Green Label Plus Program which provides limits on Volatile Organic Compounds (VOC) products may contain. All adhesives and sealants installed within the building fell below or were in compliance with this standard.

EQ Credit 4.4: Low Emitting Materials – Composite Wood & Agrifiber Products

Composite wood and agrifiber products are defined as: particleboard, medium density fiberboard (MDF), plywood used on the interior of the building shall contain no added urea-formaldehyde resins. Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies shall contain no added urea-formaldehyde resins.

EQ Credit 5: Indoor Chemical Pollutant Source Control

The project was designed to minimize and control pollutant entry into the building and later, cross contamination of regularly occupied areas. To accomplish this, permanent entryway systems are installed at each regularly used entry points for building users. Janitorial closets where chemicals may be present have exhaust systems that create negative pressure with respect to adjacent spaces with the door to the room closed. Prior to occupancy, air filtration media with a Minimum Efficiency Reporting Value (MERV) of 13 was installed to both the return and outside air for regularly occupied areas of the building.

EQ Credit 6.1: Controllability of Systems – Lighting Controls

Lighting controls are provided for individual workstations, and are available for shared multi-occupant spaces to promote productivity, comfort and well being of building occupants.

EQ Credit 6.1: Controllability of Systems – Thermal Comfort

Thermal controls are provided for 27 individual workstations, and controls available for all shared multi-occupant spaces to promote productivity, comfort and well being of building occupants.

EQ Credit 7.1: Thermal Comfort – Design

The HVAC systems and building envelope have been designed to meet the requirements of the ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy. Thermal comfort is a complex issue, impacted by environmental conditions (air temperature, humidity and air speed) and personal factors (metabolic rate and clothing level) as well as personal preferences of occupants. Each occupied space in the building is served by a dedicated variable volume supply air control valve with a hot water reheat coil (VAV/RH). Each VAV/RH has a dedicated space temperature sensor and an occupancy sensor connected to the building automation system (BAS). The VAV/RH units vary the amount of air and heat provided to a

space based on the measured temperature and occupant settings. Transient high occupancy spaces such as conference rooms have CO2 sensors in addition to the temperature and occupancy sensor.

EQ Credit 7.2: Thermal Comfort – Verification

A thermal comfort survey will be distributed to building occupants within the first 6 to 18 months of occupancy. a corrective action plan if the survey results indicate that 20% of the building occupants are dissatisfied with thermal comfort based on the environmental variables outlined in ASHRAE 55-2004 has been devised.

Innovation & Design Process (ID)

Sustainable design strategies and measures are constantly evolving and improving. New technologies are continually introduced to the marketplace and up-to-date scientific research influences building design strategies. The purpose of the category is to recognize projects for innovative building features and sustainable building knowledge.

The Monroe County Crime Lab earned 5 out of 5 possible rating system points in the category of Innovation & Design.

ID Credit 1: Exemplary Performance - WE Credit 3 Water Efficiency

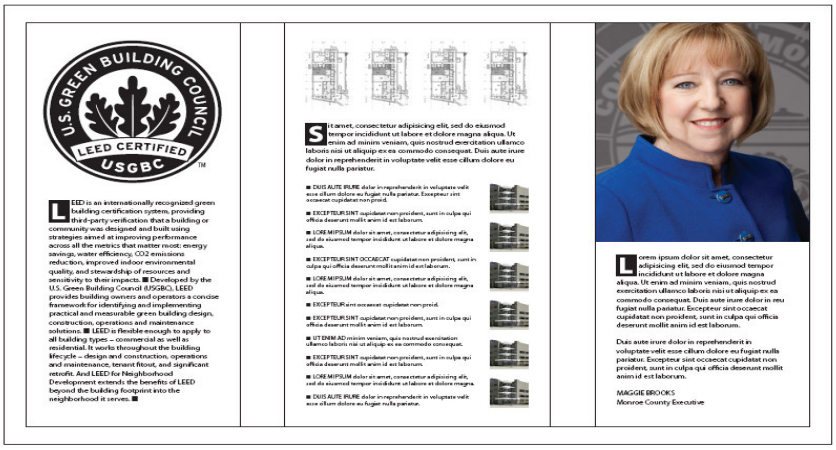
The project achieved exemplary performance for WEc3 Water Use Reduction. The guideline for exemplary performance in WEc3 is 40%. The project team has specified efficient fixtures for water systems and demonstrated a 56.9% reduction water use.

ID Credit 2: Exemplary Performance – MR Credit 2 Construction Waste Management

The project achieved exemplary performance for MRc2 Construction Waste Management. The guideline for exemplary performance in MRc2 is 98%. The construction team recycled, diverted 97%.

ID Credit 3: Educational Outreach

Monroe County implemented an actively instructional educational program to educate a broad audience of building occupants and visitors about sustainable design, the impact of buildings on the environment and sustainable solutions that were integrated in this new building. The building lobby houses a LCD monitor with a continuous loop video, activated by occupancy, of the sustainable design features of the building to educate visitors to the facility. A case study was developed and placed on the Monroe County Website to inform the design of other buildings based on the successes of this project. A diorama on the exterior of the building was constructed to educate the local community who do not have access to the building, about the sustainable design features incorporated within. Guided tours will be provided by appointment to showcase the building sustainable features.

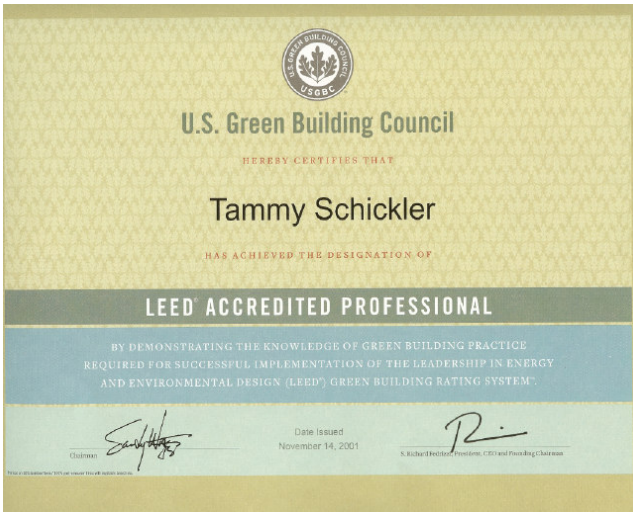


ID Credit 1: Exemplary Performance – EAc Credit 6 Green Power

The project achieved exemplary performance for EA Credit 6 Green Power by purchasing Renewable Energy Certificates (RECs) equal to 145.8% of the predicted annual electrical consumptions over a two year period in the form of Wind Energy. The requirement for exemplary performance in EAc6 is double the base credit requirement of 35%.

ID Credit 2: LEED Accredited Professional

Monroe County enlisted the services of a LEED Accredited Professional early in the design process for the life of the project. This individual served as the facilitator of an integrated design and construction process, provided a basis of knowledge in the application of the LEED Rating System and streamlined the application and certification process. In addition, several members of the design and construction team were also LEED Accredited Professionals who provided concentrated knowledge in the area of their expertise.



Appendix A

Energy Model EAcr1 Report

Revised January 2010

TECHNICAL ASSISTANCE STUDY IN SUPPORT OF NEW CONSTRUCTION PROGRAM

LEED® EAc1 ANALYSIS

completed by

SAIC - *CONTRACT #10128-07*

for

Monroe County
Public Safety Laboratory
Rochester, New York

Project Number: NCP8142

Science Applications International Corporation
6390 Fly Road
East Syracuse, New York

New York State
Energy Research and Development Authority

NOTICE

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SECTION 1 - LEED ENERGY AND ATMOSPHERE CREDIT 1 ANALYSIS

OVERVIEW

Science Applications International Corporation (SAIC) completed under the NYSERDA New Construction Program an evaluation of energy efficiency opportunities considered for a new laboratory and office facility for Monroe County, NY. Based on the results of this study, the owner received an incentive offer from NYSERDA to implement many of the measures addressed by the study.

The project has been registered with the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) program under LEED-NC Version 2.2 and certification is being pursued by the owner and design team. To assist in this effort, SAIC developed eQUEST/DOE-2.2 models of the proposed and baseline buildings to help the design team optimize building energy performance and determine the number of rating points available from LEED *Energy and Atmosphere Credit 1 – Optimize Energy Performance.* This report documents the results of the LEED EAc1 analysis.

BACKGROUND

The County is planning to construct a new 45,000 gross square foot, 4-story building to house crime laboratories and offices. The first floor will include an unconditioned garage, laboratory support space, storage and mechanical equipment rooms. The second and third floors will have offices on the west side of the building and labs on the east side. Laboratory space also exists on the east side of the fourth floor, with mechanical equipment space occupying the west side.

One (1) 177.5-ton air-cooled rotary screw chiller will provide cooling capacity to the building. The basis of design is Trane RTAC series rated at 1.122 kW/ton full-load (10.7 EER) and 0.828 kW/ton IPLV (14.5 EER) at job conditions of 45° leaving chilled water temperature and 57°F entering chilled water temperature.

Three (3) 900 MBH output high efficiency natural gas-fired condensing boilers provide space and domestic hot water heating capacity. The basis of design is Hydrotherm KN-10 with 88% thermal efficiency at full-load. The boilers will generate domestic hot water through a plate-and-frame heat exchanger (HX-1).

A variable primary flow chilled water pumping system is specified. Pump speed/flow will be controlled by variable frequency drives (VFDs) in response to a differential pressure control. Each 10-hp pump is rated for 340 GPM at 55 feet of head. Only one pump operates at a time; the second pump provides standby service.

The building heating hot water pumping system consists of variable speed pumps HWP-1 and -2, each rated for 180 GPM at 45 feet of head (5-hp), and west and east constant speed radiation pumps HWP-4 and -5 rated for 20 GPM at 30 feet of head (0.5-hp). Variable speed pump HWP-3 (30 GPM at 15 feet of head; 0.5-hp) circulates hot water from the boiler loop through domestic hot water heat exchanger HX-1. The domestic hot water loop will include a fractional horsepower recirculation pump.

Fume hoods and bio-safety cabinets will be utilized in the laboratories. A variable air volume (VAV) laboratory supply and exhaust system will be provided. Space temperature and supply/exhaust air volume will be controlled through VAV terminal boxes as well as air valves on the exhaust of each fume hood and general exhaust.

Two central station variable air volume (VAV) air handling units will be provided for the building. One unit will serve the laboratory side of the building (designated as AHU-2), while the second will serve the offices and support space (AHU-1). The laboratory unit will supply 100% outside air to the laboratories. The supply fan will be fitted with a variable frequency drive to vary the amount of air delivered to the building in response to a duct static pressure control.

All of the laboratory exhaust systems will be ducted into a common header. Two 19,000 CFM variable speed/variable flow exhaust fans (designated as EF-6 and -7) will be controlled to maintain exhaust system static pressure as well as stack discharge velocity within an acceptable range. AHU-2 includes an enthalpy wheel that transfers energy between building exhaust and outdoor air streams to preheat or precool make-up air. The wheel was selected for zero percent cross contamination.

A flat plate heat exchanger is specified for exhaust air heat recovery in the PCR Amplification Lab. This system consists of make-up air fan EF-4 (1,500 CFM) and packaged heat recovery unit HR-1. Outside air is drawn through the heat exchanger by EF-4 before being delivered to the AHU-2 outside air intake. Energy is transferred between the laboratory exhaust air stream (on laboratory exhaust fans EF-6 and -7) and the outdoor air brought into the building by EF-4. A dedicated exhaust system is specified for the firing range (EF-3).
The office and support area VAV system will include terminal boxes with hot water reheat coils and a traditional duct static pressure control scheme to provide fan speed modulation through variable frequency drives.

Table 3-2 summarizes design ratings for the building's two major air handling systems. The values shown in the table were obtained from design drawings and vendor submittals.

Table 3-2: Air Handling Unit Design Ratings

I.D.	Service	Type[1]	Supply Fan Characteristics		Minimum OA CFM	Return/Exhaust Fan Characteristics		Heating Coil Capacity (MBH)	Cooling Coil Total Capacity (MBH)[2]	Cooling Coil Sensible Capacity (MBH)	Energy Recovery
			CFM	HP		CFM	HP				
AHU-1	Offices and Support	VAV	20,000	40	2,500	18,000	5	282	822	562	None
AHU-2	Laboratory	VAV	40,000	40	40,000	40,000	50	1,485	1,872	1,331	Enthalpy Wheel

A building automation system (BAS) will provide monitoring, direct digital control (DDC), and central management of the HVAC systems. Several control enhancements are specified including a dual enthalpy economizer on AHU-1 and discriminator controls to reset duct discharge temperature setpoints on the VAV systems. Lighting occupancy sensors will be used to index through the BAS occupancy status in laboratory spaces. When occupancy is not detected for 20 minutes, the room/lab shall reset to unoccupied status and its corresponding airflow requirement. The system will return to occupied airflow requirements immediately upon detection of space occupancy.

The building will be constructed with levels of insulation and glazing performance characteristics that exceed the minimum prescriptive requirements of the Energy Conservation Construction Code of New York State (ECCC) and ASHRAE Standard 90.1-2004 – *Energy Standard for Buildings Except Low-Rise Residential Buildings* (see Table 3-1). For example, a typical exterior wall consists of a masonry finish backed by 2-inches of continuous extruded polystyrene (nominal R-10), six inch metal studs, and nominal R-13 polyicynene spray foam between the studs. This compares to minimum R-3.8 continuous and R-13 cavity insulation as per ASHRAE Standard 90.1-2004 in Climate Zone 5A. Energy simulation models prepared by SAIC consider effective thermal resistance from thermal bridging through the metal studs. The continuous layer of rigid insulation serves as a thermal break at the studs.

The proposed PVC roofing membrane will be highly reflective with a minimum emissivity of 0.90. The Energy Star compliant membrane is intended to reduce the heat island effect and lower cooling energy requirements. The building design calls for an average of 4.5 inches of polyisocyanurate roof deck

insulation. Assuming an aged thermal resistance of R-6.4 per inch, the total average R-value for the roof insulation is R-28.8.

High-performance glazing will be provided. The final design calls for low-E glazing (Guardian SunGuard basis of design). The 0.29 U-factor and 0.38 SHGC (center of glass) listed in the specifications for this glass type exceed the minimum requirements of the energy code and ASHRAE 90.1-2004. Glazing with reduced solar heat gain coefficient (SHGC) lowers space cooling loads and energy requirements, while reduced U-factors primarily lower heating energy requirements.

The lighting system is designed for an overall power density (LPD) that is lower than the maximum limit specified by the ASHRAE 90.1-2004 space-by-space method. The lighting power density for the entire building is approximately 0.953 Watts per square foot. This compares to a maximum allowable lighting power density of 1.120 W/ft^2 following the space-by-space method of ASHRAE 90.1-2004. Automatic daylight stepped control of fluorescent fixtures will be implemented in perimeter labs and offices while on/off control of fixtures will be utilized in the conference room, lounge, library and break room.

A summary of the design features that will reduce energy requirements follows.

- High-efficiency air-cooled chiller.
- High-efficiency natural gas-fired condensing boilers.
- Variable flow/speed chilled and hot water pumping systems.
- Exhaust air energy recovery on laboratory supply and exhaust system.
- Enthalpy economizer controls for AHU-1.
- Improved levels of building envelope insulation over the prescriptive requirements of ASHRAE Standard 90.1-2004.
- High-performance/reduced SHGC window glazing.
- EnergyStar® compliant high albedo roof.
- High-efficiency lighting and controls with lighting power density lower than the maximum ASHRAE Standard 90.1-2004 prescriptive limit.
- Automatic daylighting controls.
- Premium-efficiency motors that meet NYSERDA minimum prescriptive requirements.

The proposed building was evaluated for potential financial incentives through the NYSERDA New Construction Program (NCP) using the Whole Building Design approach. An eQUEST/DOE-2.2 building energy simulation model was developed for the building with all energy efficiency measures (EEMs) implemented. A baseline model was then developed that just meets the prescriptive requirements of ASHRAE Standard 90.1-2004 following the Appendix G Performance Rating Method (PRM). These two models were compared to determine the incentive for the project based on annual energy and summer peak demand savings.

SAIC used the same models to determine the number of rating points available from LEED *Energy and Atmosphere Credit 1 (EAc1) – Optimize Energy Performance.* The LEED® *Option 1 – Whole Building Energy Simulation* compliance path was followed. Graphic representations of the eQUEST building model are shown below (Figures 1-1 through 1-6).

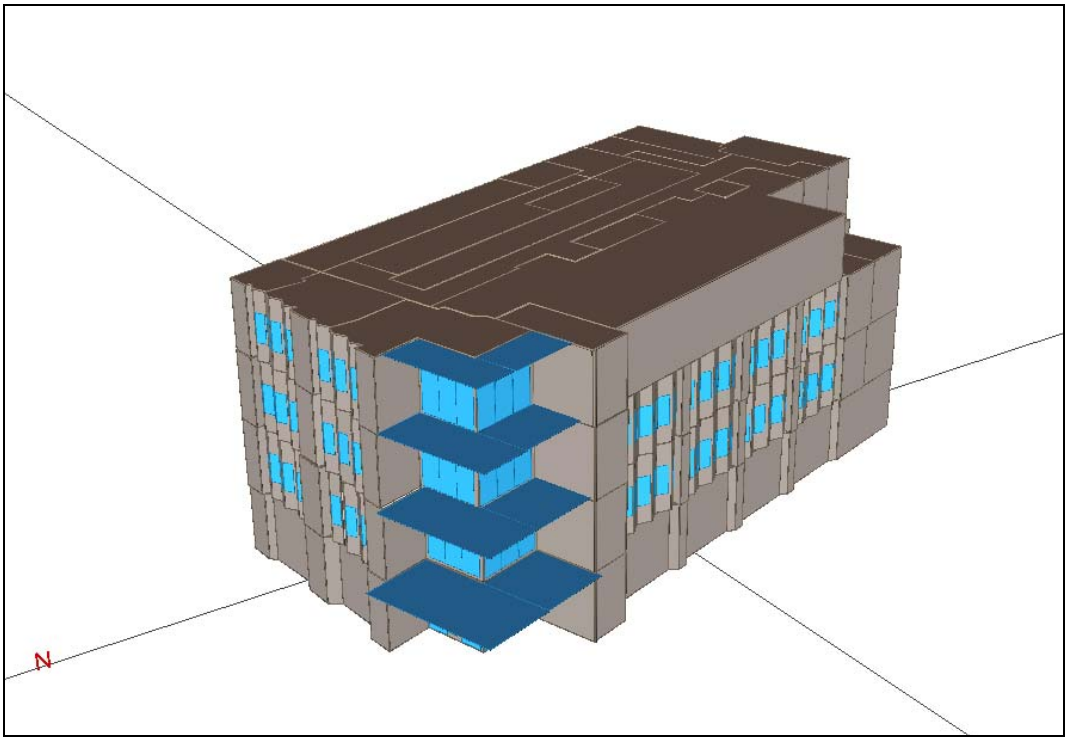

Figure 1-1: 3-D eQuest View

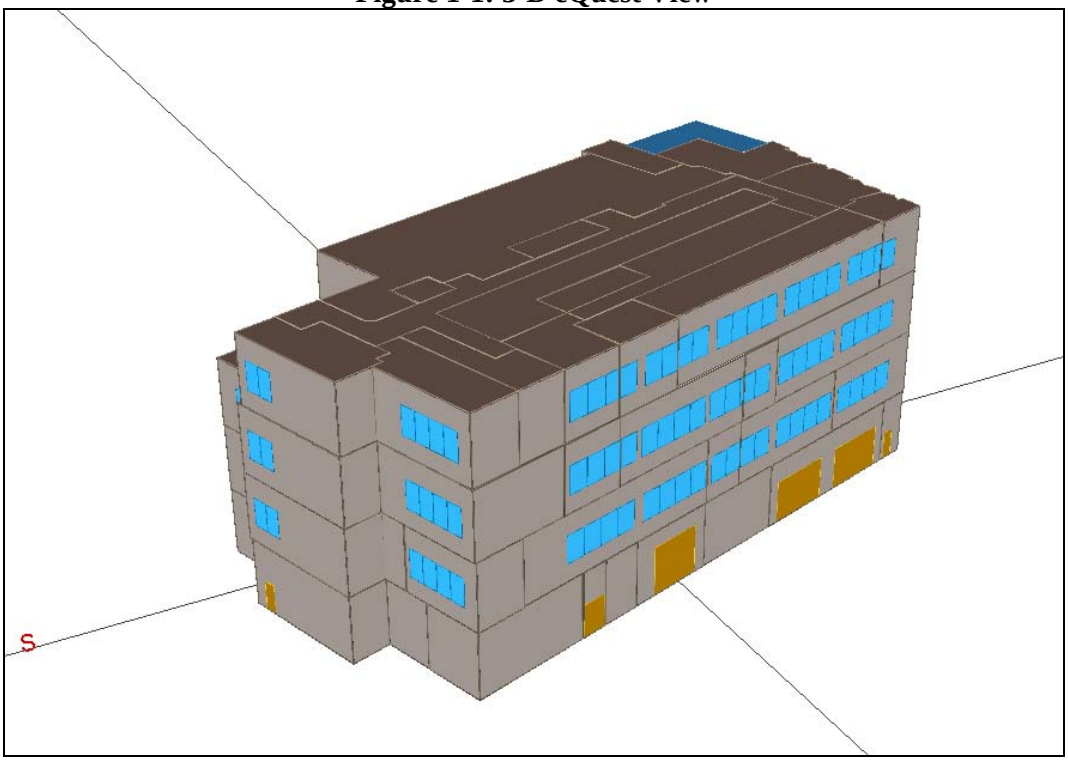

Figure 1-2: 3-D eQuest View

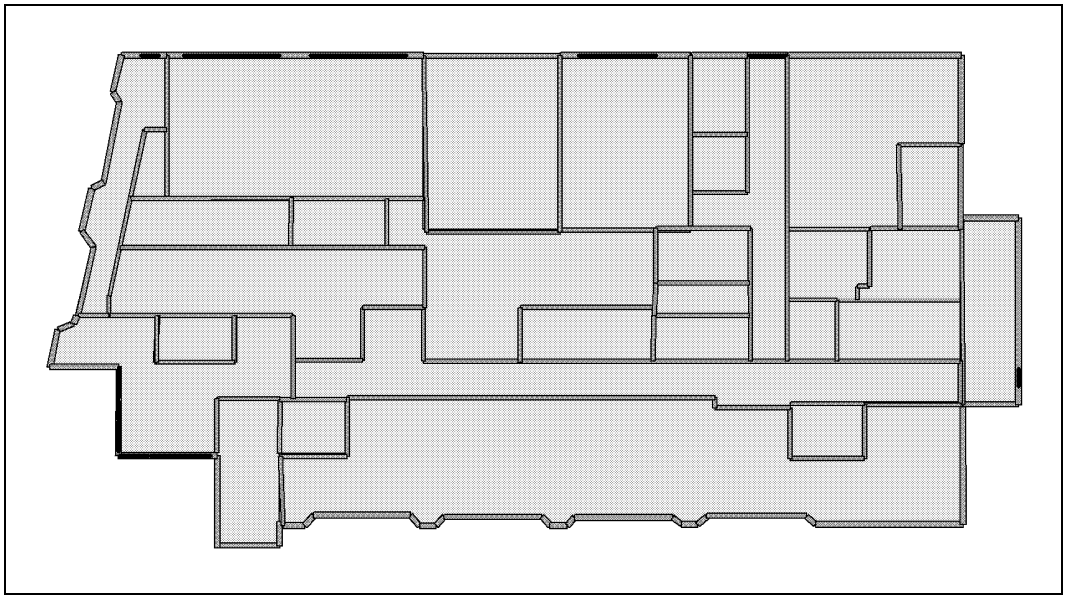

Figure 1-3: First Floor Zoning

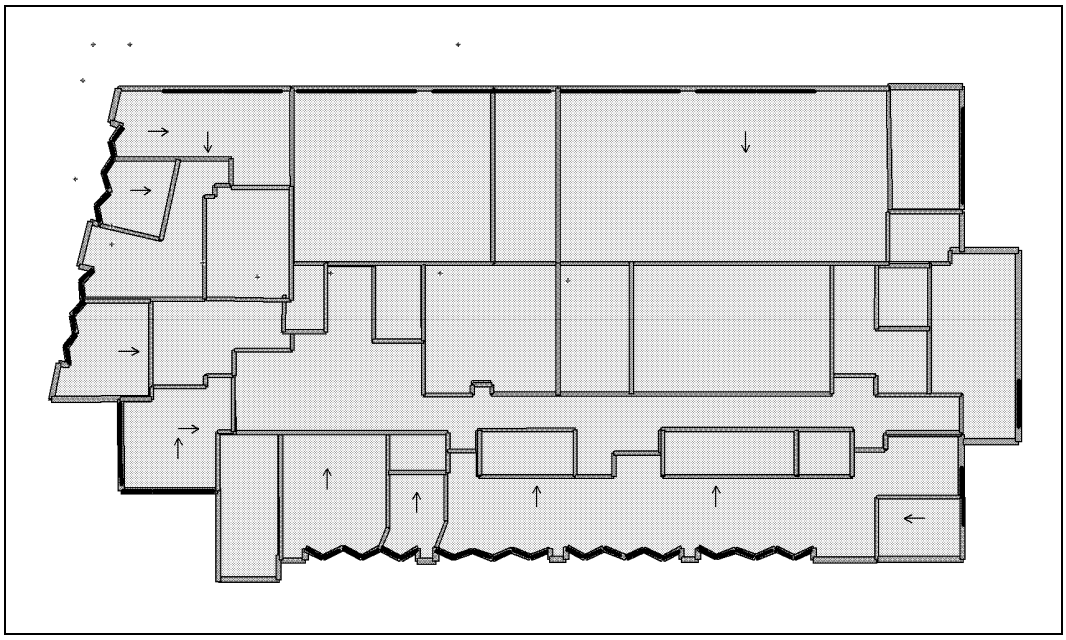

Figure 1-4: Second Floor Zoning

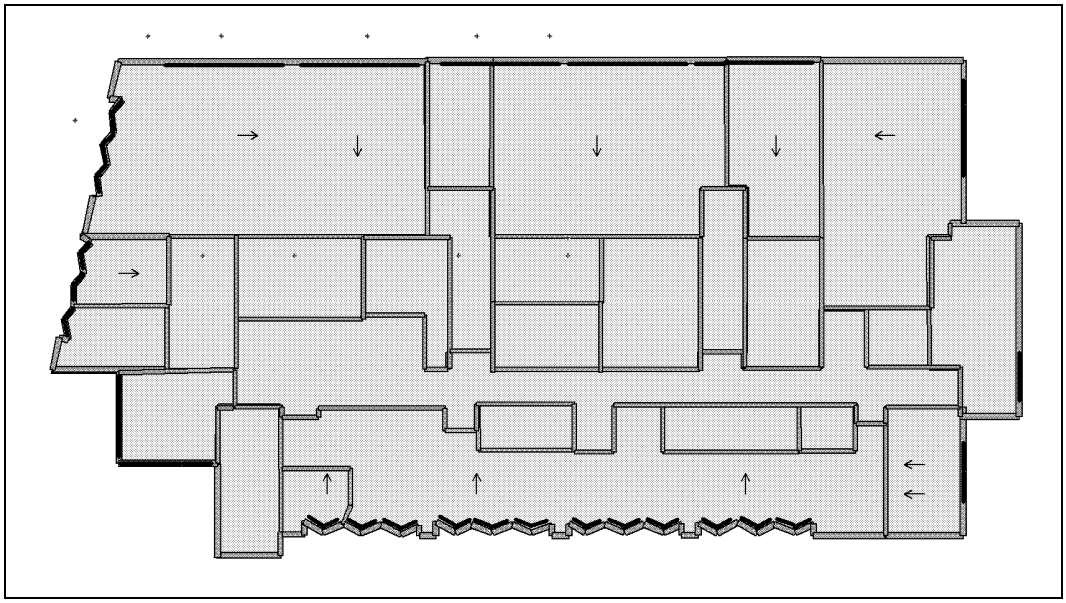

Figure 1-5: Third Floor Zoning

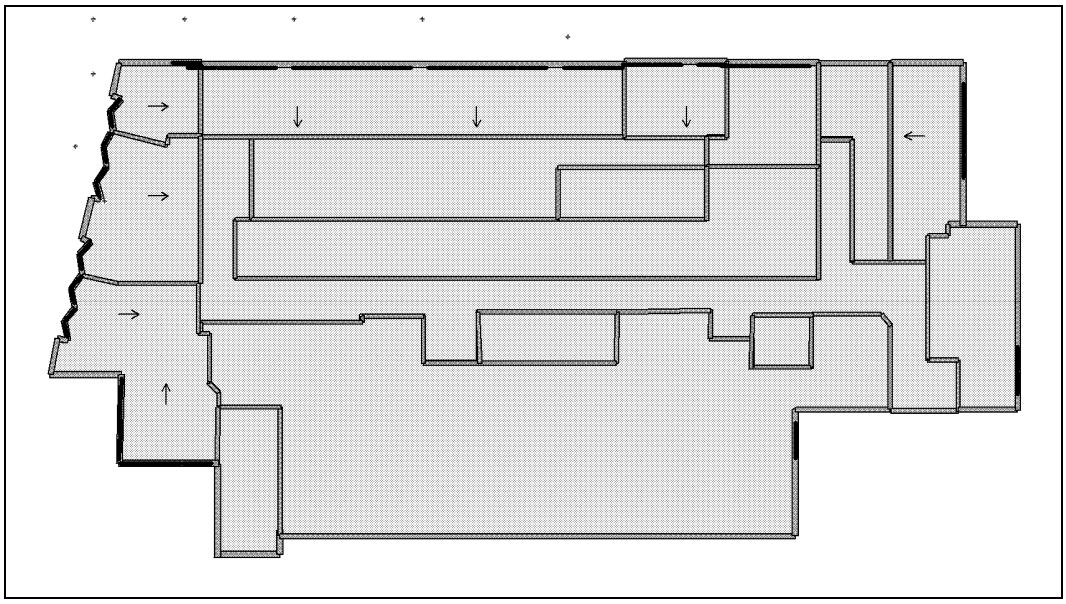

Figure 1-6: Fourth Floor Zoning

METHODOLOGY

The baseline and design buildings were modeled in eQUEST (version 3.61, DOE-2.2 release 44e4), a DOE-2.2 based hourly building energy simulation program developed by James J. Hirsch & Associates. This program applies state-of-the-art features that allow a modeler to enter key characteristics for the building shell, mechanical and electrical systems, along with characteristic operating strategies and schedules. The interactions between all of the different building loads, systems and plants are then simulated in hourly time intervals using typical or long-term average weather data for the location to provide a detailed account of energy consumption and demand. All simulations used Rochester TMY2 (Typical Meteorological Year) weather data, which represents typical year conditions.

The LOADS analysis program of DOE-2.2 calculates peak loads and hourly space loads imposed by ambient weather conditions and internal occupancy, lighting and equipment, as well as by variations in

the size, location, orientation, construction, and materials for walls, roofs, and windows. The HVAC program simulates the operation of secondary Heating, Ventilating, and Air Conditioning (HVAC) components including fans, coils and economizers that are operated according to various user-defined temperature schedules as well as primary HVAC equipment such as boilers, chillers, and cooling towers. Utility rate structures are modeled in the ECONOMICS program to calculate building energy costs.

Architectural drawings provided to SAIC were used to obtain dimensional information and construction characteristics on the building. Thermal zones were established primarily based on building exposure, common space type, and the actual HVAC zones indicated on the drawings. Design ratings for the HVAC systems were obtained from the design drawings, specifications and manufacturer's performance data.

Installed lighting loads were calculated by SAIC from reflected ceiling plans and fixture specifications provided by the design team. Plug loads were based on the electrical equipment that would be expected in each space (e.g., office equipment, computers, copiers, etc.). This information was used to estimate installed lighting and equipment power for the model. Typical occupancy levels and schedules were obtained from the owner. The program models input energy to lighting and electrical equipment and also calculates heat generated by these systems and building occupants; the resulting loads are imposed on the building's HVAC systems.

SAIC developed eQUEST building energy simulation models of the proposed (i.e., design) and baseline buildings to estimate energy and demand savings and financial incentives available from the New Construction Program and to determine the number of rating points available from LEED *Energy and Atmosphere Credit 1 (EAc1) – Optimize Energy Performance.* The LEED® *Option 1 – Whole Building Energy Simulation* compliance path was followed. This approach uses the Building Performance Rating Method (PRM) outlined in Appendix G of ASHRAE 90.1-2004. Addendum *a* to the Standard was followed, which eliminates the requirement to distribute glazing in horizontal bands for the baseline building.

Utility costs were predicted by eQUEST based on cost data provided by the County. According to the County, the average cost of energy is $0.10/kWh and $1.15/Therm for electricity and natural gas, respectively.

Tables G3.1.1A and G3.1.1B of ASHRAE 90.1-2004 define the appropriate baseline HVAC system type. For this project the baseline system is packaged variable air volume with reheat (VAV w/reheat) with DX cooling and fossil fuel boiler (System 5). There is no chilled water plant for the baseline building as the baseline system uses direct expansion cooling. As required by the PRM, all areas of the design building that will *not* be mechanically cooled were modeled with a DX cooling system that matches the baseline building system. In both cases, the same cooling system type and efficiency (equal to ASHRAE 90.1-2004 minimum efficiency) were modeled.

In accordance with ASHRAE 90.1-2004 Appendix G, heating and cooling capacities of the baseline HVAC systems were oversized 25% and 15%, respectively, compared to eQUEST autosized loads. Baseline design air flow rates are based on a supply-air-to-room-air temperature difference of 20°F (Section G3.1.2.8). Baseline fan brake horsepower and input power were calculated by following the equations in Addendum *ac* to the Standard with credits for a fully-ducted return, return airflow control device, and MERV 13 filter (AHU-2 only).

The PRM calls for four baseline model calculations; one for the building oriented as designed and three others with the building rotated 90°, 180° and 270° from the actual orientation. Annual energy and utility costs for the final baseline building are calculated as the average of the simulation results for the four orientations. The baseline and design building models include all energy end uses for the site, including

regulated (e.g., interior and exterior lighting, space heating and cooling, pumps, fans, service water heating, snow melt system) and non-regulated (e.g., elevators, refrigeration, kitchen equipment and receptacle loads).

RESULTS

Table 1-2 compares construction and efficiency characteristics of the baseline and design buildings simulated by the eQUEST models developed for this study. The baseline column lists the minimum prescriptive requirements of ASHRAE 90.1-2004 for the building envelope, lighting, and HVAC systems. The source of data for the baseline code model is also presented in the table. Design parameters are based on information shown on drawings and provided to SAIC by the project team.

Table 1-2: Comparison of Baseline and Design Building Characteristics – NYSERDA NCP and LEED EAc1 Analysis (Climate Zone 5A)

Parameter	Baseline Building	Design Building	Baseline Source/Notes
Building Loads (~18% Glazed Area)			
Exterior Wall Insulation			
Metal Framed Walls	R-13 cavity R-3.8 continuous U-0.084 max. assembly	R-13 cavity R-10 continuous U-0.054 for assembly	ASHRAE 90.1-2004 Table 5.5-5 Steel-Framed Walls (see Note 1)
Concrete Masonry Unit Walls (south stairwell)	R-13 cavity R-3.8 continuous U-0.084 max. assembly	R-5 continuous U-0.118 for assembly	
Metal Framed Walls (Semi-exterior exposure, interior parking garage walls)	R-13 cavity U-0.124 max. assembly	R-13 cavity R-10 continuous U-0.054 for assembly	
Roof Insulation			
Insulation Above Deck	R-15 continuous U-0.063 max assembly	R-28.8 continuous (average 4.5" polyisocyanurate; R-6.4 per inch) U-0.034 for assembly	ASHRAE 90.1-2004 Table 5.5-5 (see Note 1)
Window Glazing			
Assembly U-factor	0.57	0.29 center of glass and 0.327 calculated assembly	ASHRAE 90.1-2004 Tables 5.5-5 and G3.1.5(c) and (f) (see Note 1)
Assembly SHGC	0.39	0.38	
High Albedo Roof			
Initial Solar Reflectance	0.30	>=0.75	LEED-NC Version 2.2 Reference Guide (pg. 180) and ASHRAE 90.1-2004 Table G3.1 (see Note 2)
3-year Aged Solar Reflectance	NA	0.45	
Infrared Emittance	NA	>=0.90	
Slab-on-Grade	F-0.730	F-0.60	ASHRAE 90.1-2004 Table 5.5-5 (see Note 1)
Opaque Doors			
Swinging	U-0.700	U-0.071 (R-14)	ASHRAE 90.1-2004 Table 5.5-5 (see Note 1)
Non-Swinging	U-1.450	U-0.160 (R-6) U-0.820 (uninsulated for	

Parameter	Baseline Building	Design Building	Baseline Source/Notes
		parking garage)	
Interior Lighting (Entire Building) Power Density Power Allowance Daylighting Controls Occupancy Sensor Controls	 1.120 W/ft^2 50,596 Watts No As per ASHRAE 90.1-2004, no credit taken as per Table G3.1.	 0.953 W/ft^2 43,089 Watts Yes (Perimeter Labs, Perimeter Offices, Conference Room, Lounge, Library and Break Room) As per ASHRAE 90.1-2004 plus offices, lab/exam rooms, corridors and storage areas. Overall LPD equals 0.877 W/ft^2 with 10% power adjustment applied to zones where occupancy sensors are not required.	ASHRAE 90.1-2004 Table 9.6.1 (see Note 3)
Task Lighting	Same as Design	1.85 kW	
Plug Load (Entire Building)	Same as Design	0.94 W/ft^2	Note 4
Refrigeration Load	Same as Design	42 kW (5,256 EFLH)	Note 4
Vertical Transportation	Same as Design	57 kW (2,054 EFLH)	Note 4
Exterior Lighting	6.23 kW	3.45 kW	Note 5
HVAC and Service Water Heating			
HVAC System Type	Packaged VAV w/reheat with DX cooling and fossil fuel boiler (System 5; Packaged VAV w/Reheat)	VAV systems with fan VFDs for AHU-1 and AHU-2. AHU-2 is a 100% outdoor air unit for the laboratory spaces and contains an enthalpy wheel energy recovery unit. Hot water unit heaters for mechanical rooms and stairwells (modeled as identical to baseline system as per PRM).	ASHRAE 90.1-2004 Table G3.1.1A and G3.1.1B (see Note 6)
Baseline Packaged VAV Cooling Efficiency	< 5.4 tons: 12.0 SEER 5.4-11.3 tons: 10.1 EER 11.3-20 tons: 9.5 EER 20-63.3 tons: 9.3 EER > 63.3 tons: 9.0 EER	NA NA NA NA NA	ASHRAE 90.1-2004 Tables 6.8.1.A and 6.8.1E
Exhaust Air Energy Recovery	No Energy Recovery in Baseline Model	Enthalpy wheel on AHU-2.	ASHRAE 90.1-2004 Section G3.1.2.10 (see Note 6)

Parameter	Baseline Building	Design Building	Baseline Source/Notes
Chiller Plant	No Chiller Plant in Baseline Model	One (1) 177.5-ton Air-Cooled Electric Screw Chiller rated at 1.122 kW/ton at job conditions (12°F delta-T across evaporator) and 0.828 kW/ton IPLV	ASHRAE 90.1-2004 Section G3.1.3.7
Primary Chilled Water Pump Flow Control	No Chilled Water Loop in Baseline Model	Variable Flow/Speed	ASHRAE 90.1-2004 Section G3.1.3.10
Boiler Plant	Two (2) equally-sized Natural Draft, Natural Gas-Fired Boilers with 80% thermal efficiency.	Three (3) 900 MBH Natural Gas-Fired Condensing Boilers with 88% thermal efficiency at full-load.	ASHRAE 90.1-2004 Section G3.1.3.2
Hot Water Pump Flow Control	Primary, Constant Speed, Riding the Pump Curve (19 W/GPM)	Variable Flow/Speed	ASHRAE 90.1-2004 Section G3.1.3.5
Service Water Heating	Natural Gas-Fired Domestic Hot Water Heater with 80% Thermal Efficiency.	Flat Plate Heat Exchanger served by Hot Water Loop.	ASHRAE 90.1-2004 Table 7.8
DDC Enhancements			ASHRAE 90.1-2004 Section G3.1.2.6, Section G3.1.2.5 (see Note 7)
Airside Economizer	Dry-Bulb (70°F limit)	Dual Enthalpy (AHU-1)	
Demand Controlled Ventilation (DCV)	No	No	
Discharge Air Temperature Reset	Yes	Yes	
Hot Water Temperature Reset	Yes	Yes	
Chilled Water Temperature Reset	NA	Yes	
Laboratory Occupancy Sensor Reset	No	Yes	
Motors	EPACT 92	NEMA Premium	ASHRAE 90.1-2004 Table 10.8

Notes:

1. Baseline performance characteristics are dependent on percentage of window and glazed door area on above-grade walls. Listed insulation R-values do not account for thermal bridge effects, but baseline and design models derate cavity insulation R-values as appropriate. Performance Rating Method requires light weight construction (e.g., steel frame exterior walls, insulation above metal roof deck, etc.) for the baseline building model regardless of design building construction.
2. New roofs with a surface reflectance greater than 0.70 and an emissivity greater than 0.75 (high albedo) are modeled with an aged reflectance of 0.45. The baseline roof is modeled with a reflectance of 0.3. See Table G3.1 of ASHRAE 90.1-2004.
3. Average design lighting power density calculated from sum-total of all spaces. ASHRAE 90.1 space-by-space method was used to determine baseline lighting power allowance. Used 1.5 W/ft^2 for Electrical/Mechanical, 1.4 W/ft^2 for Laboratory, 1.3 W/ft^2 for Lobby, 1.1 W/ft^2 for Office (Enclosed or Open), 0.9 W/ft^2 for Restroom/Break Room, 0.8 W/ft^2 for Active Storage, 0.7 W/ft^2 for Automotive – Service/Repair, 0.6 W/ft^2 for Active Stairs, 0.5 W/ft^2 for Corridor, and 0.2 W/ft^2 Parking Garage. Occupancy sensor controls required for classrooms, conference/meeting rooms, and lunch/break rooms. Ten (10) percent power reduction applied to zones in design building model where occupancy sensors are not required as per ASHRAE 90.1-2004 Table G3.2.
4. Miscellaneous electric (plug) loads based on survey of building owner to estimate number of personal computers, office equipment, etc. in each DOE-2.2 zone. Also modeled elevators identically in baseline and design building models (estimated 57 kW total input power based on one 40 hp and one 50 hp motors). Refrigeration equipment load based on estimated electrical usage provided by the design team and modeled identically in design and baseline.
5. Baseline exterior lighting power was established and coordinated with LEED Sustainable Sites Credit 8: Light Pollution Reduction.
6. Energy recovery is required on individual fan systems that have both a design capacity of 5,000 CFM or greater and have a minimum outside air supply of 70% of the supply air volume. The energy recovery system, when required, must have at least 50% recovery effectiveness. According to Section G3.1.2.10, energy recovery is required for the baseline for areas served by laboratory system AHU-2, however a Credit Interpretation Ruling issued by the USGBC specifies that credit can

be taken for energy recovery if the designed system has the ability to reduce total airflows by at least 50% (http://www.usgbc.org/LEED/Credit/CIRDetails.aspx?CIID=1819). Therefore, energy recovery is not modeled in the baseline.

7. Air-side economizers are required for baseline packaged VAV w/reheat (System 5) as per Section G3.1.2.6 and Table G3.1.2.6B.

Based on anticipated building usage, the office air handling system (AHU-1) is expected to operate weekdays from 6 a.m. to 7 p.m. with minimal operation on weekends and holidays. The laboratory air handling system (AHU-2, EF-6 and EF-7) will operate continuously.

Table 1-3 compares baseline and design building annual energy use and demand predicted by the energy simulation models for the major end-uses as well as total energy use and costs for the entire building.

Table 1-3: Comparison of Building Energy Use and Demand for Baseline and Design Building Models – LEED EAc1 Analysis

Performance Rating Method Compliance Report								
Performance and Rating Table Energy Summary by End Use				EAc1 Points	8			
				EAc2 Points	1			
			Proposed Building		Baseline Building		Savings	
End Use	**Energy Type**	**Units**	**Energy**	**Peak**	**Energy**	**Peak**	**(%)**	
Area Lights	Electricity	kWh	93,243	29.2	136,796	44.9	32%	
Task Lights	Electricity	kWh	17,292	5.1	17,292	5.1	0%	
Miscellaneous Equip	Electricity	kWh	315,187	38.9	315,187	38.9	0%	
Space Heating	Electricity	kWh	2,040	0.9	-	-	-	
Space Heating	Natural Gas	Therm	32,435	16.2	90,102	46.9	64%	
Space Cooling	Electricity	kWh	146,598	136.9	205,621	247.9	29%	
Pumps & Misc	Electricity	kWh	27,885	7.0	32,041	4.8	13%	
Fans - Interior	Electricity	kWh	253,142	54.8	233,541	58.0	-8%	
Refrigeration	Electricity	kWh	227,760	26.0	227,760	26.0	0%	
Service Water Heating	Natural Gas	Therm	356	0.2	404	0.2	12%	
Exterior Usage	Electricity	kWh	14,556	3.5	26,284	6.2	45%	
Total Building Consumption		**MMBtu**	**7,026**		**13,127**		**46%**	

		Proposed Building		Baseline Building		Percentage Improvement	
Type		**Energy Use**	**Energy Cost**	**Energy Use**	**Energy Cost**	**Energy (%)**	**Cost (%)**
Nonrenewable (Regulated & Unregulated)							
Electricity	MMBtu	3,746	$ 109,770	4,077	$ 119,452	8.1%	8.1%
Natural Gas	MMBtu	3,279	$ 37,710	9,051	$ 104,082	63.8%	63.8%
Steam or Hot Water	MMBtu	-	$ -	-	$ -	-	-
Chilled Water	MMBtu	-	$ -	-	$ -	-	-
Other	MMBtu	-	$ -	-	$ -	-	-
Total Nonrenewable	MMBtu	7,026	$ 147,480	13,128	$ 223,534	46.5%	34.0%

	Proposed Building		Baseline Building		Percentage Improvement	
Exceptional Calculation Method Savings (savings indicated as negative)	**Energy Use (MMBtu)**	**Energy Cost**	**Energy Use (MMBtu)**	**Energy Cost**	**Energy (%)**	**Cost (%)**
Site-Generated Renewable (REC)	(126)	$ (3,687)			1.0%	1.6%
Site-Recovered					-	-
Exceptional Calculation #1 Savings					-	-
Exceptional Calculation #2 Savings					-	-
Exceptional Calculation #3 Savings					-	-
Total including Exceptional Calculations	6,900	$ 143,793	13,128	$ 223,534	47.4%	35.7%
Percentage Improvement = 100 x (1 - (Proposed Building Performance / Baseline Building Performance))						**35.7%**
Percent Renewable = REC / (Proposed Building Performance + REC)						**2.50%**

Appendix A and B include selected DOE-2.2 output reports for both the LEED baseline and design building models. These reports present annual energy use for each building end-use (reports PS-E, BEPS and BEPU), as well as economic reports (reports ES-D and ES-E) that summarize utility costs for both cases. ***Based on this analysis, the design building provides 35.7% annual energy cost savings relative to the baseline building. This results in eight (8) LEED rating points for the credit.*** The number of points awarded for the credit is subject to USGBC review of the credit submission.

The eQUEST simulations are in compliance with the requirements of ASHRAE 90.1-2004 Appendix G for simulation discrepancies between the baseline and design models. According to Section G3.1.2.2 of the standard, the unmet load hours reported by the simulation output for both the baseline and design runs may not exceed 300 hours per year (of the 8,760 hours simulated). Further, unmet load hours for the proposed building design may not exceed the unmet load hours for the baseline building design by more than 50 hours per year. This requirement is intended as a final check that adjustments made to the baseline HVAC system sizing was done correctly (and in accordance with the Standard) so that the baseline system loading characteristics are similar to the design system.

Interior lighting savings are 32% and primarily come from a 15% reduction in lighting power density and an 8% lighting power density reduction due to occupancy sensors. Daylighting controls in the perimeter office and lab areas account for the remainder of the savings. Daylighting is modeled directly in eQUEST and takes into consideration placement, orientation and sensitivity of the daylighting sensors along with direct and indirect solar effects. Indirect solar effects include reflection of light off of walls, floors and ceilings in the space. Exterior lighting savings of 45% are caused by the reduction in lighting power.

Space heating energy savings is 64% with enthalpy wheel energy recovery accounting for 34% of the total heating savings. From reviewing the outputs of both models, the seasonal efficiency of the baseline heating plant is 64% compared to a seasonal efficiency of 86% for the design model. The efficiency difference accounts for another 22% of the space heating savings. The remainder of the heating savings , approximately 8%, comes from lower internal gains resulting in reduced cycling in unoccupied periods.

Space cooling savings is 29%. The enthalpy wheel does not contribute any significant energy savings (but does reduce the peak demand). The cooling energy savings come from a combination of efficiency differences between the baseline and design models and lower internal gains which result in reduced cycling in unoccupied periods.

Fan energy is increased by 8.4% between the design and baseline model that comes from an increase in total fan power, due to the enthalpy wheel energy recovery unit for AHU-2. Both the design and baseline airflow requirements are primarily driven by the air change rates in the lab spaces, so there is no benefit to fan power from lowering the space loads as the laboratory AHU is scheduled to run 24-hours per day. The decrease in fan energy use from AHU-1 is more than offset by the increase in fan power requirements for AHU-2 caused by the increased total static pressure with the enthalpy wheel.

There is a small difference in Pumps and Miscellaneous HVAC equipment energy. The design has chilled and hot water pumping systems with VFD controls (total 16,198 kWh) plus the enthalpy wheel energy recovery unit. The baseline model has an inefficient constant speed hot water pumping system (21,324 kWh). There is a difference (12%) in service water heating due to efficiency differences between the condensing boilers in the design versus a minimum efficiency storage domestic hot water heater.

Appendix A

DOE-2.2 Output Reports for Baseline Building

WARNING********
SYSTEM Dummy VAV-1 (Stairs) has zero outside air for design calculations

WARNING********
SYSTEM Dummy VAV-2 (MER) has zero outside air for design calculations

PERIOD OF STUDY

STARTING DATE	ENDING DATE	NUMBER OF DAYS
1 JAN 2007	31 DEC 2007	365

SITE CHARACTERISTIC DATA

STATION NAME	LATITUDE (DEG)	LONGITUDE (DEG)	ALTITUDE (FT)	TIME ZONE	BUILDING AZIMUTH (DEG)
Rochester NY TMY2	43.0	76.2	0.	5 EST	73.0

NUMBER OF SPACES 104 EXTERIOR 60 INTERIOR 44

SPACE	SPACE*FLOOR MULTIPLIER	SPACE TYPE	AZIM	LIGHTS (WATT / SQFT)	PEOPLE	EQUIP (WATT / SQFT)	INFILTRATION METHOD	ACH	AREA (SQFT)	VOLUME (CUFT)
Spaces on floor: Floor-1										
Z01-1100-STA	1.0	EXT	0.0	0.60	0.3	0.55	AIR-CHANGE	0.05	255.6	4090.3
Z02-1101-MER	1.0	EXT	0.0	1.50	2.0	0.55	AIR-CHANGE	0.05	2049.4	32790.7
Z03-1102-TELE	1.0	INT	0.0	1.50	0.1	3.35	AIR-CHANGE	0.00	114.5	1832.5
Z04-1103-STA	1.0	EXT	0.0	0.60	0.3	0.55	AIR-CHANGE	0.10	296.0	4735.6
Z05-1104-COR	1.0	INT	0.0	0.50	0.8	0.55	AIR-CHANGE	0.00	832.4	13318.3
Z06-1105-ELEV	1.0	INT	0.0	1.50	0.1	0.55	AIR-CHANGE	0.00	101.2	1619.9
Z07-1106-SUPP	1.0	INT	0.0	1.50	1.0	1.35	AIR-CHANGE	0.00	209.0	3344.7
Z08-1107-STO	1.0	INT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.00	84.7	1355.6
Z09-1108-EVID	1.0	INT	0.0	2.86	1.0	1.85	AIR-CHANGE	0.00	155.7	2491.6
Z10-1109-VIEW	1.0	INT	0.0	2.01	1.0	1.85	AIR-CHANGE	0.00	188.2	3011.3
Z11-1110-OFC	1.0	EXT	0.0	1.88	1.0	1.85	AIR-CHANGE	0.10	145.4	2326.0
Z12-1111-LAB	1.0	EXT	0.0	1.73	1.0	0.85	AIR-CHANGE	0.10	691.6	11066.3
Z13-1112-COR	1.0	EXT	0.0	0.50	0.4	0.55	AIR-CHANGE	0.05	391.3	6261.6
Z14-1113-REST	1.0	INT	0.0	0.90	0.1	0.55	AIR-CHANGE	0.00	91.8	1469.2
Z15-1114-STO	1.0	EXT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.10	124.8	1996.4
Z16-1115-VEHI	1.0	EXT	0.0	0.80	0.6	0.55	AIR-CHANGE	0.10	634.7	10154.4
Z17-1116-EVID	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	665.6	10649.5
Z18-1117-PARK	1.0	EXT	0.0	0.20	1.0	0.55	AIR-CHANGE	0.20	1033.4	16533.7
Z19-1118-COR	1.0	EXT	0.0	0.50	0.3	0.55	AIR-CHANGE	0.15	275.9	4414.9
Z20-1119-LOB	1.0	INT	0.0	1.30	1.2	0.85	AIR-CHANGE	0.15	231.1	3698.4
Z21-1120-VIEW	1.0	INT	0.0	1.20	1.0	1.85	AIR-CHANGE	0.00	131.7	2106.8
Z22-1121-RECE	1.0	INT	0.0	1.20	2.0	1.85	AIR-CHANGE	0.00	674.7	10795.8
Z23-1122-SECU	1.0	INT	0.0	1.20	1.0	1.85	AIR-CHANGE	0.00	102.2	1635.3
Z24-1123-LOB	1.0	EXT	0.0	1.30	2.8	0.85	AIR-CHANGE	0.00	552.4	8838.4
Z25-1124-REST	1.0	INT	0.0	0.90	0.1	0.55	AIR-CHANGE	0.00	56.3	901.4
Z26-1125-FREEZ	1.0	INT	0.0	0.80	0.7	2.35	AIR-CHANGE	0.00	703.4	11254.6
Z27-1126-NARC	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	203.2	3251.8
Z28-1127-JAN	1.0	INT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.00	124.3	1988.7
Z29-1128-DRY	1.0	INT	0.0	1.50	0.1	1.85	AIR-CHANGE	0.00	89.4	1430.6
Z30-1129-LAB	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	145.1	2322.3
Spaces on floor: Floor-2										
Z31-2200-STA	1.0	EXT	0.0	0.60	0.2	0.55	AIR-CHANGE	0.05	246.0	3936.3
Z32-2201-LIB	1.0	EXT	0.0	1.40	3.0	1.85	AIR-CHANGE	0.10	361.6	5785.3
Z33-2202-SUPV	1.0	EXT	0.0	1.97	1.0	1.85	AIR-CHANGE	0.10	131.5	2104.1
Z34-2203-STO	1.0	INT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.00	66.9	1071.0
Z35-2204-WORK	1.0	EXT	0.0	1.59	3.0	1.85	AIR-CHANGE	0.15	1162.8	18605.4
Z36-2205-SUPV	1.0	EXT	0.0	1.87	1.0	1.85	AIR-CHANGE	0.10	147.5	2359.4
Z37-2206-DATA	1.0	INT	0.0	1.50	0.1	4.35	AIR-CHANGE	0.00	73.7	1179.6
Z38-2207-COR	1.0	INT	0.0	0.50	1.3	0.55	AIR-CHANGE	0.00	1270.5	20328.2
Z39-2208-STA	1.0	EXT	0.0	0.60	0.4	0.55	AIR-CHANGE	0.10	429.7	6874.7
Z40-2209-VEST	1.0	INT	0.0	1.30	0.2	0.55	AIR-CHANGE	0.00	236.7	3787.6
Z41-2210-STO	1.0	INT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.00	95.6	1530.0
Z42-2211-STO	1.0	EXT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.10	100.4	1606.2
Z43-2212-EXAM	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	250.5	4008.0
Z44-2213-LAB	1.0	EXT	0.0	1.50	2.0	1.85	AIR-CHANGE	0.15	1628.5	26055.5
Z45-2214-EXAM	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	318.8	5101.4
Z46-2215-LAB	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.15	985.9	15774.4
Z47-2216-OFC	1.0	EXT	0.0	1.20	2.0	1.85	AIR-CHANGE	0.10	394.7	6314.6
Z48-2217-QA/QC	1.0	EXT	0.0	1.20	1.0	1.85	AIR-CHANGE	0.10	138.1	2209.7
Z49-2218-COR	1.0	EXT	0.0	0.50	0.3	0.55	AIR-CHANGE	0.05	324.5	5192.4
Z50-2219-CONF	1.0	EXT	0.0	1.40	2.3	1.35	AIR-CHANGE	0.10	231.9	3710.8
Z51-2220-LOUN	1.0	EXT	0.0	1.30	0.3	1.35	AIR-CHANGE	0.15	299.5	4792.7
Z52-2221-OFC	1.0	INT	0.0	1.20	1.0	1.85	AIR-CHANGE	0.00	278.4	4453.6
Z53-2222-REST	1.0	INT	0.0	0.90	0.1	0.55	AIR-CHANGE	0.00	74.5	1191.7
Z54-2223-STO	1.0	INT	0.0	0.80	0.3	0.55	AIR-CHANGE	0.00	269.9	4317.7
Z55-2224-STO	1.0	INT	0.0	0.80	0.1	0.55	AIR-CHANGE	0.00	109.8	1756.7
Z56-2225-INST	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	498.1	7969.2
Z57-2226-LAB	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	268.9	4301.7
Z58-2227-INST	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	723.9	11583.0
Z59-2228-REST	1.0	INT	0.0	0.90	0.2	0.55	AIR-CHANGE	0.00	168.7	2699.9
Z60-2229-REST	1.0	INT	0.0	0.90	0.1	0.55	AIR-CHANGE	0.00	122.7	1962.7
Spaces on floor: Floor-3										
Z61-3300-STA	1.0	EXT	0.0	0.60	0.3	0.55	AIR-CHANGE	0.05	263.3	4213.4
Z62-3301-OFC	1.0	EXT	0.0	2.09	1.0	1.85	AIR-CHANGE	0.05	114.7	1835.9
Z63-3302-OPEN	1.0	EXT	0.0	2.09	3.0	1.85	AIR-CHANGE	0.15	1494.6	23913.6
Z64-3303-OFC	1.0	EXT	0.0	1.92	1.0	1.85	AIR-CHANGE	0.10	278.2	4450.5
Z65-3304-DATA	1.0	EXT	0.0	1.50	0.1	4.35	AIR-CHANGE	0.00	74.2	1186.5
Z66-3305-REST	1.0	INT	0.0	0.90	0.2	0.55	AIR-CHANGE	0.00	180.2	2883.6
Z67-3306-REST	1.0	INT	0.0	0.90	0.1	0.55	AIR-CHANGE	0.00	118.9	1901.8
Z68-3307-STA	1.0	EXT	0.0	0.60	0.4	0.55	AIR-CHANGE	0.10	437.0	6992.2
Z69-3308-COR	1.0	EXT	0.0	0.50	1.2	0.55	AIR-CHANGE	0.00	1241.7	19866.8
Z70-3309-OFC	1.0	INT	0.0	1.20	1.0	1.85	AIR-CHANGE	0.00	101.1	1617.0
Z71-3310-PCR	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	918.4	14694.9
Z72-3311-LAB	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	441.6	7065.4
Z73-3312-LAB	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.15	1114.2	17827.8
Z74-3313-EXAM	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	239.1	3825.8
Z75-3314-LAB	1.0	EXT	0.0	1.50	2.0	1.85	AIR-CHANGE	0.15	1574.5	25192.7
Z76-3315-OFC	1.0	EXT	0.0	1.20	1.0	1.85	AIR-CHANGE	0.10	174.1	2786.3
Z77-3316-BIO	1.0	EXT	0.0	1.40	1.0	1.85	AIR-CHANGE	0.05	181.9	2909.9
Z78-3317-LOUN	1.0	EXT	0.0	1.30	0.3	1.85	AIR-CHANGE	0.10	271.8	4348.4
Z79-3318-EXAM	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	254.5	4072.1
Z80-3319-EXAM	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	295.8	4732.1
Z81-3320-EVID LOC	1.0	INT	0.0	0.90	0.2	1.85	AIR-CHANGE	0.00	228.2	3650.9
Z82-3321-VEST	1.0	INT	0.0	1.30	0.2	0.55	AIR-CHANGE	0.00	225.7	3610.7

Z83-3322-PERP	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	199.5	3191.3
Z84-3323-FREEZ	1.0	INT	0.0	0.80	0.2	2.35	AIR-CHANGE	0.00	211.0	3375.6
Z85-3324-SETUP	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	375.2	6003.8
Z86-3325-VEST	1.0	INT	0.0	1.30	0.2	0.55	AIR-CHANGE	0.00	207.7	3323.2
Z87-3326-SETUP	1.0	INT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.00	279.6	4473.2
Spaces on floor: Floor-4										
Z87A-4400-STA	1.0	EXT	0.0	0.60	0.3	0.55	AIR-CHANGE	0.05	258.4	4134.6
Z88-4401-MER	1.0	EXT	0.0	1.50	3.2	0.55	AIR-CHANGE	0.15	3213.4	51415.1
Z89-4402-REST	1.0	EXT	0.0	0.90	0.2	0.55	AIR-CHANGE	0.00	197.4	3159.2
Z90-4403-DATA	1.0	EXT	0.0	1.50	0.1	4.35	AIR-CHANGE	0.00	93.5	1496.0
Z91-4404-COR	1.0	EXT	0.0	0.50	1.3	0.55	AIR-CHANGE	0.00	1329.6	21274.2
Z92-4405-STA	1.0	EXT	0.0	0.60	0.4	0.55	AIR-CHANGE	0.10	419.5	6712.6
Z93-4406-LAB	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	372.2	5954.5
Z94-4407-GUN	1.0	EXT	0.0	1.40	1.0	1.85	AIR-CHANGE	0.05	283.3	4533.3
Z95-4408-SHOP	1.0	EXT	0.0	1.10	1.0	1.85	AIR-CHANGE	0.10	287.1	4593.3
Z96-4409-GSR	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	219.7	3516.0
Z97-4410-LAB	1.0	EXT	0.0	1.50	3.0	1.85	AIR-CHANGE	0.15	852.4	13639.1
Z98-4411-OFC	1.0	EXT	0.0	1.72	1.0	1.85	AIR-CHANGE	0.05	183.0	2928.4
Z99-4412-OPEN	1.0	EXT	0.0	1.88	2.0	1.85	AIR-CHANGE	0.10	436.8	6988.6
Z100-4413-BREAK	1.0	EXT	0.0	0.90	4.0	1.85	AIR-CHANGE	0.15	604.7	9675.0
Z101-4414-LAB	1.0	EXT	0.0	1.50	1.0	0.55	AIR-CHANGE	0.00	829.9	13278.2
Z102-4415-STO	1.0	EXT	0.0	0.80	0.2	0.55	AIR-CHANGE	0.00	211.8	3388.2
Z103-4416-RANGE	1.0	EXT	0.0	1.50	1.1	1.85	AIR-CHANGE	0.00	1140.6	18250.1
BUILDING TOTALS					93.7				45195.7	723131.4

NUMBER OF EXTERIOR SURFACES 254
(U-VALUE INCLUDES OUTSIDE FILM; WINDOW INCLUDES FRAME AND CURB, IF DEFINED)

SURFACE	- - - W I N D O W S - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	- - - - W A L L - - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	-W A L L + W I N D O W S- U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	AZIMUTH
W05-Z75-3314-LAB	0.555	22.19	0.081	34.06	0.268	56.25	NORTH
in space: Z75-3314-LAB							
W06-Z76-3315-OFC	0.567	19.60	0.081	43.10	0.233	62.70	NORTH
in space: Z76-3315-OFC							
W25-Z35-2204-WORK	0.000	0.00	0.081	31.34	0.081	31.34	NORTH
in space: Z35-2204-WORK							
W02-Z51-2220-LOUN	0.509	149.99	0.081	94.02	0.344	244.01	NORTH
in space: Z51-2220-LOUN							
W16-Z35-2204-WORK	0.000	0.00	0.081	28.67	0.081	28.67	NORTH
in space: Z35-2204-WORK							
W03-Z01-1100-STA	0.000	0.00	0.081	248.00	0.081	248.00	NORTH
in space: Z01-1100-STA							
W03-Z31-2200-STA	0.000	0.00	0.081	248.00	0.081	248.00	NORTH
in space: Z31-2200-STA							
W05-Z63-3302-OPEN	0.000	0.00	0.081	25.33	0.081	25.33	NORTH
in space: Z63-3302-OPEN							
W14-Z63-3302-OPEN	0.000	0.00	0.081	29.33	0.081	29.33	NORTH
in space: Z63-3302-OPEN							
W23-Z63-3302-OPEN	0.000	0.00	0.081	30.00	0.081	30.00	NORTH
in space: Z63-3302-OPEN							
W32-Z63-3302-OPEN	0.000	0.00	0.081	32.00	0.081	32.00	NORTH
in space: Z63-3302-OPEN							
W03-Z33-2202-SUPV	0.000	0.00	0.081	32.67	0.081	32.67	NORTH
in space: Z33-2202-SUPV							
W07-Z35-2204-WORK	0.000	0.00	0.081	26.00	0.081	26.00	NORTH
in space: Z35-2204-WORK							
W01-Z78-3317-LOUN	0.509	149.99	0.081	96.01	0.342	246.00	NORTH
in space: Z78-3317-LOUN							
W02-Z24-1123-LOB	0.513	165.51	0.081	73.16	0.381	238.67	NORTH
in space: Z24-1123-LOB							
W03-Z61-3300-STA	0.000	0.00	0.081	248.00	0.081	248.00	NORTH
in space: Z61-3300-STA							
W03-Z87A-4400-STA	0.000	0.00	0.081	248.00	0.081	248.00	NORTH
in space: Z87A-4400-STA							
W03-Z100-4413-BREAK	0.509	149.99	0.081	88.05	0.351	238.05	NORTH
in space: Z100-4413-BREAK							
W04-Z19-1118-COR	0.000	0.00	0.081	221.23	0.081	221.23	NORTH
in space: Z19-1118-COR							
W06-Z50-2219-CONF	0.000	0.00	0.081	97.80	0.081	97.80	NORTH
in space: Z50-2219-CONF							
W04-Z24-1123-LOB	0.000	0.00	0.081	102.63	0.081	102.63	NORTH
in space: Z24-1123-LOB							
W02-Z98-4411-OFC	0.000	0.00	0.081	89.82	0.081	89.82	NORTH
in space: Z98-4411-OFC							
W05-Z77-3316-BIO	0.000	0.00	0.081	88.52	0.081	88.52	NORTH
in space: Z77-3316-BIO							
W09-Z100-4413-BREAK	0.000	0.00	0.081	97.41	0.081	97.41	NORTH
in space: Z100-4413-BREAK							
W08-Z19-1118-COR	0.000	0.00	0.081	191.56	0.081	191.56	NORTH
in space: Z19-1118-COR							
W11-Z75-3314-LAB	0.000	0.00	0.081	110.49	0.081	110.49	NORTH
in space: Z75-3314-LAB							
W02-Z47-2216-OFC	0.000	0.00	0.081	93.50	0.081	93.50	NORTH
in space: Z47-2216-OFC							
W02-Z75-3314-LAB	0.000	0.00	0.081	100.09	0.081	100.09	NORTH
in space: Z75-3314-LAB							
W06-Z19-1118-COR	0.000	0.00	0.081	116.58	0.081	116.58	NORTH
in space: Z19-1118-COR							
W02-Z19-1118-COR	0.000	0.00	0.081	101.54	0.081	101.54	NORTH
in space: Z19-1118-COR							
W06-Z99-4412-OPEN	0.000	0.00	0.081	112.54	0.081	112.54	NORTH
in space: Z99-4412-OPEN							
W02-Z49-2218-COR	0.000	0.00	0.081	122.89	0.081	122.89	NORTH
in space: Z49-2218-COR							
W06-Z24-1123-LOB	0.000	0.00	0.081	22.16	0.081	22.16	NORTH
in space: Z24-1123-LOB							
W01-Z99-4412-OPEN	0.567	19.60	0.081	22.17	0.309	41.77	NORTH
in space: Z99-4412-OPEN							
W01-Z48-2217-QA/QC	0.567	19.60	0.081	25.15	0.294	44.75	NORTH
in space: Z48-2217-QA/QC							
W03-Z99-4412-OPEN	0.567	19.60	0.081	29.61	0.274	49.21	NORTH
in space: Z99-4412-OPEN							
W04-Z100-4413-BREAK	0.567	19.60	0.081	25.74	0.291	45.34	NORTH
in space: Z100-4413-BREAK							
W04-Z47-2216-OFC	0.567	19.60	0.081	30.00	0.273	49.60	NORTH
in space: Z47-2216-OFC							
W03-Z50-2219-CONF	0.567	19.60	0.081	24.27	0.298	43.87	NORTH
in space: Z50-2219-CONF							
W04-Z75-3314-LAB	0.555	22.19	0.081	21.02	0.324	43.21	NORTH
in space: Z75-3314-LAB							
W08-Z75-3314-LAB	0.567	19.60	0.081	22.05	0.310	41.65	NORTH
in space: Z75-3314-LAB							
W05-Z76-3315-OFC	0.567	19.60	0.081	22.99	0.305	42.59	NORTH
in space: Z76-3315-OFC							
W06-Z100-4413-BREAK	0.567	19.60	0.081	23.93	0.300	43.53	NORTH
in space: Z100-4413-BREAK							
W02-Z77-3316-BIO	0.567	19.60	0.081	18.22	0.333	37.82	NORTH
in space: Z77-3316-BIO							
W01-Z50-2219-CONF	0.567	19.60	0.081	31.89	0.266	51.49	NORTH
in space: Z50-2219-CONF							

W04-Z98-4411-OFC	0.567	19.60	0.081	25.25	0.293	44.85	NORTH
in space: Z98-4411-OFC							
W08-Z99-4412-OPEN	0.567	19.60	0.081	24.26	0.298	43.86	NORTH
in space: Z99-4412-OPEN							
W06-Z75-3314-LAB	0.555	22.19	0.081	18.35	0.340	40.54	NORTH
in space: Z75-3314-LAB							
W04-Z49-2218-COR	0.567	19.60	0.081	26.60	0.287	46.20	NORTH
in space: Z49-2218-COR							
W03-Z48-2217-QA/QC	0.567	19.60	0.081	30.37	0.272	49.97	NORTH
in space: Z48-2217-QA/QC							
W03-Z76-3315-OFC	0.567	19.60	0.081	20.01	0.321	39.61	NORTH
in space: Z76-3315-OFC							
W05-Z19-1118-COR	0.000	0.00	0.081	35.18	0.081	35.18	NORTH-EAST
in space: Z19-1118-COR							
W03-Z24-1123-LOB	0.000	0.00	0.081	44.94	0.081	44.94	NORTH-EAST
in space: Z24-1123-LOB							
W01-Z13-1112-COR	0.000	0.00	0.081	107.33	0.081	107.33	NORTH-EAST
in space: Z13-1112-COR							
W01-Z15-1114-STO	0.000	0.00	0.081	150.67	0.081	150.67	NORTH-EAST
in space: Z15-1114-STO							
W01-Z16-1115-VEHI	0.000	0.00	0.081	348.00	0.081	348.00	NORTH-EAST
in space: Z16-1115-VEHI							
W01-Z76-3315-OFC	0.000	0.00	0.081	235.33	0.081	235.33	NORTH-EAST
in space: Z76-3315-OFC							
W01-Z17-1116-EVID	0.000	0.00	0.081	364.67	0.081	364.67	NORTH-EAST
in space: Z17-1116-EVID							
W03-Z39-2208-STA	0.000	0.00	0.081	184.00	0.081	184.00	NORTH-EAST
in space: Z39-2208-STA							
W02-Z43-2212-EXAM	0.000	0.00	0.081	196.66	0.081	196.66	NORTH-EAST
in space: Z43-2212-EXAM							
W01-Z44-2213-LAB	0.519	289.52	0.081	596.48	0.224	886.00	NORTH-EAST
in space: Z44-2213-LAB							
W01-Z45-2214-EXAM	0.519	72.38	0.081	102.29	0.262	174.67	NORTH-EAST
in space: Z45-2214-EXAM							
W01-Z46-2215-LAB	0.519	217.14	0.081	320.86	0.258	538.00	NORTH-EAST
in space: Z46-2215-LAB							
W01-Z47-2216-OFC	0.519	144.76	0.081	316.57	0.218	461.33	NORTH-EAST
in space: Z47-2216-OFC							
W03-Z92-4405-STA	0.000	0.00	0.081	186.67	0.081	186.67	NORTH-EAST
in space: Z92-4405-STA							
W02-Z93-4406-LAB	0.000	0.00	0.081	193.33	0.081	193.33	NORTH-EAST
in space: Z93-4406-LAB							
W01-Z94-4407-GUN	0.000	0.00	0.081	193.33	0.081	193.33	NORTH-EAST
in space: Z94-4407-GUN							
W01-Z95-4408-SHOP	0.519	108.57	0.081	139.43	0.273	248.00	NORTH-EAST
in space: Z95-4408-SHOP							
W01-Z96-4409-GSR	0.519	108.57	0.081	168.10	0.253	276.67	NORTH-EAST
in space: Z96-4409-GSR							
W01-Z97-4410-LAB	0.519	470.47	0.081	662.20	0.263	1132.67	NORTH-EAST
in space: Z97-4410-LAB							
W01-Z98-4411-OFC	0.519	36.19	0.081	186.48	0.152	222.67	NORTH-EAST
in space: Z98-4411-OFC							
W01-Z18-1117-PARK	0.000	0.00	0.118	685.33	0.118	685.33	NORTH-EAST
in space: Z18-1117-PARK							
W03-Z68-3307-STA	0.000	0.00	0.081	184.66	0.081	184.66	NORTH-EAST
in space: Z68-3307-STA							
W02-Z71-3310-PCR	0.000	0.00	0.081	382.00	0.081	382.00	NORTH-EAST
in space: Z71-3310-PCR							
W01-Z72-3311-LAB	0.519	108.57	0.081	144.76	0.269	253.33	NORTH-EAST
in space: Z72-3311-LAB							
W01-Z73-3312-LAB	0.524	262.71	0.081	363.29	0.267	626.00	NORTH-EAST
in space: Z73-3312-LAB							
W01-Z74-3313-EXAM	0.525	65.38	0.081	115.95	0.241	181.33	NORTH-EAST
in space: Z74-3313-EXAM							
W01-Z75-3314-LAB	0.519	289.52	0.081	538.48	0.234	828.00	NORTH-EAST
in space: Z75-3314-LAB							
W01-Z19-1118-COR	0.000	0.00	0.081	122.00	0.081	122.00	NORTH-EAST
in space: Z19-1118-COR							
W03-Z04-1103-STA	0.000	0.00	0.081	152.67	0.081	152.67	NORTH-EAST
in space: Z04-1103-STA							
W02-Z12-1111-LAB	0.000	0.00	0.081	462.67	0.081	462.67	NORTH-EAST
in space: Z12-1111-LAB							
W05-Z50-2219-CONF	0.000	0.00	0.081	28.39	0.081	28.39	NORTH-EAST
in space: Z50-2219-CONF							
W08-Z100-4413-BREAK	0.000	0.00	0.081	27.07	0.081	27.07	NORTH-EAST
in space: Z100-4413-BREAK							
W05-Z99-4412-OPEN	0.000	0.00	0.081	25.10	0.081	25.10	NORTH-EAST
in space: Z99-4412-OPEN							
W04-Z77-3316-BIO	0.000	0.00	0.081	25.73	0.081	25.73	NORTH-EAST
in space: Z77-3316-BIO							
W01-Z49-2218-COR	0.000	0.00	0.081	23.19	0.081	23.19	EAST
in space: Z49-2218-COR							
W18-Z02-1101-MER	0.000	0.00	0.081	320.68	0.081	320.68	SOUTH-EAST
in space: Z02-1101-MER							
W02-Z61-3300-STA	0.000	0.00	0.081	64.00	0.081	64.00	SOUTH-EAST
in space: Z61-3300-STA							
W02-Z68-3307-STA	0.532	58.38	0.081	458.29	0.132	516.67	SOUTH-EAST
in space: Z68-3307-STA							
W02-Z36-2205-SUPV	0.521	35.00	0.081	130.33	0.174	165.33	SOUTH-EAST
in space: Z36-2205-SUPV							
W02-Z88-4401-MER	0.000	0.00	0.081	338.00	0.081	338.00	SOUTH-EAST
in space: Z88-4401-MER							
W02-Z92-4405-STA	0.532	58.38	0.081	438.95	0.134	497.33	SOUTH-EAST
in space: Z92-4405-STA							
W01-Z71-3310-PCR	0.532	116.76	0.081	315.91	0.203	432.67	SOUTH-EAST
in space: Z71-3310-PCR							
W01-Z93-4406-LAB	0.532	116.76	0.081	317.91	0.202	434.67	SOUTH-EAST
in space: Z93-4406-LAB							
W02-Z39-2208-STA	0.532	58.38	0.081	457.62	0.132	516.00	SOUTH-EAST
in space: Z39-2208-STA							
W02-Z04-1103-STA	0.000	0.00	0.081	504.00	0.081	504.00	SOUTH-EAST
in space: Z04-1103-STA							
W01-Z42-2211-STO	0.000	0.00	0.081	107.33	0.081	107.33	SOUTH-EAST
in space: Z42-2211-STO							
W01-Z43-2212-EXAM	0.532	116.76	0.081	213.24	0.241	330.00	SOUTH-EAST

in space: Z43-2212-EXAM							
W02-Z32-2201-LIB	0.000	0.00	0.081	31.33	0.081	31.33	SOUTH-EAST
in space: Z32-2201-LIB							
W02-Z01-1100-STA	0.000	0.00	0.081	64.00	0.081	64.00	SOUTH-EAST
in space: Z01-1100-STA							
W05-Z33-2202-SUPV	0.000	0.00	0.081	36.67	0.081	36.67	SOUTH-EAST
in space: Z33-2202-SUPV							
W01-Z11-1110-OFC	0.000	0.00	0.081	226.00	0.081	226.00	SOUTH-EAST
in space: Z11-1110-OFC							
W09-Z35-2204-WORK	0.000	0.00	0.081	31.33	0.081	31.33	SOUTH-EAST
in space: Z35-2204-WORK							
W02-Z62-3301-OFC	0.000	0.00	0.081	36.00	0.081	36.00	SOUTH-EAST
in space: Z62-3301-OFC							
W01-Z12-1111-LAB	0.000	0.00	0.081	237.33	0.081	237.33	SOUTH-EAST
in space: Z12-1111-LAB							
W07-Z63-3302-OPEN	0.000	0.00	0.081	37.33	0.081	37.33	SOUTH-EAST
in space: Z63-3302-OPEN							
W18-Z35-2204-WORK	0.000	0.00	0.081	31.33	0.081	31.33	SOUTH-EAST
in space: Z35-2204-WORK							
W16-Z63-3302-OPEN	0.000	0.00	0.081	34.67	0.081	34.67	SOUTH-EAST
in space: Z63-3302-OPEN							
W02-Z31-2200-STA	0.000	0.00	0.081	64.00	0.081	64.00	SOUTH-EAST
in space: Z31-2200-STA							
W25-Z63-3302-OPEN	0.000	0.00	0.081	33.33	0.081	33.33	SOUTH-EAST
in space: Z63-3302-OPEN							
W27-Z35-2204-WORK	0.521	35.00	0.081	131.00	0.174	166.00	SOUTH-EAST
in space: Z35-2204-WORK							
W02-Z64-3303-OFC	0.521	70.00	0.081	274.00	0.170	344.00	SOUTH-EAST
in space: Z64-3303-OFC							
W02-Z87A-4400-STA	0.000	0.00	0.081	64.00	0.081	64.00	SOUTH-EAST
in space: Z87A-4400-STA							
W10-Z02-1101-MER	0.000	0.00	0.081	29.29	0.081	29.29	SOUTH
in space: Z02-1101-MER							
W02-Z02-1101-MER	0.000	0.00	0.081	37.27	0.081	37.27	SOUTH
in space: Z02-1101-MER							
W06-Z02-1101-MER	0.000	0.00	0.081	34.42	0.081	34.42	SOUTH
in space: Z02-1101-MER							
W14-Z02-1101-MER	0.000	0.00	0.081	34.44	0.081	34.44	SOUTH
in space: Z02-1101-MER							
W02-Z33-2202-SUPV	0.555	22.19	0.081	31.89	0.275	54.08	SOUTH
in space: Z33-2202-SUPV							
W27-Z63-3302-OPEN	0.555	22.19	0.081	40.50	0.249	62.69	SOUTH
in space: Z63-3302-OPEN							
W29-Z63-3302-OPEN	0.555	22.19	0.081	29.74	0.283	51.93	SOUTH
in space: Z63-3302-OPEN							
W24-Z35-2204-WORK	0.555	22.19	0.081	35.95	0.262	58.14	SOUTH-WEST
in space: Z35-2204-WORK							
W15-Z35-2204-WORK	0.555	22.19	0.081	35.95	0.262	58.14	SOUTH-WEST
in space: Z35-2204-WORK							
W09-Z63-3302-OPEN	0.555	22.19	0.081	25.51	0.301	47.70	SOUTH-WEST
in space: Z63-3302-OPEN							
W11-Z35-2204-WORK	0.555	22.19	0.081	33.56	0.269	55.75	SOUTH-WEST
in space: Z35-2204-WORK							
W04-Z32-2201-LIB	0.555	22.19	0.081	38.63	0.254	60.82	SOUTH-WEST
in space: Z32-2201-LIB							
W22-Z63-3302-OPEN	0.555	22.19	0.081	29.69	0.284	51.88	SOUTH-WEST
in space: Z63-3302-OPEN							
W06-Z32-2201-LIB	0.555	22.19	0.081	30.29	0.281	52.48	SOUTH-WEST
in space: Z32-2201-LIB							
W20-Z63-3302-OPEN	0.555	22.19	0.081	35.69	0.263	57.88	SOUTH-WEST
in space: Z63-3302-OPEN							
W13-Z35-2204-WORK	0.555	22.19	0.081	28.24	0.289	50.43	SOUTH-WEST
in space: Z35-2204-WORK							
W31-Z63-3302-OPEN	0.555	22.19	0.081	30.34	0.281	52.53	SOUTH-WEST
in space: Z63-3302-OPEN							
W02-Z63-3302-OPEN	0.555	22.19	0.081	36.90	0.259	59.09	SOUTH-WEST
in space: Z63-3302-OPEN							
W04-Z63-3302-OPEN	0.555	22.19	0.081	30.34	0.281	52.53	SOUTH-WEST
in space: Z63-3302-OPEN							
W04-Z35-2204-WORK	0.555	22.19	0.081	33.66	0.269	55.85	SOUTH-WEST
in space: Z35-2204-WORK							
W18-Z63-3302-OPEN	0.555	22.19	0.081	35.76	0.262	57.95	SOUTH-WEST
in space: Z63-3302-OPEN							
W04-Z62-3301-OFC	0.555	22.19	0.081	34.89	0.265	57.08	SOUTH-WEST
in space: Z62-3301-OFC							
W22-Z35-2204-WORK	0.555	22.19	0.081	36.12	0.261	58.31	SOUTH-WEST
in space: Z35-2204-WORK							
W11-Z63-3302-OPEN	0.555	22.19	0.081	35.87	0.262	58.06	SOUTH-WEST
in space: Z63-3302-OPEN							
W06-Z35-2204-WORK	0.555	22.19	0.081	34.39	0.267	56.58	SOUTH-WEST
in space: Z35-2204-WORK							
W02-Z35-2204-WORK	0.555	22.19	0.081	32.90	0.272	55.09	SOUTH-WEST
in space: Z35-2204-WORK							
W13-Z63-3302-OPEN	0.555	22.19	0.081	34.32	0.267	56.51	SOUTH-WEST
in space: Z63-3302-OPEN							
W20-Z35-2204-WORK	0.555	22.19	0.081	32.83	0.272	55.02	SOUTH-WEST
in space: Z35-2204-WORK							
W07-Z50-2219-CONF	0.000	0.00	0.081	264.69	0.081	264.69	SOUTH-WEST
in space: Z50-2219-CONF							
W01-Z01-1100-STA	0.000	0.00	0.081	166.67	0.081	166.67	SOUTH-WEST
in space: Z01-1100-STA							
W11-Z02-1101-MER	0.000	0.00	0.081	264.00	0.081	264.00	SOUTH-WEST
in space: Z02-1101-MER							
W01-Z77-3316-BIO	0.000	0.00	0.081	307.33	0.081	307.33	SOUTH-WEST
in space: Z77-3316-BIO							
W26-Z35-2204-WORK	0.000	0.00	0.081	170.00	0.081	170.00	SOUTH-WEST
in space: Z35-2204-WORK							
W04-Z33-2202-SUPV	0.000	0.00	0.081	47.33	0.081	47.33	SOUTH-WEST
in space: Z33-2202-SUPV							
W24-Z63-3302-OPEN	0.000	0.00	0.081	45.33	0.081	45.33	SOUTH-WEST
in space: Z63-3302-OPEN							
W01-Z36-2205-SUPV	0.000	0.00	0.081	227.33	0.081	227.33	SOUTH-WEST
in space: Z36-2205-SUPV							
W02-Z78-3317-LOUN	0.503	165.49	0.081	99.85	0.344	265.33	SOUTH-WEST
in space: Z78-3317-LOUN							

W01-Z87A-4400-STA	0.000	0.00	0.081	171.33	0.081	171.33	SOUTH-WEST
in space: Z87A-4400-STA							
W01-Z24-1123-LOB	0.499	197.53	0.081	66.47	0.394	264.00	SOUTH-WEST
in space: Z24-1123-LOB							
W01-Z39-2208-STA	0.000	0.00	0.081	148.67	0.081	148.67	SOUTH-WEST
in space: Z39-2208-STA							
W01-Z88-4401-MER	0.000	0.00	0.081	1379.34	0.081	1379.34	SOUTH-WEST
in space: Z88-4401-MER							
W01-Z51-2220-LOUN	0.503	165.49	0.081	93.18	0.351	258.67	SOUTH-WEST
in space: Z51-2220-LOUN							
W03-Z88-4401-MER	0.000	0.00	0.081	254.66	0.081	254.66	SOUTH-WEST
in space: Z88-4401-MER							
W01-Z91-4404-COR	0.000	0.00	0.081	179.34	0.081	179.34	SOUTH-WEST
in space: Z91-4404-COR							
W01-Z92-4405-STA	0.000	0.00	0.081	158.00	0.081	158.00	SOUTH-WEST
in space: Z92-4405-STA							
W13-Z02-1101-MER	0.000	0.00	0.081	41.33	0.081	41.33	SOUTH-WEST
in space: Z02-1101-MER							
W33-Z63-3302-OPEN	0.000	0.00	0.081	192.00	0.081	192.00	SOUTH-WEST
in space: Z63-3302-OPEN							
W01-Z64-3303-OFC	0.000	0.00	0.081	206.00	0.081	206.00	SOUTH-WEST
in space: Z64-3303-OFC							
W01-Z61-3300-STA	0.000	0.00	0.081	171.33	0.081	171.33	SOUTH-WEST
in space: Z61-3300-STA							
W01-Z68-3307-STA	0.000	0.00	0.081	156.00	0.081	156.00	SOUTH-WEST
in space: Z68-3307-STA							
W03-Z02-1101-MER	0.000	0.00	0.081	258.67	0.081	258.67	SOUTH-WEST
in space: Z02-1101-MER							
W15-Z02-1101-MER	0.000	0.00	0.081	266.67	0.081	266.67	SOUTH-WEST
in space: Z02-1101-MER							
W01-Z62-3301-OFC	0.000	0.00	0.081	60.00	0.081	60.00	SOUTH-WEST
in space: Z62-3301-OFC							
W05-Z24-1123-LOB	0.000	0.00	0.081	183.33	0.081	183.33	SOUTH-WEST
in space: Z24-1123-LOB							
W08-Z35-2204-WORK	0.000	0.00	0.081	43.33	0.081	43.33	SOUTH-WEST
in space: Z35-2204-WORK							
W17-Z02-1101-MER	0.000	0.00	0.081	395.34	0.081	395.34	SOUTH-WEST
in space: Z02-1101-MER							
W01-Z31-2200-STA	0.000	0.00	0.081	160.67	0.081	160.67	SOUTH-WEST
in space: Z31-2200-STA							
W05-Z02-1101-MER	0.000	0.00	0.081	43.33	0.081	43.33	SOUTH-WEST
in space: Z02-1101-MER							
W06-Z63-3302-OPEN	0.000	0.00	0.081	45.33	0.081	45.33	SOUTH-WEST
in space: Z63-3302-OPEN							
W01-Z04-1103-STA	0.000	0.00	0.081	148.00	0.081	148.00	SOUTH-WEST
in space: Z04-1103-STA							
W01-Z32-2201-LIB	0.000	0.00	0.081	63.33	0.081	63.33	SOUTH-WEST
in space: Z32-2201-LIB							
W01-Z100-4413-BREAK	0.503	165.49	0.081	100.51	0.344	266.00	SOUTH-WEST
in space: Z100-4413-BREAK							
W02-Z100-4413-BREAK	0.000	0.00	0.081	189.33	0.081	189.33	SOUTH-WEST
in space: Z100-4413-BREAK							
W17-Z35-2204-WORK	0.000	0.00	0.081	44.00	0.081	44.00	SOUTH-WEST
in space: Z35-2204-WORK							
W01-Z02-1101-MER	0.000	0.00	0.081	58.00	0.081	58.00	SOUTH-WEST
in space: Z02-1101-MER							
W07-Z02-1101-MER	0.000	0.00	0.081	261.33	0.081	261.33	SOUTH-WEST
in space: Z02-1101-MER							
W15-Z63-3302-OPEN	0.000	0.00	0.081	46.67	0.081	46.67	SOUTH-WEST
in space: Z63-3302-OPEN							
W09-Z02-1101-MER	0.000	0.00	0.081	44.67	0.081	44.67	SOUTH-WEST
in space: Z02-1101-MER							
W03-Z75-3314-LAB	0.000	0.00	0.081	32.17	0.081	32.17	SOUTH-WEST
in space: Z75-3314-LAB							
W03-Z49-2218-COR	0.000	0.00	0.081	38.33	0.081	38.33	SOUTH-WEST
in space: Z49-2218-COR							
W03-Z47-2216-OFC	0.000	0.00	0.081	32.47	0.081	32.47	WEST
in space: Z47-2216-OFC							
W03-Z98-4411-OFC	0.000	0.00	0.081	26.15	0.081	26.15	WEST
in space: Z98-4411-OFC							
W21-Z35-2204-WORK	0.555	22.19	0.081	33.92	0.268	56.11	WEST
in space: Z35-2204-WORK							
W30-Z63-3302-OPEN	0.555	22.19	0.081	39.21	0.252	61.40	WEST
in space: Z63-3302-OPEN							
W12-Z63-3302-OPEN	0.555	22.19	0.081	33.52	0.270	55.71	WEST
in space: Z63-3302-OPEN							
W10-Z63-3302-OPEN	0.555	22.19	0.081	36.49	0.260	58.68	WEST
in space: Z63-3302-OPEN							
W05-Z35-2204-WORK	0.555	22.19	0.081	30.80	0.279	52.99	WEST
in space: Z35-2204-WORK							
W03-Z35-2204-WORK	0.555	22.19	0.081	35.87	0.262	58.06	WEST
in space: Z35-2204-WORK							
W12-Z35-2204-WORK	0.555	22.19	0.081	43.30	0.241	65.49	WEST
in space: Z35-2204-WORK							
W07-Z99-4412-OPEN	0.000	0.00	0.081	25.39	0.081	25.39	WEST
in space: Z99-4412-OPEN							
W19-Z63-3302-OPEN	0.555	22.19	0.081	34.54	0.266	56.73	WEST
in space: Z63-3302-OPEN							
W21-Z63-3302-OPEN	0.555	22.19	0.081	36.29	0.261	58.48	WEST
in space: Z63-3302-OPEN							
W14-Z35-2204-WORK	0.555	22.19	0.081	33.59	0.269	55.78	WEST
in space: Z35-2204-WORK							
W03-Z63-3302-OPEN	0.555	22.19	0.081	38.06	0.255	60.25	WEST
in space: Z63-3302-OPEN							
W01-Z35-2204-WORK	0.555	22.19	0.081	30.01	0.282	52.20	WEST
in space: Z35-2204-WORK							
W19-Z35-2204-WORK	0.555	22.19	0.081	31.18	0.278	53.37	WEST
in space: Z35-2204-WORK							
W23-Z35-2204-WORK	0.555	22.19	0.081	33.56	0.269	55.75	WEST
in space: Z35-2204-WORK							
W05-Z32-2201-LIB	0.555	22.19	0.081	33.86	0.268	56.05	WEST
in space: Z32-2201-LIB							
W03-Z32-2201-LIB	0.555	22.19	0.081	30.29	0.281	52.48	WEST
in space: Z32-2201-LIB							
W01-Z33-2202-SUPV	0.555	22.19	0.081	37.15	0.258	59.34	WEST

in space: Z33-2202-SUPV							
W08-Z63-3302-OPEN	0.555	22.19	0.081	38.68	0.254	60.87	WEST
in space: Z63-3302-OPEN							
W10-Z35-2204-WORK	0.555	22.19	0.081	34.21	0.267	56.40	WEST
in space: Z35-2204-WORK							
W26-Z63-3302-OPEN	0.555	22.19	0.081	36.03	0.261	58.22	WEST
in space: Z63-3302-OPEN							
W01-Z63-3302-OPEN	0.555	22.19	0.081	28.58	0.288	50.77	WEST
in space: Z63-3302-OPEN							
W28-Z63-3302-OPEN	0.555	22.19	0.081	37.84	0.256	60.03	WEST
in space: Z63-3302-OPEN							
W17-Z63-3302-OPEN	0.555	22.19	0.081	27.43	0.293	49.62	WEST
in space: Z63-3302-OPEN							
W02-Z76-3315-OFC	0.000	0.00	0.081	31.10	0.081	31.10	WEST
in space: Z76-3315-OFC							
W03-Z62-3301-OFC	0.555	22.19	0.081	36.47	0.260	58.66	WEST
in space: Z62-3301-OFC							
W12-Z02-1101-MER	0.000	0.00	0.081	31.24	0.081	31.24	WEST
in space: Z02-1101-MER							
W16-Z02-1101-MER	0.000	0.00	0.081	33.04	0.081	33.04	WEST
in space: Z02-1101-MER							
W08-Z02-1101-MER	0.000	0.00	0.081	32.07	0.081	32.07	WEST
in space: Z02-1101-MER							
W04-Z02-1101-MER	0.000	0.00	0.081	36.96	0.081	36.96	WEST
in space: Z02-1101-MER							
W07-Z19-1118-COR	0.000	0.00	0.081	53.63	0.081	53.63	WEST
in space: Z19-1118-COR							
W03-Z19-1118-COR	0.000	0.00	0.081	30.70	0.081	30.70	WEST
in space: Z19-1118-COR							
W04-Z99-4412-OPEN	0.567	19.60	0.081	28.29	0.280	47.89	NORTH-WEST
in space: Z99-4412-OPEN							
W02-Z48-2217-QA/QC	0.567	19.60	0.081	36.53	0.251	56.13	NORTH-WEST
in space: Z48-2217-QA/QC							
W04-Z48-2217-QA/QC	0.567	19.60	0.081	33.12	0.262	52.72	NORTH-WEST
in space: Z48-2217-QA/QC							
W03-Z77-3316-BIO	0.567	19.60	0.081	37.67	0.247	57.27	NORTH-WEST
in space: Z77-3316-BIO							
W02-Z50-2219-CONF	0.567	19.60	0.081	32.83	0.263	52.43	NORTH-WEST
in space: Z50-2219-CONF							
W05-Z47-2216-OFC	0.567	19.60	0.081	27.99	0.281	47.59	NORTH-WEST
in space: Z47-2216-OFC							
W07-Z75-3314-LAB	0.555	22.19	0.081	32.85	0.272	55.04	NORTH-WEST
in space: Z75-3314-LAB							
W05-Z100-4413-BREAK	0.567	19.60	0.081	36.10	0.252	55.70	NORTH-WEST
in space: Z100-4413-BREAK							
W04-Z76-3315-OFC	0.567	19.60	0.081	36.52	0.251	56.12	NORTH-WEST
in space: Z76-3315-OFC							
W07-Z100-4413-BREAK	0.567	19.60	0.081	33.12	0.262	52.72	NORTH-WEST
in space: Z100-4413-BREAK							
W04-Z50-2219-CONF	0.567	19.60	0.081	29.06	0.277	48.66	NORTH-WEST
in space: Z50-2219-CONF							
W02-Z99-4412-OPEN	0.567	19.60	0.081	35.75	0.253	55.35	NORTH-WEST
in space: Z99-4412-OPEN							
W05-Z98-4411-OFC	0.567	19.60	0.081	37.07	0.249	56.67	NORTH-WEST
in space: Z98-4411-OFC							
W09-Z99-4412-OPEN	0.567	19.60	0.081	36.97	0.249	56.57	NORTH-WEST
in space: Z99-4412-OPEN							
W09-Z75-3314-LAB	0.567	19.60	0.081	32.83	0.263	52.43	NORTH-WEST
in space: Z75-3314-LAB							
W05-Z49-2218-COR	0.567	19.60	0.081	27.30	0.284	46.90	NORTH-WEST
in space: Z49-2218-COR							
R01-Z89-4402-REST	0.000	0.00	0.061	197.45	0.061	197.45	ROOF
in space: Z89-4402-REST							
R01-Z94-4407-GUN	0.000	0.00	0.061	283.33	0.061	283.33	ROOF
in space: Z94-4407-GUN							
R01-Z90-4403-DATA	0.000	0.00	0.061	93.50	0.061	93.50	ROOF
in space: Z90-4403-DATA							
R01-Z95-4408-SHOP	0.000	0.00	0.061	287.08	0.061	287.08	ROOF
in space: Z95-4408-SHOP							
R01-Z91-4404-COR	0.000	0.00	0.061	1329.64	0.061	1329.64	ROOF
in space: Z91-4404-COR							
R01-Z96-4409-GSR	0.000	0.00	0.061	219.75	0.061	219.75	ROOF
in space: Z96-4409-GSR							
R01-Z65-3304-DATA	0.000	0.00	0.061	74.16	0.061	74.16	ROOF
in space: Z65-3304-DATA							
R01-Z99-4412-OPEN	0.000	0.00	0.061	436.79	0.061	436.79	ROOF
in space: Z99-4412-OPEN							
R01-Z97-4410-LAB	0.000	0.00	0.061	852.45	0.061	852.45	ROOF
in space: Z97-4410-LAB							
R01-Z87A-4400-STA	0.000	0.00	0.061	258.41	0.061	258.41	ROOF
in space: Z87A-4400-STA							
R01-Z69-3308-COR	0.000	0.00	0.061	14.21	0.061	14.21	ROOF
in space: Z69-3308-COR							
R01-Z63-3302-OPEN	0.000	0.00	0.061	230.42	0.061	230.42	ROOF
in space: Z63-3302-OPEN							
R01-Z92-4405-STA	0.000	0.00	0.061	419.54	0.061	419.54	ROOF
in space: Z92-4405-STA							
R01-Z64-3303-OFC	0.000	0.00	0.061	278.16	0.061	278.16	ROOF
in space: Z64-3303-OFC							
R01-Z98-4411-OFC	0.000	0.00	0.061	183.03	0.061	183.03	ROOF
in space: Z98-4411-OFC							
R01-Z88-4401-MER	0.000	0.00	0.061	3213.44	0.061	3213.44	ROOF
in space: Z88-4401-MER							
R01-Z93-4406-LAB	0.000	0.00	0.061	372.15	0.061	372.15	ROOF
in space: Z93-4406-LAB							
R01-Z100-4413-BREAK	0.000	0.00	0.061	604.69	0.061	604.69	ROOF
in space: Z100-4413-BREAK							
R01-Z101-4414-LAB	0.000	0.00	0.061	829.89	0.061	829.89	ROOF
in space: Z101-4414-LAB							
R01-Z102-4415-STO	0.000	0.00	0.061	211.76	0.061	211.76	ROOF
in space: Z102-4415-STO							
R01-Z103-4416-RANGE	0.000	0.00	0.061	1140.63	0.061	1140.63	ROOF
in space: Z103-4416-RANGE							
UF01-Z01-1100-STA	0.000	0.00	0.038	255.64	0.038	255.64	UNDERGRND
in space: Z01-1100-STA							

SURFACE	- - - W I N D O W S - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	- - - - W A L L - - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	-W A L L + W I N D O W S- U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	AZIMUTH
UF01-Z02-1101-MER in space: Z02-1101-MER	0.000	0.00	0.038	2049.42	0.038	2049.42	UNDERGRND
UF01-Z03-1102-TELE in space: Z03-1102-TELE	0.000	0.00	0.038	114.53	0.038	114.53	UNDERGRND
UF01-Z04-1103-STA in space: Z04-1103-STA	0.000	0.00	0.038	295.97	0.038	295.97	UNDERGRND
UF01-Z05-1104-COR in space: Z05-1104-COR	0.000	0.00	0.038	832.39	0.038	832.39	UNDERGRND
UF01-Z06-1105-ELEV in space: Z06-1105-ELEV	0.000	0.00	0.038	101.24	0.038	101.24	UNDERGRND
UF01-Z07-1106-SUP in space: Z07-1106-SUPP	0.000	0.00	0.038	209.04	0.038	209.04	UNDERGRND
UF01-Z08-1107-STO in space: Z08-1107-STO	0.000	0.00	0.038	84.73	0.038	84.73	UNDERGRND
UF01-Z09-1108-EVID in space: Z09-1108-EVID	0.000	0.00	0.038	155.72	0.038	155.72	UNDERGRND
UF01-Z10-1109-VIEW in space: Z10-1109-VIEW	0.000	0.00	0.038	188.21	0.038	188.21	UNDERGRND
UF01-Z11-1110-OFC in space: Z11-1110-OFC	0.000	0.00	0.038	145.37	0.038	145.37	UNDERGRND
UF01-Z12-1111-LAB in space: Z12-1111-LAB	0.000	0.00	0.038	691.64	0.038	691.64	UNDERGRND
UF01-Z13-1112-COR in space: Z13-1112-COR	0.000	0.00	0.038	391.35	0.038	391.35	UNDERGRND
UF01-Z14-1113-REST in space: Z14-1113-REST	0.000	0.00	0.038	91.83	0.038	91.83	UNDERGRND
UF01-Z15-1114-STO in space: Z15-1114-STO	0.000	0.00	0.038	124.78	0.038	124.78	UNDERGRND
UF01-Z16-1115-VEHI in space: Z16-1115-VEHI	0.000	0.00	0.038	634.65	0.038	634.65	UNDERGRND
UF01-Z17-1116-EVID in space: Z17-1116-EVID	0.000	0.00	0.038	665.59	0.038	665.59	UNDERGRND
UF01-Z18-1117-PARK in space: Z18-1117-PARK	0.000	0.00	0.038	1033.35	0.038	1033.35	UNDERGRND
UF01-Z19-1118-COR in space: Z19-1118-COR	0.000	0.00	0.038	275.93	0.038	275.93	UNDERGRND
UF01-Z20-1119-LOB in space: Z20-1119-LOB	0.000	0.00	0.038	231.15	0.038	231.15	UNDERGRND
UF01-Z21-1120-VIEW in space: Z21-1120-VIEW	0.000	0.00	0.038	131.67	0.038	131.67	UNDERGRND
UF01-Z22-1121-RECE in space: Z22-1121-RECE	0.000	0.00	0.038	674.74	0.038	674.74	UNDERGRND
UF01-Z23-1122-SECU in space: Z23-1122-SECU	0.000	0.00	0.038	102.20	0.038	102.20	UNDERGRND
UF01-Z24-1123-LOB in space: Z24-1123-LOB	0.000	0.00	0.038	552.40	0.038	552.40	UNDERGRND
UF01-Z25-1124-REST in space: Z25-1124-REST	0.000	0.00	0.038	56.34	0.038	56.34	UNDERGRND
UF01-Z26-1125-FREEZ in space: Z26-1125-FREEZ	0.000	0.00	0.038	703.41	0.038	703.41	UNDERGRND
UF01-Z27-1126-NARC in space: Z27-1126-NARC	0.000	0.00	0.038	203.24	0.038	203.24	UNDERGRND
UF01-Z28-1127-JAN in space: Z28-1127-JAN	0.000	0.00	0.038	124.29	0.038	124.29	UNDERGRND
UF01-Z29-1128-DRY in space: Z29-1128-DRY	0.000	0.00	0.038	89.41	0.038	89.41	UNDERGRND
UF01-Z30-1129-LAB in space: Z30-1129-LAB	0.000	0.00	0.038	145.14	0.038	145.14	UNDERGRND

	AVERAGE U-VALUE/WINDOWS (BTU/HR-SQFT-F)	AVERAGE U-VALUE/WALLS (BTU/HR-SQFT-F)	AVERAGE U-VALUE WALLS+WINDOWS (BTU/HR-SQFT-F)	WINDOW AREA (SQFT)	WALL AREA (SQFT)	WINDOW+WALL AREA (SQFT)
NORTH	0.532	0.081	0.177	1015.26	3766.38	4781.64
NORTH-EAST	0.520	0.084	0.177	2173.78	7990.61	10164.40
EAST	0.000	0.081	0.081	0.00	23.19	23.19
SOUTH-EAST	0.530	0.081	0.134	665.42	4998.59	5664.01
SOUTH	0.555	0.081	0.185	66.57	237.54	304.11
SOUTH-WEST	0.523	0.081	0.137	1159.98	7995.05	9155.02
WEST	0.555	0.081	0.230	532.56	1163.62	1696.18
NORTH-WEST	0.566	0.081	0.261	316.19	534.00	850.19
ROOF	0.000	0.061	0.061	0.00	11530.47	11530.47
ALL WALLS	0.530	0.082	0.163	5929.75	26708.97	32638.73
WALLS+ROOFS	0.530	0.076	0.137	5929.75	38239.43	44169.20
UNDERGRND	0.000	0.038	0.038	0.00	11355.39	11355.39
BUILDING	0.530	0.067	0.116	5929.75	49594.82	55524.58

NUMBER OF UNDERGROUND SURFACES 30

SURFACE NAME	MULTIPLIER	AREA (SQFT)	CONSTRUCTION NAME	U-VALUE (BTU/HR-SQFT-F)
UF01-Z01-1100-STA	1.0	255.64	UF-TYP-CONS	0.038
UF01-Z02-1101-MER	1.0	2049.42	UF-TYP-CONS	0.038
UF01-Z03-1102-TELE	1.0	114.53	UF-TYP-CONS	0.038
UF01-Z04-1103-STA	1.0	295.97	UF-TYP-CONS	0.038
UF01-Z05-1104-COR	1.0	832.39	UF-TYP-CONS	0.038
UF01-Z06-1105-ELEV	1.0	101.24	UF-TYP-CONS	0.038
UF01-Z07-1106-SUP	1.0	209.04	UF-TYP-CONS	0.038
UF01-Z08-1107-STO	1.0	84.73	UF-TYP-CONS	0.038
UF01-Z09-1108-EVID	1.0	155.72	UF-TYP-CONS	0.038
UF01-Z10-1109-VIEW	1.0	188.21	UF-TYP-CONS	0.038
UF01-Z11-1110-OFC	1.0	145.37	UF-TYP-CONS	0.038
UF01-Z12-1111-LAB	1.0	691.64	UF-TYP-CONS	0.038
UF01-Z13-1112-COR	1.0	391.35	UF-TYP-CONS	0.038
UF01-Z14-1113-REST	1.0	91.83	UF-TYP-CONS	0.038
UF01-Z15-1114-STO	1.0	124.78	UF-TYP-CONS	0.038
UF01-Z16-1115-VEHI	1.0	634.65	UF-TYP-CONS	0.038
UF01-Z17-1116-EVID	1.0	665.59	UF-TYP-CONS	0.038
UF01-Z18-1117-PARK	1.0	1033.35	UF-TYP-CONS	0.038
UF01-Z19-1118-COR	1.0	275.93	UF-TYP-CONS	0.038
UF01-Z20-1119-LOB	1.0	231.15	UF-TYP-CONS	0.038
UF01-Z21-1120-VIEW	1.0	131.67	UF-TYP-CONS	0.038
UF01-Z22-1121-RECE	1.0	674.74	UF-TYP-CONS	0.038
UF01-Z23-1122-SECU	1.0	102.20	UF-TYP-CONS	0.038
UF01-Z24-1123-LOB	1.0	552.40	UF-TYP-CONS	0.038
UF01-Z25-1124-REST	1.0	56.34	UF-TYP-CONS	0.038
UF01-Z26-1125-FREEZ	1.0	703.41	UF-TYP-CONS	0.038
UF01-Z27-1126-NARC	1.0	203.24	UF-TYP-CONS	0.038
UF01-Z28-1127-JAN	1.0	124.29	UF-TYP-CONS	0.038
UF01-Z29-1128-DRY	1.0	89.41	UF-TYP-CONS	0.038
UF01-Z30-1129-LAB	1.0	145.14	UF-TYP-CONS	0.038

Number of Interior Surfaces 361
(U-VALUE includes both air films)

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW01-Z01-1100-STA	166.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z01-1100-STA	144.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z02-1101-MER	260.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z02-1101-MER	145.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z02-1101-MER	200.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z02-1101-MER	138.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z02-1101-MER	201.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z02-1101-MER	26.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z02-1101-MER	982.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z02-1101-MER	157.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z02-1101-MER	181.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z02-1101-MER	185.51	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z03-1102-TELE	198.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z04-1103-STA	504.02	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z05-1104-COR	110.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z05-1104-COR	1436.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z05-1104-COR	144.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z06-1105-ELEV	145.37	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z06-1105-ELEV	176.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z07-1106-SUP	330.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z07-1106-SUP	162.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z08-1107-STO	130.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z09-1108-EVID	38.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z09-1108-EVID	31.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z09-1108-EVID	152.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z09-1108-EVID	215.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z10-1109-VIEW	240.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z11-1110-OFC	167.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z11-1110-OFC	226.06	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z13-1112-COR	824.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z13-1112-COR	95.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z13-1112-COR	158.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z13-1112-COR	360.02	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z13-1112-COR	152.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z13-1112-COR	369.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z14-1113-REST	150.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z16-1115-VEHI	345.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z16-1115-VEHI	468.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z17-1116-EVID	357.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z17-1116-EVID	472.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z17-1116-EVID	472.06	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z18-1117-PARK	685.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z18-1117-PARK	386.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z18-1117-PARK	1033.35	GARAGE-CEIL-CONS	DELAYED ADIABATIC	0.069
IW01-Z19-1118-COR	56.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z19-1118-COR	455.42	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z19-1118-COR	58.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z19-1118-COR	84.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z20-1119-LOB	428.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z20-1119-LOB	134.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z21-1120-VIEW	130.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW01-Z22-1121-RECE	488.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z22-1121-RECE	142.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z22-1121-RECE	165.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z22-1121-RECE	162.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z22-1121-RECE	814.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z22-1121-RECE	187.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z23-1122-SECU	214.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z23-1122-SECU	124.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z23-1122-SECU	124.15	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z24-1123-LOB	225.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z24-1123-LOB	126.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z24-1123-LOB	208.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z24-1123-LOB	124.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z27-1126-NARC	357.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z27-1126-NARC	145.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z28-1127-JAN	257.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z28-1127-JAN	123.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z29-1128-DRY	251.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z29-1128-DRY	90.20	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z30-1129-LAB	252.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z30-1129-LAB	146.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z31-2200-STA	160.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z32-2201-LIB	61.03	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z32-2201-LIB	253.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z32-2201-LIB	341.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z32-2201-LIB	361.58	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW03-Z33-2202-SUPV	78.12	IW-TYP-CONS	DELAYED STANDARD	0.371
IW04-Z33-2202-SUPV	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z33-2202-SUPV	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z34-2203-STO	108.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z34-2203-STO	159.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z35-2204-WORK	170.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z35-2204-WORK	224.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z35-2204-WORK	205.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z35-2204-WORK	40.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z35-2204-WORK	86.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371

IW07-Z35-2204-WORK	72.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z35-2204-WORK	4.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z35-2204-WORK	502.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z35-2204-WORK	62.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z35-2204-WORK	130.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z35-2204-WORK	62.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z35-2204-WORK	364.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z35-2204-WORK	68.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z35-2204-WORK	1162.84	C-TYP-CONS	DELAYED ADIABATIC	0.389
IC01-Z36-2205-SUPV	147.46	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z37-2206-DATA	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z37-2206-DATA	126.68	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z38-2207-COR	565.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z38-2207-COR	47.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z38-2207-COR	81.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z38-2207-COR	55.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z38-2207-COR	259.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z38-2207-COR	123.20	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z38-2207-COR	105.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW08-Z38-2207-COR	61.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z38-2207-COR	124.80	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z38-2207-COR	62.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z38-2207-COR	514.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z38-2207-COR	44.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z38-2207-COR	200.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z38-2207-COR	100.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW15-Z38-2207-COR	229.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW16-Z38-2207-COR	50.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW17-Z38-2207-COR	115.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW18-Z38-2207-COR	48.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW19-Z38-2207-COR	910.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW20-Z38-2207-COR	25.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW21-Z38-2207-COR	51.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW22-Z38-2207-COR	26.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW23-Z38-2207-COR	130.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW24-Z38-2207-COR	140.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW25-Z38-2207-COR	210.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW26-Z38-2207-COR	128.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z39-2208-STA	35.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z39-2208-STA	54.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z39-2208-STA	352.01	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z41-2210-STO	146.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z41-2210-STO	142.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z41-2210-STO	170.05	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z42-2211-STO	196.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z42-2211-STO	135.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z43-2212-EXAM	330.03	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z44-2213-LAB	887.99	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z44-2213-LAB	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z44-2213-LAB	1628.47	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z45-2214-EXAM	172.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z45-2214-EXAM	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z45-2214-EXAM	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z46-2215-LAB	536.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z46-2215-LAB	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z47-2216-OFC	312.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z47-2216-OFC	77.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z47-2216-OFC	158.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z47-2216-OFC	394.66	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z48-2217-QA/QC	167.20	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z48-2217-QA/QC	219.92	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z48-2217-QA/QC	138.10	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z49-2218-COR	326.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z49-2218-COR	276.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z49-2218-COR	28.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z49-2218-COR	41.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z49-2218-COR	26.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z50-2219-CONF	261.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z50-2219-CONF	178.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z50-2219-CONF	231.93	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z51-2220-LOUN	156.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z51-2220-LOUN	42.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z51-2220-LOUN	150.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z51-2220-LOUN	74.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW05-Z51-2220-LOUN	28.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z51-2220-LOUN	145.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z51-2220-LOUN	34.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z51-2220-LOUN	83.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z51-2220-LOUN	299.55	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z52-2221-OFC	66.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z52-2221-OFC	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z52-2221-OFC	51.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z53-2222-REST	115.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z53-2222-REST	186.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z53-2222-REST	99.37	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z54-2223-STO	227.40	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z54-2223-STO	306.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z55-2224-STO	136.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z55-2224-STO	206.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z56-2225-INST	356.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z57-2226-LAB	356.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z58-2227-INST	345.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z59-2228-REST	120.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z59-2228-REST	120.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z60-2229-REST	122.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

IW02-Z61-3300-STA	168.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z61-3300-STA	333.28	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z61-3300-STA	152.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z62-3301-OFC	54.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z62-3301-OFC	98.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z62-3301-OFC	184.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z62-3301-OFC	114.74	C-TYP-CONS	DELAYED ADIABATIC	0.389
IC01-Z63-3302-OPEN	1494.60	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z64-3303-OFC	344.01	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z64-3303-OFC	278.16	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z65-3304-DATA	150.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z65-3304-DATA	126.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z65-3304-DATA	126.01	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z66-3305-REST	362.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z66-3305-REST	127.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z67-3306-REST	257.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z67-3306-REST	117.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z67-3306-REST	117.40	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z68-3307-STA	35.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z68-3307-STA	58.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z68-3307-STA	354.69	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z68-3307-STA	83.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z68-3307-STA	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z69-3308-COR	99.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z69-3308-COR	125.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z69-3308-COR	27.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z69-3308-COR	97.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z69-3308-COR	25.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z69-3308-COR	339.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z69-3308-COR	60.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z69-3308-COR	84.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z69-3308-COR	72.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z69-3308-COR	260.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z69-3308-COR	128.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW12-Z69-3308-COR	107.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z69-3308-COR	124.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z69-3308-COR	647.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW15-Z69-3308-COR	48.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW16-Z69-3308-COR	80.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW17-Z69-3308-COR	45.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW18-Z69-3308-COR	200.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW19-Z69-3308-COR	105.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW20-Z69-3308-COR	251.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW21-Z69-3308-COR	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW22-Z69-3308-COR	124.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW23-Z69-3308-COR	156.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW24-Z69-3308-COR	204.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW25-Z69-3308-COR	42.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW26-Z69-3308-COR	119.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW27-Z69-3308-COR	46.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW28-Z69-3308-COR	553.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW29-Z69-3308-COR	46.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW30-Z69-3308-COR	62.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW31-Z69-3308-COR	144.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW32-Z69-3308-COR	168.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW33-Z69-3308-COR	11.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW34-Z69-3308-COR	337.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z70-3309-OFC	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z71-3310-PCR	294.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z71-3310-PCR	187.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z71-3310-PCR	51.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z71-3310-PCR	663.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z71-3310-PCR	918.43	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z72-3311-LAB	50.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z72-3311-LAB	136.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z72-3311-LAB	200.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z72-3311-LAB	339.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z72-3311-LAB	441.59	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z73-3312-LAB	563.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z73-3312-LAB	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z73-3312-LAB	64.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z73-3312-LAB	468.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z73-3312-LAB	1114.24	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z74-3313-EXAM	177.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z74-3313-EXAM	341.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z75-3314-LAB	920.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z75-3314-LAB	465.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z75-3314-LAB	1574.54	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW02-Z76-3315-OFC	253.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z76-3315-OFC	185.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z77-3316-BIO	164.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z78-3317-LOUN	149.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z78-3317-LOUN	41.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z78-3317-LOUN	306.79	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z79-3318-EXAM	357.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z80-3319-EXAM	224.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z81-3320-EVID	354.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z81-3320-EVID	231.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z82-3321-VEST	115.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW03-Z82-3321-VEST	434.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z82-3321-VEST	174.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z83-3322-PERP	291.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z83-3322-PERP	174.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z84-3323-FREEZ	186.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z84-3323-FREEZ	186.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

IW01-Z85-3324-SETUP	359.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z86-3325-VEST	440.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z86-3325-VEST	120.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z87-3326-SETUP	348.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z87-3326-SETUP	348.02	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z87A-4400-STA	342.72	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z87A-4400-STA	167.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z87A-4400-STA	152.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z88-4401-MER	224.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z88-4401-MER	38.32	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z88-4401-MER	186.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z88-4401-MER	141.35	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z88-4401-MER	156.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z88-4401-MER	75.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z88-4401-MER	114.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z88-4401-MER	76.41	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z88-4401-MER	249.63	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z88-4401-MER	135.74	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z88-4401-MER	516.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z88-4401-MER	124.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z88-4401-MER	164.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW15-Z88-4401-MER	16.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW16-Z88-4401-MER	432.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW17-Z88-4401-MER	30.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW18-Z88-4401-MER	20.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z89-4402-REST	373.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z89-4402-REST	136.04	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z90-4403-DATA	165.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z90-4403-DATA	143.37	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z91-4404-COR	135.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z91-4404-COR	81.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z91-4404-COR	265.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z91-4404-COR	202.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z91-4404-COR	329.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z91-4404-COR	89.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z91-4404-COR	89.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z91-4404-COR	375.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z91-4404-COR	1563.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z91-4404-COR	160.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z91-4404-COR	45.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z91-4404-COR	220.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z91-4404-COR	136.00	IW-TYP-CONS	DELAYED STANDARD	0.371
IW01-Z92-4405-STA	30.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z92-4405-STA	55.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z92-4405-STA	332.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z93-4406-LAB	531.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z93-4406-LAB	372.15	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z94-4407-GUN	90.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z94-4407-GUN	531.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW03-Z94-4407-GUN	326.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z95-4408-SHOP	79.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z95-4408-SHOP	298.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z95-4408-SHOP	280.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z95-4408-SHOP	50.68	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z96-4409-GSR	276.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z96-4409-GSR	203.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z96-4409-GSR	203.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z96-4409-GSR	219.75	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z97-4410-LAB	1132.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z97-4410-LAB	192.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z97-4410-LAB	852.45	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z98-4411-OFC	148.46	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z98-4411-OFC	24.89	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z98-4411-OFC	89.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z98-4411-OFC	183.03	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z99-4412-OPEN	99.14	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z99-4412-OPEN	219.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z99-4412-OPEN	394.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z99-4412-OPEN	436.79	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z100-4413-BREAK	39.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z100-4413-BREAK	3.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z100-4413-BREAK	128.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z100-4413-BREAK	28.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z100-4413-BREAK	138.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z100-4413-BREAK	35.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z101-4414-LAB	820.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z101-4414-LAB	139.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z101-4414-LAB	397.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z101-4414-LAB	80.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z102-4415-STO	396.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z102-4415-STO	136.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z103-4416-RANGE	304.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z103-4416-RANGE	301.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z103-4416-RANGE	145.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z01-1100-STA	Z01-1100-STA	Z01-1100-STA
IW02-Z01-1100-STA	Z01-1100-STA	Z01-1100-STA
IW01-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW02-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW03-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW04-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW05-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW06-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW07-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW08-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER

IW09-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW10-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW01-Z03-1102-TELE	Z03-1102-TELE	Z03-1102-TELE
IW01-Z04-1103-STA	Z04-1103-STA	Z04-1103-STA

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z05-1104-COR	Z05-1104-COR	Z05-1104-COR
IW02-Z05-1104-COR	Z05-1104-COR	Z05-1104-COR
IW03-Z05-1104-COR	Z05-1104-COR	Z05-1104-COR
IW01-Z06-1105-ELEV	Z06-1105-ELEV	Z06-1105-ELEV
IW02-Z06-1105-ELEV	Z06-1105-ELEV	Z06-1105-ELEV
IW01-Z07-1106-SUP	Z07-1106-SUPP	Z07-1106-SUPP
IW02-Z07-1106-SUP	Z07-1106-SUPP	Z07-1106-SUPP
IW01-Z08-1107-STO	Z08-1107-STO	Z08-1107-STO
IW01-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW02-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW03-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW04-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW01-Z10-1109-VIEW	Z10-1109-VIEW	Z10-1109-VIEW
IW01-Z11-1110-OFC	Z11-1110-OFC	Z11-1110-OFC
IW02-Z11-1110-OFC	Z11-1110-OFC	Z11-1110-OFC
IW02-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW04-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW05-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW01-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW03-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW06-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW01-Z14-1113-REST	Z15-1114-STO	Z14-1113-REST
IW01-Z16-1115-VEHI	Z16-1115-VEHI	Z16-1115-VEHI
IW02-Z16-1115-VEHI	Z16-1115-VEHI	Z16-1115-VEHI
IW01-Z17-1116-EVID	Z17-1116-EVID	Z17-1116-EVID
IW02-Z17-1116-EVID	Z17-1116-EVID	Z17-1116-EVID
IW03-Z17-1116-EVID	Z17-1116-EVID	Z17-1116-EVID
IW01-Z18-1117-PARK	Z18-1117-PARK	Z18-1117-PARK
IW03-Z18-1117-PARK	Z18-1117-PARK	Z18-1117-PARK
IC01-Z18-1117-PARK	Z18-1117-PARK	Z18-1117-PARK
IW01-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW02-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW03-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW04-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW01-Z20-1119-LOB	Z20-1119-LOB	Z20-1119-LOB
IW02-Z20-1119-LOB	Z20-1119-LOB	Z20-1119-LOB
IW02-Z21-1120-VIEW	Z21-1120-VIEW	Z21-1120-VIEW
IW01-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW02-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW03-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW04-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW05-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW06-Z22-1121-RECE	Z22-1121-RECE	Z23-1122-SECU
IW01-Z23-1122-SECU	Z23-1122-SECU	Z23-1122-SECU
IW02-Z23-1122-SECU	Z23-1122-SECU	Z23-1122-SECU
IW03-Z23-1122-SECU	Z23-1122-SECU	Z23-1122-SECU
IW01-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW03-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW04-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW05-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW01-Z27-1126-NARC	Z27-1126-NARC	Z27-1126-NARC
IW02-Z27-1126-NARC	Z27-1126-NARC	Z27-1126-NARC
IW02-Z28-1127-JAN	Z28-1127-JAN	Z28-1127-JAN
IW03-Z28-1127-JAN	Z28-1127-JAN	Z28-1127-JAN

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z29-1128-DRY	Z29-1128-DRY	Z29-1128-DRY
IW02-Z29-1128-DRY	Z29-1128-DRY	Z29-1128-DRY
IW01-Z30-1129-LAB	Z30-1129-LAB	Z30-1129-LAB
IW02-Z30-1129-LAB	Z30-1129-LAB	Z30-1129-LAB
IW02-Z31-2200-STA	Z31-2200-STA	Z31-2200-STA
IW01-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IW02-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IW03-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IC01-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IW03-Z33-2202-SUPV	Z33-2202-SUPV	Z32-2201-LIB
IW04-Z33-2202-SUPV	Z33-2202-SUPV	Z33-2202-SUPV
IW05-Z33-2202-SUPV	Z33-2202-SUPV	Z33-2202-SUPV
IW01-Z34-2203-STO	Z34-2203-STO	Z34-2203-STO
IW02-Z34-2203-STO	Z34-2203-STO	Z34-2203-STO
IW01-Z35-2204-WORK	Z35-2204-WORK	Z36-2205-SUPV
IW02-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW04-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW05-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW06-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW07-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW08-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW09-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW10-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW11-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW12-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW13-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW14-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IC01-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IC01-Z36-2205-SUPV	Z36-2205-SUPV	Z36-2205-SUPV
IW01-Z37-2206-DATA	Z37-2206-DATA	Z37-2206-DATA
IW03-Z37-2206-DATA	Z37-2206-DATA	Z37-2206-DATA
IW01-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW02-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW03-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW04-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR

IW05-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW06-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW07-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW08-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW09-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW10-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW11-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW12-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW13-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW14-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW15-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW16-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW17-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW18-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW19-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW20-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW21-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW22-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW23-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW24-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW25-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW26-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW01-Z39-2208-STA	Z39-2208-STA	Z39-2208-STA
IW02-Z39-2208-STA	Z39-2208-STA	Z39-2208-STA
IW03-Z39-2208-STA	Z39-2208-STA	Z39-2208-STA
IW01-Z41-2210-STO	Z41-2210-STO	Z41-2210-STO
IW02-Z41-2210-STO	Z41-2210-STO	Z41-2210-STO
IW03-Z41-2210-STO	Z41-2210-STO	Z41-2210-STO
IW01-Z42-2211-STO	Z42-2211-STO	Z42-2211-STO
IW02-Z42-2211-STO	Z42-2211-STO	Z42-2211-STO
IW01-Z43-2212-EXAM	Z43-2212-EXAM	Z43-2212-EXAM
IW01-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IW02-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IC01-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IW01-Z45-2214-EXAM	Z45-2214-EXAM	Z45-2214-EXAM
IW02-Z45-2214-EXAM	Z45-2214-EXAM	Z45-2214-EXAM
IW03-Z45-2214-EXAM	Z45-2214-EXAM	Z45-2214-EXAM
IW01-Z46-2215-LAB	Z46-2215-LAB	Z46-2215-LAB
IW02-Z46-2215-LAB	Z46-2215-LAB	Z46-2215-LAB
IW01-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IW02-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IW03-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IC01-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IW01-Z48-2217-QA/QC	Z48-2217-QA/QC	Z48-2217-QA/QC
IW02-Z48-2217-QA/QC	Z48-2217-QA/QC	Z48-2217-QA/QC
IC01-Z48-2217-QA/QC	Z48-2217-QA/QC	Z48-2217-QA/QC
IW01-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW02-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW03-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW04-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW05-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW02-Z50-2219-CONF	Z50-2219-CONF	Z50-2219-CONF
IW03-Z50-2219-CONF	Z50-2219-CONF	Z50-2219-CONF
IC01-Z50-2219-CONF	Z50-2219-CONF	Z50-2219-CONF
IW01-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW02-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW03-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW04-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW05-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW06-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW07-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW08-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IC01-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW01-Z52-2221-OFC	Z52-2221-OFC	Z52-2221-OFC
IW02-Z52-2221-OFC	Z52-2221-OFC	Z52-2221-OFC
IW03-Z52-2221-OFC	Z52-2221-OFC	Z52-2221-OFC
IW01-Z53-2222-REST	Z53-2222-REST	Z53-2222-REST
IW02-Z53-2222-REST	Z53-2222-REST	Z53-2222-REST
IW03-Z53-2222-REST	Z53-2222-REST	Z53-2222-REST
IW01-Z54-2223-STO	Z54-2223-STO	Z54-2223-STO
IW02-Z54-2223-STO	Z54-2223-STO	Z54-2223-STO
IW01-Z55-2224-STO	Z55-2224-STO	Z55-2224-STO
IW02-Z55-2224-STO	Z55-2224-STO	Z55-2224-STO

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z56-2225-INST	Z56-2225-INST	Z56-2225-INST
IW02-Z57-2226-LAB	Z57-2226-LAB	Z57-2226-LAB
IW02-Z58-2227-INST	Z58-2227-INST	Z58-2227-INST
IW01-Z59-2228-REST	Z59-2228-REST	Z59-2228-REST
IW02-Z59-2228-REST	Z59-2228-REST	Z59-2228-REST
IW01-Z60-2229-REST	Z60-2229-REST	Z60-2229-REST
IW02-Z61-3300-STA	Z61-3300-STA	Z61-3300-STA
IW01-Z61-3300-STA	Z61-3300-STA	Z61-3300-STA
IW03-Z61-3300-STA	Z61-3300-STA	Z61-3300-STA
IW01-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IW02-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IW03-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IC01-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IC01-Z63-3302-OPEN	Z63-3302-OPEN	Z63-3302-OPEN
IW01-Z64-3303-OFC	Z64-3303-OFC	Z64-3303-OFC
IC01-Z64-3303-OFC	Z64-3303-OFC	Z64-3303-OFC
IW01-Z65-3304-DATA	Z65-3304-DATA	Z65-3304-DATA
IW02-Z65-3304-DATA	Z65-3304-DATA	Z65-3304-DATA
IW03-Z65-3304-DATA	Z65-3304-DATA	Z65-3304-DATA
IW01-Z66-3305-REST	Z66-3305-REST	Z66-3305-REST

IW03-Z66-3305-REST	Z66-3305-REST	Z66-3305-REST
IW01-Z67-3306-REST	Z67-3306-REST	Z67-3306-REST
IW02-Z67-3306-REST	Z67-3306-REST	Z67-3306-REST
IW03-Z67-3306-REST	Z67-3306-REST	Z67-3306-REST
IW01-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW02-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW03-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW04-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW05-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW01-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW02-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW03-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW04-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW05-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW06-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW07-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW08-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW09-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW10-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW11-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW12-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW13-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW14-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW15-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW16-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW17-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW18-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW19-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW20-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW21-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW22-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW23-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW24-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW25-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW26-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW27-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW28-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW29-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW30-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW31-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW32-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW33-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW34-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW01-Z70-3309-OFC	Z70-3309-OFC	Z70-3309-OFC
IW01-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW02-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW03-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW04-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IC01-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW01-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW02-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW03-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW04-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IC01-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW01-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW02-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW03-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW04-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IC01-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW01-Z74-3313-EXAM	Z74-3313-EXAM	Z74-3313-EXAM
IW03-Z74-3313-EXAM	Z74-3313-EXAM	Z74-3313-EXAM
IW01-Z75-3314-LAB	Z75-3314-LAB	Z75-3314-LAB
IW02-Z75-3314-LAB	Z75-3314-LAB	Z75-3314-LAB
IC01-Z75-3314-LAB	Z75-3314-LAB	Z75-3314-LAB
IW02-Z76-3315-OFC	Z76-3315-OFC	Z76-3315-OFC
IW03-Z76-3315-OFC	Z76-3315-OFC	Z76-3315-OFC
IW02-Z77-3316-BIO	Z77-3316-BIO	Z77-3316-BIO
IW01-Z78-3317-LOUN	Z78-3317-LOUN	Z78-3317-LOUN
IW02-Z78-3317-LOUN	Z78-3317-LOUN	Z78-3317-LOUN
IW03-Z78-3317-LOUN	Z78-3317-LOUN	Z78-3317-LOUN
IW02-Z79-3318-EXAM	Z79-3318-EXAM	Z79-3318-EXAM
IW01-Z80-3319-EXAM	Z80-3319-EXAM	Z80-3319-EXAM
IW01-Z81-3320-EVID	Z81-3320-EVID LOC	Z81-3320-EVID LOC
IW02-Z81-3320-EVID	Z81-3320-EVID LOC	Z81-3320-EVID LOC
IW02-Z82-3321-VEST	Z82-3321-VEST	Z82-3321-VEST
IW03-Z82-3321-VEST	Z82-3321-VEST	Z82-3321-VEST
IW04-Z82-3321-VEST	Z82-3321-VEST	Z82-3321-VEST
IW01-Z83-3322-PERP	Z83-3322-PERP	Z83-3322-PERP
IW02-Z83-3322-PERP	Z83-3322-PERP	Z83-3322-PERP
IW01-Z84-3323-FREEZ	Z84-3323-FREEZ	Z84-3323-FREEZ
IW02-Z84-3323-FREEZ	Z84-3323-FREEZ	Z84-3323-FREEZ
IW01-Z85-3324-SETUP	Z85-3324-SETUP	Z85-3324-SETUP
IW01-Z86-3325-VEST	Z86-3325-VEST	Z86-3325-VEST
IW02-Z86-3325-VEST	Z86-3325-VEST	Z86-3325-VEST
IW01-Z87-3326-SETUP	Z87-3326-SETUP	Z87-3326-SETUP
IW02-Z87-3326-SETUP	Z87-3326-SETUP	Z87-3326-SETUP
IW01-Z87A-4400-STA	Z87A-4400-STA	Z87A-4400-STA
IW02-Z87A-4400-STA	Z87A-4400-STA	Z87A-4400-STA

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW03-Z87A-4400-STA	Z87A-4400-STA	Z87A-4400-STA
IW01-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW02-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW03-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW04-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER

IW05-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW06-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW07-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW08-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW09-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW11-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW12-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW13-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW14-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW15-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW16-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW17-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW18-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW01-Z89-4402-REST	Z89-4402-REST	Z89-4402-REST
IW02-Z89-4402-REST	Z89-4402-REST	Z89-4402-REST
IW01-Z90-4403-DATA	Z90-4403-DATA	Z90-4403-DATA
IW02-Z90-4403-DATA	Z90-4403-DATA	Z90-4403-DATA
IW01-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW02-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW03-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW04-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW05-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW06-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW07-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW08-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW09-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW10-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW11-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW12-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW13-Z91-4404-COR	Z91-4404-COR	Z92-4405-STA
IW01-Z92-4405-STA	Z92-4405-STA	Z92-4405-STA
IW02-Z92-4405-STA	Z92-4405-STA	Z92-4405-STA
IW03-Z92-4405-STA	Z92-4405-STA	Z92-4405-STA
IW03-Z93-4406-LAB	Z93-4406-LAB	Z93-4406-LAB
IC01-Z93-4406-LAB	Z93-4406-LAB	Z93-4406-LAB
IW01-Z94-4407-GUN	Z94-4407-GUN	Z94-4407-GUN
IW02-Z94-4407-GUN	Z94-4407-GUN	Z94-4407-GUN
IW03-Z94-4407-GUN	Z94-4407-GUN	Z94-4407-GUN
IW01-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW02-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW03-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW04-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW01-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IW02-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IW03-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IC01-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IW01-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB
IW02-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB
IC01-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IW02-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IW03-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IC01-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IW01-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IW02-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IW03-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IC01-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IW01-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW02-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW03-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW04-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW05-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW06-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW01-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW02-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW03-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW04-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW01-Z102-4415-STO	Z102-4415-STO	Z102-4415-STO
IW02-Z102-4415-STO	Z102-4415-STO	Z102-4415-STO
IW01-Z103-4416-RANGE	Z103-4416-RANGE	Z103-4416-RANGE
IW02-Z103-4416-RANGE	Z103-4416-RANGE	Z103-4416-RANGE
IW03-Z103-4416-RANGE	Z103-4416-RANGE	Z103-4416-RANGE

NUMBER OF WINDOWS 192

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB
WIN01-W01-Z24-1123-LOB	1.0	59.95	11.99	5.00	0.17	0.17	5.89	0.00	1.328	0.000
WIN02-W01-Z24-1123-LOB	1.0	59.95	11.99	5.00	5.34	0.17	5.89	0.00	1.328	0.000
WIN03-W01-Z24-1123-LOB	1.0	59.95	11.99	5.00	10.51	0.17	5.89	0.00	1.328	0.000
WIN01-W02-Z24-1123-LOB	1.0	59.95	11.99	5.00	0.17	0.17	5.89	0.00	1.328	0.000
WIN02-W02-Z24-1123-LOB	1.0	59.95	11.99	5.00	9.17	0.17	5.89	0.00	1.328	0.000
WIN03-W02-Z24-1123-LOB	1.0	14.84	6.34	2.34	5.67	1.00	3.07	0.00	1.328	0.000
WIN04-W02-Z24-1123-LOB	1.0	13.32	4.00	3.33	5.67	8.17	2.61	0.00	1.328	0.000
WIN01-W03-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W04-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W05-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W06-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W01-Z33-2202-SUPV	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W02-Z33-2202-SUPV	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W01-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W02-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W03-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W04-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W05-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W06-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W10-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W11-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W12-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W13-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W14-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W15-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W19-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W20-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W21-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W22-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W23-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W24-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W27-Z35-2204-WORK	1.0	31.04	6.66	4.66	0.17	4.17	3.96	0.00	1.328	0.000
WIN01-W02-Z36-2205-SUPV	1.0	31.04	6.66	4.66	5.83	4.17	3.96	0.00	1.328	0.000
WIN01-W02-Z39-2208-STA	1.0	25.51	6.66	3.83	2.66	4.17	3.68	0.00	1.328	0.000
WIN02-W02-Z39-2208-STA	1.0	25.51	6.66	3.83	6.66	4.17	3.68	0.00	1.328	0.000
WIN01-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	1.17	4.17	3.68	0.00	1.328	0.000
WIN02-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	5.17	4.17	3.68	0.00	1.328	0.000
WIN03-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	9.17	4.17	3.68	0.00	1.328	0.000
WIN04-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	13.17	4.17	3.68	0.00	1.328	0.000
WIN01-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	12.47	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	17.47	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	22.47	4.17	4.02	0.00	1.328	0.000
WIN04-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	27.47	4.17	4.02	0.00	1.328	0.000
WIN05-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	35.13	4.17	4.02	0.00	1.328	0.000
WIN06-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	40.13	4.17	4.02	0.00	1.328	0.000
WIN07-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	45.13	4.17	4.02	0.00	1.328	0.000
WIN08-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	50.13	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z45-2214-EXAM	1.0	32.17	6.66	4.83	1.33	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z45-2214-EXAM	1.0	32.17	6.66	4.83	6.33	4.17	4.02	0.00	1.328	0.000

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB
WIN01-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	5.17	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	12.83	4.17	4.02	0.00	1.328	0.000
WIN04-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	17.83	4.17	4.02	0.00	1.328	0.000
WIN05-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	22.83	4.17	4.02	0.00	1.328	0.000
WIN06-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	27.83	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	1.328	0.000
WIN04-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	16.47	4.17	4.02	0.00	1.328	0.000
WIN01-W04-Z47-2216-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W05-Z47-2216-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W01-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W02-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W03-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W04-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W04-Z49-2218-COR	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W05-Z49-2218-COR	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W01-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W02-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W03-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W04-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W01-Z51-2220-LOUN	1.0	49.95	9.99	5.00	0.17	0.67	5.21	0.00	1.328	0.000
WIN02-W01-Z51-2220-LOUN	1.0	49.95	9.99	5.00	5.34	0.67	5.21	0.00	1.328	0.000
WIN03-W01-Z51-2220-LOUN	1.0	49.95	9.99	5.00	10.51	0.67	5.21	0.00	1.328	0.000
WIN01-W02-Z51-2220-LOUN	1.0	44.95	9.99	4.50	0.67	0.67	5.04	0.00	1.328	0.000
WIN02-W02-Z51-2220-LOUN	1.0	44.95	9.99	4.50	5.17	0.67	5.04	0.00	1.328	0.000
WIN03-W02-Z51-2220-LOUN	1.0	44.95	9.99	4.50	9.67	0.67	5.04	0.00	1.328	0.000
WIN01-W03-Z62-3301-OFC	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W04-Z62-3301-OFC	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W01-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W02-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W03-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000

WIN01-W04-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W08-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W09-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W10-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W11-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W12-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W13-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W17-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W18-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W19-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W20-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W21-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W22-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W26-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W27-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W28-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W29-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W30-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W31-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB AREA	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB U-VALUE
WIN01-W02-Z64-3303-OFC	1.0	31.04	6.66	4.66	5.83	4.17	3.96	0.00	1.328	0.000
WIN02-W02-Z64-3303-OFC	1.0	31.04	6.66	4.66	10.83	4.17	3.96	0.00	1.328	0.000
WIN01-W02-Z68-3307-STA	1.0	25.51	6.66	3.83	2.66	4.17	3.68	0.00	1.328	0.000
WIN02-W02-Z68-3307-STA	1.0	25.51	6.66	3.83	6.66	4.17	3.68	0.00	1.328	0.000
WIN01-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	7.88	4.17	3.68	0.00	1.328	0.000
WIN02-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	11.88	4.17	3.68	0.00	1.328	0.000
WIN03-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	15.88	4.17	3.68	0.00	1.328	0.000
WIN04-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	19.88	4.17	3.68	0.00	1.328	0.000
WIN01-W01-Z72-3311-LAB	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z72-3311-LAB	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z72-3311-LAB	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	6.50	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	11.50	4.17	4.02	0.00	1.328	0.000
WIN04-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	16.50	4.17	4.02	0.00	1.328	0.000
WIN05-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	21.50	4.17	4.02	0.00	1.328	0.000
WIN06-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	27.83	4.17	4.02	0.00	1.328	0.000
WIN07-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	32.83	4.17	4.02	0.00	1.328	0.000
WIN08-W01-Z73-3312-LAB	1.0	6.66	6.66	1.00	37.83	4.17	2.72	0.00	1.328	0.000
WIN01-W01-Z74-3313-EXAM	1.0	25.51	6.66	3.83	0.00	4.17	3.68	0.00	1.328	0.000
WIN02-W01-Z74-3313-EXAM	1.0	32.17	6.66	4.83	4.00	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	1.328	0.000
WIN04-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	16.47	4.17	4.02	0.00	1.328	0.000
WIN05-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	24.13	4.17	4.02	0.00	1.328	0.000
WIN06-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	29.13	4.17	4.02	0.00	1.328	0.000
WIN07-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	34.13	4.17	4.02	0.00	1.328	0.000
WIN08-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	39.13	4.17	4.02	0.00	1.328	0.000
WIN01-W04-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W05-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W06-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W07-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	1.328	0.000
WIN01-W08-Z75-3314-LAB	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W09-Z75-3314-LAB	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W03-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W04-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W05-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W06-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W02-Z77-3316-BIO	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W03-Z77-3316-BIO	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W01-Z78-3317-LOUN	1.0	44.95	9.99	4.50	0.67	0.67	5.04	0.00	1.328	0.000
WIN02-W01-Z78-3317-LOUN	1.0	44.95	9.99	4.50	5.17	0.67	5.04	0.00	1.328	0.000
WIN03-W01-Z78-3317-LOUN	1.0	44.95	9.99	4.50	9.67	0.67	5.04	0.00	1.328	0.000
WIN01-W02-Z78-3317-LOUN	1.0	49.95	9.99	5.00	0.17	0.67	5.21	0.00	1.328	0.000
WIN02-W02-Z78-3317-LOUN	1.0	49.95	9.99	5.00	5.34	0.67	5.21	0.00	1.328	0.000
WIN03-W02-Z78-3317-LOUN	1.0	49.95	9.99	5.00	10.51	0.67	5.21	0.00	1.328	0.000
WIN01-W02-Z92-4405-STA	1.0	25.51	6.66	3.83	2.66	4.17	3.68	0.00	1.328	0.000
WIN02-W02-Z92-4405-STA	1.0	25.51	6.66	3.83	6.66	4.17	3.68	0.00	1.328	0.000
WIN01-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	7.88	4.17	3.68	0.00	1.328	0.000
WIN02-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	11.88	4.17	3.68	0.00	1.328	0.000
WIN03-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	15.88	4.17	3.68	0.00	1.328	0.000

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB AREA	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB U-VALUE
WIN04-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	19.88	4.17	3.68	0.00	1.328	0.000
WIN01-W01-Z95-4408-SHOP	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z95-4408-SHOP	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z95-4408-SHOP	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z96-4409-GSR	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z96-4409-GSR	1.0	32.17	6.66	4.83	7.66	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z96-4409-GSR	1.0	32.17	6.66	4.83	12.66	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	1.328	0.000
WIN02-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	5.17	4.17	4.02	0.00	1.328	0.000
WIN03-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	12.83	4.17	4.02	0.00	1.328	0.000
WIN04-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	17.83	4.17	4.02	0.00	1.328	0.000
WIN05-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	22.83	4.17	4.02	0.00	1.328	0.000
WIN06-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	27.83	4.17	4.02	0.00	1.328	0.000
WIN07-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	35.49	4.17	4.02	0.00	1.328	0.000
WIN08-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	40.49	4.17	4.02	0.00	1.328	0.000
WIN09-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	45.49	4.17	4.02	0.00	1.328	0.000
WIN10-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	50.49	4.17	4.02	0.00	1.328	0.000
WIN11-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	58.15	4.17	4.02	0.00	1.328	0.000

WIN12-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	63.15	4.17	4.02	0.00	1.328	0.000
WIN13-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	68.15	4.17	4.02	0.00	1.328	0.000
WIN01-W01-Z98-4411-OFC	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	1.328	0.000
WIN01-W04-Z98-4411-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W05-Z98-4411-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W01-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W02-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W03-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W04-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W08-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W09-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W01-Z100-4413-BREAK	1.0	49.95	9.99	5.00	0.17	0.67	5.21	0.00	1.328	0.000
WIN02-W01-Z100-4413-BREAK	1.0	49.95	9.99	5.00	5.34	0.67	5.21	0.00	1.328	0.000
WIN03-W01-Z100-4413-BREAK	1.0	49.95	9.99	5.00	10.51	0.67	5.21	0.00	1.328	0.000
WIN01-W03-Z100-4413-BREAK	1.0	44.95	9.99	4.50	0.67	0.67	5.04	0.00	1.328	0.000
WIN02-W03-Z100-4413-BREAK	1.0	44.95	9.99	4.50	5.17	0.67	5.04	0.00	1.328	0.000
WIN03-W03-Z100-4413-BREAK	1.0	44.95	9.99	4.50	9.67	0.67	5.04	0.00	1.328	0.000
WIN01-W04-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W05-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W06-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000
WIN01-W07-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	1.328	0.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W01-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W02-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN04-W02-Z24-1123-LOB	0.00	0.45	2	0.418	0.442	0.283	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W03-Z32-2201-LIB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z32-2201-LIB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z32-2201-LIB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W06-Z32-2201-LIB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z33-2202-SUPV	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z33-2202-SUPV	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W06-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W10-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W11-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W12-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W13-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W14-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W15-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W19-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W20-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W21-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W22-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W23-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W24-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W27-Z35-2204-WORK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z36-2205-SUPV	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z39-2208-STA	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z39-2208-STA	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z43-2212-EXAM	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z43-2212-EXAM	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z43-2212-EXAM	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z43-2212-EXAM	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN05-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN06-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN07-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN08-W01-Z44-2213-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z45-2214-EXAM	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z45-2214-EXAM	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z46-2215-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z46-2215-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z46-2215-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z46-2215-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN05-W01-Z46-2215-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN06-W01-Z46-2215-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z47-2216-OFC	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z47-2216-OFC	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z47-2216-OFC	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z47-2216-OFC	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z47-2216-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z47-2216-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W01-Z48-2217-QA/QC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z48-2217-QA/QC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z48-2217-QA/QC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z48-2217-QA/QC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z49-2218-COR	0.00	0.45	2	0.418	0.442	0.283	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W05-Z49-2218-COR	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z50-2219-CONF	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z50-2219-CONF	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z50-2219-CONF	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z50-2219-CONF	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z51-2220-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z51-2220-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z51-2220-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z51-2220-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z51-2220-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W02-Z51-2220-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z62-3301-OFC	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z62-3301-OFC	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W08-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W09-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W10-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W11-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W12-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W13-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W17-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W18-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W19-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W20-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W21-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W22-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W26-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W27-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W28-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W29-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W30-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W31-Z63-3302-OPEN	1.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z64-3303-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z64-3303-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z68-3307-STA	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z68-3307-STA	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z71-3310-PCR	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z71-3310-PCR	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z71-3310-PCR	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z71-3310-PCR	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z72-3311-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z72-3311-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z72-3311-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN05-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN06-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN07-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN08-W01-Z73-3312-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z74-3313-EXAM	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z74-3313-EXAM	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN05-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN06-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN07-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN08-W01-Z75-3314-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z75-3314-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z75-3314-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W06-Z75-3314-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W07-Z75-3314-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W08-Z75-3314-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W09-Z75-3314-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z76-3315-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z76-3315-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z76-3315-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W06-Z76-3315-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z77-3316-BIO	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z77-3316-BIO	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z78-3317-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z78-3317-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z78-3317-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z78-3317-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z78-3317-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W02-Z78-3317-LOUN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z92-4405-STA	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W02-Z92-4405-STA	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z93-4406-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z93-4406-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z93-4406-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z93-4406-LAB	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z95-4408-SHOP	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z95-4408-SHOP	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z95-4408-SHOP	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z96-4409-GSR	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z96-4409-GSR	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z96-4409-GSR	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN04-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN05-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000

WIN06-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN07-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN08-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN09-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN10-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN11-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN12-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN13-W01-Z97-4410-LAB	0.50	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z98-4411-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z98-4411-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z98-4411-OFC	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z99-4412-OPEN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W02-Z99-4412-OPEN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z99-4412-OPEN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z99-4412-OPEN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W08-Z99-4412-OPEN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W09-Z99-4412-OPEN	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W01-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W01-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W01-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W03-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN02-W03-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN03-W03-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W04-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W05-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W06-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000
WIN01-W07-Z100-4413-BREAK	0.00	0.45	2	0.418	0.442	0.283	1.000

NUMBER OF CONSTRUCTIONS 14 DELAYED 12 QUICK 2

CONSTRUCTION NAME	U-VALUE (BTU/HR-SQFT-F)	SURFACE ABSORPTANCE	SURFACE ROUGHNESS INDEX	SURFACE TYPE	NUMBER OF RESPONSE FACTORS
C-TYP-CONS	0.389	0.70	3	DELAYED	4
GARAGE-IW-CONS	0.084	0.70	3	DELAYED	4
GARAGE-CEIL-CONS	0.069	0.70	3	DELAYED	5
R-TYP-CONS	0.063	0.70	3	DELAYED	6
UF-TYP-CONS	0.038	0.70	3	DELAYED	20
FL-TYP-CONS	0.306	0.70	3	DELAYED	8
IC-TYP-CONS	0.389	0.70	3	DELAYED	4
IW-TYP-CONS	0.371	0.70	3	DELAYED	4
W-TYP-CONS	0.084	0.70	3	DELAYED	4
OF-TYP-CONS	0.052	0.70	3	DELAYED	6
Swinging Doors	0.700	0.70	3	QUICK	0
IF-TYP-CONS	0.371	0.70	3	DELAYED	4
Non-Swinging Door	1.450	0.70	3	QUICK	0
GARAGE-W-CONS	0.124	0.70	3	DELAYED	4

Monroe County Public Safety Lab LABELLA Associates DOE-2.2-44e4 1/04/2010 16:12:45 BDL RUN 1
Design Building SAIC/Energy Systems Group
REPORT- PS-D Circulation Loop Loads WEATHER FILE- Rochester NY TMY2

		COIL LOAD	PIPE GAIN	NET LOAD	OVERLOAD		Number of hours within each PART LOAD range										TOTAL
	SUM	(MBTU)	(MBTU)	(MBTU)	(MBTU)		00	10	20	30	40	50	60	70	80	90	100	RUN
MON	PEAK	(KBTU/HR)	(KBTU/HR)	(KBTU/HR)	(KBTU/HR)		10	20	30	40	50	60	70	80	90	100	+	HOURS
Primary HW Loop																		
	SUM	-5864.8	0.0	-5796.2	0.0	HEAT	4629	2088	553	120	4	0	0	0	0	0	0	7394
	PEAK	-3630.9	0.0	-3605.9	0.0	FLOW	5827	2733	196	4	0	0	0	0	0	0	0	8760
	MON/DAY	12/19	0/ 0	12/19	0/ 0													
DHW Loop																		
	SUM	-28.1	0.0	-24.2	-2.5	HEAT	60	0	0	31	31	0	31	28	305	1216	0	1702
	PEAK	-22.0	0.0	-15.6	-4.2	FLOW	0	0	0	0	0	0	0	0	0	7300	1460	8760
	MON/DAY	3/ 1	0/ 0	6/10	3/25													

Hours overloaded during heating: 968

REPORT- PS-F Energy End-Use Summary for EM 2 - ELEVATOR WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
KWH	0.	0.	9913.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9913.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	2/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
FEB													
KWH	0.	0.	8959.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8959.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAR													
KWH	0.	0.	10082.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10082.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
APR													
KWH	0.	0.	9708.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9708.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	2/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAY													
KWH	0.	0.	10082.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10082.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
JUN													
KWH	0.	0.	9708.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9708.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
JUL													
KWH	0.	0.	9913.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9913.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	2/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AUG													
KWH	0.	0.	10250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10250.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SEP													
KWH	0.	0.	9371.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9371.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	4/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	4/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
OCT													
KWH	0.	0.	10082.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10082.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NOV													
KWH	0.	0.	9539.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9539.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
DEC													
KWH	0.	0.	9745.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9745.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	3/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	3/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
KWH	0.	0.	117350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	117350.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
MON/DY	0/ 0	0/ 0	1/ 2	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

YEARLY TRANSFORMER LOSSES = 0.0 KWH

REPORT- PS-F Energy End-Use Summary for EM 3 - EXT.LITE WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2897.	2897.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
FEB													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2617.	2617.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
MAR													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2124.	2124.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
APR													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2056.	2056.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
MAY													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2124.	2124.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
JUN													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1495.	1495.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
JUL													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1545.	1545.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
AUG													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1545.	1545.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
SEP													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2056.	2056.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
OCT													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2124.	2124.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
NOV													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2803.	2803.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
DEC													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2897.	2897.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	26284.	26284.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	6.230
MON/DY	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.230	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	

YEARLY TRANSFORMER LOSSES = 0.0 KWH

REPORT- PS-F Energy End-Use Summary for EM1 WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
KWH	11457.	1447.	26580.	0.	684.	0.	2975.	20363.	19344.	0.	0.	2897.	85746.
MAX KW	44.870	5.061	67.543	0.000	6.032	0.000	4.664	48.224	26.000	0.000	0.000	6.230	194.225
DAY/HR	2/11	2/11	2/ 8	0/ 0	30/16	0/ 0	16/ 7	16/ 7	1/ 1	0/ 0	0/ 0	1/ 1	16/ 8
PEAK ENDUSE	36.055	5.001	67.543	0.000	2.159	0.000	4.565	46.672	26.000	0.000	0.000	6.230	
PEAK PCT	18.6	2.6	34.8	0.0	1.1	0.0	2.4	24.0	13.4	0.0	0.0	3.2	
FEB													
KWH	10379.	1310.	24027.	0.	718.	0.	2706.	18496.	17472.	0.	0.	2617.	77725.
MAX KW	44.870	5.061	67.543	0.000	21.333	0.000	4.811	48.956	26.000	0.000	0.000	6.230	201.712
DAY/HR	1/11	1/11	1/ 8	0/ 0	2/16	0/ 0	13/ 7	13/ 7	1/ 1	0/ 0	0/ 0	1/ 1	2/14
PEAK ENDUSE	43.554	5.001	61.831	0.000	16.341	0.000	3.393	45.591	26.000	0.000	0.000	0.000	
PEAK PCT	21.6	2.5	30.7	0.0	8.1	0.0	1.7	22.6	12.9	0.0	0.0	0.0	
MAR													
KWH	11952.	1515.	27176.	0.	984.	0.	2883.	20353.	19344.	0.	0.	2124.	86331.
MAX KW	44.870	5.061	67.543	0.000	44.667	0.000	4.457	47.923	26.000	0.000	0.000	6.230	220.170
DAY/HR	1/11	1/11	1/ 8	0/ 0	30/18	0/ 0	28/ 7	29/18	1/ 1	0/ 0	0/ 0	1/ 1	30/18
PEAK ENDUSE	36.055	5.001	58.975	0.000	44.667	0.000	3.393	46.079	26.000	0.000	0.000	0.000	
PEAK PCT	16.4	2.3	26.8	0.0	20.3	0.0	1.5	20.9	11.8	0.0	0.0	0.0	
APR													
KWH	11400.	1444.	26126.	0.	7240.	0.	2616.	18920.	18720.	0.	0.	2056.	88522.
MAX KW	44.870	5.061	67.543	0.000	123.194	0.000	4.305	51.614	26.000	0.000	0.000	6.230	310.576
DAY/HR	2/11	2/11	2/ 8	0/ 0	4/14	0/ 0	9/ 7	4/18	1/ 2	0/ 0	0/ 0	1/ 2	4/14
PEAK ENDUSE	43.554	5.001	61.831	0.000	123.194	0.000	3.393	47.601	26.000	0.000	0.000	0.000	
PEAK PCT	14.0	1.6	19.9	0.0	39.7	0.0	1.1	15.3	8.4	0.0	0.0	0.0	
MAY													
KWH	11910.	1511.	27176.	0.	18018.	0.	2610.	19482.	19344.	0.	0.	2124.	102175.
MAX KW	44.870	5.061	67.543	0.000	217.239	0.000	4.156	55.925	26.000	0.000	0.000	6.230	406.192
DAY/HR	1/11	1/11	1/ 8	0/ 0	9/17	0/ 0	2/ 7	9/18	1/ 2	0/ 0	0/ 0	1/ 2	9/14
PEAK ENDUSE	43.554	5.001	61.831	0.000	215.934	0.000	3.393	50.478	26.000	0.000	0.000	0.000	
PEAK PCT	10.7	1.2	15.2	0.0	53.2	0.0	0.8	12.4	6.4	0.0	0.0	0.0	
JUN													
KWH	11441.	1448.	26126.	0.	37307.	0.	2450.	19325.	18720.	0.	0.	1495.	118312.
MAX KW	44.870	5.061	67.543	0.000	243.570	0.000	3.813	57.178	26.000	0.000	0.000	6.230	421.722
DAY/HR	1/11	1/11	1/ 8	0/ 0	18/17	0/ 0	4/ 6	8/18	1/ 2	0/ 0	0/ 0	1/ 2	18/17
PEAK ENDUSE	36.055	5.001	53.263	0.000	243.570	0.000	3.393	54.440	26.000	0.000	0.000	0.000	
PEAK PCT	8.5	1.2	12.6	0.0	57.8	0.0	0.8	12.9	6.2	0.0	0.0	0.0	
JUL													
KWH	11457.	1447.	26580.	0.	50691.	0.	2525.	19753.	19344.	0.	0.	1545.	133341.
MAX KW	44.870	5.061	67.543	0.000	242.981	0.000	3.481	57.059	26.000	0.000	0.000	6.230	422.716
DAY/HR	2/11	2/11	2/ 8	0/ 0	19/17	0/ 0	2/ 7	30/18	1/ 2	0/ 0	0/ 0	1/ 2	30/17
PEAK ENDUSE	36.055	5.001	53.263	0.000	242.619	0.000	3.393	56.385	26.000	0.000	0.000	0.000	
PEAK PCT	8.5	1.2	12.6	0.0	57.4	0.0	0.8	13.3	6.2	0.0	0.0	0.0	
AUG													
KWH	12364.	1575.	27771.	0.	50957.	0.	2525.	20275.	19344.	0.	0.	1545.	136356.
MAX KW	44.870	5.061	67.543	0.000	247.915	0.000	3.450	58.001	26.000	0.000	0.000	6.230	433.783
DAY/HR	1/11	1/11	1/ 8	0/ 0	17/18	0/ 0	31/ 7	31/18	1/ 2	0/ 0	0/ 0	1/ 2	17/18
PEAK ENDUSE	36.055	5.001	58.975	0.000	247.915	0.000	3.393	56.443	26.000	0.000	0.000	0.000	
PEAK PCT	8.3	1.2	13.6	0.0	57.2	0.0	0.8	13.0	6.0	0.0	0.0	0.0	
SEP													
KWH	10535.	1320.	24935.	0.	25847.	0.	2471.	17930.	18720.	0.	0.	2056.	103813.
MAX KW	44.870	5.061	67.543	0.000	239.250	0.000	4.053	59.074	26.000	0.000	0.000	6.230	427.481
DAY/HR	4/11	4/11	4/ 8	0/ 0	4/18	0/ 0	21/ 7	4/17	1/ 2	0/ 0	0/ 0	1/ 2	4/18
PEAK ENDUSE	36.055	5.001	58.975	0.000	239.250	0.000	3.393	58.807	26.000	0.000	0.000	0.000	
PEAK PCT	8.4	1.2	13.8	0.0	56.0	0.0	0.8	13.8	6.1	0.0	0.0	0.0	
OCT													
KWH	11910.	1511.	27176.	0.	9916.	0.	2647.	19257.	19344.	0.	0.	2124.	93885.
MAX KW	44.870	5.061	67.543	0.000	168.288	0.000	4.232	52.398	26.000	0.000	0.000	6.230	344.399
DAY/HR	1/11	1/11	1/ 8	0/ 0	4/17	0/ 0	29/ 7	4/17	1/ 2	0/ 0	0/ 0	1/ 2	4/17
PEAK ENDUSE	36.055	5.001	53.263	0.000	168.288	0.000	3.393	52.398	26.000	0.000	0.000	0.000	
PEAK PCT	10.5	1.5	15.5	0.0	48.9	0.0	1.0	15.2	7.5	0.0	0.0	0.0	
NOV													
KWH	10946.	1380.	25530.	0.	1524.	0.	2725.	18998.	18720.	0.	0.	2803.	82627.
MAX KW	44.870	5.061	67.543	0.000	52.381	0.000	4.347	48.934	26.000	0.000	0.000	6.230	237.734
DAY/HR	1/11	1/11	1/ 8	0/ 0	9/15	0/ 0	26/ 7	8/15	1/ 2	0/ 0	0/ 0	1/ 2	9/14
PEAK ENDUSE	43.554	5.001	61.831	0.000	52.333	0.000	3.393	45.621	26.000	0.000	0.000	0.000	
PEAK PCT	18.3	2.1	26.0	0.0	22.0	0.0	1.4	19.2	10.9	0.0	0.0	0.0	
DEC													
KWH	11045.	1386.	25984.	0.	1516.	0.	2910.	19959.	19344.	0.	0.	2897.	85042.
MAX KW	44.870	5.061	67.543	0.000	66.830	0.000	4.823	49.070	26.000	0.000	0.000	6.230	248.461
DAY/HR	3/11	3/11	3/ 8	0/ 0	5/12	0/ 0	19/ 7	19/ 7	1/ 1	0/ 0	0/ 0	1/ 1	5/11
PEAK ENDUSE	44.870	5.061	60.656	0.000	62.859	0.000	3.393	45.621	26.000	0.000	0.000	0.000	
PEAK PCT	18.1	2.0	24.4	0.0	25.3	0.0	1.4	18.4	10.5	0.0	0.0	0.0	
KWH	136796.	17292.	315187.	0.	205403.	0.	32042.	233111.	227760.	0.	0.	26284.	1193875.
MAX KW	44.870	5.061	67.543	0.000	247.915	0.000	4.823	59.074	26.000	0.000	0.000	6.230	433.783
MON/DY	1/ 2	1/ 2	1/ 2	0/ 0	8/17	0/ 0	12/19	9/ 4	1/ 1	0/ 0	0/ 0	1/ 1	8/17
PEAK ENDUSE	36.055	5.001	58.975	0.000	247.915	0.000	3.393	56.443	26.000	0.000	0.000	0.000	
PEAK PCT	8.3	1.2	13.6	0.0	57.2	0.0	0.8	13.0	6.0	0.0	0.0	0.0	

YEARLY TRANSFORMER LOSSES = 0.0 KWH

REPORT- PS-F Energy End-Use Summary for FM1 WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
THERM	0.	0.	0.	14554.	0.	0.	0.	0.	0.	0.	37.	0.	14591.
MAX THERM/HR	0.0	0.0	0.0	43.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	43.6
DAY/HR	0/ 0	0/ 0	0/ 0	16/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	16/ 7
PEAK ENDUSE	0.0	0.0	0.0	43.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
FEB													
THERM	0.	0.	0.	13975.	0.	0.	0.	0.	0.	0.	35.	0.	14010.
MAX THERM/HR	0.0	0.0	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	47.0
DAY/HR	0/ 0	0/ 0	0/ 0	13/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	13/ 7
PEAK ENDUSE	0.0	0.0	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAR													
THERM	0.	0.	0.	11756.	0.	0.	0.	0.	0.	0.	38.	0.	11794.
MAX THERM/HR	0.0	0.0	0.0	38.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	38.1
DAY/HR	0/ 0	0/ 0	0/ 0	28/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	28/ 7
PEAK ENDUSE	0.0	0.0	0.0	38.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
APR													
THERM	0.	0.	0.	6501.	0.	0.	0.	0.	0.	0.	36.	0.	6537.
MAX THERM/HR	0.0	0.0	0.0	32.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	32.5
DAY/HR	0/ 0	0/ 0	0/ 0	10/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	10/ 7
PEAK ENDUSE	0.0	0.0	0.0	32.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAY													
THERM	0.	0.	0.	4625.	0.	0.	0.	0.	0.	0.	35.	0.	4660.
MAX THERM/HR	0.0	0.0	0.0	26.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	26.3
DAY/HR	0/ 0	0/ 0	0/ 0	2/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	2/ 7
PEAK ENDUSE	0.0	0.0	0.0	26.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
JUN													
THERM	0.	0.	0.	2577.	0.	0.	0.	0.	0.	0.	32.	0.	2609.
MAX THERM/HR	0.0	0.0	0.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	13.3
DAY/HR	0/ 0	0/ 0	0/ 0	4/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	4/ 7
PEAK ENDUSE	0.0	0.0	0.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
JUL													
THERM	0.	0.	0.	2332.	0.	0.	0.	0.	0.	0.	32.	0.	2363.
MAX THERM/HR	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.8
DAY/HR	0/ 0	0/ 0	0/ 0	19/ 6	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	7/11	0/ 0	19/ 6
PEAK ENDUSE	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
AUG													
THERM	0.	0.	0.	2496.	0.	0.	0.	0.	0.	0.	30.	0.	2526.
MAX THERM/HR	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	10.0
DAY/HR	0/ 0	0/ 0	0/ 0	7/ 6	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	21/11	0/ 0	7/ 6
PEAK ENDUSE	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
SEP													
THERM	0.	0.	0.	3411.	0.	0.	0.	0.	0.	0.	29.	0.	3441.
MAX THERM/HR	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	22.0
DAY/HR	0/ 0	0/ 0	0/ 0	21/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	30/11	0/ 0	21/ 7
PEAK ENDUSE	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
OCT													
THERM	0.	0.	0.	5920.	0.	0.	0.	0.	0.	0.	32.	0.	5952.
MAX THERM/HR	0.0	0.0	0.0	26.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	26.2
DAY/HR	0/ 0	0/ 0	0/ 0	29/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	21/11	0/ 0	29/ 7
PEAK ENDUSE	0.0	0.0	0.0	26.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NOV													
THERM	0.	0.	0.	9420.	0.	0.	0.	0.	0.	0.	32.	0.	9452.
MAX THERM/HR	0.0	0.0	0.0	34.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	34.2
DAY/HR	0/ 0	0/ 0	0/ 0	26/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	26/ 7
PEAK ENDUSE	0.0	0.0	0.0	34.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
DEC													
THERM	0.	0.	0.	12555.	0.	0.	0.	0.	0.	0.	35.	0.	12590.
MAX THERM/HR	0.0	0.0	0.0	47.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	47.2
DAY/HR	0/ 0	0/ 0	0/ 0	19/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	19/ 7
PEAK ENDUSE	0.0	0.0	0.0	47.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
THERM	0.	0.	0.	90122.	0.	0.	0.	0.	0.	0.	403.	0.	90526.
MAX THERM/HR	0.0	0.0	0.0	47.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	47.2
MON/DY	0/ 0	0/ 0	0/ 0	12/19	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 1	0/ 0	12/19
PEAK ENDUSE	0.0	0.0	0.0	47.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
MBTU	466.9	59.0	1075.7	0.0	701.0	0.0	109.4	795.6	777.3	0.0	0.0	89.7	4074.7
FM1 NATURAL-GAS													
MBTU	0.0	0.0	0.0	9012.2	0.0	0.0	0.0	0.0	0.0	0.0	40.3	0.0	9052.6
MBTU	466.9	59.0	1075.7	9012.2	701.0	0.0	109.4	795.6	777.3	0.0	40.3	89.7	13127.2

TOTAL SITE ENERGY 13127.23 MBTU 302.1 KBTU/SQFT-YR GROSS-AREA 302.1 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 21276.55 MBTU 489.6 KBTU/SQFT-YR GROSS-AREA 489.6 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.2
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	136796.	17292.	315187.	0.	205403.	0.	32042.	233111.	227760.	0.	0.	26284.	1193875.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	90122.	0.	0.	0.	0.	0.	0.	403.	0.	90526.

TOTAL ELECTRICITY 1193875. KWH 27.471 KWH /SQFT-YR GROSS-AREA 27.471 KWH /SQFT-YR NET-AREA
TOTAL NATURAL-GAS 90526. THERM 2.083 THERM /SQFT-YR GROSS-AREA 2.083 THERM /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.2
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

UTILITY-RATE	RESOURCE	METERS	METERED ENERGY UNITS/YR	TOTAL CHARGE ($)	VIRTUAL RATE ($/UNIT)	RATE USED ALL YEAR?
RGE_SC-7_Elec	ELECTRICITY	EM1	1193875. KWH	119387.	0.1000	YES
RGE_SC-1_Gas	NATURAL-GAS	FM1	90526. THERM	104105.	1.1500	YES
				223492.		

ENERGY COST/GROSS BLDG AREA: 5.14
ENERGY COST/NET BLDG AREA: 5.14

REPORT- ES-E Summary of Utility-Rate: RGE_SC-7_Elec WEATHER FILE- Rochester NY TMY2

RESOURCE: ELECTRICITY DEMAND-INTERVAL 15 3413. BTU/KWH
BILLING-DAY: 31 RATE-LIMITATION: 0.0000
METERS: EM1
POWER-FACTOR: 0.80 EXCESS-KVAR-FRAC: 0.75 EXCESS-KVAR-CHG: 0.0000

RATE-QUALIFICATIONS		BLOCK-CHARGES	DEMAND-RATCHETS	MIN-MON-RATCHETS
MIN-ENERGY:	0.0			
MAX-ENERGY:	0.0			
MIN-DEMAND:	0.0			
MAX-DEMAND:	0.0			
QUALIFY-RATE:	ALL YEAR			
USE-MIN-QUAL:	NO			

MONTH	METERED ENERGY KWH	BILLING ENERGY KWH	METERED DEMAND KW	BILLING DEMAND KW	ENERGY CHARGE ($)	DEMAND CHARGE ($)	ENERGY CST ADJ ($)	TAXES ($)	SURCHRG ($)	FIXED CHARGE ($)	MINIMUM CHARGE ($)	VIRTUAL RATE ($/UNIT)	TOTAL CHARGE ($)
JAN	85746	85746	194.4	194.4	8575	0	0	0	0	0	0	0.1000	8575
FEB	77725	77725	201.8	201.8	7772	0	0	0	0	0	0	0.1000	7772
MAR	86331	86331	221.6	221.6	8633	0	0	0	0	0	0	0.1000	8633
APR	88522	88522	311.4	311.4	8852	0	0	0	0	0	0	0.1000	8852
MAY	102175	102175	407.3	407.3	10218	0	0	0	0	0	0	0.1000	10218
JUN	118312	118312	422.5	422.5	11831	0	0	0	0	0	0	0.1000	11831
JUL	133341	133341	423.7	423.7	13334	0	0	0	0	0	0	0.1000	13334
AUG	136356	136356	434.6	434.6	13636	0	0	0	0	0	0	0.1000	13636
SEP	103813	103813	427.7	427.7	10381	0	0	0	0	0	0	0.1000	10381
OCT	93885	93885	344.9	344.9	9389	0	0	0	0	0	0	0.1000	9389
NOV	82627	82627	238.0	238.0	8263	0	0	0	0	0	0	0.1000	8263
DEC	85042	85042	248.6	248.6	8504	0	0	0	0	0	0	0.1000	8504
TOTAL	1193875	1193875	434.6		119387	0	0	0	0	0		0.1000	119387

REPORT- ES-E Summary of Utility-Rate: RGE_SC-1_Gas WEATHER FILE- Rochester NY TMY2

RESOURCE: NATURAL-GAS DEMAND-INTERVAL 60 100000. BTU/THERM
BILLING-DAY: 31 RATE-LIMITATION: 0.0000
METERS: FM1

RATE-QUALIFICATIONS		BLOCK-CHARGES	DEMAND-RATCHETS	MIN-MON-RATCHETS
MIN-ENERGY:	0.0			
MAX-ENERGY:	0.0			
MIN-DEMAND:	0.0			
MAX-DEMAND:	0.0			
QUALIFY-RATE:	ALL YEAR			
USE-MIN-QUAL:	NO			

MONTH	METERED ENERGY THERM	BILLING ENERGY THERM	METERED DEMAND THERM/HR	BILLING DEMAND THERM/HR	ENERGY CHARGE ($)	DEMAND CHARGE ($)	ENERGY CST ADJ ($)	TAXES ($)	SURCHRG ($)	FIXED CHARGE ($)	MINIMUM CHARGE ($)	VIRTUAL RATE ($/UNIT)	TOTAL CHARGE ($)
JAN	14591	14591	43.6	43.6	16780	0	0	0	0	0	0	1.1500	16780
FEB	14010	14010	47.0	47.0	16111	0	0	0	0	0	0	1.1500	16111
MAR	11794	11794	38.1	38.1	13564	0	0	0	0	0	0	1.1500	13564
APR	6537	6537	32.5	32.5	7518	0	0	0	0	0	0	1.1500	7518
MAY	4660	4660	26.3	26.3	5360	0	0	0	0	0	0	1.1500	5360
JUN	2609	2609	13.3	13.3	3000	0	0	0	0	0	0	1.1500	3000
JUL	2363	2363	9.8	9.8	2718	0	0	0	0	0	0	1.1500	2718
AUG	2526	2526	10.0	10.0	2905	0	0	0	0	0	0	1.1500	2905
SEP	3441	3441	22.0	22.0	3957	0	0	0	0	0	0	1.1500	3957
OCT	5952	5952	26.2	26.2	6845	0	0	0	0	0	0	1.1500	6845
NOV	9452	9452	34.2	34.2	10870	0	0	0	0	0	0	1.1500	10870
DEC	12590	12590	47.2	47.2	14478	0	0	0	0	0	0	1.1500	14478
TOTAL	90526	90526	47.2		104105	0	0	0	0	0		1.1500	104105

REPORT- SV-A System Design Parameters for AHU-2 WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
PVAVS	1.000	29119.5	53.	1.000	2591.220	0.530	-3859.967	0.330	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	42779.	1.00	33.538	2.42	0.0	0.00	0.00	DRAW-THRU	BY USER	1.10	0.40

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	EXTRACTION SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z03-1102-TELE_C	22.	0.	0.000	0.500	22.	0.00	0.00	0.46	-1.74	-1.05	1.
Z05-1104-COR_C	88.	0.	0.000	0.500	88.	0.00	0.00	1.89	-7.10	-4.26	1.
Z06-1105-ELEV_C	19.	0.	0.000	0.500	19.	0.00	0.00	0.41	-1.54	-0.92	1.
Z07-1106-SUPP_C	160.	0.	0.000	0.500	160.	0.00	0.00	3.46	-12.96	-7.78	1.
Z08-1107-STO_C	150.	150.	0.100	0.500	150.	0.00	0.00	3.24	-12.15	-7.29	1.
Z09-1108-EVID_C	175.	100.	0.067	0.500	175.	0.00	0.00	3.78	-14.18	-8.51	1.
Z10-1109-VIEW_C	190.	190.	0.127	0.320	190.	0.00	0.00	4.10	-15.39	-9.23	1.
Z11-1110-OFC_C	160.	160.	0.107	0.310	160.	0.00	0.00	3.46	-12.96	-7.78	1.
Z12-1111-LAB_C	1495.	1395.	0.932	0.170	1495.	0.00	0.00	32.29	-121.10	-72.66	1.
Z13-1112-COR_C	745.	0.	0.000	1.000	745.	0.00	0.00	16.09	-60.35	-36.21	1.
Z14-1113-REST_C	15.	0.	0.000	0.500	15.	0.00	0.00	0.32	-1.18	-0.71	1.
Z15-1114-STO_C	250.	250.	0.167	1.000	250.	0.00	0.00	5.40	-20.25	-12.15	1.
Z16-1115-VEHI_C	500.	500.	0.334	0.350	500.	0.00	0.00	10.80	-40.50	-24.30	1.
Z17-1116-EVID_C	2185.	2185.	1.460	0.520	2185.	0.00	0.00	47.20	-176.99	-106.19	1.
Z20-1119-LOB_C	275.	275.	0.184	0.510	275.	0.00	0.00	5.94	-22.28	-13.37	1.
Z21-1120-VIEW_C	150.	150.	0.100	0.500	150.	0.00	0.00	3.24	-12.15	-7.29	1.
Z22-1121-RECE_C	765.	765.	0.511	0.150	765.	0.00	0.00	16.52	-61.97	-37.18	1.
Z25-1124-REST_C	10.	0.	0.000	0.500	10.	0.00	0.00	0.22	-0.81	-0.49	1.
Z27-1126-NARC_C	555.	555.	0.371	0.320	555.	0.00	0.00	11.99	-44.96	-26.97	1.
Z28-1127-JAN_C	150.	150.	0.100	0.500	150.	0.00	0.00	3.24	-12.15	-7.29	1.
Z29-1128-DRY_C	340.	340.	0.227	0.310	340.	0.00	0.00	7.34	-27.54	-16.52	1.
Z30-1129-LAB_C	535.	535.	0.357	0.320	535.	0.00	0.00	11.56	-43.34	-26.00	1.
Z37-2206-DATA_C	11.	0.	0.000	1.000	11.	0.00	0.00	0.23	-0.88	-0.53	1.
Z38-2207-COR_C	900.	0.	0.000	0.840	900.	0.00	0.00	19.44	-72.90	-43.74	1.
Z40-2209-VEST_C	150.	150.	0.100	0.500	150.	0.00	0.00	3.24	-12.15	-7.29	1.
Z41-2210-STO_C	200.	200.	0.134	1.000	200.	0.00	0.00	4.32	-16.20	-9.72	1.
Z42-2211-STO_C	195.	195.	0.130	1.000	195.	0.00	0.00	4.21	-15.80	-9.48	1.
Z43-2212-EXAM_C	685.	685.	0.458	1.000	685.	0.00	0.00	14.80	-55.49	-33.29	1.
Z44-2213-LAB_C	1820.	1820.	1.216	0.570	1820.	0.00	0.00	39.31	-147.42	-88.45	1.
Z45-2214-EXAM_C	425.	425.	0.284	0.440	425.	0.00	0.00	9.18	-34.43	-20.66	1.
Z46-2215-LAB_C	1350.	1350.	0.902	0.340	1350.	0.00	0.00	29.16	-109.35	-65.61	1.
Z53-2222-REST_C	60.	0.	0.000	0.500	60.	0.00	0.00	1.30	-4.86	-2.92	1.
Z54-2223-STO_C	22.	0.	0.000	0.500	22.	0.00	0.00	0.48	-1.78	-1.07	1.
Z55-2224-STO_C	255.	255.	0.170	1.000	255.	0.00	0.00	5.51	-20.66	-12.39	1.
Z56-2225-INST_C	585.	585.	0.391	0.900	585.	0.00	0.00	12.64	-47.39	-28.43	1.
Z57-2226-LAB_C	685.	685.	0.458	0.250	685.	0.00	0.00	14.80	-55.49	-33.29	1.
Z58-2227-INST_C	1485.	1485.	0.992	0.270	1485.	0.00	0.00	32.08	-120.29	-72.17	1.
Z59-2228-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.51	-5.67	-3.40	1.
Z60-2229-REST_C	65.	0.	0.000	0.500	65.	0.00	0.00	1.40	-5.27	-3.16	1.
Z65-3304-DATA_C	20.	0.	0.000	0.500	20.	0.00	0.00	0.44	-1.64	-0.99	1.
Z66-3305-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.51	-5.67	-3.40	1.
Z67-3306-REST_C	65.	0.	0.000	0.500	65.	0.00	0.00	1.40	-5.27	-3.16	1.
Z69-3308-COR_C	610.	85.	0.057	0.760	610.	0.00	0.00	13.18	-49.41	-29.65	1.
Z70-3309-OFC_C	110.	0.	0.000	0.500	110.	0.00	0.00	2.38	-8.91	-5.35	1.
Z71-3310-PCR_C	1990.	1990.	1.329	0.210	1990.	0.00	0.00	42.98	-161.19	-96.71	1.
Z72-3311-LAB_C	1095.	1020.	0.681	0.330	1095.	0.00	0.00	23.65	-88.70	-53.22	1.
Z73-3312-LAB_C	1390.	1390.	0.929	0.420	1390.	0.00	0.00	30.02	-112.59	-67.55	1.
Z74-3313-EXAM_C	300.	300.	0.200	0.430	300.	0.00	0.00	6.48	-24.30	-14.58	1.
Z75-3314-LAB_C	2325.	2325.	1.553	1.000	2325.	0.00	0.00	50.22	-188.33	-113.00	1.
Z79-3318-EXAM_C	1280.	1280.	0.855	0.170	1280.	0.00	0.00	27.65	-103.68	-62.21	1.
Z80-3319-EXAM_C	350.	350.	0.234	0.510	350.	0.00	0.00	7.56	-28.35	-17.01	1.
Z81-3320-EVID LOC_C	255.	255.	0.170	0.310	255.	0.00	0.00	5.51	-20.66	-12.39	1.
Z82-3321-VEST_C	150.	0.	0.000	1.000	150.	0.00	0.00	3.24	-12.15	-7.29	1.
Z83-3322-PERP_C	330.	330.	0.220	0.400	330.	0.00	0.00	7.13	-26.73	-16.04	1.
Z84-3323-FREEZ_C	865.	865.	0.578	0.050	865.	0.00	0.00	18.68	-70.07	-42.04	1.
Z85-3324-SETUP_C	425.	350.	0.234	0.180	425.	0.00	0.00	9.18	-34.43	-20.66	1.
Z86-3325-VEST_C	450.	450.	0.301	0.500	450.	0.00	0.00	9.72	-36.45	-21.87	1.
Z87-3326-SETUP_C	325.	250.	0.167	0.230	325.	0.00	0.00	7.02	-26.33	-15.80	1.
Z89-4402-REST_C	67.	0.	0.000	0.500	67.	0.00	0.00	1.45	-5.44	-3.27	1.
Z90-4403-DATA_C	26.	0.	0.000	0.500	26.	0.00	0.00	0.55	-2.07	-1.24	1.
Z91-4404-COR_C	525.	0.	0.000	0.050	525.	0.00	0.00	11.34	-42.53	-25.52	1.
Z93-4406-LAB_C	985.	985.	0.658	0.190	985.	0.00	0.00	21.28	-79.79	-47.87	1.
Z94-4407-GUN_C	325.	325.	0.217	0.420	325.	0.00	0.00	7.02	-26.33	-15.80	1.
Z95-4408-SHOP_C	765.	765.	0.511	0.080	765.	0.00	0.00	16.52	-61.97	-37.18	1.
Z96-4409-GSR_C	565.	565.	0.377	0.140	565.	0.00	0.00	12.20	-45.77	-27.46	1.
Z97-4410-LAB_C	1800.	1800.	1.202	0.190	1800.	0.00	0.00	38.88	-145.80	-87.48	1.
Z101-4414-LAB_C	1535.	1535.	1.025	0.520	1535.	0.00	0.00	33.16	-124.34	-74.60	1.
Z102-4415-STO_C	350.	350.	0.234	0.520	350.	0.00	0.00	7.56	-28.35	-17.01	1.
Z103-4416-RANGE_C	5535.	5535.	3.697	0.070	5535.	0.00	0.00	119.56	-448.34	-269.00	1.
Z18-1117-PARK_U	0.	0.	0.000	0.000	0.	0.00	0.00	0.00	0.00	0.00	1.

Z26-1125-FREEZ_U	0.	0.	0.000	0.000	0.	0.00	0.00	0.00	0.00	0.00	1.

REPORT- SV-A System Design Parameters for AHU-1 WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
PVAVS	1.000	8207.8	33.	0.201	508.759	0.562	-90.852	0.319	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	12419.	1.00	12.046	3.00	0.0	0.00	0.00	DRAW-THRU	BY USER	1.10	0.30
RETURN	11174.	1.00	7.274	2.01	0.0	0.00	0.00	RETURN	BY USER	1.10	0.30

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	EXTRACTION SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z19-1118-COR_C	248.	0.	0.000	0.446	26.	0.00	0.00	5.35	-13.37	-6.69	1.
Z23-1122-SECU_C	100.	0.	0.000	0.409	20.	0.00	0.00	2.16	-5.40	-2.70	1.
Z24-1123-LOB_C	1218.	0.	0.000	0.181	242.	0.00	0.00	26.31	-65.77	-32.88	1.
Z32-2201-LIB_C	350.	0.	0.000	0.413	72.	0.00	0.00	7.57	-18.91	-9.46	1.
Z33-2202-SUPV_C	246.	0.	0.000	0.214	52.	0.00	0.00	5.31	-13.28	-6.64	1.
Z34-2203-STO_C	27.	0.	0.000	1.000	3.	0.00	0.00	0.58	-1.45	-0.72	1.
Z35-2204-WORK_C	2103.	0.	0.000	0.221	443.	0.00	0.00	45.42	-113.54	-56.77	1.
Z36-2205-SUPV_C	218.	0.	0.000	0.271	47.	0.00	0.00	4.70	-11.75	-5.88	1.
Z47-2216-OFC_C	364.	0.	0.000	0.434	75.	0.00	0.00	7.86	-19.65	-9.83	1.
Z48-2217-QA/QC_C	176.	0.	0.000	0.315	39.	0.00	0.00	3.79	-9.48	-4.74	1.
Z49-2218-COR_C	200.	0.	0.000	0.649	31.	0.00	0.00	4.32	-10.80	-5.40	1.
Z50-2219-CONF_C	234.	0.	0.000	0.396	40.	0.00	0.00	5.06	-12.65	-6.32	1.
Z51-2220-LOUN_C	822.	0.	0.000	0.146	153.	0.00	0.00	17.76	-44.39	-22.20	1.
Z52-2221-OFC_C	200.	0.	0.000	0.557	37.	0.00	0.00	4.32	-10.80	-5.40	1.
Z62-3301-OFC_C	210.	0.	0.000	0.219	48.	0.00	0.00	4.54	-11.34	-5.67	1.
Z63-3302-OPEN_C	2312.	0.	0.000	0.259	483.	0.00	0.00	49.94	-124.86	-62.43	1.
Z64-3303-OFC_C	414.	0.	0.000	0.269	87.	0.00	0.00	8.94	-22.34	-11.17	1.
Z76-3315-OFC_C	207.	0.	0.000	0.336	43.	0.00	0.00	4.48	-11.20	-5.60	1.
Z77-3316-BIO_C	209.	0.	0.000	0.348	38.	0.00	0.00	4.52	-11.30	-5.65	1.
Z78-3317-LOUN_C	832.	0.	0.000	0.131	170.	0.00	0.00	17.97	-44.93	-22.47	1.
Z98-4411-OFC_C	225.	0.	0.000	0.326	47.	0.00	0.00	4.85	-12.13	-6.06	1.
Z99-4412-OPEN_C	470.	0.	0.000	0.372	99.	0.00	0.00	10.15	-25.38	-12.69	1.
Z100-4413-BREAK_C	1035.	0.	0.000	0.234	205.	0.00	0.00	22.35	-55.88	-27.94	1.

REPORT- SV-A System Design Parameters for Dummy VAV-1 (Stairs) WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
PVAVS	1.000	2605.6	3.	0.000	39.212	0.683	0.000	0.233	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	1205.	1.00	1.392	3.57	0.0	0.00	0.00	DRAW-THRU	BY USER	1.10	0.30

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z01-1100-STA_C	85.	0.	0.000	1.000	0.	0.00	0.00	1.84	-6.89	-4.13	1.
Z04-1103-STA_C	135.	0.	0.000	0.877	0.	0.00	0.00	2.92	-10.94	-6.56	1.
Z31-2200-STA_C	100.	0.	0.000	0.984	0.	0.00	0.00	2.16	-8.10	-4.86	1.
Z39-2208-STA_C	213.	0.	0.000	0.807	0.	0.00	0.00	4.60	-17.25	-10.35	1.
Z61-3300-STA_C	105.	0.	0.000	1.000	0.	0.00	0.00	2.27	-8.51	-5.10	1.
Z68-3307-STA_C	213.	0.	0.000	0.821	0.	0.00	0.00	4.60	-17.25	-10.35	1.
Z87A-4400-STA_C	115.	0.	0.000	0.899	0.	0.00	0.00	2.48	-9.32	-5.59	1.
Z92-4405-STA_C	239.	0.	0.000	0.702	0.	0.00	0.00	5.16	-19.36	-11.62	1.

REPORT- SV-A System Design Parameters for Dummy VAV-2 (MER) WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
PVAVS	1.000	5262.9	5.	0.000	100.427	0.693	0.000	0.294	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	3150.	1.00	3.490	3.42	0.0	0.00	0.00	DRAW-THRU	BY USER	1.10	0.30

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	EXTRACTION SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z88-4401-MER_C	2150.	0.	0.000	0.598	0.	0.00	0.00	46.44	-104.12	-62.47	1.
Z02-1101-MER_C	1000.	0.	0.000	0.820	0.	0.00	0.00	21.60	-66.40	-39.84	1.

Appendix B

DOE-2.2 Output Reports for Design Building

PERIOD OF STUDY

STARTING DATE	ENDING DATE	NUMBER OF DAYS
1 JAN 2007	31 DEC 2007	365

SITE CHARACTERISTIC DATA

STATION NAME	LATITUDE (DEG)	LONGITUDE (DEG)	ALTITUDE (FT)	TIME ZONE	BUILDING AZIMUTH (DEG)
Rochester NY TMY2	43.0	76.2	0.	5 EST	73.0

NUMBER OF SPACES 104 EXTERIOR 60 INTERIOR 44

SPACE	SPACE*FLOOR MULTIPLIER	SPACE TYPE	AZIM	LIGHTS (WATT / SQFT)	PEOPLE	EQUIP (WATT / SQFT)	INFILTRATION METHOD	ACH	AREA (SQFT)	VOLUME (CUFT)
Spaces on floor: Floor-1										
Z01-1100-STA	1.0	EXT	0.0	0.47	0.3	0.55	AIR-CHANGE	0.05	255.6	4090.3
Z02-1101-MER	1.0	EXT	0.0	0.64	2.0	0.55	AIR-CHANGE	0.05	2049.4	32790.7
Z03-1102-TELE	1.0	INT	0.0	2.10	0.1	3.35	AIR-CHANGE	0.00	114.5	1832.5
Z04-1103-STA	1.0	EXT	0.0	0.41	0.3	0.55	AIR-CHANGE	0.10	296.0	4735.6
Z05-1104-COR	1.0	INT	0.0	0.56	0.8	0.55	AIR-CHANGE	0.00	832.4	13318.3
Z06-1105-ELEV	1.0	INT	0.0	1.19	0.1	0.55	AIR-CHANGE	0.00	101.2	1619.9
Z07-1106-SUPP	1.0	INT	0.0	1.30	1.0	1.35	AIR-CHANGE	0.00	209.0	3344.7
Z08-1107-STO	1.0	INT	0.0	0.71	0.1	0.55	AIR-CHANGE	0.00	84.7	1355.6
Z09-1108-EVID	1.0	INT	0.0	3.07	1.0	1.85	AIR-CHANGE	0.00	155.7	2491.6
Z10-1109-VIEW	1.0	INT	0.0	1.76	1.0	1.85	AIR-CHANGE	0.00	188.2	3011.3
Z11-1110-OFC	1.0	EXT	0.0	1.52	1.0	1.85	AIR-CHANGE	0.10	145.4	2326.0
Z12-1111-LAB	1.0	EXT	0.0	1.54	1.0	0.85	AIR-CHANGE	0.10	691.6	11066.3
Z13-1112-COR	1.0	EXT	0.0	0.37	0.4	0.55	AIR-CHANGE	0.05	391.3	6261.6
Z14-1113-REST	1.0	INT	0.0	1.31	0.1	0.55	AIR-CHANGE	0.00	91.8	1469.2
Z15-1114-STO	1.0	EXT	0.0	0.96	0.1	0.55	AIR-CHANGE	0.10	124.8	1996.4
Z16-1115-VEHI	1.0	EXT	0.0	0.95	0.6	0.55	AIR-CHANGE	0.10	634.7	10154.4
Z17-1116-EVID	1.0	EXT	0.0	0.83	1.0	1.85	AIR-CHANGE	0.10	665.6	10649.5
Z18-1117-PARK	1.0	EXT	0.0	0.70	1.0	0.55	AIR-CHANGE	0.20	1033.4	16533.7
Z19-1118-COR	1.0	EXT	0.0	0.42	0.3	0.55	AIR-CHANGE	0.15	275.9	4414.9
Z20-1119-LOB	1.0	INT	0.0	0.93	1.2	0.85	AIR-CHANGE	0.15	231.1	3698.4
Z21-1120-VIEW	1.0	INT	0.0	0.92	1.0	1.85	AIR-CHANGE	0.00	131.7	2106.8
Z22-1121-RECE	1.0	INT	0.0	1.09	2.0	1.85	AIR-CHANGE	0.00	674.7	10795.8
Z23-1122-SECU	1.0	INT	0.0	1.74	1.0	1.85	AIR-CHANGE	0.00	102.2	1635.3
Z24-1123-LOB	1.0	EXT	0.0	1.46	2.8	0.85	AIR-CHANGE	0.00	552.4	8838.4
Z25-1124-REST	1.0	INT	0.0	2.66	0.1	0.55	AIR-CHANGE	0.00	56.3	901.4
Z26-1125-FREEZ	1.0	INT	0.0	0.38	0.7	2.35	AIR-CHANGE	0.00	703.4	11254.6
Z27-1126-NARC	1.0	INT	0.0	0.53	1.0	1.85	AIR-CHANGE	0.00	203.2	3251.8
Z28-1127-JAN	1.0	INT	0.0	0.97	0.1	0.55	AIR-CHANGE	0.00	124.3	1988.7
Z29-1128-DRY	1.0	INT	0.0	1.44	0.1	1.85	AIR-CHANGE	0.00	89.4	1430.6
Z30-1129-LAB	1.0	INT	0.0	1.22	1.0	1.85	AIR-CHANGE	0.00	145.1	2322.3
Spaces on floor: Floor-2										
Z31-2200-STA	1.0	EXT	0.0	0.49	0.2	0.55	AIR-CHANGE	0.05	246.0	3936.3
Z32-2201-LIB	1.0	EXT	0.0	1.49	3.0	1.85	AIR-CHANGE	0.10	361.6	5785.3
Z33-2202-SUPV	1.0	EXT	0.0	1.69	1.0	1.85	AIR-CHANGE	0.10	131.5	2104.1
Z34-2203-STO	1.0	INT	0.0	0.90	0.1	0.55	AIR-CHANGE	0.00	66.9	1071.0
Z35-2204-WORK	1.0	EXT	0.0	1.00	3.0	1.85	AIR-CHANGE	0.15	1162.8	18605.4
Z36-2205-SUPV	1.0	EXT	0.0	1.50	1.0	1.85	AIR-CHANGE	0.10	147.5	2359.4
Z37-2206-DATA	1.0	INT	0.0	1.63	0.1	4.35	AIR-CHANGE	0.00	73.7	1179.6
Z38-2207-COR	1.0	INT	0.0	0.47	1.3	0.55	AIR-CHANGE	0.00	1270.5	20328.2
Z39-2208-STA	1.0	EXT	0.0	0.28	0.4	0.55	AIR-CHANGE	0.10	429.7	6874.7
Z40-2209-VEST	1.0	INT	0.0	1.16	0.2	0.55	AIR-CHANGE	0.00	236.7	3787.6
Z41-2210-STO	1.0	INT	0.0	1.13	0.1	0.55	AIR-CHANGE	0.00	95.6	1530.0
Z42-2211-STO	1.0	EXT	0.0	0.54	0.1	0.55	AIR-CHANGE	0.10	100.4	1606.2
Z43-2212-EXAM	1.0	EXT	0.0	1.10	1.0	1.85	AIR-CHANGE	0.10	250.5	4008.0
Z44-2213-LAB	1.0	EXT	0.0	1.18	2.0	1.85	AIR-CHANGE	0.15	1628.5	26055.5
Z45-2214-EXAM	1.0	EXT	0.0	1.68	1.0	1.85	AIR-CHANGE	0.10	318.8	5101.4
Z46-2215-LAB	1.0	EXT	0.0	1.12	1.0	1.85	AIR-CHANGE	0.15	985.9	15774.4
Z47-2216-OFC	1.0	EXT	0.0	0.78	2.0	1.85	AIR-CHANGE	0.10	394.7	6314.6
Z48-2217-QA/QC	1.0	EXT	0.0	0.88	1.0	1.85	AIR-CHANGE	0.10	138.1	2209.7
Z49-2218-COR	1.0	EXT	0.0	0.83	0.3	0.55	AIR-CHANGE	0.05	324.5	5192.4
Z50-2219-CONF	1.0	EXT	0.0	1.70	2.3	1.35	AIR-CHANGE	0.10	231.9	3710.8
Z51-2220-LOUN	1.0	EXT	0.0	1.40	0.3	1.35	AIR-CHANGE	0.15	299.5	4792.7
Z52-2221-OFC	1.0	INT	0.0	1.07	1.0	1.85	AIR-CHANGE	0.00	278.4	4453.6
Z53-2222-REST	1.0	INT	0.0	0.81	0.1	0.55	AIR-CHANGE	0.00	74.5	1191.7
Z54-2223-STO	1.0	INT	0.0	1.24	0.3	0.55	AIR-CHANGE	0.00	269.9	4317.7
Z55-2224-STO	1.0	INT	0.0	0.98	0.1	0.55	AIR-CHANGE	0.00	109.8	1756.7
Z56-2225-INST	1.0	INT	0.0	1.11	1.0	1.85	AIR-CHANGE	0.00	498.1	7969.2
Z57-2226-LAB	1.0	INT	0.0	1.35	1.0	1.85	AIR-CHANGE	0.00	268.9	4301.7
Z58-2227-INST	1.0	INT	0.0	1.49	1.0	1.85	AIR-CHANGE	0.00	723.9	11583.0
Z59-2228-REST	1.0	INT	0.0	1.07	0.2	0.55	AIR-CHANGE	0.00	168.7	2699.9
Z60-2229-REST	1.0	INT	0.0	0.98	0.1	0.55	AIR-CHANGE	0.00	122.7	1962.7
Spaces on floor: Floor-3										
Z61-3300-STA	1.0	EXT	0.0	0.46	0.3	0.55	AIR-CHANGE	0.05	263.3	4213.4
Z62-3301-OFC	1.0	EXT	0.0	3.34	1.0	1.85	AIR-CHANGE	0.05	114.7	1835.9
Z63-3302-OPEN	1.0	EXT	0.0	1.60	3.0	1.85	AIR-CHANGE	0.15	1494.6	23913.6
Z64-3303-OFC	1.0	EXT	0.0	1.60	1.0	1.85	AIR-CHANGE	0.10	278.2	4450.5
Z65-3304-DATA	1.0	EXT	0.0	1.62	0.1	4.35	AIR-CHANGE	0.00	74.2	1186.5
Z66-3305-REST	1.0	INT	0.0	1.00	0.2	0.55	AIR-CHANGE	0.00	180.2	2883.6
Z67-3306-REST	1.0	INT	0.0	1.01	0.1	0.55	AIR-CHANGE	0.00	118.9	1901.8
Z68-3307-STA	1.0	EXT	0.0	0.27	0.4	0.55	AIR-CHANGE	0.10	437.0	6992.2
Z69-3308-COR	1.0	EXT	0.0	0.44	1.2	0.55	AIR-CHANGE	0.00	1241.7	19866.8
Z70-3309-OFC	1.0	INT	0.0	1.17	1.0	1.85	AIR-CHANGE	0.00	101.1	1617.0
Z71-3310-PCR	1.0	EXT	0.0	1.01	1.0	1.85	AIR-CHANGE	0.10	918.4	14694.9
Z72-3311-LAB	1.0	EXT	0.0	1.24	1.0	1.85	AIR-CHANGE	0.10	441.6	7065.4
Z73-3312-LAB	1.0	EXT	0.0	1.15	1.0	1.85	AIR-CHANGE	0.15	1114.2	17827.8
Z74-3313-EXAM	1.0	EXT	0.0	1.60	1.0	1.85	AIR-CHANGE	0.10	239.1	3825.8
Z75-3314-LAB	1.0	EXT	0.0	1.16	2.0	1.85	AIR-CHANGE	0.15	1574.5	25192.7
Z76-3315-OFC	1.0	EXT	0.0	0.72	1.0	1.85	AIR-CHANGE	0.10	174.1	2786.3
Z77-3316-BIO	1.0	EXT	0.0	0.59	1.0	1.85	AIR-CHANGE	0.05	181.9	2909.9
Z78-3317-LOUN	1.0	EXT	0.0	1.23	0.3	1.85	AIR-CHANGE	0.10	271.8	4348.4
Z79-3318-EXAM	1.0	INT	0.0	2.40	1.0	1.85	AIR-CHANGE	0.00	254.5	4072.1
Z80-3319-EXAM	1.0	INT	0.0	1.80	1.0	1.85	AIR-CHANGE	0.00	295.8	4732.1
Z81-3320-EVID LOC	1.0	INT	0.0	1.03	0.2	1.85	AIR-CHANGE	0.00	228.2	3650.9
Z82-3321-VEST	1.0	INT	0.0	0.74	0.2	0.55	AIR-CHANGE	0.00	225.7	3610.7

Z83-3322-PERP	1.0	INT	0.0	1.18	1.0	1.85	AIR-CHANGE	0.00	199.5	3191.3
Z84-3323-FREEZ	1.0	INT	0.0	1.02	0.2	2.35	AIR-CHANGE	0.00	211.0	3375.6
Z85-3324-SETUP	1.0	INT	0.0	1.44	1.0	1.85	AIR-CHANGE	0.00	375.2	6003.8
Z86-3325-VEST	1.0	INT	0.0	0.78	0.2	0.55	AIR-CHANGE	0.00	207.7	3323.2
Z87-3326-SETUP	1.0	INT	0.0	1.30	1.0	1.85	AIR-CHANGE	0.00	279.6	4473.2
Spaces on floor: Floor-4										
Z87A-4400-STA	1.0	EXT	0.0	0.46	0.3	0.55	AIR-CHANGE	0.05	258.4	4134.6
Z88-4401-MER	1.0	EXT	0.0	0.55	3.2	0.55	AIR-CHANGE	0.15	3213.4	51415.1
Z89-4402-REST	1.0	EXT	0.0	0.91	0.2	0.55	AIR-CHANGE	0.00	197.4	3159.2
Z90-4403-DATA	1.0	EXT	0.0	1.28	0.1	4.35	AIR-CHANGE	0.00	93.5	1496.0
Z91-4404-COR	1.0	EXT	0.0	0.63	1.3	0.55	AIR-CHANGE	0.00	1329.6	21274.2
Z92-4405-STA	1.0	EXT	0.0	0.29	0.4	0.55	AIR-CHANGE	0.10	419.5	6712.6
Z93-4406-LAB	1.0	EXT	0.0	1.00	1.0	1.85	AIR-CHANGE	0.10	372.2	5954.5
Z94-4407-GUN	1.0	EXT	0.0	0.76	1.0	1.85	AIR-CHANGE	0.05	283.3	4533.3
Z95-4408-SHOP	1.0	EXT	0.0	1.17	1.0	1.85	AIR-CHANGE	0.10	287.1	4593.3
Z96-4409-GSR	1.0	EXT	0.0	0.84	1.0	1.85	AIR-CHANGE	0.10	219.7	3516.0
Z97-4410-LAB	1.0	EXT	0.0	0.93	3.0	1.85	AIR-CHANGE	0.15	852.4	13639.1
Z98-4411-OFC	1.0	EXT	0.0	1.21	1.0	1.85	AIR-CHANGE	0.05	183.0	2928.4
Z99-4412-OPEN	1.0	EXT	0.0	1.65	2.0	1.85	AIR-CHANGE	0.10	436.8	6988.6
Z100-4413-BREAK	1.0	EXT	0.0	1.94	4.0	1.85	AIR-CHANGE	0.15	604.7	9675.0
Z101-4414-LAB	1.0	EXT	0.0	1.41	1.0	0.55	AIR-CHANGE	0.00	829.9	13278.2
Z102-4415-STO	1.0	EXT	0.0	1.02	0.2	0.55	AIR-CHANGE	0.00	211.8	3388.2
Z103-4416-RANGE	1.0	EXT	0.0	1.16	1.1	1.85	AIR-CHANGE	0.00	1140.6	18250.1
BUILDING TOTALS					93.7				45195.7	723131.4

NUMBER OF EXTERIOR SURFACES 254
(U-VALUE INCLUDES OUTSIDE FILM; WINDOW INCLUDES FRAME AND CURB, IF DEFINED)

SURFACE	- - - W I N D O W S - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	- - - - W A L L - - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	-W A L L + W I N D O W S- U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	AZIMUTH
W05-Z75-3314-LAB	0.345	22.19	0.053	34.06	0.168	56.25	NORTH
in space: Z75-3314-LAB							
W06-Z76-3315-OFC	0.354	19.60	0.053	43.10	0.147	62.70	NORTH
in space: Z76-3315-OFC							
W25-Z35-2204-WORK	0.000	0.00	0.053	31.34	0.053	31.34	NORTH
in space: Z35-2204-WORK							
W02-Z51-2220-LOUN	0.312	149.99	0.053	94.02	0.212	244.01	NORTH
in space: Z51-2220-LOUN							
W16-Z35-2204-WORK	0.000	0.00	0.053	28.67	0.053	28.67	NORTH
in space: Z35-2204-WORK							
W03-Z01-1100-STA	0.000	0.00	0.113	248.00	0.113	248.00	NORTH
in space: Z01-1100-STA							
W03-Z31-2200-STA	0.000	0.00	0.113	248.00	0.113	248.00	NORTH
in space: Z31-2200-STA							
W05-Z63-3302-OPEN	0.000	0.00	0.053	25.33	0.053	25.33	NORTH
in space: Z63-3302-OPEN							
W14-Z63-3302-OPEN	0.000	0.00	0.053	29.33	0.053	29.33	NORTH
in space: Z63-3302-OPEN							
W23-Z63-3302-OPEN	0.000	0.00	0.053	30.00	0.053	30.00	NORTH
in space: Z63-3302-OPEN							
W32-Z63-3302-OPEN	0.000	0.00	0.053	32.00	0.053	32.00	NORTH
in space: Z63-3302-OPEN							
W03-Z33-2202-SUPV	0.000	0.00	0.053	32.67	0.053	32.67	NORTH
in space: Z33-2202-SUPV							
W07-Z35-2204-WORK	0.000	0.00	0.053	26.00	0.053	26.00	NORTH
in space: Z35-2204-WORK							
W01-Z78-3317-LOUN	0.312	149.99	0.053	96.01	0.211	246.00	NORTH
in space: Z78-3317-LOUN							
W02-Z24-1123-LOB	0.316	165.51	0.053	73.16	0.235	238.67	NORTH
in space: Z24-1123-LOB							
W03-Z61-3300-STA	0.000	0.00	0.113	248.00	0.113	248.00	NORTH
in space: Z61-3300-STA							
W03-Z87A-4400-STA	0.000	0.00	0.113	248.00	0.113	248.00	NORTH
in space: Z87A-4400-STA							
W03-Z100-4413-BREAK	0.312	149.99	0.053	88.05	0.216	238.05	NORTH
in space: Z100-4413-BREAK							
W04-Z19-1118-COR	0.000	0.00	0.053	221.23	0.053	221.23	NORTH
in space: Z19-1118-COR							
W06-Z50-2219-CONF	0.000	0.00	0.053	97.80	0.053	97.80	NORTH
in space: Z50-2219-CONF							
W04-Z24-1123-LOB	0.000	0.00	0.053	102.63	0.053	102.63	NORTH
in space: Z24-1123-LOB							
W02-Z98-4411-OFC	0.000	0.00	0.053	89.82	0.053	89.82	NORTH
in space: Z98-4411-OFC							
W05-Z77-3316-BIO	0.000	0.00	0.053	88.52	0.053	88.52	NORTH
in space: Z77-3316-BIO							
W09-Z100-4413-BREAK	0.000	0.00	0.053	97.41	0.053	97.41	NORTH
in space: Z100-4413-BREAK							
W08-Z19-1118-COR	0.000	0.00	0.053	191.56	0.053	191.56	NORTH
in space: Z19-1118-COR							
W11-Z75-3314-LAB	0.000	0.00	0.053	110.49	0.053	110.49	NORTH
in space: Z75-3314-LAB							
W02-Z47-2216-OFC	0.000	0.00	0.053	93.50	0.053	93.50	NORTH
in space: Z47-2216-OFC							
W02-Z75-3314-LAB	0.000	0.00	0.053	100.09	0.053	100.09	NORTH
in space: Z75-3314-LAB							
W06-Z19-1118-COR	0.000	0.00	0.053	116.58	0.053	116.58	NORTH
in space: Z19-1118-COR							
W02-Z19-1118-COR	0.000	0.00	0.053	101.54	0.053	101.54	NORTH
in space: Z19-1118-COR							
W06-Z99-4412-OPEN	0.000	0.00	0.053	112.54	0.053	112.54	NORTH
in space: Z99-4412-OPEN							
W02-Z49-2218-COR	0.000	0.00	0.053	122.89	0.053	122.89	NORTH
in space: Z49-2218-COR							
W06-Z24-1123-LOB	0.000	0.00	0.053	22.16	0.053	22.16	NORTH
in space: Z24-1123-LOB							
W01-Z99-4412-OPEN	0.354	19.60	0.053	22.17	0.194	41.77	NORTH
in space: Z99-4412-OPEN							
W01-Z48-2217-QA/QC	0.354	19.60	0.053	25.15	0.185	44.75	NORTH
in space: Z48-2217-QA/QC							
W03-Z99-4412-OPEN	0.354	19.60	0.053	29.61	0.173	49.21	NORTH
in space: Z99-4412-OPEN							
W04-Z100-4413-BREAK	0.354	19.60	0.053	25.74	0.183	45.34	NORTH
in space: Z100-4413-BREAK							
W04-Z47-2216-OFC	0.354	19.60	0.053	30.00	0.172	49.60	NORTH
in space: Z47-2216-OFC							
W03-Z50-2219-CONF	0.354	19.60	0.053	24.27	0.187	43.87	NORTH
in space: Z50-2219-CONF							
W04-Z75-3314-LAB	0.345	22.19	0.053	21.02	0.203	43.21	NORTH
in space: Z75-3314-LAB							
W08-Z75-3314-LAB	0.354	19.60	0.053	22.05	0.195	41.65	NORTH
in space: Z75-3314-LAB							
W05-Z76-3315-OFC	0.354	19.60	0.053	22.99	0.191	42.59	NORTH
in space: Z76-3315-OFC							
W06-Z100-4413-BREAK	0.354	19.60	0.053	23.93	0.188	43.53	NORTH
in space: Z100-4413-BREAK							
W02-Z77-3316-BIO	0.354	19.60	0.053	18.22	0.209	37.82	NORTH
in space: Z77-3316-BIO							
W01-Z50-2219-CONF	0.354	19.60	0.053	31.89	0.167	51.49	NORTH
in space: Z50-2219-CONF							

W04-Z98-4411-OFC in space: Z98-4411-OFC	0.354	19.60	0.053	25.25	0.184	44.85	NORTH
W08-Z99-4412-OPEN in space: Z99-4412-OPEN	0.354	19.60	0.053	24.26	0.187	43.86	NORTH
W06-Z75-3314-LAB in space: Z75-3314-LAB	0.345	22.19	0.053	18.35	0.213	40.54	NORTH
W04-Z49-2218-COR in space: Z49-2218-COR	0.354	19.60	0.053	26.60	0.181	46.20	NORTH
W03-Z48-2217-QA/QC in space: Z48-2217-QA/QC	0.354	19.60	0.053	30.37	0.171	49.97	NORTH
W03-Z76-3315-OFC in space: Z76-3315-OFC	0.354	19.60	0.053	20.01	0.202	39.61	NORTH
W05-Z19-1118-COR in space: Z19-1118-COR	0.000	0.00	0.053	35.18	0.053	35.18	NORTH-EAST
W03-Z24-1123-LOB in space: Z24-1123-LOB	0.000	0.00	0.053	44.94	0.053	44.94	NORTH-EAST
W01-Z13-1112-COR in space: Z13-1112-COR	0.000	0.00	0.053	107.33	0.053	107.33	NORTH-EAST
W01-Z15-1114-STO in space: Z15-1114-STO	0.000	0.00	0.053	150.67	0.053	150.67	NORTH-EAST
W01-Z16-1115-VEHI in space: Z16-1115-VEHI	0.000	0.00	0.053	348.00	0.053	348.00	NORTH-EAST
W01-Z76-3315-OFC in space: Z76-3315-OFC	0.000	0.00	0.053	235.33	0.053	235.33	NORTH-EAST
W01-Z17-1116-EVID in space: Z17-1116-EVID	0.000	0.00	0.053	364.67	0.053	364.67	NORTH-EAST
W03-Z39-2208-STA in space: Z39-2208-STA	0.000	0.00	0.113	184.00	0.113	184.00	NORTH-EAST
W02-Z43-2212-EXAM in space: Z43-2212-EXAM	0.000	0.00	0.053	196.66	0.053	196.66	NORTH-EAST
W01-Z44-2213-LAB in space: Z44-2213-LAB	0.319	289.52	0.053	596.48	0.140	886.00	NORTH-EAST
W01-Z45-2214-EXAM in space: Z45-2214-EXAM	0.319	72.38	0.053	102.29	0.163	174.67	NORTH-EAST
W01-Z46-2215-LAB in space: Z46-2215-LAB	0.319	217.14	0.053	320.86	0.160	538.00	NORTH-EAST
W01-Z47-2216-OFC in space: Z47-2216-OFC	0.319	144.76	0.053	316.57	0.136	461.33	NORTH-EAST
W03-Z92-4405-STA in space: Z92-4405-STA	0.000	0.00	0.113	186.67	0.113	186.67	NORTH-EAST
W02-Z93-4406-LAB in space: Z93-4406-LAB	0.000	0.00	0.053	193.33	0.053	193.33	NORTH-EAST
W01-Z94-4407-GUN in space: Z94-4407-GUN	0.000	0.00	0.053	193.33	0.053	193.33	NORTH-EAST
W01-Z95-4408-SHOP in space: Z95-4408-SHOP	0.319	108.57	0.053	139.43	0.169	248.00	NORTH-EAST
W01-Z96-4409-GSR in space: Z96-4409-GSR	0.319	108.57	0.053	168.10	0.157	276.67	NORTH-EAST
W01-Z97-4410-LAB in space: Z97-4410-LAB	0.319	470.47	0.053	662.20	0.163	1132.67	NORTH-EAST
W01-Z98-4411-OFC in space: Z98-4411-OFC	0.319	36.19	0.053	186.48	0.096	222.67	NORTH-EAST
W01-Z18-1117-PARK in space: Z18-1117-PARK	0.000	0.00	0.053	685.33	0.053	685.33	NORTH-EAST
W03-Z68-3307-STA in space: Z68-3307-STA	0.000	0.00	0.113	184.66	0.113	184.66	NORTH-EAST
W02-Z71-3310-PCR in space: Z71-3310-PCR	0.000	0.00	0.053	382.00	0.053	382.00	NORTH-EAST
W01-Z72-3311-LAB in space: Z72-3311-LAB	0.319	108.57	0.053	144.76	0.167	253.33	NORTH-EAST
W01-Z73-3312-LAB in space: Z73-3312-LAB	0.324	262.71	0.053	363.29	0.166	626.00	NORTH-EAST
W01-Z74-3313-EXAM in space: Z74-3313-EXAM	0.324	65.38	0.053	115.95	0.150	181.33	NORTH-EAST
W01-Z75-3314-LAB in space: Z75-3314-LAB	0.319	289.52	0.053	538.48	0.146	828.00	NORTH-EAST
W01-Z19-1118-COR in space: Z19-1118-COR	0.000	0.00	0.053	122.00	0.053	122.00	NORTH-EAST
W03-Z04-1103-STA in space: Z04-1103-STA	0.000	0.00	0.113	152.67	0.113	152.67	NORTH-EAST
W02-Z12-1111-LAB in space: Z12-1111-LAB	0.000	0.00	0.053	462.67	0.053	462.67	NORTH-EAST
W05-Z50-2219-CONF in space: Z50-2219-CONF	0.000	0.00	0.053	28.39	0.053	28.39	NORTH-EAST
W08-Z100-4413-BREAK in space: Z100-4413-BREAK	0.000	0.00	0.053	27.07	0.053	27.07	NORTH-EAST
W05-Z99-4412-OPEN in space: Z99-4412-OPEN	0.000	0.00	0.053	25.10	0.053	25.10	NORTH-EAST
W04-Z77-3316-BIO in space: Z77-3316-BIO	0.000	0.00	0.053	25.73	0.053	25.73	NORTH-EAST
W01-Z49-2218-COR in space: Z49-2218-COR	0.000	0.00	0.053	23.19	0.053	23.19	EAST
W18-Z02-1101-MER in space: Z02-1101-MER	0.000	0.00	0.053	320.68	0.053	320.68	SOUTH-EAST
W02-Z61-3300-STA in space: Z61-3300-STA	0.000	0.00	0.113	64.00	0.113	64.00	SOUTH-EAST
W02-Z68-3307-STA in space: Z68-3307-STA	0.329	58.38	0.113	458.29	0.137	516.67	SOUTH-EAST
W02-Z36-2205-SUPV in space: Z36-2205-SUPV	0.321	35.00	0.053	130.33	0.109	165.33	SOUTH-EAST
W02-Z88-4401-MER in space: Z88-4401-MER	0.000	0.00	0.053	338.00	0.053	338.00	SOUTH-EAST
W02-Z92-4405-STA in space: Z92-4405-STA	0.329	58.38	0.113	438.95	0.138	497.33	SOUTH-EAST
W01-Z71-3310-PCR in space: Z71-3310-PCR	0.329	116.76	0.053	315.91	0.127	432.67	SOUTH-EAST
W01-Z93-4406-LAB in space: Z93-4406-LAB	0.329	116.76	0.053	317.91	0.127	434.67	SOUTH-EAST
W02-Z39-2208-STA in space: Z39-2208-STA	0.329	58.38	0.113	457.62	0.137	516.00	SOUTH-EAST
W02-Z04-1103-STA in space: Z04-1103-STA	0.000	0.00	0.113	504.00	0.113	504.00	SOUTH-EAST
W01-Z42-2211-STO in space: Z42-2211-STO	0.000	0.00	0.053	107.33	0.053	107.33	SOUTH-EAST
W01-Z43-2212-EXAM	0.329	116.76	0.053	213.24	0.150	330.00	SOUTH-EAST

in space: Z43-2212-EXAM							
W02-Z32-2201-LIB	0.000	0.00	0.053	31.33	0.053	31.33	SOUTH-EAST
in space: Z32-2201-LIB							
W02-Z01-1100-STA	0.000	0.00	0.113	64.00	0.113	64.00	SOUTH-EAST
in space: Z01-1100-STA							
W05-Z33-2202-SUPV	0.000	0.00	0.053	36.67	0.053	36.67	SOUTH-EAST
in space: Z33-2202-SUPV							
W01-Z11-1110-OFC	0.000	0.00	0.053	226.00	0.053	226.00	SOUTH-EAST
in space: Z11-1110-OFC							
W09-Z35-2204-WORK	0.000	0.00	0.053	31.33	0.053	31.33	SOUTH-EAST
in space: Z35-2204-WORK							
W02-Z62-3301-OFC	0.000	0.00	0.053	36.00	0.053	36.00	SOUTH-EAST
in space: Z62-3301-OFC							
W01-Z12-1111-LAB	0.000	0.00	0.053	237.33	0.053	237.33	SOUTH-EAST
in space: Z12-1111-LAB							
W07-Z63-3302-OPEN	0.000	0.00	0.053	37.33	0.053	37.33	SOUTH-EAST
in space: Z63-3302-OPEN							
W18-Z35-2204-WORK	0.000	0.00	0.053	31.33	0.053	31.33	SOUTH-EAST
in space: Z35-2204-WORK							
W16-Z63-3302-OPEN	0.000	0.00	0.053	34.67	0.053	34.67	SOUTH-EAST
in space: Z63-3302-OPEN							
W02-Z31-2200-STA	0.000	0.00	0.113	64.00	0.113	64.00	SOUTH-EAST
in space: Z31-2200-STA							
W25-Z63-3302-OPEN	0.000	0.00	0.053	33.33	0.053	33.33	SOUTH-EAST
in space: Z63-3302-OPEN							
W27-Z35-2204-WORK	0.321	35.00	0.053	131.00	0.109	166.00	SOUTH-EAST
in space: Z35-2204-WORK							
W02-Z64-3303-OFC	0.321	70.00	0.053	274.00	0.107	344.00	SOUTH-EAST
in space: Z64-3303-OFC							
W02-Z87A-4400-STA	0.000	0.00	0.113	64.00	0.113	64.00	SOUTH-EAST
in space: Z87A-4400-STA							
W10-Z02-1101-MER	0.000	0.00	0.053	29.29	0.053	29.29	SOUTH
in space: Z02-1101-MER							
W02-Z02-1101-MER	0.000	0.00	0.053	37.27	0.053	37.27	SOUTH
in space: Z02-1101-MER							
W06-Z02-1101-MER	0.000	0.00	0.053	34.42	0.053	34.42	SOUTH
in space: Z02-1101-MER							
W14-Z02-1101-MER	0.000	0.00	0.053	34.44	0.053	34.44	SOUTH
in space: Z02-1101-MER							
W02-Z33-2202-SUPV	0.345	22.19	0.053	31.89	0.173	54.08	SOUTH
in space: Z33-2202-SUPV							
W27-Z63-3302-OPEN	0.345	22.19	0.053	40.50	0.156	62.69	SOUTH
in space: Z63-3302-OPEN							
W29-Z63-3302-OPEN	0.345	22.19	0.053	29.74	0.178	51.93	SOUTH
in space: Z63-3302-OPEN							
W24-Z35-2204-WORK	0.345	22.19	0.053	35.95	0.164	58.14	SOUTH-WEST
in space: Z35-2204-WORK							
W15-Z35-2204-WORK	0.345	22.19	0.053	35.95	0.164	58.14	SOUTH-WEST
in space: Z35-2204-WORK							
W09-Z63-3302-OPEN	0.345	22.19	0.053	25.51	0.189	47.70	SOUTH-WEST
in space: Z63-3302-OPEN							
W11-Z35-2204-WORK	0.345	22.19	0.053	33.56	0.169	55.75	SOUTH-WEST
in space: Z35-2204-WORK							
W04-Z32-2201-LIB	0.345	22.19	0.053	38.63	0.159	60.82	SOUTH-WEST
in space: Z32-2201-LIB							
W22-Z63-3302-OPEN	0.345	22.19	0.053	29.69	0.178	51.88	SOUTH-WEST
in space: Z63-3302-OPEN							
W06-Z32-2201-LIB	0.345	22.19	0.053	30.29	0.176	52.48	SOUTH-WEST
in space: Z32-2201-LIB							
W20-Z63-3302-OPEN	0.345	22.19	0.053	35.69	0.165	57.88	SOUTH-WEST
in space: Z63-3302-OPEN							
W13-Z35-2204-WORK	0.345	22.19	0.053	28.24	0.181	50.43	SOUTH-WEST
in space: Z35-2204-WORK							
W31-Z63-3302-OPEN	0.345	22.19	0.053	30.34	0.176	52.53	SOUTH-WEST
in space: Z63-3302-OPEN							
W02-Z63-3302-OPEN	0.345	22.19	0.053	36.90	0.163	59.09	SOUTH-WEST
in space: Z63-3302-OPEN							
W04-Z63-3302-OPEN	0.345	22.19	0.053	30.34	0.176	52.53	SOUTH-WEST
in space: Z63-3302-OPEN							
W04-Z35-2204-WORK	0.345	22.19	0.053	33.66	0.169	55.85	SOUTH-WEST
in space: Z35-2204-WORK							
W18-Z63-3302-OPEN	0.345	22.19	0.053	35.76	0.165	57.95	SOUTH-WEST
in space: Z63-3302-OPEN							
W04-Z62-3301-OFC	0.345	22.19	0.053	34.89	0.166	57.08	SOUTH-WEST
in space: Z62-3301-OFC							
W22-Z35-2204-WORK	0.345	22.19	0.053	36.12	0.164	58.31	SOUTH-WEST
in space: Z35-2204-WORK							
W11-Z63-3302-OPEN	0.345	22.19	0.053	35.87	0.165	58.06	SOUTH-WEST
in space: Z63-3302-OPEN							
W06-Z35-2204-WORK	0.345	22.19	0.053	34.39	0.167	56.58	SOUTH-WEST
in space: Z35-2204-WORK							
W02-Z35-2204-WORK	0.345	22.19	0.053	32.90	0.171	55.09	SOUTH-WEST
in space: Z35-2204-WORK							
W13-Z63-3302-OPEN	0.345	22.19	0.053	34.32	0.168	56.51	SOUTH-WEST
in space: Z63-3302-OPEN							
W20-Z35-2204-WORK	0.345	22.19	0.053	32.83	0.171	55.02	SOUTH-WEST
in space: Z35-2204-WORK							
W07-Z50-2219-CONF	0.000	0.00	0.053	264.69	0.053	264.69	SOUTH-WEST
in space: Z50-2219-CONF							
W01-Z01-1100-STA	0.000	0.00	0.113	166.67	0.113	166.67	SOUTH-WEST
in space: Z01-1100-STA							
W11-Z02-1101-MER	0.000	0.00	0.053	264.00	0.053	264.00	SOUTH-WEST
in space: Z02-1101-MER							
W01-Z77-3316-BIO	0.000	0.00	0.053	307.33	0.053	307.33	SOUTH-WEST
in space: Z77-3316-BIO							
W26-Z35-2204-WORK	0.000	0.00	0.053	170.00	0.053	170.00	SOUTH-WEST
in space: Z35-2204-WORK							
W04-Z33-2202-SUPV	0.000	0.00	0.053	47.33	0.053	47.33	SOUTH-WEST
in space: Z33-2202-SUPV							
W24-Z63-3302-OPEN	0.000	0.00	0.053	45.33	0.053	45.33	SOUTH-WEST
in space: Z63-3302-OPEN							
W01-Z36-2205-SUPV	0.000	0.00	0.053	227.33	0.053	227.33	SOUTH-WEST
in space: Z36-2205-SUPV							
W02-Z78-3317-LOUN	0.308	165.49	0.053	99.85	0.212	265.33	SOUTH-WEST
in space: Z78-3317-LOUN							

W01-Z87A-4400-STA	0.000	0.00	0.113	171.33	0.113	171.33	SOUTH-WEST
in space: Z87A-4400-STA							
W01-Z24-1123-LOB	0.305	197.53	0.053	66.47	0.241	264.00	SOUTH-WEST
in space: Z24-1123-LOB							
W01-Z39-2208-STA	0.000	0.00	0.113	148.67	0.113	148.67	SOUTH-WEST
in space: Z39-2208-STA							
W01-Z88-4401-MER	0.000	0.00	0.053	1379.34	0.053	1379.34	SOUTH-WEST
in space: Z88-4401-MER							
W01-Z51-2220-LOUN	0.308	165.49	0.053	93.18	0.216	258.67	SOUTH-WEST
in space: Z51-2220-LOUN							
W03-Z88-4401-MER	0.000	0.00	0.053	254.66	0.053	254.66	SOUTH-WEST
in space: Z88-4401-MER							
W01-Z91-4404-COR	0.000	0.00	0.053	179.34	0.053	179.34	SOUTH-WEST
in space: Z91-4404-COR							
W01-Z92-4405-STA	0.000	0.00	0.113	158.00	0.113	158.00	SOUTH-WEST
in space: Z92-4405-STA							
W13-Z02-1101-MER	0.000	0.00	0.053	41.33	0.053	41.33	SOUTH-WEST
in space: Z02-1101-MER							
W33-Z63-3302-OPEN	0.000	0.00	0.053	192.00	0.053	192.00	SOUTH-WEST
in space: Z63-3302-OPEN							
W01-Z64-3303-OFC	0.000	0.00	0.053	206.00	0.053	206.00	SOUTH-WEST
in space: Z64-3303-OFC							
W01-Z61-3300-STA	0.000	0.00	0.113	171.33	0.113	171.33	SOUTH-WEST
in space: Z61-3300-STA							
W01-Z68-3307-STA	0.000	0.00	0.113	156.00	0.113	156.00	SOUTH-WEST
in space: Z68-3307-STA							
W03-Z02-1101-MER	0.000	0.00	0.053	258.67	0.053	258.67	SOUTH-WEST
in space: Z02-1101-MER							
W15-Z02-1101-MER	0.000	0.00	0.053	266.67	0.053	266.67	SOUTH-WEST
in space: Z02-1101-MER							
W01-Z62-3301-OFC	0.000	0.00	0.053	60.00	0.053	60.00	SOUTH-WEST
in space: Z62-3301-OFC							
W05-Z24-1123-LOB	0.000	0.00	0.053	183.33	0.053	183.33	SOUTH-WEST
in space: Z24-1123-LOB							
W08-Z35-2204-WORK	0.000	0.00	0.053	43.33	0.053	43.33	SOUTH-WEST
in space: Z35-2204-WORK							
W17-Z02-1101-MER	0.000	0.00	0.053	395.34	0.053	395.34	SOUTH-WEST
in space: Z02-1101-MER							
W01-Z31-2200-STA	0.000	0.00	0.113	160.67	0.113	160.67	SOUTH-WEST
in space: Z31-2200-STA							
W05-Z02-1101-MER	0.000	0.00	0.053	43.33	0.053	43.33	SOUTH-WEST
in space: Z02-1101-MER							
W06-Z63-3302-OPEN	0.000	0.00	0.053	45.33	0.053	45.33	SOUTH-WEST
in space: Z63-3302-OPEN							
W01-Z04-1103-STA	0.000	0.00	0.113	148.00	0.113	148.00	SOUTH-WEST
in space: Z04-1103-STA							
W01-Z32-2201-LIB	0.000	0.00	0.053	63.33	0.053	63.33	SOUTH-WEST
in space: Z32-2201-LIB							
W01-Z100-4413-BREAK	0.308	165.49	0.053	100.51	0.212	266.00	SOUTH-WEST
in space: Z100-4413-BREAK							
W02-Z100-4413-BREAK	0.000	0.00	0.053	189.33	0.053	189.33	SOUTH-WEST
in space: Z100-4413-BREAK							
W17-Z35-2204-WORK	0.000	0.00	0.053	44.00	0.053	44.00	SOUTH-WEST
in space: Z35-2204-WORK							
W01-Z02-1101-MER	0.000	0.00	0.053	58.00	0.053	58.00	SOUTH-WEST
in space: Z02-1101-MER							
W07-Z02-1101-MER	0.000	0.00	0.053	261.33	0.053	261.33	SOUTH-WEST
in space: Z02-1101-MER							
W15-Z63-3302-OPEN	0.000	0.00	0.053	46.67	0.053	46.67	SOUTH-WEST
in space: Z63-3302-OPEN							
W09-Z02-1101-MER	0.000	0.00	0.053	44.67	0.053	44.67	SOUTH-WEST
in space: Z02-1101-MER							
W03-Z75-3314-LAB	0.000	0.00	0.053	32.17	0.053	32.17	SOUTH-WEST
in space: Z75-3314-LAB							
W03-Z49-2218-COR	0.000	0.00	0.053	38.33	0.053	38.33	SOUTH-WEST
in space: Z49-2218-COR							
W03-Z47-2216-OFC	0.000	0.00	0.053	32.47	0.053	32.47	WEST
in space: Z47-2216-OFC							
W03-Z98-4411-OFC	0.000	0.00	0.053	26.15	0.053	26.15	WEST
in space: Z98-4411-OFC							
W21-Z35-2204-WORK	0.345	22.19	0.053	33.92	0.168	56.11	WEST
in space: Z35-2204-WORK							
W30-Z63-3302-OPEN	0.345	22.19	0.053	39.21	0.158	61.40	WEST
in space: Z63-3302-OPEN							
W12-Z63-3302-OPEN	0.345	22.19	0.053	33.52	0.169	55.71	WEST
in space: Z63-3302-OPEN							
W10-Z63-3302-OPEN	0.345	22.19	0.053	36.49	0.163	58.68	WEST
in space: Z63-3302-OPEN							
W05-Z35-2204-WORK	0.345	22.19	0.053	30.80	0.175	52.99	WEST
in space: Z35-2204-WORK							
W03-Z35-2204-WORK	0.345	22.19	0.053	35.87	0.165	58.06	WEST
in space: Z35-2204-WORK							
W12-Z35-2204-WORK	0.345	22.19	0.053	43.30	0.152	65.49	WEST
in space: Z35-2204-WORK							
W07-Z99-4412-OPEN	0.000	0.00	0.053	25.39	0.053	25.39	WEST
in space: Z99-4412-OPEN							
W19-Z63-3302-OPEN	0.345	22.19	0.053	34.54	0.167	56.73	WEST
in space: Z63-3302-OPEN							
W21-Z63-3302-OPEN	0.345	22.19	0.053	36.29	0.164	58.48	WEST
in space: Z63-3302-OPEN							
W14-Z35-2204-WORK	0.345	22.19	0.053	33.59	0.169	55.78	WEST
in space: Z35-2204-WORK							
W03-Z63-3302-OPEN	0.345	22.19	0.053	38.06	0.160	60.25	WEST
in space: Z63-3302-OPEN							
W01-Z35-2204-WORK	0.345	22.19	0.053	30.01	0.177	52.20	WEST
in space: Z35-2204-WORK							
W19-Z35-2204-WORK	0.345	22.19	0.053	31.18	0.174	53.37	WEST
in space: Z35-2204-WORK							
W23-Z35-2204-WORK	0.345	22.19	0.053	33.56	0.169	55.75	WEST
in space: Z35-2204-WORK							
W05-Z32-2201-LIB	0.345	22.19	0.053	33.86	0.169	56.05	WEST
in space: Z32-2201-LIB							
W03-Z32-2201-LIB	0.345	22.19	0.053	30.29	0.176	52.48	WEST
in space: Z32-2201-LIB							
W01-Z33-2202-SUPV	0.345	22.19	0.053	37.15	0.162	59.34	WEST

in space: Z33-2202-SUPV							
W08-Z63-3302-OPEN	0.345	22.19	0.053	38.68	0.159	60.87	WEST
in space: Z63-3302-OPEN							
W10-Z35-2204-WORK	0.345	22.19	0.053	34.21	0.168	56.40	WEST
in space: Z35-2204-WORK							
W26-Z63-3302-OPEN	0.345	22.19	0.053	36.03	0.164	58.22	WEST
in space: Z63-3302-OPEN							
W01-Z63-3302-OPEN	0.345	22.19	0.053	28.58	0.181	50.77	WEST
in space: Z63-3302-OPEN							
W28-Z63-3302-OPEN	0.345	22.19	0.053	37.84	0.161	60.03	WEST
in space: Z63-3302-OPEN							
W17-Z63-3302-OPEN	0.345	22.19	0.053	27.43	0.184	49.62	WEST
in space: Z63-3302-OPEN							
W02-Z76-3315-OFC	0.000	0.00	0.053	31.10	0.053	31.10	WEST
in space: Z76-3315-OFC							
W03-Z62-3301-OFC	0.345	22.19	0.053	36.47	0.163	58.66	WEST
in space: Z62-3301-OFC							
W12-Z02-1101-MER	0.000	0.00	0.053	31.24	0.053	31.24	WEST
in space: Z02-1101-MER							
W16-Z02-1101-MER	0.000	0.00	0.053	33.04	0.053	33.04	WEST
in space: Z02-1101-MER							
W08-Z02-1101-MER	0.000	0.00	0.053	32.07	0.053	32.07	WEST
in space: Z02-1101-MER							
W04-Z02-1101-MER	0.000	0.00	0.053	36.96	0.053	36.96	WEST
in space: Z02-1101-MER							
W07-Z19-1118-COR	0.000	0.00	0.053	53.63	0.053	53.63	WEST
in space: Z19-1118-COR							
W03-Z19-1118-COR	0.000	0.00	0.053	30.70	0.053	30.70	WEST
in space: Z19-1118-COR							
W04-Z99-4412-OPEN	0.354	19.60	0.053	28.29	0.176	47.89	NORTH-WEST
in space: Z99-4412-OPEN							
W02-Z48-2217-QA/QC	0.354	19.60	0.053	36.53	0.158	56.13	NORTH-WEST
in space: Z48-2217-QA/QC							
W04-Z48-2217-QA/QC	0.354	19.60	0.053	33.12	0.165	52.72	NORTH-WEST
in space: Z48-2217-QA/QC							
W03-Z77-3316-BIO	0.354	19.60	0.053	37.67	0.156	57.27	NORTH-WEST
in space: Z77-3316-BIO							
W02-Z50-2219-CONF	0.354	19.60	0.053	32.83	0.165	52.43	NORTH-WEST
in space: Z50-2219-CONF							
W05-Z47-2216-OFC	0.354	19.60	0.053	27.99	0.177	47.59	NORTH-WEST
in space: Z47-2216-OFC							
W07-Z75-3314-LAB	0.345	22.19	0.053	32.85	0.171	55.04	NORTH-WEST
in space: Z75-3314-LAB							
W05-Z100-4413-BREAK	0.354	19.60	0.053	36.10	0.159	55.70	NORTH-WEST
in space: Z100-4413-BREAK							
W04-Z76-3315-OFC	0.354	19.60	0.053	36.52	0.158	56.12	NORTH-WEST
in space: Z76-3315-OFC							
W07-Z100-4413-BREAK	0.354	19.60	0.053	33.12	0.165	52.72	NORTH-WEST
in space: Z100-4413-BREAK							
W04-Z50-2219-CONF	0.354	19.60	0.053	29.06	0.174	48.66	NORTH-WEST
in space: Z50-2219-CONF							
W02-Z99-4412-OPEN	0.354	19.60	0.053	35.75	0.159	55.35	NORTH-WEST
in space: Z99-4412-OPEN							
W05-Z98-4411-OFC	0.354	19.60	0.053	37.07	0.157	56.67	NORTH-WEST
in space: Z98-4411-OFC							
W09-Z99-4412-OPEN	0.354	19.60	0.053	36.97	0.157	56.57	NORTH-WEST
in space: Z99-4412-OPEN							
W09-Z75-3314-LAB	0.354	19.60	0.053	32.83	0.165	52.43	NORTH-WEST
in space: Z75-3314-LAB							
W05-Z49-2218-COR	0.354	19.60	0.053	27.30	0.179	46.90	NORTH-WEST
in space: Z49-2218-COR							
R01-Z89-4402-REST	0.000	0.00	0.033	197.45	0.033	197.45	ROOF
in space: Z89-4402-REST							
R01-Z94-4407-GUN	0.000	0.00	0.033	283.33	0.033	283.33	ROOF
in space: Z94-4407-GUN							
R01-Z90-4403-DATA	0.000	0.00	0.033	93.50	0.033	93.50	ROOF
in space: Z90-4403-DATA							
R01-Z95-4408-SHOP	0.000	0.00	0.033	287.08	0.033	287.08	ROOF
in space: Z95-4408-SHOP							
R01-Z91-4404-COR	0.000	0.00	0.033	1329.64	0.033	1329.64	ROOF
in space: Z91-4404-COR							
R01-Z96-4409-GSR	0.000	0.00	0.033	219.75	0.033	219.75	ROOF
in space: Z96-4409-GSR							
R01-Z65-3304-DATA	0.000	0.00	0.033	74.16	0.033	74.16	ROOF
in space: Z65-3304-DATA							
R01-Z99-4412-OPEN	0.000	0.00	0.033	436.79	0.033	436.79	ROOF
in space: Z99-4412-OPEN							
R01-Z97-4410-LAB	0.000	0.00	0.033	852.45	0.033	852.45	ROOF
in space: Z97-4410-LAB							
R01-Z87A-4400-STA	0.000	0.00	0.033	258.41	0.033	258.41	ROOF
in space: Z87A-4400-STA							
R01-Z69-3308-COR	0.000	0.00	0.033	14.21	0.033	14.21	ROOF
in space: Z69-3308-COR							
R01-Z63-3302-OPEN	0.000	0.00	0.033	230.42	0.033	230.42	ROOF
in space: Z63-3302-OPEN							
R01-Z92-4405-STA	0.000	0.00	0.033	419.54	0.033	419.54	ROOF
in space: Z92-4405-STA							
R01-Z64-3303-OFC	0.000	0.00	0.033	278.16	0.033	278.16	ROOF
in space: Z64-3303-OFC							
R01-Z98-4411-OFC	0.000	0.00	0.033	183.03	0.033	183.03	ROOF
in space: Z98-4411-OFC							
R01-Z88-4401-MER	0.000	0.00	0.033	3213.44	0.033	3213.44	ROOF
in space: Z88-4401-MER							
R01-Z93-4406-LAB	0.000	0.00	0.033	372.15	0.033	372.15	ROOF
in space: Z93-4406-LAB							
R01-Z100-4413-BREAK	0.000	0.00	0.033	604.69	0.033	604.69	ROOF
in space: Z100-4413-BREAK							
R01-Z101-4414-LAB	0.000	0.00	0.033	829.89	0.033	829.89	ROOF
in space: Z101-4414-LAB							
R01-Z102-4415-STO	0.000	0.00	0.033	211.76	0.033	211.76	ROOF
in space: Z102-4415-STO							
R01-Z103-4416-RANGE	0.000	0.00	0.033	1140.63	0.033	1140.63	ROOF
in space: Z103-4416-RANGE							
UF01-Z01-1100-STA	0.000	0.00	0.031	255.64	0.031	255.64	UNDERGRND
in space: Z01-1100-STA							

SURFACE	- - - W I N D O W S - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	- - - - W A L L - - - - U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	-W A L L + W I N D O W S- U-VALUE (BTU/HR-SQFT-F)	AREA (SQFT)	AZIMUTH
UF01-Z02-1101-MER in space: Z02-1101-MER	0.000	0.00	0.031	2049.42	0.031	2049.42	UNDERGRND
UF01-Z03-1102-TELE in space: Z03-1102-TELE	0.000	0.00	0.001	114.53	0.001	114.53	UNDERGRND
UF01-Z04-1103-STA in space: Z04-1103-STA	0.000	0.00	0.031	295.97	0.031	295.97	UNDERGRND
UF01-Z05-1104-COR in space: Z05-1104-COR	0.000	0.00	0.001	832.39	0.001	832.39	UNDERGRND
UF01-Z06-1105-ELEV in space: Z06-1105-ELEV	0.000	0.00	0.001	101.24	0.001	101.24	UNDERGRND
UF01-Z07-1106-SUP in space: Z07-1106-SUPP	0.000	0.00	0.001	209.04	0.001	209.04	UNDERGRND
UF01-Z08-1107-STO in space: Z08-1107-STO	0.000	0.00	0.001	84.73	0.001	84.73	UNDERGRND
UF01-Z09-1108-EVID in space: Z09-1108-EVID	0.000	0.00	0.001	155.72	0.001	155.72	UNDERGRND
UF01-Z10-1109-VIEW in space: Z10-1109-VIEW	0.000	0.00	0.001	188.21	0.001	188.21	UNDERGRND
UF01-Z11-1110-OFC in space: Z11-1110-OFC	0.000	0.00	0.031	145.37	0.031	145.37	UNDERGRND
UF01-Z12-1111-LAB in space: Z12-1111-LAB	0.000	0.00	0.031	691.64	0.031	691.64	UNDERGRND
UF01-Z13-1112-COR in space: Z13-1112-COR	0.000	0.00	0.031	391.35	0.031	391.35	UNDERGRND
UF01-Z14-1113-REST in space: Z14-1113-REST	0.000	0.00	0.001	91.83	0.001	91.83	UNDERGRND
UF01-Z15-1114-STO in space: Z15-1114-STO	0.000	0.00	0.031	124.78	0.031	124.78	UNDERGRND
UF01-Z16-1115-VEHI in space: Z16-1115-VEHI	0.000	0.00	0.031	634.65	0.031	634.65	UNDERGRND
UF01-Z17-1116-EVID in space: Z17-1116-EVID	0.000	0.00	0.031	665.59	0.031	665.59	UNDERGRND
UF01-Z18-1117-PARK in space: Z18-1117-PARK	0.000	0.00	0.031	1033.35	0.031	1033.35	UNDERGRND
UF01-Z19-1118-COR in space: Z19-1118-COR	0.000	0.00	0.031	275.93	0.031	275.93	UNDERGRND
UF01-Z20-1119-LOB in space: Z20-1119-LOB	0.000	0.00	0.001	231.15	0.001	231.15	UNDERGRND
UF01-Z21-1120-VIEW in space: Z21-1120-VIEW	0.000	0.00	0.001	131.67	0.001	131.67	UNDERGRND
UF01-Z22-1121-RECE in space: Z22-1121-RECE	0.000	0.00	0.001	674.74	0.001	674.74	UNDERGRND
UF01-Z23-1122-SECU in space: Z23-1122-SECU	0.000	0.00	0.001	102.20	0.001	102.20	UNDERGRND
UF01-Z24-1123-LOB in space: Z24-1123-LOB	0.000	0.00	0.031	552.40	0.031	552.40	UNDERGRND
UF01-Z25-1124-REST in space: Z25-1124-REST	0.000	0.00	0.001	56.34	0.001	56.34	UNDERGRND
UF01-Z26-1125-FREEZ in space: Z26-1125-FREEZ	0.000	0.00	0.001	703.41	0.001	703.41	UNDERGRND
UF01-Z27-1126-NARC in space: Z27-1126-NARC	0.000	0.00	0.001	203.24	0.001	203.24	UNDERGRND
UF01-Z28-1127-JAN in space: Z28-1127-JAN	0.000	0.00	0.001	124.29	0.001	124.29	UNDERGRND
UF01-Z29-1128-DRY in space: Z29-1128-DRY	0.000	0.00	0.001	89.41	0.001	89.41	UNDERGRND
UF01-Z30-1129-LAB in space: Z30-1129-LAB	0.000	0.00	0.001	145.14	0.001	145.14	UNDERGRND

	AVERAGE U-VALUE/WINDOWS (BTU/HR-SQFT-F)	AVERAGE U-VALUE/WALLS (BTU/HR-SQFT-F)	AVERAGE U-VALUE WALLS+WINDOWS (BTU/HR-SQFT-F)	WINDOW AREA (SQFT)	WALL AREA (SQFT)	WINDOW+WALL AREA (SQFT)
NORTH	0.329	0.068	0.124	1015.26	3766.38	4781.64
NORTH-EAST	0.320	0.058	0.114	2173.78	7990.61	10164.40
EAST	0.000	0.053	0.053	0.00	23.19	23.19
SOUTH-EAST	0.327	0.078	0.107	665.42	4998.59	5664.01
SOUTH	0.345	0.053	0.117	66.57	237.54	304.11
SOUTH-WEST	0.323	0.062	0.095	1159.98	7995.05	9155.02
WEST	0.345	0.053	0.145	532.56	1163.62	1696.18
NORTH-WEST	0.354	0.053	0.165	316.19	534.00	850.19
ROOF	0.000	0.033	0.033	0.00	11530.47	11530.47
ALL WALLS	0.327	0.064	0.112	5929.75	26708.97	32638.73
WALLS+ROOFS	0.327	0.055	0.091	5929.75	38239.43	44169.20
UNDERGRND	0.000	0.020	0.020	0.00	11355.39	11355.39
BUILDING	0.327	0.047	0.077	5929.75	49594.82	55524.58

NUMBER OF UNDERGROUND SURFACES 30

SURFACE NAME	MULTIPLIER	AREA (SQFT)	CONSTRUCTION NAME	U-VALUE (BTU/HR-SQFT-F)
UF01-Z01-1100-STA	1.0	255.64	UW-TYP-CONS	0.031
UF01-Z02-1101-MER	1.0	2049.42	UW-TYP-CONS	0.031
UF01-Z03-1102-TELE	1.0	114.53	UW1-TYP-CONS	0.001
UF01-Z04-1103-STA	1.0	295.97	UW-TYP-CONS	0.031
UF01-Z05-1104-COR	1.0	832.39	UW1-TYP-CONS	0.001
UF01-Z06-1105-ELEV	1.0	101.24	UW1-TYP-CONS	0.001
UF01-Z07-1106-SUP	1.0	209.04	UW1-TYP-CONS	0.001
UF01-Z08-1107-STO	1.0	84.73	UW1-TYP-CONS	0.001
UF01-Z09-1108-EVID	1.0	155.72	UW1-TYP-CONS	0.001
UF01-Z10-1109-VIEW	1.0	188.21	UW1-TYP-CONS	0.001
UF01-Z11-1110-OFC	1.0	145.37	UW-TYP-CONS	0.031
UF01-Z12-1111-LAB	1.0	691.64	UW-TYP-CONS	0.031
UF01-Z13-1112-COR	1.0	391.35	UW-TYP-CONS	0.031
UF01-Z14-1113-REST	1.0	91.83	UW1-TYP-CONS	0.001
UF01-Z15-1114-STO	1.0	124.78	UW-TYP-CONS	0.031
UF01-Z16-1115-VEHI	1.0	634.65	UW-TYP-CONS	0.031
UF01-Z17-1116-EVID	1.0	665.59	UW-TYP-CONS	0.031
UF01-Z18-1117-PARK	1.0	1033.35	UW-TYP-CONS	0.031
UF01-Z19-1118-COR	1.0	275.93	UW-TYP-CONS	0.031
UF01-Z20-1119-LOB	1.0	231.15	UW1-TYP-CONS	0.001
UF01-Z21-1120-VIEW	1.0	131.67	UW1-TYP-CONS	0.001
UF01-Z22-1121-RECE	1.0	674.74	UW1-TYP-CONS	0.001
UF01-Z23-1122-SECU	1.0	102.20	UW1-TYP-CONS	0.001
UF01-Z24-1123-LOB	1.0	552.40	UW-TYP-CONS	0.031
UF01-Z25-1124-REST	1.0	56.34	UW1-TYP-CONS	0.001
UF01-Z26-1125-FREEZ	1.0	703.41	UW1-TYP-CONS	0.001
UF01-Z27-1126-NARC	1.0	203.24	UW1-TYP-CONS	0.001
UF01-Z28-1127-JAN	1.0	124.29	UW1-TYP-CONS	0.001
UF01-Z29-1128-DRY	1.0	89.41	UW1-TYP-CONS	0.001
UF01-Z30-1129-LAB	1.0	145.14	UW1-TYP-CONS	0.001

Number of Interior Surfaces 371
(U-VALUE includes both air films)

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW01-Z01-1100-STA	166.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z01-1100-STA	144.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z02-1101-MER	260.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z02-1101-MER	145.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z02-1101-MER	200.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z02-1101-MER	138.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z02-1101-MER	201.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z02-1101-MER	26.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z02-1101-MER	982.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z02-1101-MER	157.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z02-1101-MER	181.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z02-1101-MER	185.51	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z03-1102-TELE	198.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z04-1103-STA	504.02	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z05-1104-COR	110.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z05-1104-COR	1436.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z05-1104-COR	144.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z06-1105-ELEV	145.37	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z06-1105-ELEV	176.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z07-1106-SUP	330.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z07-1106-SUP	162.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z08-1107-STO	130.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z09-1108-EVID	38.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z09-1108-EVID	31.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z09-1108-EVID	152.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z09-1108-EVID	215.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z10-1109-VIEW	240.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z11-1110-OFC	167.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z11-1110-OFC	226.06	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z13-1112-COR	824.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z13-1112-COR	95.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z13-1112-COR	158.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z13-1112-COR	360.02	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z13-1112-COR	152.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z13-1112-COR	369.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z14-1113-REST	150.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z16-1115-VEHI	345.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z16-1115-VEHI	468.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z17-1116-EVID	357.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z17-1116-EVID	472.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z17-1116-EVID	472.06	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z18-1117-PARK	685.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z18-1117-PARK	386.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z18-1117-PARK	1033.35	GARAGE-CEIL-CONS	DELAYED ADIABATIC	0.066
IW01-Z19-1118-COR	56.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z19-1118-COR	455.42	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z19-1118-COR	58.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z19-1118-COR	84.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z20-1119-LOB	428.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z20-1119-LOB	134.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z21-1120-VIEW	130.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW01-Z22-1121-RECE	488.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z22-1121-RECE	142.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z22-1121-RECE	165.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z22-1121-RECE	162.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z22-1121-RECE	814.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z22-1121-RECE	187.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z23-1122-SECU	214.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z23-1122-SECU	124.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z23-1122-SECU	124.15	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z24-1123-LOB	225.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z24-1123-LOB	126.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z24-1123-LOB	208.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z24-1123-LOB	124.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z27-1126-NARC	357.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z27-1126-NARC	145.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z28-1127-JAN	257.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z28-1127-JAN	123.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z29-1128-DRY	251.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z29-1128-DRY	90.20	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z30-1129-LAB	252.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z30-1129-LAB	146.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z31-2200-STA	160.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z32-2201-LIB	61.03	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z32-2201-LIB	253.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z32-2201-LIB	341.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z32-2201-LIB	361.58	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW03-Z33-2202-SUPV	78.12	IW-TYP-CONS	DELAYED STANDARD	0.371
IW04-Z33-2202-SUPV	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z33-2202-SUPV	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z34-2203-STO	108.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z34-2203-STO	159.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z35-2204-WORK	170.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z35-2204-WORK	224.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z35-2204-WORK	205.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z35-2204-WORK	40.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z35-2204-WORK	86.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371

IW07-Z35-2204-WORK	72.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z35-2204-WORK	4.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z35-2204-WORK	502.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z35-2204-WORK	62.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z35-2204-WORK	130.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z35-2204-WORK	62.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z35-2204-WORK	364.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z35-2204-WORK	68.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z35-2204-WORK	1162.84	C-TYP-CONS	DELAYED ADIABATIC	0.389
IC01-Z36-2205-SUPV	147.46	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z37-2206-DATA	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z37-2206-DATA	126.68	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z38-2207-COR	565.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z38-2207-COR	47.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z38-2207-COR	81.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z38-2207-COR	55.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z38-2207-COR	259.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z38-2207-COR	123.20	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z38-2207-COR	105.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW08-Z38-2207-COR	61.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z38-2207-COR	124.80	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z38-2207-COR	62.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z38-2207-COR	514.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z38-2207-COR	44.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z38-2207-COR	200.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z38-2207-COR	100.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW15-Z38-2207-COR	229.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW16-Z38-2207-COR	50.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW17-Z38-2207-COR	115.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW18-Z38-2207-COR	48.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW19-Z38-2207-COR	910.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW20-Z38-2207-COR	25.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW21-Z38-2207-COR	51.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW22-Z38-2207-COR	26.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW23-Z38-2207-COR	130.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW24-Z38-2207-COR	140.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW25-Z38-2207-COR	210.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW26-Z38-2207-COR	128.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z39-2208-STA	35.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z39-2208-STA	54.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z39-2208-STA	352.01	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z41-2210-STO	146.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z41-2210-STO	142.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z41-2210-STO	170.05	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z42-2211-STO	196.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z42-2211-STO	135.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z43-2212-EXAM	330.03	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z44-2213-LAB	887.99	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z44-2213-LAB	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z44-2213-LAB	1628.47	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z45-2214-EXAM	172.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z45-2214-EXAM	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z45-2214-EXAM	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z46-2215-LAB	536.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z46-2215-LAB	470.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z47-2216-OFC	312.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z47-2216-OFC	77.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z47-2216-OFC	158.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z47-2216-OFC	394.66	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z48-2217-QA/QC	167.20	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z48-2217-QA/QC	219.92	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z48-2217-QA/QC	138.10	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z49-2218-COR	326.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z49-2218-COR	276.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z49-2218-COR	28.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z49-2218-COR	41.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z49-2218-COR	26.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z50-2219-CONF	261.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z50-2219-CONF	178.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z50-2219-CONF	231.93	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z51-2220-LOUN	156.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z51-2220-LOUN	42.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z51-2220-LOUN	150.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z51-2220-LOUN	74.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW05-Z51-2220-LOUN	28.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z51-2220-LOUN	145.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z51-2220-LOUN	34.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z51-2220-LOUN	83.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z51-2220-LOUN	299.55	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z52-2221-OFC	66.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z52-2221-OFC	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z52-2221-OFC	51.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z53-2222-REST	115.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z53-2222-REST	186.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z53-2222-REST	99.37	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z54-2223-STO	227.40	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z54-2223-STO	306.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z55-2224-STO	136.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z55-2224-STO	206.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z56-2225-INST	356.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z57-2226-LAB	356.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z58-2227-INST	345.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z59-2228-REST	120.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z59-2228-REST	120.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z60-2229-REST	122.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

IW02-Z61-3300-STA	168.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z61-3300-STA	333.28	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z61-3300-STA	152.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z62-3301-OFC	54.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z62-3301-OFC	98.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z62-3301-OFC	184.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z62-3301-OFC	114.74	C-TYP-CONS	DELAYED ADIABATIC	0.389
IC01-Z63-3302-OPEN	1494.60	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z64-3303-OFC	344.01	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z64-3303-OFC	278.16	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z65-3304-DATA	150.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z65-3304-DATA	126.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z65-3304-DATA	126.01	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z66-3305-REST	362.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z66-3305-REST	127.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z67-3306-REST	257.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z67-3306-REST	117.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z67-3306-REST	117.40	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z68-3307-STA	35.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z68-3307-STA	58.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z68-3307-STA	354.69	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z68-3307-STA	83.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z68-3307-STA	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z69-3308-COR	99.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z69-3308-COR	125.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z69-3308-COR	27.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z69-3308-COR	97.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z69-3308-COR	25.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z69-3308-COR	339.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z69-3308-COR	60.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z69-3308-COR	84.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z69-3308-COR	72.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z69-3308-COR	260.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z69-3308-COR	128.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW12-Z69-3308-COR	107.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z69-3308-COR	124.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z69-3308-COR	647.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW15-Z69-3308-COR	48.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW16-Z69-3308-COR	80.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW17-Z69-3308-COR	45.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW18-Z69-3308-COR	200.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW19-Z69-3308-COR	105.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW20-Z69-3308-COR	251.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW21-Z69-3308-COR	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW22-Z69-3308-COR	124.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW23-Z69-3308-COR	156.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW24-Z69-3308-COR	204.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW25-Z69-3308-COR	42.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW26-Z69-3308-COR	119.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW27-Z69-3308-COR	46.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW28-Z69-3308-COR	553.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW29-Z69-3308-COR	46.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW30-Z69-3308-COR	62.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW31-Z69-3308-COR	144.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW32-Z69-3308-COR	168.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW33-Z69-3308-COR	11.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW34-Z69-3308-COR	337.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z70-3309-OFC	154.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z71-3310-PCR	294.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z71-3310-PCR	187.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z71-3310-PCR	51.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z71-3310-PCR	663.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z71-3310-PCR	918.43	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z72-3311-LAB	50.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z72-3311-LAB	136.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z72-3311-LAB	200.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z72-3311-LAB	339.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z72-3311-LAB	441.59	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z73-3312-LAB	563.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z73-3312-LAB	126.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z73-3312-LAB	64.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z73-3312-LAB	468.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z73-3312-LAB	1114.24	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z74-3313-EXAM	177.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z74-3313-EXAM	341.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z75-3314-LAB	920.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z75-3314-LAB	465.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z75-3314-LAB	1574.54	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW02-Z76-3315-OFC	253.36	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z76-3315-OFC	185.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z76-3315-OFC	174.14	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW02-Z77-3316-BIO	164.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z78-3317-LOUN	149.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z78-3317-LOUN	41.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z78-3317-LOUN	306.79	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z79-3318-EXAM	357.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z80-3319-EXAM	224.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z81-3320-EVID	354.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z81-3320-EVID	231.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW02-Z82-3321-VEST	115.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z82-3321-VEST	434.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z82-3321-VEST	174.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z83-3322-PERP	291.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z83-3322-PERP	174.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z84-3323-FREEZ	186.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

IW02-Z84-3323-FREEZ	186.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z85-3324-SETUP	359.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z86-3325-VEST	440.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z86-3325-VEST	120.66	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z87-3326-SETUP	348.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z87-3326-SETUP	348.02	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z87A-4400-STA	342.72	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z87A-4400-STA	167.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z87A-4400-STA	152.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z88-4401-MER	224.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z88-4401-MER	38.32	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z88-4401-MER	186.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z88-4401-MER	141.35	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z88-4401-MER	156.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z88-4401-MER	75.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z88-4401-MER	114.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z88-4401-MER	76.41	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z88-4401-MER	249.63	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z88-4401-MER	135.74	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z88-4401-MER	516.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z88-4401-MER	124.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW14-Z88-4401-MER	164.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW15-Z88-4401-MER	16.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW16-Z88-4401-MER	432.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW17-Z88-4401-MER	30.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW18-Z88-4401-MER	20.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z89-4402-REST	373.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z89-4402-REST	136.04	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z90-4403-DATA	165.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z90-4403-DATA	143.37	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z91-4404-COR	135.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z91-4404-COR	81.34	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z91-4404-COR	265.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z91-4404-COR	202.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z91-4404-COR	329.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z91-4404-COR	89.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW07-Z91-4404-COR	89.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW08-Z91-4404-COR	375.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW09-Z91-4404-COR	1563.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW10-Z91-4404-COR	160.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW11-Z91-4404-COR	45.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW12-Z91-4404-COR	220.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW13-Z91-4404-COR	136.00	IW-TYP-CONS	DELAYED STANDARD	0.371
IW01-Z92-4405-STA	30.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z92-4405-STA	55.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z92-4405-STA	332.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z93-4406-LAB	531.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z93-4406-LAB	372.15	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z94-4407-GUN	90.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371

SURFACE NAME	AREA (SQFT)	CONSTRUCTION NAME	SURFACE TYPE	U-VALUE (BTU/HR-SQFT-F)
IW02-Z94-4407-GUN	531.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z94-4407-GUN	326.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z95-4408-SHOP	79.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z95-4408-SHOP	298.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z95-4408-SHOP	280.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z95-4408-SHOP	50.68	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z96-4409-GSR	276.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z96-4409-GSR	203.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z96-4409-GSR	203.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z96-4409-GSR	219.75	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z97-4410-LAB	1132.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z97-4410-LAB	192.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z97-4410-LAB	852.45	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z98-4411-OFC	148.46	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z98-4411-OFC	24.89	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z98-4411-OFC	89.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z98-4411-OFC	183.03	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z99-4412-OPEN	99.14	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z99-4412-OPEN	219.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z99-4412-OPEN	394.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z99-4412-OPEN	436.79	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z100-4413-BREAK	39.60	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z100-4413-BREAK	3.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z100-4413-BREAK	128.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z100-4413-BREAK	28.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW05-Z100-4413-BREAK	138.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW06-Z100-4413-BREAK	35.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IC01-Z100-4413-BREAK	604.69	C-TYP-CONS	DELAYED ADIABATIC	0.389
IW01-Z101-4414-LAB	820.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z101-4414-LAB	139.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z101-4414-LAB	397.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW04-Z101-4414-LAB	80.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z102-4415-STO	396.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z102-4415-STO	136.67	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z103-4416-RANGE	304.00	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW02-Z103-4416-RANGE	301.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW03-Z103-4416-RANGE	145.33	IW-TYP-CONS	DELAYED ADIABATIC	0.371
IW01-Z36-2250-SUPV	229.33	IW-AIR-CONS	QUICK ADIABATIC	0.001
IW02-Z36-2250-SUPV	165.35	IW-AIR-CONS	QUICK ADIABATIC	0.001
IF01-Z36-2205-SUPV	147.46	IW-AIR-CONS	QUICK ADIABATIC	0.001
IW03-Z44-2213-LAB	470.00	IW-AIR-CONS	QUICK ADIABATIC	0.001
IF01-Z44-2213-LAB	1628.47	IW-AIR-CONS	QUICK ADIABATIC	0.001
IW02-Z64-3303-OFC	208.00	IW-AIR-CONS	QUICK ADIABATIC	0.001
IW04-Z93-4406-LAB	97.33	IW-AIR-CONS	QUICK ADIABATIC	0.001
IW03-Z97-4410-LAB	192.67	IW-AIR-CONS	QUICK ADIABATIC	0.001

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2

IW01-Z01-1100-STA	Z01-1100-STA	Z01-1100-STA
IW02-Z01-1100-STA	Z01-1100-STA	Z01-1100-STA
IW01-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW02-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW03-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW04-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW05-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW06-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW07-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW08-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW09-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW10-Z02-1101-MER	Z02-1101-MER	Z02-1101-MER
IW01-Z03-1102-TELE	Z03-1102-TELE	Z03-1102-TELE
IW01-Z04-1103-STA	Z04-1103-STA	Z04-1103-STA
IW01-Z05-1104-COR	Z05-1104-COR	Z05-1104-COR
IW02-Z05-1104-COR	Z05-1104-COR	Z05-1104-COR
IW03-Z05-1104-COR	Z05-1104-COR	Z05-1104-COR
IW01-Z06-1105-ELEV	Z06-1105-ELEV	Z06-1105-ELEV
IW02-Z06-1105-ELEV	Z06-1105-ELEV	Z06-1105-ELEV
IW01-Z07-1106-SUP	Z07-1106-SUPP	Z07-1106-SUPP
IW02-Z07-1106-SUP	Z07-1106-SUPP	Z07-1106-SUPP
IW01-Z08-1107-STO	Z08-1107-STO	Z08-1107-STO
IW01-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW02-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW03-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW04-Z09-1108-EVID	Z09-1108-EVID	Z09-1108-EVID
IW01-Z10-1109-VIEW	Z10-1109-VIEW	Z10-1109-VIEW
IW01-Z11-1110-OFC	Z11-1110-OFC	Z11-1110-OFC
IW02-Z11-1110-OFC	Z11-1110-OFC	Z11-1110-OFC
IW02-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW04-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW05-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW01-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW03-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW06-Z13-1112-COR	Z13-1112-COR	Z13-1112-COR
IW01-Z14-1113-REST	Z15-1114-STO	Z14-1113-REST
IW01-Z16-1115-VEHI	Z16-1115-VEHI	Z16-1115-VEHI
IW02-Z16-1115-VEHI	Z16-1115-VEHI	Z16-1115-VEHI
IW01-Z17-1116-EVID	Z17-1116-EVID	Z17-1116-EVID
IW02-Z17-1116-EVID	Z17-1116-EVID	Z17-1116-EVID
IW03-Z17-1116-EVID	Z17-1116-EVID	Z17-1116-EVID
IW01-Z18-1117-PARK	Z18-1117-PARK	Z18-1117-PARK
IW03-Z18-1117-PARK	Z18-1117-PARK	Z18-1117-PARK
IC01-Z18-1117-PARK	Z18-1117-PARK	Z18-1117-PARK
IW01-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW02-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW03-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW04-Z19-1118-COR	Z19-1118-COR	Z19-1118-COR
IW01-Z20-1119-LOB	Z20-1119-LOB	Z20-1119-LOB
IW02-Z20-1119-LOB	Z20-1119-LOB	Z20-1119-LOB
IW02-Z21-1120-VIEW	Z21-1120-VIEW	Z21-1120-VIEW
IW01-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW02-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW03-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW04-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW05-Z22-1121-RECE	Z22-1121-RECE	Z22-1121-RECE
IW06-Z22-1121-RECE	Z22-1121-RECE	Z23-1122-SECU
IW01-Z23-1122-SECU	Z23-1122-SECU	Z23-1122-SECU

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW02-Z23-1122-SECU	Z23-1122-SECU	Z23-1122-SECU
IW03-Z23-1122-SECU	Z23-1122-SECU	Z23-1122-SECU
IW01-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW03-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW04-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW05-Z24-1123-LOB	Z24-1123-LOB	Z24-1123-LOB
IW01-Z27-1126-NARC	Z27-1126-NARC	Z27-1126-NARC
IW02-Z27-1126-NARC	Z27-1126-NARC	Z27-1126-NARC
IW02-Z28-1127-JAN	Z28-1127-JAN	Z28-1127-JAN
IW03-Z28-1127-JAN	Z28-1127-JAN	Z28-1127-JAN
IW01-Z29-1128-DRY	Z29-1128-DRY	Z29-1128-DRY
IW02-Z29-1128-DRY	Z29-1128-DRY	Z29-1128-DRY
IW01-Z30-1129-LAB	Z30-1129-LAB	Z30-1129-LAB
IW02-Z30-1129-LAB	Z30-1129-LAB	Z30-1129-LAB
IW02-Z31-2200-STA	Z31-2200-STA	Z31-2200-STA
IW01-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IW02-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IW03-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IC01-Z32-2201-LIB	Z32-2201-LIB	Z32-2201-LIB
IW03-Z33-2202-SUPV	Z33-2202-SUPV	Z32-2201-LIB
IW04-Z33-2202-SUPV	Z33-2202-SUPV	Z33-2202-SUPV
IW05-Z33-2202-SUPV	Z33-2202-SUPV	Z33-2202-SUPV
IW01-Z34-2203-STO	Z34-2203-STO	Z34-2203-STO
IW02-Z34-2203-STO	Z34-2203-STO	Z34-2203-STO
IW01-Z35-2204-WORK	Z35-2204-WORK	Z36-2205-SUPV
IW02-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW04-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW05-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW06-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW07-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW08-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW09-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW10-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW11-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW12-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK

IW13-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IW14-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IC01-Z35-2204-WORK	Z35-2204-WORK	Z35-2204-WORK
IC01-Z36-2205-SUPV	Z36-2205-SUPV	Z36-2205-SUPV
IW01-Z37-2206-DATA	Z37-2206-DATA	Z37-2206-DATA
IW03-Z37-2206-DATA	Z37-2206-DATA	Z37-2206-DATA
IW01-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW02-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW03-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW04-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW05-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW06-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW07-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW08-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW09-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW10-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW11-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW12-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW13-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW14-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW15-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW16-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW17-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW18-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW19-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW20-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW21-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW22-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW23-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW24-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW25-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW26-Z38-2207-COR	Z38-2207-COR	Z38-2207-COR
IW01-Z39-2208-STA	Z39-2208-STA	Z39-2208-STA
IW02-Z39-2208-STA	Z39-2208-STA	Z39-2208-STA
IW03-Z39-2208-STA	Z39-2208-STA	Z39-2208-STA
IW01-Z41-2210-STO	Z41-2210-STO	Z41-2210-STO
IW02-Z41-2210-STO	Z41-2210-STO	Z41-2210-STO
IW03-Z41-2210-STO	Z41-2210-STO	Z41-2210-STO
IW01-Z42-2211-STO	Z42-2211-STO	Z42-2211-STO
IW02-Z42-2211-STO	Z42-2211-STO	Z42-2211-STO
IW01-Z43-2212-EXAM	Z43-2212-EXAM	Z43-2212-EXAM
IW01-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IW02-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IC01-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IW01-Z45-2214-EXAM	Z45-2214-EXAM	Z45-2214-EXAM
IW02-Z45-2214-EXAM	Z45-2214-EXAM	Z45-2214-EXAM
IW03-Z45-2214-EXAM	Z45-2214-EXAM	Z45-2214-EXAM
IW01-Z46-2215-LAB	Z46-2215-LAB	Z46-2215-LAB
IW02-Z46-2215-LAB	Z46-2215-LAB	Z46-2215-LAB
IW01-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IW02-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IW03-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IC01-Z47-2216-OFC	Z47-2216-OFC	Z47-2216-OFC
IW01-Z48-2217-QA/QC	Z48-2217-QA/QC	Z48-2217-QA/QC
IW02-Z48-2217-QA/QC	Z48-2217-QA/QC	Z48-2217-QA/QC
IC01-Z48-2217-QA/QC	Z48-2217-QA/QC	Z48-2217-QA/QC
IW01-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW02-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW03-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW04-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW05-Z49-2218-COR	Z49-2218-COR	Z49-2218-COR
IW02-Z50-2219-CONF	Z50-2219-CONF	Z50-2219-CONF
IW03-Z50-2219-CONF	Z50-2219-CONF	Z50-2219-CONF
IC01-Z50-2219-CONF	Z50-2219-CONF	Z50-2219-CONF
IW01-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW02-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW03-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW04-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW05-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW06-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW07-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IW08-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN
IC01-Z51-2220-LOUN	Z51-2220-LOUN	Z51-2220-LOUN

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z52-2221-OFC	Z52-2221-OFC	Z52-2221-OFC
IW02-Z52-2221-OFC	Z52-2221-OFC	Z52-2221-OFC
IW03-Z52-2221-OFC	Z52-2221-OFC	Z52-2221-OFC
IW01-Z53-2222-REST	Z53-2222-REST	Z53-2222-REST
IW02-Z53-2222-REST	Z53-2222-REST	Z53-2222-REST
IW03-Z53-2222-REST	Z53-2222-REST	Z53-2222-REST
IW01-Z54-2223-STO	Z54-2223-STO	Z54-2223-STO
IW02-Z54-2223-STO	Z54-2223-STO	Z54-2223-STO
IW01-Z55-2224-STO	Z55-2224-STO	Z55-2224-STO
IW02-Z55-2224-STO	Z55-2224-STO	Z55-2224-STO
IW01-Z56-2225-INST	Z56-2225-INST	Z56-2225-INST
IW02-Z57-2226-LAB	Z57-2226-LAB	Z57-2226-LAB
IW02-Z58-2227-INST	Z58-2227-INST	Z58-2227-INST
IW01-Z59-2228-REST	Z59-2228-REST	Z59-2228-REST
IW02-Z59-2228-REST	Z59-2228-REST	Z59-2228-REST
IW01-Z60-2229-REST	Z60-2229-REST	Z60-2229-REST
IW02-Z61-3300-STA	Z61-3300-STA	Z61-3300-STA
IW01-Z61-3300-STA	Z61-3300-STA	Z61-3300-STA
IW03-Z61-3300-STA	Z61-3300-STA	Z61-3300-STA
IW01-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC

IW02-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IW03-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IC01-Z62-3301-OFC	Z62-3301-OFC	Z62-3301-OFC
IC01-Z63-3302-OPEN	Z63-3302-OPEN	Z63-3302-OPEN
IW01-Z64-3303-OFC	Z64-3303-OFC	Z64-3303-OFC
IC01-Z64-3303-OFC	Z64-3303-OFC	Z64-3303-OFC
IW01-Z65-3304-DATA	Z65-3304-DATA	Z65-3304-DATA
IW02-Z65-3304-DATA	Z65-3304-DATA	Z65-3304-DATA
IW03-Z65-3304-DATA	Z65-3304-DATA	Z65-3304-DATA
IW01-Z66-3305-REST	Z66-3305-REST	Z66-3305-REST
IW03-Z66-3305-REST	Z66-3305-REST	Z66-3305-REST
IW01-Z67-3306-REST	Z67-3306-REST	Z67-3306-REST
IW02-Z67-3306-REST	Z67-3306-REST	Z67-3306-REST
IW03-Z67-3306-REST	Z67-3306-REST	Z67-3306-REST
IW01-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW02-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW03-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW04-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW05-Z68-3307-STA	Z68-3307-STA	Z68-3307-STA
IW01-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW02-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW03-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW04-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW05-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW06-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW07-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW08-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW09-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW10-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW11-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW12-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW13-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW14-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW15-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW16-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW17-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW18-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW19-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW20-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW21-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW22-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW23-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW24-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW25-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW26-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW27-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW28-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW29-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW30-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW31-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW32-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW33-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW34-Z69-3308-COR	Z69-3308-COR	Z69-3308-COR
IW01-Z70-3309-OFC	Z70-3309-OFC	Z70-3309-OFC
IW01-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW02-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW03-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW04-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IC01-Z71-3310-PCR	Z71-3310-PCR	Z71-3310-PCR
IW01-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW02-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW03-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW04-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IC01-Z72-3311-LAB	Z72-3311-LAB	Z72-3311-LAB
IW01-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW02-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW03-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW04-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IC01-Z73-3312-LAB	Z73-3312-LAB	Z73-3312-LAB
IW01-Z74-3313-EXAM	Z74-3313-EXAM	Z74-3313-EXAM
IW03-Z74-3313-EXAM	Z74-3313-EXAM	Z74-3313-EXAM
IW01-Z75-3314-LAB	Z75-3314-LAB	Z75-3314-LAB
IW02-Z75-3314-LAB	Z75-3314-LAB	Z75-3314-LAB
IC01-Z75-3314-LAB	Z75-3314-LAB	Z75-3314-LAB
IW02-Z76-3315-OFC	Z76-3315-OFC	Z76-3315-OFC
IW03-Z76-3315-OFC	Z76-3315-OFC	Z76-3315-OFC
IC01-Z76-3315-OFC	Z76-3315-OFC	Z76-3315-OFC
IW02-Z77-3316-BIO	Z77-3316-BIO	Z77-3316-BIO
IW01-Z78-3317-LOUN	Z78-3317-LOUN	Z78-3317-LOUN
IW02-Z78-3317-LOUN	Z78-3317-LOUN	Z78-3317-LOUN
IW03-Z78-3317-LOUN	Z78-3317-LOUN	Z78-3317-LOUN
IW02-Z79-3318-EXAM	Z79-3318-EXAM	Z79-3318-EXAM
IW01-Z80-3319-EXAM	Z80-3319-EXAM	Z80-3319-EXAM
IW01-Z81-3320-EVID	Z81-3320-EVID LOC	Z81-3320-EVID LOC
IW02-Z81-3320-EVID	Z81-3320-EVID LOC	Z81-3320-EVID LOC
IW02-Z82-3321-VEST	Z82-3321-VEST	Z82-3321-VEST
IW03-Z82-3321-VEST	Z82-3321-VEST	Z82-3321-VEST
IW04-Z82-3321-VEST	Z82-3321-VEST	Z82-3321-VEST

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z83-3322-PERP	Z83-3322-PERP	Z83-3322-PERP
IW02-Z83-3322-PERP	Z83-3322-PERP	Z83-3322-PERP
IW01-Z84-3323-FREEZ	Z84-3323-FREEZ	Z84-3323-FREEZ
IW02-Z84-3323-FREEZ	Z84-3323-FREEZ	Z84-3323-FREEZ
IW01-Z85-3324-SETUP	Z85-3324-SETUP	Z85-3324-SETUP

IW01-Z86-3325-VEST	Z86-3325-VEST	Z86-3325-VEST
IW02-Z86-3325-VEST	Z86-3325-VEST	Z86-3325-VEST
IW01-Z87-3326-SETUP	Z87-3326-SETUP	Z87-3326-SETUP
IW02-Z87-3326-SETUP	Z87-3326-SETUP	Z87-3326-SETUP
IW01-Z87A-4400-STA	Z87A-4400-STA	Z87A-4400-STA
IW02-Z87A-4400-STA	Z87A-4400-STA	Z87A-4400-STA
IW03-Z87A-4400-STA	Z87A-4400-STA	Z87A-4400-STA
IW01-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW02-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW03-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW04-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW05-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW06-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW07-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW08-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW09-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW11-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW12-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW13-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW14-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW15-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW16-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW17-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW18-Z88-4401-MER	Z88-4401-MER	Z88-4401-MER
IW01-Z89-4402-REST	Z89-4402-REST	Z89-4402-REST
IW02-Z89-4402-REST	Z89-4402-REST	Z89-4402-REST
IW01-Z90-4403-DATA	Z90-4403-DATA	Z90-4403-DATA
IW02-Z90-4403-DATA	Z90-4403-DATA	Z90-4403-DATA
IW01-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW02-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW03-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW04-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW05-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW06-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW07-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW08-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW09-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW10-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW11-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW12-Z91-4404-COR	Z91-4404-COR	Z91-4404-COR
IW13-Z91-4404-COR	Z91-4404-COR	Z92-4405-STA
IW01-Z92-4405-STA	Z92-4405-STA	Z92-4405-STA
IW02-Z92-4405-STA	Z92-4405-STA	Z92-4405-STA
IW03-Z92-4405-STA	Z92-4405-STA	Z92-4405-STA
IW03-Z93-4406-LAB	Z93-4406-LAB	Z93-4406-LAB
IC01-Z93-4406-LAB	Z93-4406-LAB	Z93-4406-LAB
IW01-Z94-4407-GUN	Z94-4407-GUN	Z94-4407-GUN
IW02-Z94-4407-GUN	Z94-4407-GUN	Z94-4407-GUN
IW03-Z94-4407-GUN	Z94-4407-GUN	Z94-4407-GUN

ADJACENT SPACES

SURFACE NAME	SPACE-1	SPACE-2
IW01-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW02-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW03-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW04-Z95-4408-SHOP	Z95-4408-SHOP	Z95-4408-SHOP
IW01-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IW02-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IW03-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IC01-Z96-4409-GSR	Z96-4409-GSR	Z96-4409-GSR
IW01-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB
IW02-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB
IC01-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB
IW01-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IW02-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IW03-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IC01-Z98-4411-OFC	Z98-4411-OFC	Z98-4411-OFC
IW01-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IW02-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IW03-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IC01-Z99-4412-OPEN	Z99-4412-OPEN	Z99-4412-OPEN
IW01-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW02-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW03-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW04-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW05-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW06-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IC01-Z100-4413-BREAK	Z100-4413-BREAK	Z100-4413-BREAK
IW01-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW02-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW03-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW04-Z101-4414-LAB	Z101-4414-LAB	Z101-4414-LAB
IW01-Z102-4415-STO	Z102-4415-STO	Z102-4415-STO
IW02-Z102-4415-STO	Z102-4415-STO	Z102-4415-STO
IW01-Z103-4416-RANGE	Z103-4416-RANGE	Z103-4416-RANGE
IW02-Z103-4416-RANGE	Z103-4416-RANGE	Z103-4416-RANGE
IW03-Z103-4416-RANGE	Z103-4416-RANGE	Z103-4416-RANGE
IW01-Z36-2250-SUPV	Z36-2205-SUPV	Z36-2205-SUPV
IW02-Z36-2250-SUPV	Z36-2205-SUPV	Z36-2205-SUPV
IF01-Z36-2205-SUPV	Z36-2205-SUPV	Z36-2205-SUPV
IW03-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IF01-Z44-2213-LAB	Z44-2213-LAB	Z44-2213-LAB
IW02-Z64-3303-OFC	Z64-3303-OFC	Z64-3303-OFC
IW04-Z93-4406-LAB	Z93-4406-LAB	Z93-4406-LAB
IW03-Z97-4410-LAB	Z97-4410-LAB	Z97-4410-LAB

NUMBER OF WINDOWS 192

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB AREA (SQFT)	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB U-VALUE (BTU/HR-SQFT-F)
WIN01-W01-Z24-1123-LOB	1.0	59.95	11.99	5.00	0.17	0.17	5.89	0.00	0.908	0.000
WIN02-W01-Z24-1123-LOB	1.0	59.95	11.99	5.00	5.34	0.17	5.89	0.00	0.908	0.000
WIN03-W01-Z24-1123-LOB	1.0	59.95	11.99	5.00	10.51	0.17	5.89	0.00	0.908	0.000
WIN01-W02-Z24-1123-LOB	1.0	59.95	11.99	5.00	0.17	0.17	5.89	0.00	0.908	0.000
WIN02-W02-Z24-1123-LOB	1.0	59.95	11.99	5.00	9.17	0.17	5.89	0.00	0.908	0.000
WIN03-W02-Z24-1123-LOB	1.0	14.84	6.34	2.34	5.67	1.00	3.07	0.00	0.908	0.000
WIN04-W02-Z24-1123-LOB	1.0	13.32	4.00	3.33	5.67	8.17	2.61	0.00	0.908	0.000
WIN01-W03-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W04-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W05-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W06-Z32-2201-LIB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W01-Z33-2202-SUPV	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W02-Z33-2202-SUPV	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W01-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W02-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W03-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W04-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W05-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W06-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W10-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W11-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W12-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W13-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W14-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W15-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W19-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W20-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W21-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W22-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W23-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W24-Z35-2204-WORK	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W27-Z35-2204-WORK	1.0	31.04	6.66	4.66	0.17	4.17	3.96	0.00	0.908	0.000
WIN01-W02-Z36-2205-SUPV	1.0	31.04	6.66	4.66	5.83	4.17	3.96	0.00	0.908	0.000
WIN01-W02-Z39-2208-STA	1.0	25.51	6.66	3.83	2.66	4.17	3.68	0.00	0.908	0.000
WIN02-W02-Z39-2208-STA	1.0	25.51	6.66	3.83	6.66	4.17	3.68	0.00	0.908	0.000
WIN01-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	1.17	4.17	3.68	0.00	0.908	0.000
WIN02-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	5.17	4.17	3.68	0.00	0.908	0.000
WIN03-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	9.17	4.17	3.68	0.00	0.908	0.000
WIN04-W01-Z43-2212-EXAM	1.0	25.51	6.66	3.83	13.17	4.17	3.68	0.00	0.908	0.000
WIN01-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	12.47	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	17.47	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	22.47	4.17	4.02	0.00	0.908	0.000
WIN04-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	27.47	4.17	4.02	0.00	0.908	0.000
WIN05-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	35.13	4.17	4.02	0.00	0.908	0.000
WIN06-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	40.13	4.17	4.02	0.00	0.908	0.000
WIN07-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	45.13	4.17	4.02	0.00	0.908	0.000
WIN08-W01-Z44-2213-LAB	1.0	32.17	6.66	4.83	50.13	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z45-2214-EXAM	1.0	32.17	6.66	4.83	1.33	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z45-2214-EXAM	1.0	32.17	6.66	4.83	6.33	4.17	4.02	0.00	0.908	0.000

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB AREA (SQFT)	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB U-VALUE (BTU/HR-SQFT-F)
WIN01-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	5.17	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	12.83	4.17	4.02	0.00	0.908	0.000
WIN04-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	17.83	4.17	4.02	0.00	0.908	0.000
WIN05-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	22.83	4.17	4.02	0.00	0.908	0.000
WIN06-W01-Z46-2215-LAB	1.0	32.17	6.66	4.83	27.83	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	0.908	0.000
WIN04-W01-Z47-2216-OFC	1.0	32.17	6.66	4.83	16.47	4.17	4.02	0.00	0.908	0.000
WIN01-W04-Z47-2216-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W05-Z47-2216-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W01-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W02-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W03-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W04-Z48-2217-QA/QC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W04-Z49-2218-COR	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W05-Z49-2218-COR	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W01-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W02-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W03-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W04-Z50-2219-CONF	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W01-Z51-2220-LOUN	1.0	49.95	9.99	5.00	0.17	0.67	5.21	0.00	0.908	0.000
WIN02-W01-Z51-2220-LOUN	1.0	49.95	9.99	5.00	5.34	0.67	5.21	0.00	0.908	0.000
WIN03-W01-Z51-2220-LOUN	1.0	49.95	9.99	5.00	10.51	0.67	5.21	0.00	0.908	0.000
WIN01-W02-Z51-2220-LOUN	1.0	44.95	9.99	4.50	0.67	0.67	5.04	0.00	0.908	0.000
WIN02-W02-Z51-2220-LOUN	1.0	44.95	9.99	4.50	5.17	0.67	5.04	0.00	0.908	0.000
WIN03-W02-Z51-2220-LOUN	1.0	44.95	9.99	4.50	9.67	0.67	5.04	0.00	0.908	0.000
WIN01-W03-Z62-3301-OFC	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W04-Z62-3301-OFC	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W01-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W02-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W03-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000

WIN01-W04-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W08-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W09-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W10-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W11-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W12-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W13-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W17-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W18-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W19-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W20-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W21-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W22-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W26-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W27-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W28-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W29-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W30-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W31-Z63-3302-OPEN	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB
WIN01-W02-Z64-3303-OFC	1.0	31.04	6.66	4.66	5.83	4.17	3.96	0.00	0.908	0.000
WIN02-W02-Z64-3303-OFC	1.0	31.04	6.66	4.66	10.83	4.17	3.96	0.00	0.908	0.000
WIN01-W02-Z68-3307-STA	1.0	25.51	6.66	3.83	2.66	4.17	3.68	0.00	0.908	0.000
WIN02-W02-Z68-3307-STA	1.0	25.51	6.66	3.83	6.66	4.17	3.68	0.00	0.908	0.000
WIN01-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	7.88	4.17	3.68	0.00	0.908	0.000
WIN02-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	11.88	4.17	3.68	0.00	0.908	0.000
WIN03-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	15.88	4.17	3.68	0.00	0.908	0.000
WIN04-W01-Z71-3310-PCR	1.0	25.51	6.66	3.83	19.88	4.17	3.68	0.00	0.908	0.000
WIN01-W01-Z72-3311-LAB	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z72-3311-LAB	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z72-3311-LAB	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	6.50	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	11.50	4.17	4.02	0.00	0.908	0.000
WIN04-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	16.50	4.17	4.02	0.00	0.908	0.000
WIN05-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	21.50	4.17	4.02	0.00	0.908	0.000
WIN06-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	27.83	4.17	4.02	0.00	0.908	0.000
WIN07-W01-Z73-3312-LAB	1.0	32.17	6.66	4.83	32.83	4.17	4.02	0.00	0.908	0.000
WIN08-W01-Z73-3312-LAB	1.0	6.66	6.66	1.00	37.83	4.17	2.72	0.00	0.908	0.000
WIN01-W01-Z74-3313-EXAM	1.0	25.51	6.66	3.83	0.00	4.17	3.68	0.00	0.908	0.000
WIN02-W01-Z74-3313-EXAM	1.0	32.17	6.66	4.83	4.00	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	0.908	0.000
WIN04-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	16.47	4.17	4.02	0.00	0.908	0.000
WIN05-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	24.13	4.17	4.02	0.00	0.908	0.000
WIN06-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	29.13	4.17	4.02	0.00	0.908	0.000
WIN07-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	34.13	4.17	4.02	0.00	0.908	0.000
WIN08-W01-Z75-3314-LAB	1.0	32.17	6.66	4.83	39.13	4.17	4.02	0.00	0.908	0.000
WIN01-W04-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W05-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W06-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W07-Z75-3314-LAB	1.0	18.85	6.66	2.83	0.17	4.17	3.34	0.00	0.908	0.000
WIN01-W08-Z75-3314-LAB	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W09-Z75-3314-LAB	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W03-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W04-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W05-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W06-Z76-3315-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W02-Z77-3316-BIO	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W03-Z77-3316-BIO	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W01-Z78-3317-LOUN	1.0	44.95	9.99	4.50	0.67	0.67	5.04	0.00	0.908	0.000
WIN02-W01-Z78-3317-LOUN	1.0	44.95	9.99	4.50	5.17	0.67	5.04	0.00	0.908	0.000
WIN03-W01-Z78-3317-LOUN	1.0	44.95	9.99	4.50	9.67	0.67	5.04	0.00	0.908	0.000
WIN01-W02-Z78-3317-LOUN	1.0	49.95	9.99	5.00	0.17	0.67	5.21	0.00	0.908	0.000
WIN02-W02-Z78-3317-LOUN	1.0	49.95	9.99	5.00	5.34	0.67	5.21	0.00	0.908	0.000
WIN03-W02-Z78-3317-LOUN	1.0	49.95	9.99	5.00	10.51	0.67	5.21	0.00	0.908	0.000
WIN01-W02-Z92-4405-STA	1.0	25.51	6.66	3.83	2.66	4.17	3.68	0.00	0.908	0.000
WIN02-W02-Z92-4405-STA	1.0	25.51	6.66	3.83	6.66	4.17	3.68	0.00	0.908	0.000
WIN01-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	7.88	4.17	3.68	0.00	0.908	0.000
WIN02-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	11.88	4.17	3.68	0.00	0.908	0.000
WIN03-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	15.88	4.17	3.68	0.00	0.908	0.000

(Note: u-values include outside air film)

WINDOW NAME	MULTIPLIER	GLASS AREA (SQFT)	GLASS HEIGHT (FT)	GLASS WIDTH (FT)	LOCATION OF ORIGIN IN SURFACE COORDINATES X (FT)	Y (FT)	FRAME AREA (SQFT)	CURB	FRAME U-VALUE (BTU/HR-SQFT-F)	CURB
WIN04-W01-Z93-4406-LAB	1.0	25.51	6.66	3.83	19.88	4.17	3.68	0.00	0.908	0.000
WIN01-W01-Z95-4408-SHOP	1.0	32.17	6.66	4.83	1.47	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z95-4408-SHOP	1.0	32.17	6.66	4.83	6.47	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z95-4408-SHOP	1.0	32.17	6.66	4.83	11.47	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z96-4409-GSR	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z96-4409-GSR	1.0	32.17	6.66	4.83	7.66	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z96-4409-GSR	1.0	32.17	6.66	4.83	12.66	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	0.908	0.000
WIN02-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	5.17	4.17	4.02	0.00	0.908	0.000
WIN03-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	12.83	4.17	4.02	0.00	0.908	0.000
WIN04-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	17.83	4.17	4.02	0.00	0.908	0.000
WIN05-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	22.83	4.17	4.02	0.00	0.908	0.000
WIN06-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	27.83	4.17	4.02	0.00	0.908	0.000
WIN07-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	35.49	4.17	4.02	0.00	0.908	0.000
WIN08-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	40.49	4.17	4.02	0.00	0.908	0.000
WIN09-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	45.49	4.17	4.02	0.00	0.908	0.000
WIN10-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	50.49	4.17	4.02	0.00	0.908	0.000
WIN11-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	58.15	4.17	4.02	0.00	0.908	0.000

WIN12-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	63.15	4.17	4.02	0.00	0.908	0.000
WIN13-W01-Z97-4410-LAB	1.0	32.17	6.66	4.83	68.15	4.17	4.02	0.00	0.908	0.000
WIN01-W01-Z98-4411-OFC	1.0	32.17	6.66	4.83	0.17	4.17	4.02	0.00	0.908	0.000
WIN01-W04-Z98-4411-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W05-Z98-4411-OFC	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W01-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W02-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W03-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W04-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W08-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W09-Z99-4412-OPEN	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W01-Z100-4413-BREAK	1.0	49.95	9.99	5.00	0.17	0.67	5.21	0.00	0.908	0.000
WIN02-W01-Z100-4413-BREAK	1.0	49.95	9.99	5.00	5.34	0.67	5.21	0.00	0.908	0.000
WIN03-W01-Z100-4413-BREAK	1.0	49.95	9.99	5.00	10.51	0.67	5.21	0.00	0.908	0.000
WIN01-W03-Z100-4413-BREAK	1.0	44.95	9.99	4.50	0.67	0.67	5.04	0.00	0.908	0.000
WIN02-W03-Z100-4413-BREAK	1.0	44.95	9.99	4.50	5.17	0.67	5.04	0.00	0.908	0.000
WIN03-W03-Z100-4413-BREAK	1.0	44.95	9.99	4.50	9.67	0.67	5.04	0.00	0.908	0.000
WIN01-W04-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W05-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W06-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000
WIN01-W07-Z100-4413-BREAK	1.0	16.38	6.66	2.46	0.17	4.17	3.22	0.00	0.908	0.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W01-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W02-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN04-W02-Z24-1123-LOB	0.00	0.45	2	0.246	0.701	0.327	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W03-Z32-2201-LIB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z32-2201-LIB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z32-2201-LIB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W06-Z32-2201-LIB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z33-2202-SUPV	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z33-2202-SUPV	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W06-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W10-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W11-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W12-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W13-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W14-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W15-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W19-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W20-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W21-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W22-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W23-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W24-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W27-Z35-2204-WORK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z36-2205-SUPV	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z39-2208-STA	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z39-2208-STA	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z43-2212-EXAM	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z43-2212-EXAM	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z43-2212-EXAM	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z43-2212-EXAM	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN05-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN06-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN07-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN08-W01-Z44-2213-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z45-2214-EXAM	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z45-2214-EXAM	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z46-2215-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z46-2215-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z46-2215-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z46-2215-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN05-W01-Z46-2215-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN06-W01-Z46-2215-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z47-2216-OFC	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z47-2216-OFC	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z47-2216-OFC	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z47-2216-OFC	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z47-2216-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z47-2216-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W01-Z48-2217-QA/QC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z48-2217-QA/QC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z48-2217-QA/QC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z48-2217-QA/QC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z49-2218-COR	0.00	0.45	2	0.246	0.701	0.327	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN01-W05-Z49-2218-COR	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z50-2219-CONF	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z50-2219-CONF	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z50-2219-CONF	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z50-2219-CONF	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z51-2220-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z51-2220-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z51-2220-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z51-2220-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z51-2220-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W02-Z51-2220-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z62-3301-OFC	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z62-3301-OFC	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W08-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W09-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W10-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W11-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W12-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W13-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W17-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W18-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W19-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W20-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W21-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W22-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W26-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W27-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W28-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W29-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W30-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W31-Z63-3302-OPEN	1.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z64-3303-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z64-3303-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z68-3307-STA	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z68-3307-STA	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z71-3310-PCR	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z71-3310-PCR	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z71-3310-PCR	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z71-3310-PCR	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z72-3311-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z72-3311-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z72-3311-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN05-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN06-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN07-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN08-W01-Z73-3312-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z74-3313-EXAM	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z74-3313-EXAM	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN05-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN06-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN07-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN08-W01-Z75-3314-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z75-3314-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z75-3314-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W06-Z75-3314-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W07-Z75-3314-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W08-Z75-3314-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W09-Z75-3314-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z76-3315-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z76-3315-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z76-3315-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W06-Z76-3315-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z77-3316-BIO	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z77-3316-BIO	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z78-3317-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z78-3317-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z78-3317-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z78-3317-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z78-3317-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W02-Z78-3317-LOUN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z92-4405-STA	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W02-Z92-4405-STA	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z93-4406-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z93-4406-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z93-4406-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z93-4406-LAB	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z95-4408-SHOP	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z95-4408-SHOP	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z95-4408-SHOP	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z96-4409-GSR	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z96-4409-GSR	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z96-4409-GSR	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN04-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN05-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000

WIN06-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN07-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN08-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN09-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000

WINDOW NAME	SETBACK (FT)	GLASS SHADING COEFF	NUMBER OF PANES	CENTER-OF-GLASS U-VALUE (BTU/HR-SQFT-F)	GLASS VISIBLE TRANS	GLASS SOLAR TRANS	SURFACE TO ROUGH OPEN AREA RATIO
WIN10-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN11-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN12-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN13-W01-Z97-4410-LAB	0.50	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z98-4411-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z98-4411-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z98-4411-OFC	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z99-4412-OPEN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W02-Z99-4412-OPEN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z99-4412-OPEN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z99-4412-OPEN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W08-Z99-4412-OPEN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W09-Z99-4412-OPEN	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W01-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W01-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W01-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W03-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN02-W03-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN03-W03-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W04-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W05-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W06-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000
WIN01-W07-Z100-4413-BREAK	0.00	0.45	2	0.246	0.701	0.327	1.000

NUMBER OF CONSTRUCTIONS 15 DELAYED 11 QUICK 4

CONSTRUCTION NAME	U-VALUE (BTU/HR-SQFT-F)	SURFACE ABSORPTANCE	SURFACE ROUGHNESS INDEX	SURFACE TYPE	NUMBER OF RESPONSE FACTORS
W-TYP-CONS	0.054	0.55	3	DELAYED	26
R-TYP-CONS	0.034	0.55	3	DELAYED	5
UW-TYP-CONS	0.031	0.70	3	DELAYED	20
IW-TYP-CONS	0.371	0.70	3	DELAYED	4
C-TYP-CONS	0.389	0.70	3	DELAYED	4
W-PLENUM-CONS	0.091	0.70	3	DELAYED	24
GARAGE-IW-CONS	0.054	0.70	3	DELAYED	26
GARAGE-CEIL-CONS	0.066	0.70	3	DELAYED	5
UW1-TYP-CONS	0.001	0.70	3	DELAYED	20
STA-W-TYP-CONS	0.118	0.70	3	DELAYED	20
Insul. OH Door	0.160	0.70	3	QUICK	0
TYP-Door	0.071	0.70	3	QUICK	0
W-GAR-BSLN-CONS	0.124	0.70	3	DELAYED	4
Dbl Lyr Unins Mtl Door	0.820	0.70	3	QUICK	0
IW-AIR-CONS	0.001	0.70	3	QUICK	0

REPORT- PS-D Circulation Loop Loads WEATHER FILE- Rochester NY TMY2

MON		COIL LOAD (MBTU)	PIPE GAIN (MBTU)	NET LOAD (MBTU)	OVERLOAD (MBTU)		Number of hours within each PART LOAD range 00	10	20	30	40	50	60	70	80	90	100	TOTAL RUN HOURS
							10	20	30	40	50	60	70	80	90	100	+	
Primary HW Loop																		
	SUM	-2811.8	0.0	-2800.1	0.0	HEAT	5740	2496	226	0	0	0	0	0	0	0	0	8462
	PEAK	-1393.0	0.0	-1371.8	0.0	FLOW	7164	1592	4	0	0	0	0	0	0	0	0	8760
	MON/DAY	12/17	0/ 0	12/17	0/ 0													
Primary CHW Loop																		
	SUM	1716.6	0.0	1750.7	0.0	COOL	1511	1034	411	336	380	55	12	2	0	0	0	3741
	PEAK	1864.8	0.0	1922.2	0.0	FLOW	0	0	0	0	0	3630	99	12	0	0	0	3741
	MON/DAY	8/27	0/ 0	8/27	0/ 0													
DHW Loop																		
	SUM	-28.1	0.0	-24.2	-2.5	HEAT	60	0	0	31	31	0	31	28	305	1216	0	1702
	PEAK	-22.0	0.0	-15.6	-4.2	FLOW	0	0	0	0	0	0	0	0	0	7300	1460	8760
	MON/DAY	3/ 1	0/ 0	6/10	3/24													

Hours overloaded during heating: 968

Monroe County Public Safety Lab LABELLA Associates DOE-2.2-44e4 1/10/2010 15:17:58 BDL RUN 1
Design Building SAIC/Energy Systems Group
REPORT- PS-F Energy End-Use Summary for EM 2 - ELEVATOR WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
KWH	0.	0.	9913.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9913.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	2/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
FEB													
KWH	0.	0.	8959.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8959.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAR													
KWH	0.	0.	10082.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10082.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
APR													
KWH	0.	0.	9708.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9708.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	2/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAY													
KWH	0.	0.	10082.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10082.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
JUN													
KWH	0.	0.	9708.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9708.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
JUL													
KWH	0.	0.	9913.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9913.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	2/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AUG													
KWH	0.	0.	10250.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10250.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SEP													
KWH	0.	0.	9371.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9371.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	4/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	4/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
OCT													
KWH	0.	0.	10082.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10082.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NOV													
KWH	0.	0.	9539.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9539.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	1/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
DEC													
KWH	0.	0.	9745.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9745.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
DAY/HR	0/ 0	0/ 0	3/ 8	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	3/ 8
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
KWH	0.	0.	117350.	0.	0.	0.	0.	0.	0.	0.	0.	0.	117350.
MAX KW	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.560
MON/DY	0/ 0	0/ 0	1/ 2	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2
PEAK ENDUSE	0.000	0.000	28.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PEAK PCT	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

YEARLY TRANSFORMER LOSSES = 0.0 KWH

REPORT- PS-F Energy End-Use Summary for EM 3 - EXT.LITE WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1604.	1604.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
FEB													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1449.	1449.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
MAR													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1176.	1176.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
APR													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1139.	1139.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
MAY													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1176.	1176.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
JUN													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	828.	828.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
JUL													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	856.	856.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
AUG													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	856.	856.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
SEP													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1139.	1139.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
OCT													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1176.	1176.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
NOV													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1552.	1552.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
DEC													
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1604.	1604.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
DAY/HR	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
KWH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	14556.	14556.
MAX KW	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	3.450
MON/DY	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/ 1	1/ 1
PEAK ENDUSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.450	
PEAK PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	

YEARLY TRANSFORMER LOSSES = 0.0 KWH

REPORT- PS-F Energy End-Use Summary for EM1 WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
KWH	8246.	1447.	26580.	255.	670.	0.	1543.	23409.	19344.	0.	0.	1604.	83098.
MAX KW	29.088	5.061	67.543	0.913	2.162	0.000	2.672	52.334	26.000	0.000	0.000	3.450	188.193
DAY/HR	2/ 8	2/11	2/ 8	10/ 7	30/18	0/ 0	1/ 9	2/ 7	1/ 1	0/ 0	0/ 0	1/ 1	29/ 8
PEAK ENDUSE	29.088	5.001	67.543	0.556	2.043	0.000	2.606	51.906	26.000	0.000	0.000	3.450	
PEAK PCT	15.5	2.7	35.9	0.3	1.1	0.0	1.4	27.6	13.8	0.0	0.0	1.8	
FEB													
KWH	7246.	1310.	24027.	234.	671.	0.	1403.	21173.	17472.	0.	0.	1449.	74985.
MAX KW	29.088	5.061	67.543	0.912	12.531	0.000	4.345	52.102	26.000	0.000	0.000	3.450	188.323
DAY/HR	1/ 8	1/11	1/ 8	26/ 6	2/ 9	0/ 0	2/ 9	20/ 9	1/ 1	0/ 0	0/ 0	1/ 1	12/ 8
PEAK ENDUSE	29.029	5.001	67.543	0.703	2.015	0.000	2.632	51.950	26.000	0.000	0.000	3.450	
PEAK PCT	15.4	2.7	35.9	0.4	1.1	0.0	1.4	27.6	13.8	0.0	0.0	1.8	
MAR													
KWH	8168.	1515.	27176.	218.	1001.	0.	1447.	23089.	19344.	0.	0.	1176.	83134.
MAX KW	29.088	5.061	67.543	0.885	30.851	0.000	4.416	52.082	26.000	0.000	0.000	3.450	201.100
DAY/HR	12/ 8	1/11	1/ 8	27/ 8	30/18	0/ 0	13/ 7	5/ 7	1/ 1	0/ 0	0/ 0	1/ 1	30/18
PEAK ENDUSE	23.765	5.001	58.975	0.323	30.851	0.000	4.289	51.895	26.000	0.000	0.000	0.000	
PEAK PCT	11.8	2.5	29.3	0.2	15.3	0.0	2.1	25.8	12.9	0.0	0.0	0.0	
APR													
KWH	7566.	1444.	26126.	158.	6560.	0.	2018.	20534.	18720.	0.	0.	1139.	84265.
MAX KW	29.013	5.061	67.543	0.848	106.745	0.000	6.185	52.138	26.000	0.000	0.000	3.450	273.497
DAY/HR	2/ 8	2/11	2/ 8	9/ 7	4/17	0/ 0	4/13	30/16	1/ 2	0/ 0	0/ 0	1/ 2	4/10
PEAK ENDUSE	23.209	5.001	60.656	0.345	101.653	0.000	4.673	51.958	26.000	0.000	0.000	0.000	
PEAK PCT	8.5	1.8	22.2	0.1	37.2	0.0	1.7	19.0	9.5	0.0	0.0	0.0	
MAY													
KWH	7775.	1511.	27176.	139.	13241.	0.	2464.	20565.	19344.	0.	0.	1176.	93391.
MAX KW	27.020	5.061	67.543	0.756	120.048	0.000	6.795	52.711	26.000	0.000	0.000	3.450	296.920
DAY/HR	3/11	1/11	1/ 8	7/ 7	9/14	0/ 0	8/20	8/18	1/ 2	0/ 0	0/ 0	1/ 2	9/14
PEAK ENDUSE	25.681	5.001	61.831	0.294	120.048	0.000	5.987	52.078	26.000	0.000	0.000	0.000	
PEAK PCT	8.6	1.7	20.8	0.1	40.4	0.0	2.0	17.5	8.8	0.0	0.0	0.0	
JUN													
KWH	7400.	1448.	26126.	111.	25294.	0.	3379.	19912.	18720.	0.	0.	828.	103217.
MAX KW	27.020	5.061	67.543	0.576	122.276	0.000	6.917	53.225	26.000	0.000	0.000	3.450	297.955
DAY/HR	15/11	1/11	1/ 8	4/ 7	18/17	0/ 0	23/20	12/18	1/ 2	0/ 0	0/ 0	1/ 2	11/14
PEAK ENDUSE	26.036	5.001	61.831	0.307	120.574	0.000	6.003	52.204	26.000	0.000	0.000	0.000	
PEAK PCT	8.7	1.7	20.8	0.1	40.5	0.0	2.0	17.5	8.7	0.0	0.0	0.0	
JUL													
KWH	7451.	1447.	26580.	109.	34377.	0.	3868.	20030.	19344.	0.	0.	856.	114061.
MAX KW	28.184	5.061	67.543	0.503	135.849	0.000	6.934	53.280	26.000	0.000	0.000	3.450	310.811
DAY/HR	31/ 8	2/11	2/ 8	23/ 7	9/ 7	0/ 0	5/ 6	30/18	1/ 2	0/ 0	0/ 0	1/ 2	20/12
PEAK ENDUSE	27.295	5.061	60.656	0.312	132.833	0.000	6.547	52.107	26.000	0.000	0.000	0.000	
PEAK PCT	8.8	1.6	19.5	0.1	42.7	0.0	2.1	16.8	8.4	0.0	0.0	0.0	
AUG													
KWH	8109.	1575.	27771.	120.	36202.	0.	3907.	20784.	19344.	0.	0.	856.	118668.
MAX KW	28.479	5.061	67.543	0.490	136.858	0.000	7.017	52.774	26.000	0.000	0.000	3.450	308.055
DAY/HR	22/ 8	1/11	1/ 8	6/ 7	27/ 7	0/ 0	6/ 6	31/18	1/ 2	0/ 0	0/ 0	1/ 2	28/ 8
PEAK ENDUSE	25.724	5.001	67.543	0.342	124.881	0.000	6.538	52.026	26.000	0.000	0.000	0.000	
PEAK PCT	8.4	1.6	21.9	0.1	40.5	0.0	2.1	16.9	8.4	0.0	0.0	0.0	
SEP													
KWH	7069.	1320.	24935.	114.	18046.	0.	2909.	18672.	18720.	0.	0.	1139.	92923.
MAX KW	29.088	5.061	67.543	0.782	125.864	0.000	6.983	54.792	26.000	0.000	0.000	3.450	308.339
DAY/HR	28/ 8	4/11	4/ 8	17/ 7	6/ 7	0/ 0	2/11	4/18	1/ 2	0/ 0	0/ 0	1/ 2	6/ 8
PEAK ENDUSE	29.013	5.001	67.543	0.347	121.848	0.000	6.532	52.053	26.000	0.000	0.000	0.000	
PEAK PCT	9.4	1.6	21.9	0.1	39.5	0.0	2.1	16.9	8.4	0.0	0.0	0.0	
OCT													
KWH	8301.	1511.	27176.	156.	8101.	0.	1990.	20771.	19344.	0.	0.	1176.	88527.
MAX KW	29.156	5.061	67.543	0.838	97.907	0.000	6.224	52.212	26.000	0.000	0.000	3.450	271.355
DAY/HR	25/11	1/11	1/ 8	15/ 7	16/17	0/ 0	4/19	2/18	1/ 2	0/ 0	0/ 0	1/ 2	5/ 8
PEAK ENDUSE	29.088	5.001	67.543	0.353	86.701	0.000	4.684	51.984	26.000	0.000	0.000	0.000	
PEAK PCT	10.7	1.8	24.9	0.1	32.0	0.0	1.7	19.2	9.6	0.0	0.0	0.0	
NOV													
KWH	7874.	1380.	25530.	194.	1002.	0.	1395.	21375.	18720.	0.	0.	1552.	79023.
MAX KW	29.088	5.061	67.543	0.865	29.555	0.000	4.337	51.985	26.000	0.000	0.000	3.450	205.070
DAY/HR	1/ 8	1/11	1/ 8	20/ 7	9/15	0/ 0	13/14	19/ 7	1/ 2	0/ 0	0/ 0	1/ 2	9/14
PEAK ENDUSE	26.254	5.001	61.831	0.343	29.387	0.000	4.298	51.956	26.000	0.000	0.000	0.000	
PEAK PCT	12.8	2.4	30.2	0.2	14.3	0.0	2.1	25.3	12.7	0.0	0.0	0.0	
DEC													
KWH	8037.	1386.	25984.	231.	1432.	0.	1563.	22828.	19344.	0.	0.	1604.	82409.
MAX KW	29.088	5.061	67.543	0.893	58.191	0.000	4.681	52.194	26.000	0.000	0.000	3.450	234.200
DAY/HR	3/18	3/11	3/ 8	18/ 9	5/11	0/ 0	5/11	17/ 7	1/ 1	0/ 0	0/ 0	1/ 1	5/11
PEAK ENDUSE	27.367	5.061	60.656	0.367	58.191	0.000	4.681	51.876	26.000	0.000	0.000	0.000	
PEAK PCT	11.7	2.2	25.9	0.2	24.8	0.0	2.0	22.2	11.1	0.0	0.0	0.0	
KWH	93243.	17292.	315187.	2040.	146598.	0.	27885.	253142.	227760.	0.	0.	14556.	1097701.
MAX KW	29.156	5.061	67.543	0.913	136.858	0.000	7.017	54.792	26.000	0.000	0.000	3.450	310.811
MON/DY	10/25	1/ 2	1/ 2	1/10	8/27	0/ 0	8/ 6	9/ 4	1/ 1	0/ 0	0/ 0	1/ 1	7/20
PEAK ENDUSE	27.295	5.061	60.656	0.312	132.833	0.000	6.547	52.107	26.000	0.000	0.000	0.000	
PEAK PCT	8.8	1.6	19.5	0.1	42.7	0.0	2.1	16.8	8.4	0.0	0.0	0.0	

YEARLY TRANSFORMER LOSSES = 0.0 KWH

REPORT- PS-F Energy End-Use Summary for FM1 WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
JAN													
THERM	0.	0.	0.	3983.	0.	0.	0.	0.	0.	0.	33.	0.	4016.
MAX THERM/HR	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	16.3
DAY/HR	0/ 0	0/ 0	0/ 0	2/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/13	0/ 0	2/ 7
PEAK ENDUSE	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
FEB													
THERM	0.	0.	0.	3655.	0.	0.	0.	0.	0.	0.	31.	0.	3686.
MAX THERM/HR	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	15.9
DAY/HR	0/ 0	0/ 0	0/ 0	5/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/14	0/ 0	5/ 7
PEAK ENDUSE	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
MAR													
THERM	0.	0.	0.	3460.	0.	0.	0.	0.	0.	0.	34.	0.	3494.
MAX THERM/HR	0.0	0.0	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	15.9
DAY/HR	0/ 0	0/ 0	0/ 0	5/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/13	0/ 0	5/ 7
PEAK ENDUSE	0.0	0.0	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
APR													
THERM	0.	0.	0.	2561.	0.	0.	0.	0.	0.	0.	32.	0.	2594.
MAX THERM/HR	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	15.8
DAY/HR	0/ 0	0/ 0	0/ 0	9/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/12	0/ 0	9/ 7
PEAK ENDUSE	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
MAY													
THERM	0.	0.	0.	2272.	0.	0.	0.	0.	0.	0.	31.	0.	2303.
MAX THERM/HR	0.0	0.0	0.0	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	14.2
DAY/HR	0/ 0	0/ 0	0/ 0	7/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/12	0/ 0	7/ 7
PEAK ENDUSE	0.0	0.0	0.0	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
JUN													
THERM	0.	0.	0.	1788.	0.	0.	0.	0.	0.	0.	28.	0.	1815.
MAX THERM/HR	0.0	0.0	0.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.8
DAY/HR	0/ 0	0/ 0	0/ 0	4/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/14	0/ 0	4/ 7
PEAK ENDUSE	0.0	0.0	0.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
JUL													
THERM	0.	0.	0.	1755.	0.	0.	0.	0.	0.	0.	28.	0.	1783.
MAX THERM/HR	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.0
DAY/HR	0/ 0	0/ 0	0/ 0	23/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	13/11	0/ 0	23/ 7
PEAK ENDUSE	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
AUG													
THERM	0.	0.	0.	1930.	0.	0.	0.	0.	0.	0.	27.	0.	1957.
MAX THERM/HR	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	8.8
DAY/HR	0/ 0	0/ 0	0/ 0	6/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	21/11	0/ 0	6/ 7
PEAK ENDUSE	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
SEP													
THERM	0.	0.	0.	1847.	0.	0.	0.	0.	0.	0.	26.	0.	1873.
MAX THERM/HR	0.0	0.0	0.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	11.5
DAY/HR	0/ 0	0/ 0	0/ 0	17/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	30/14	0/ 0	17/ 7
PEAK ENDUSE	0.0	0.0	0.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
OCT													
THERM	0.	0.	0.	2551.	0.	0.	0.	0.	0.	0.	28.	0.	2579.
MAX THERM/HR	0.0	0.0	0.0	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	15.0
DAY/HR	0/ 0	0/ 0	0/ 0	29/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	28/12	0/ 0	29/ 7
PEAK ENDUSE	0.0	0.0	0.0	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
NOV													
THERM	0.	0.	0.	3058.	0.	0.	0.	0.	0.	0.	28.	0.	3086.
MAX THERM/HR	0.0	0.0	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	15.9
DAY/HR	0/ 0	0/ 0	0/ 0	19/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	19/ 7
PEAK ENDUSE	0.0	0.0	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
DEC													
THERM	0.	0.	0.	3574.	0.	0.	0.	0.	0.	0.	31.	0.	3605.
MAX THERM/HR	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	15.8
DAY/HR	0/ 0	0/ 0	0/ 0	31/ 7	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	1/11	0/ 0	31/ 7
PEAK ENDUSE	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	
THERM	0.	0.	0.	32435.	0.	0.	0.	0.	0.	0.	356.	0.	32791.
MAX THERM/HR	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	16.3
MON/DY	0/ 0	0/ 0	0/ 0	1/ 2	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	2/ 1	0/ 0	1/ 2
PEAK ENDUSE	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PEAK PCT	0.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
MBTU	318.2	59.0	1075.7	7.0	500.3	0.0	95.2	864.0	777.3	0.0	0.0	49.7	3746.4
FM1 NATURAL-GAS													
MBTU	0.0	0.0	0.0	3243.5	0.0	0.0	0.0	0.0	0.0	0.0	35.6	0.0	3279.1
MBTU	318.2	59.0	1075.7	3250.5	500.3	0.0	95.2	864.0	777.3	0.0	35.6	49.7	7025.6

TOTAL SITE ENERGY 7025.56 MBTU 161.7 KBTU/SQFT-YR GROSS-AREA 161.7 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 14518.41 MBTU 334.1 KBTU/SQFT-YR GROSS-AREA 334.1 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.2
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

REPORT- BEPU Building Utility Performance WEATHER FILE- Rochester NY TMY2

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	93243.	17292.	315187.	2040.	146598.	0.	27885.	253142.	227760.	0.	0.	14556.	1097701.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	32435.	0.	0.	0.	0.	0.	0.	356.	0.	32791.

TOTAL ELECTRICITY 1097701. KWH 25.258 KWH /SQFT-YR GROSS-AREA 25.258 KWH /SQFT-YR NET-AREA
TOTAL NATURAL-GAS 32791. THERM 0.755 THERM /SQFT-YR GROSS-AREA 0.755 THERM /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.2
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

UTILITY-RATE	RESOURCE	METERS	METERED ENERGY UNITS/YR	TOTAL CHARGE ($)	VIRTUAL RATE ($/UNIT)	RATE USED ALL YEAR?
RGE_SC-7_Elec	ELECTRICITY	EM1	1097701. KWH	109770.	0.1000	YES
RGE_SC-1_Gas	NATURAL-GAS	FM1	32791. THERM	37710.	1.1500	YES
				147480.		

ENERGY COST/GROSS BLDG AREA: 3.39
ENERGY COST/NET BLDG AREA: 3.39

REPORT- ES-E Summary of Utility-Rate: RGE_SC-7_Elec WEATHER FILE- Rochester NY TMY2

RESOURCE: ELECTRICITY DEMAND-INTERVAL 15 3413. BTU/KWH
BILLING-DAY: 31 RATE-LIMITATION: 0.0000
METERS: EM1
POWER-FACTOR: 0.80 EXCESS-KVAR-FRAC: 0.75 EXCESS-KVAR-CHG: 0.0000

RATE-QUALIFICATIONS		BLOCK-CHARGES	DEMAND-RATCHETS	MIN-MON-RATCHETS
MIN-ENERGY:	0.0			
MAX-ENERGY:	0.0			
MIN-DEMAND:	0.0			
MAX-DEMAND:	0.0			
QUALIFY-RATE:	ALL YEAR			
USE-MIN-QUAL:	NO			

MONTH	METERED ENERGY KWH	BILLING ENERGY KWH	METERED DEMAND KW	BILLING DEMAND KW	ENERGY CHARGE ($)	DEMAND CHARGE ($)	ENERGY CST ADJ ($)	TAXES ($)	SURCHRG ($)	FIXED CHARGE ($)	MINIMUM CHARGE ($)	VIRTUAL RATE ($/UNIT)	TOTAL CHARGE ($)
JAN	83098	83098	188.6	188.6	8310	0	0	0	0	0	0	0.1000	8310
FEB	74985	74985	188.5	188.5	7498	0	0	0	0	0	0	0.1000	7498
MAR	83134	83134	201.2	201.2	8313	0	0	0	0	0	0	0.1000	8313
APR	84265	84265	273.5	273.5	8426	0	0	0	0	0	0	0.1000	8426
MAY	93391	93391	297.0	297.0	9339	0	0	0	0	0	0	0.1000	9339
JUN	103217	103217	298.0	298.0	10322	0	0	0	0	0	0	0.1000	10322
JUL	114061	114061	310.9	310.9	11406	0	0	0	0	0	0	0.1000	11406
AUG	118668	118668	308.1	308.1	11867	0	0	0	0	0	0	0.1000	11867
SEP	92923	92923	308.4	308.4	9292	0	0	0	0	0	0	0.1000	9292
OCT	88527	88527	271.4	271.4	8853	0	0	0	0	0	0	0.1000	8853
NOV	79023	79023	205.2	205.2	7902	0	0	0	0	0	0	0.1000	7902
DEC	82409	82409	234.2	234.2	8241	0	0	0	0	0	0	0.1000	8241
TOTAL	1097701	1097701	310.9		109770	0	0	0	0	0		0.1000	109770

RESOURCE: NATURAL-GAS DEMAND-INTERVAL 60 100000. BTU/THERM
BILLING-DAY: 31 RATE-LIMITATION: 0.0000
METERS: FM1

RATE-QUALIFICATIONS		BLOCK-CHARGES	DEMAND-RATCHETS	MIN-MON-RATCHETS
MIN-ENERGY:	0.0			
MAX-ENERGY:	0.0			
MIN-DEMAND:	0.0			
MAX-DEMAND:	0.0			
QUALIFY-RATE:	ALL YEAR			
USE-MIN-QUAL:	NO			

MONTH	METERED ENERGY THERM	BILLING ENERGY THERM	METERED DEMAND THERM/HR	BILLING DEMAND THERM/HR	ENERGY CHARGE ($)	DEMAND CHARGE ($)	ENERGY CST ADJ ($)	TAXES ($)	SURCHRG ($)	FIXED CHARGE ($)	MINIMUM CHARGE ($)	VIRTUAL RATE ($/UNIT)	TOTAL CHARGE ($)
JAN	4016	4016	16.3	16.3	4618	0	0	0	0	0	0	1.1500	4618
FEB	3686	3686	15.9	15.9	4239	0	0	0	0	0	0	1.1500	4239
MAR	3494	3494	15.9	15.9	4019	0	0	0	0	0	0	1.1500	4019
APR	2594	2594	15.8	15.8	2983	0	0	0	0	0	0	1.1500	2983
MAY	2303	2303	14.2	14.2	2649	0	0	0	0	0	0	1.1500	2649
JUN	1815	1815	9.8	9.8	2088	0	0	0	0	0	0	1.1500	2088
JUL	1783	1783	9.0	9.0	2050	0	0	0	0	0	0	1.1500	2050
AUG	1957	1957	8.8	8.8	2251	0	0	0	0	0	0	1.1500	2251
SEP	1873	1873	11.5	11.5	2154	0	0	0	0	0	0	1.1500	2154
OCT	2579	2579	15.0	15.0	2965	0	0	0	0	0	0	1.1500	2965
NOV	3086	3086	15.9	15.9	3549	0	0	0	0	0	0	1.1500	3549
DEC	3605	3605	15.8	15.8	4146	0	0	0	0	0	0	1.1500	4146
TOTAL	32791	32791	16.3		37710	0	0	0	0	0		1.1500	37710

REPORT- SV-A System Design Parameters for AHU-2 WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
VAVS	1.000	29119.5	53.	1.000	1872.000	0.711	-1485.000	0.000	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	40000.	1.00	24.160	1.87	0.0	0.00	0.00	DRAW-THRU	SPEED	1.10	0.40

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z03-1102-TELE_C	100.	0.	0.000	0.500	100.	0.00	0.00	2.08	-4.32	-1.51	1.
Z05-1104-COR_C	100.	0.	0.000	0.500	100.	0.00	0.00	2.08	-4.32	-1.51	1.
Z06-1105-ELEV_C	5.	0.	0.000	0.500	5.	0.00	0.00	0.11	-0.22	-0.08	1.
Z07-1106-SUPP_C	100.	0.	0.000	0.500	100.	0.00	0.00	2.08	-4.32	-1.51	1.
Z08-1107-STO_C	150.	150.	0.118	0.500	150.	0.00	0.00	3.13	-6.48	-2.26	1.
Z09-1108-EVID_C	150.	100.	0.079	0.500	150.	0.00	0.00	3.13	-6.48	-2.26	1.
Z10-1109-VIEW_C	190.	190.	0.150	0.320	190.	0.00	0.00	3.96	-8.21	-2.86	1.
Z11-1110-OFC_C	160.	160.	0.126	0.310	160.	0.00	0.00	3.33	-6.91	-2.41	1.
Z12-1111-LAB_C	1495.	1395.	1.101	0.170	1495.	0.00	0.00	31.16	-64.58	-22.50	1.
Z13-1112-COR_C	745.	0.	0.000	1.000	745.	0.00	0.00	15.53	-32.18	-11.21	1.
Z14-1113-REST_C	50.	0.	0.000	0.500	50.	0.00	0.00	1.04	-2.16	-0.75	1.
Z15-1114-STO_C	250.	250.	0.197	1.000	250.	0.00	0.00	5.21	-10.80	-3.76	1.
Z16-1115-VEHI_C	500.	500.	0.395	0.350	500.	0.00	0.00	10.42	-21.60	-7.53	1.
Z17-1116-EVID_C	2185.	2185.	1.724	0.520	2185.	0.00	0.00	45.54	-94.39	-32.88	1.
Z20-1119-LOB_C	275.	275.	0.217	0.510	275.	0.00	0.00	5.73	-11.88	-4.14	1.
Z21-1120-VIEW_C	150.	150.	0.118	0.500	150.	0.00	0.00	3.13	-6.48	-2.26	1.
Z22-1121-RECE_C	765.	765.	6.036	0.150	765.	0.00	0.00	15.95	-33.05	-11.51	1.
Z25-1124-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z27-1126-NARC_C	555.	555.	0.438	0.320	555.	0.00	0.00	11.57	-23.98	-8.35	1.
Z28-1127-JAN_C	150.	150.	0.118	0.500	150.	0.00	0.00	3.13	-6.48	-2.26	1.
Z29-1128-DRY_C	340.	340.	0.268	0.310	340.	0.00	0.00	7.09	-14.69	-5.12	1.
Z30-1129-LAB_C	535.	535.	0.422	0.320	535.	0.00	0.00	11.15	-23.11	-8.05	1.
Z37-2206-DATA_C	4.	0.	0.000	1.000	4.	0.00	0.00	0.08	-0.16	-0.06	1.
Z38-2207-COR_C	900.	0.	0.000	0.840	900.	0.00	0.00	18.76	-38.88	-13.55	1.
Z40-2209-VEST_C	150.	150.	0.118	0.500	150.	0.00	0.00	3.13	-6.48	-2.26	1.
Z41-2210-STO_C	200.	200.	0.158	0.500	200.	0.00	0.00	4.17	-8.64	-3.01	1.
Z42-2211-STO_C	195.	195.	0.154	0.500	195.	0.00	0.00	4.06	-8.42	-2.93	1.
Z43-2212-EXAM_C	685.	685.	0.540	1.000	685.	0.00	0.00	14.28	-29.59	-10.31	1.
Z44-2213-LAB_C	1820.	1820.	1.436	0.570	1820.	0.00	0.00	37.93	-78.62	-27.39	1.
Z45-2214-EXAM_C	425.	425.	0.335	0.440	425.	0.00	0.00	8.86	-18.36	-6.40	1.
Z46-2215-LAB_C	1350.	1350.	1.065	0.340	1350.	0.00	0.00	28.14	-58.32	-20.32	1.
Z53-2222-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z54-2223-STO_C	10.	0.	0.000	0.500	10.	0.00	0.00	0.22	-0.45	-0.16	1.
Z55-2224-STO_C	255.	255.	0.201	0.500	255.	0.00	0.00	5.32	-11.02	-3.84	1.
Z56-2225-INST_C	585.	585.	0.462	0.900	585.	0.00	0.00	12.19	-25.27	-8.80	1.
Z57-2226-LAB_C	685.	685.	0.540	0.250	685.	0.00	0.00	14.28	-29.59	-10.31	1.
Z58-2227-INST_C	1485.	1485.	1.172	0.270	1485.	0.00	0.00	30.95	-64.15	-22.35	1.
Z59-2228-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z60-2229-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z65-3304-DATA_C	5.	0.	0.000	0.500	5.	0.00	0.00	0.11	-0.23	-0.08	1.
Z66-3305-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z67-3306-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z69-3308-COR_C	610.	85.	0.067	0.760	610.	0.00	0.00	12.71	-26.35	-9.18	1.
Z70-3309-OFC_C	100.	0.	0.000	0.500	100.	0.00	0.00	2.08	-4.32	-1.51	1.
Z71-3310-PCR_C	1990.	1990.	1.570	0.210	1990.	0.00	0.00	41.48	-85.97	-29.95	1.
Z72-3311-LAB_C	1095.	1020.	0.805	0.330	1095.	0.00	0.00	22.82	-47.30	-16.48	1.
Z73-3312-LAB_C	1390.	1390.	1.097	0.420	1390.	0.00	0.00	28.97	-60.05	-20.92	1.
Z74-3313-EXAM_C	300.	300.	0.237	0.430	300.	0.00	0.00	6.25	-12.96	-4.52	1.
Z75-3314-LAB_C	2325.	2325.	1.834	1.000	2325.	0.00	0.00	48.46	-100.44	-34.99	1.
Z79-3318-EXAM_C	1280.	1280.	1.010	0.170	1280.	0.00	0.00	26.68	-55.30	-19.26	1.
Z80-3319-EXAM_C	350.	350.	0.276	0.510	350.	0.00	0.00	7.30	-15.12	-5.27	1.
Z81-3320-EVID LOC_C	255.	255.	0.201	0.310	255.	0.00	0.00	5.32	-11.02	-3.84	1.
Z82-3321-VEST_C	150.	0.	0.000	1.000	150.	0.00	0.00	3.13	-6.48	-2.26	1.
Z83-3322-PERP_C	330.	330.	0.260	0.400	330.	0.00	0.00	6.88	-14.26	-4.97	1.
Z84-3323-FREEZ_C	865.	865.	0.682	0.050	865.	0.00	0.00	18.03	-37.37	-13.02	1.
Z85-3324-SETUP_C	425.	350.	0.276	0.180	425.	0.00	0.00	8.86	-18.36	-6.40	1.
Z86-3325-VEST_C	450.	450.	0.355	0.500	450.	0.00	0.00	9.38	-19.44	-6.77	1.
Z87-3326-SETUP_C	325.	250.	0.197	0.230	325.	0.00	0.00	6.77	-14.04	-4.89	1.
Z89-4402-REST_C	70.	0.	0.000	0.500	70.	0.00	0.00	1.46	-3.02	-1.05	1.
Z90-4403-DATA_C	6.	0.	0.000	0.500	6.	0.00	0.00	0.12	-0.25	-0.09	1.
Z91-4404-COR_C	525.	0.	0.000	0.050	525.	0.00	0.00	10.94	-22.68	-7.90	1.
Z93-4406-LAB_C	985.	985.	0.777	0.190	985.	0.00	0.00	20.53	-42.55	-14.82	1.
Z94-4407-GUN_C	325.	325.	0.256	0.420	325.	0.00	0.00	6.77	-14.04	-4.89	1.
Z95-4408-SHOP_C	765.	765.	0.604	0.080	765.	0.00	0.00	15.95	-33.05	-11.51	1.
Z96-4409-GSR_C	565.	565.	0.446	0.140	565.	0.00	0.00	11.78	-24.41	-8.50	1.
Z97-4410-LAB_C	1800.	1800.	1.420	0.190	1800.	0.00	0.00	37.52	-77.76	-27.09	1.
Z101-4414-LAB_C	1535.	1535.	1.211	0.520	1535.	0.00	0.00	31.99	-66.31	-23.10	1.
Z102-4415-STO_C	350.	350.	0.276	0.520	350.	0.00	0.00	7.30	-15.12	-5.27	1.
Z103-4416-RANGE_C	5535.	5535.	4.367	0.070	5535.	0.00	0.00	115.37	-239.11	-83.30	1.
Z18-1117-PARK_U	0.	0.	0.000	0.000	0.	0.00	0.00	0.00	0.00	0.00	1.

Z26-1125-FREEZ_U	0.	0.	0.000	0.000	0.	0.00	0.00	0.00	0.00	0.00	1.

REPORT- SV-A System Design Parameters for AHU-1 WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
VAVS	1.000	8207.8	33.	0.125	822.000	0.683	-281.600	0.000	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	20000.	1.00	22.760	3.52	0.0	0.00	0.00	DRAW-THRU	SPEED	1.10	0.40
RETURN	18000.	1.00	4.914	0.84	0.0	0.00	0.00	RETURN	SPEED	1.10	0.40

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	EXTRACTION SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z19-1118-COR_C	417.	0.	0.000	0.500	26.	0.00	0.00	8.89	-18.01	-11.42	1.
Z23-1122-SECU_C	149.	0.	0.000	0.500	20.	0.00	0.00	3.18	-6.45	-4.09	1.
Z24-1123-LOB_C	1911.	0.	0.000	0.500	242.	0.00	0.00	40.73	-82.57	-52.36	1.
Z32-2201-LIB_C	583.	0.	0.000	0.500	72.	0.00	0.00	12.42	-25.17	-15.96	1.
Z33-2202-SUPV_C	412.	0.	0.000	0.500	52.	0.00	0.00	8.77	-17.79	-11.28	1.
Z34-2203-STO_C	24.	0.	0.000	0.500	3.	0.00	0.00	0.52	-1.06	-0.67	1.
Z35-2204-WORK_C	3511.	0.	0.000	0.500	443.	0.00	0.00	74.82	-151.68	-96.19	1.
Z36-2205-SUPV_C	360.	0.	0.000	0.500	47.	0.00	0.00	7.67	-15.55	-9.86	1.
Z47-2216-OFC_C	583.	0.	0.000	0.500	75.	0.00	0.00	12.43	-25.19	-15.97	1.
Z48-2217-QA/QC_C	305.	0.	0.000	0.500	39.	0.00	0.00	6.51	-13.19	-8.36	1.
Z49-2218-COR_C	237.	0.	0.000	0.500	31.	0.00	0.00	5.05	-10.23	-6.49	1.
Z50-2219-CONF_C	375.	0.	0.000	0.500	40.	0.00	0.00	8.00	-16.22	-10.28	1.
Z51-2220-LOUN_C	1234.	0.	0.000	0.500	153.	0.00	0.00	26.30	-53.32	-33.81	1.
Z52-2221-OFC_C	276.	0.	0.000	0.500	37.	0.00	0.00	5.87	-11.90	-7.55	1.
Z62-3301-OFC_C	377.	0.	0.000	0.500	48.	0.00	0.00	8.03	-16.27	-10.32	1.
Z63-3302-OPEN_C	3803.	0.	0.000	0.500	483.	0.00	0.00	81.04	-164.28	-104.18	1.
Z64-3303-OFC_C	669.	0.	0.000	0.500	87.	0.00	0.00	14.26	-28.91	-18.33	1.
Z76-3315-OFC_C	340.	0.	0.000	0.500	43.	0.00	0.00	7.25	-14.69	-9.32	1.
Z77-3316-BIO_C	295.	0.	0.000	0.500	38.	0.00	0.00	6.29	-12.75	-8.08	1.
Z78-3317-LOUN_C	1339.	0.	0.000	0.500	170.	0.00	0.00	28.52	-57.83	-36.67	1.
Z98-4411-OFC_C	362.	0.	0.000	0.500	47.	0.00	0.00	7.71	-15.62	-9.91	1.
Z99-4412-OPEN_C	772.	0.	0.000	0.500	99.	0.00	0.00	16.44	-33.34	-21.14	1.
Z100-4413-BREAK_C	1666.	0.	0.000	0.500	205.	0.00	0.00	35.51	-71.99	-45.65	1.

REPORT- SV-A System Design Parameters for Dummy VAV-1 (Stairs) WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
PVAVS	1.000	2605.6	3.	0.000	38.616	0.689	0.000	0.233	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	1205.	1.00	1.392	3.57	0.0	0.00	0.00	DRAW-THRU	BY USER	1.10	0.30

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z01-1100-STA_C	85.	0.	0.000	1.000	0.	0.00	0.00	1.84	-6.89	-4.13	1.
Z31-2200-STA_C	100.	0.	0.000	0.984	0.	0.00	0.00	2.16	-8.10	-4.86	1.
Z61-3300-STA_C	105.	0.	0.000	1.000	0.	0.00	0.00	2.27	-8.51	-5.10	1.
Z87A-4400-STA_C	115.	0.	0.000	0.899	0.	0.00	0.00	2.48	-9.32	-5.59	1.
Z04-1103-STA_C	135.	0.	0.000	0.877	0.	0.00	0.00	2.92	-10.94	-6.56	1.
Z39-2208-STA_C	213.	0.	0.000	0.807	0.	0.00	0.00	4.60	-17.25	-10.35	1.
Z68-3307-STA_C	213.	0.	0.000	0.821	0.	0.00	0.00	4.60	-17.25	-10.35	1.
Z92-4405-STA_C	239.	0.	0.000	0.702	0.	0.00	0.00	5.16	-19.36	-11.62	1.

REPORT- SV-A System Design Parameters for Dummy VAV-2 (MER) WEATHER FILE- Rochester NY TMY2

SYSTEM TYPE	ALTITUDE FACTOR	FLOOR AREA (SQFT)	MAX PEOPLE	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)	HEAT PUMP SUPP-HEAT (KBTU/HR)
PVAVS	1.000	5262.9	5.	0.000	85.108	0.697	0.000	0.294	0.000	0.000

FAN TYPE	CAPACITY (CFM)	DIVERSITY FACTOR (FRAC)	POWER DEMAND (KW)	FAN DELTA-T (F)	STATIC PRESSURE (IN-WATER)	TOTAL EFF (FRAC)	MECH EFF (FRAC)	FAN PLACEMENT	FAN CONTROL	MAX FAN RATIO (FRAC)	MIN FAN RATIO (FRAC)
SUPPLY	2700.	1.00	2.992	3.42	0.0	0.00	0.00	DRAW-THRU	BY USER	1.10	0.30

ZONE NAME	SUPPLY FLOW (CFM)	EXHAUST FLOW (CFM)	FAN (KW)	MINIMUM FLOW (FRAC)	OUTSIDE AIR FLOW (CFM)	COOLING CAPACITY (KBTU/HR)	SENSIBLE (FRAC)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	ZONE MULT
Z02-1101-MER_C	800.	0.	0.000	1.000	0.	0.00	0.00	17.28	-64.80	-38.88	1.
Z88-4401-MER_C	1900.	0.	0.000	0.677	0.	0.00	0.00	41.04	-104.12	-62.47	1.

Appendix C

Supporting Documentation for LEED® Energy and Atmosphere Credit 1

CREDIT INTERPRETATION RULING FOR LABORATORY EXHAUST AIR ENERGY RECOVERY

ENERGY & ATMOSPHERE: Optimize Energy Performance ()

6/15/2007 - **Credit Interpretation Request**

This CIR is a follow-up to the 2/26/2007 ruling for our 120,000 sq. ft. laboratory project. The EAc1 ruling dated 2/26/2007 indicates "the ASHRAE 90.1-2004 Standard Appendix G modeling protocol is not a compliance method but rather a method of comparing the proposed design's energy performance to a building that would have been typically built." The prescriptive requirements in 6.5.7.2 of ASHRAE 90.1-2004 indicate fume hood systems having a total exhaust rate greater than 15,000 cfm shall include either VAV exhaust and room supply, direct make-up, or heat recovery systems. Based on these prescriptive requirements, a lab similar to ours would that would have been typically built would not include both VAV and energy recovery. It would only include one of these strategies.

But based on the 2/26/2007 ruling, it seems the baseline in Appendix G will require both VAV and energy recovery, which is above the typical based on the prescriptive requirements noted above. The 2/26/2007 EAc1 ruling indicates "the baseline should be modeled as system 5", meaning we should ignore G3.1.1(c) (which tells us to model our baseline in the lab only as constant volume) and we should model the baseline lab as a VAV system. G3.1.2.10 requires us to have energy recovery in the baseline since we also have it in the proposed design. By having us ignore G3.1.1(c), the 2/26/2007 ruling has created a baseline that is above the typical. This ruling does not award labs for providing both VAV and energy recovery even though having both is not typical. Can we instead match the prescriptive requirements and typical lab building design by not including energy recovery in the baseline with VAV when we do have energy recovery in the proposed design?

8/13/2007 - **Ruling**

"The applicant is requesting an allowance to match the prescriptive requirements of Standard 90.1 in their baseline building model. This request is allowed.

Section 6.6.7.2 of Standard 90.1-2004 requires the proposed laboratory system to include either VAV controls that are capable of reducing exhaust and makeup air volume by 50% of design values or heat recovery meeting the requirements of Section 6.5.6.1. This is consistent with the applicants request to not include heat recovery in the baseline building model. In addition, the baseline VAV system serving the laboratory should only reduce the exhaust and makeup air volume to 50% of design values during unoccupied periods instead of the minimum volume setpoint of 0.4 cfm/ft2 of floor area as required by Section G3.1.3.13."

BASELINE FAN POWER CALCULATIONS

System Name	Nominal Tons	Design System Name	AHU Type (VAV or CV)	SA (cfm)	Pressure Credits (bhp)	Total Fan BHP	Motor Size (For Lookup) (hp)	Standard Motor Efficiency	Total Fan Power Limit (kW)	Total Fan kW/CFM	Supply Fan KW/CFM	Supply Fan Power (kW)	MIN OA cfm	OA Fraction	RA = SA minus OA cfm	RA = 0.9* SA	Max RA for eQuest input	RA Fan KW/CFM	Return Fan Power (kW)	Total System Fan Power (kW)
AHU-2	216	AHU-2	VAV	42,779	18.734	74.3465	75.0	94.1%	58.940	0.001378	0.000784	33.530	42,779	100%	0	38,501	38,501	0.000660	25.410	58.940
AHU-1	42	AHU-1	VAV	12,419	7.603	23.7481	25.0	91.7%	19.320	0.001556	0.000970	12.041	2,500	20%	9,919	11,177	11,177	0.000651	7.278	19.319
Dummy VAV-1 (Stairs)	3	Dummy VAV 1	VAV	1,205	0.000	1.5665	2.0	84.0%	1.391	0.001155	0.001155	1.391	0	0%	1,205	1,085	1,205	-	-	1.391
Dummy VAV-2 (MER)	8	Dummy VAV 2	VAV	3,150	0.000	4.0950	5.0	87.5%	3.491	0.001108	0.001108	3.491	0	0%	3,150	2,835	3,150	-	-	3.491
Total	*269*			*59,553*		*103.8*			*83.1*	*0.001396*	*0.000847*	*50.454*	*45,279*	*76%*	*14,274*	*53,598*	*54,033*	*0.000605*	*32.7*	*83.1*

														Pressure Credits - Credit Can only be taken for elements REQUIRED in the Baseline								
System Name	Baseline System Number	Baseline VAV/CV	Supply Airflow (cfm)	Design Return Fan % of Total Fan Power)	Baseline Fan Power Allowance (bhp)	BHP/cfm	Motor Size (For Lookup) (hp)	Standard Motor Efficiency	Standard Motor Power (kW)	System Fan Power Limitation (kW/cfm)	Supply Fan Power (kW/cfm)	Return/ Exhaust Fan Power (kW/cfm)	Total Pressure Credits (bhp)	Fully Ducted Return and/or Exhaust Air Systems	Return and/or Exhaust Airflow Control Devices	MERV 9-12	MERV 13-15	MERV >= 16	Carbon and other gas-phase air cleaners	Heat Recovery Device	Sound Attenuation Section	Fume Hood
AHU-1	5	VAV	12,419	37.7%	23.748	0.00191	25.0	91.7%	19.320	0.001556	0.000970	0.000586	7.603	1.503	2.18		3.92					
AHU-2	5	VAV	42,779	43.1%	74.347	0.00174	75.0	94.1%	58.940	0.001378	0.000784	0.000594	18.734	5.178	4.84		8.71					
Dummy VAV 1	5	VAV	1,205	0.0%	1.567	0.00130	2.0	84.0%	1.391	0.001155	0.001155	-	0.000									
Dummy VAV 2	5	VAV	3,150	0.0%	4.095	0.00130	5.0	87.5%	3.491	0.001108	0.001108	-	0.000									

State of New York
David A. Paterson, Governor

New York State Energy Research and Development Authority
Vincent A. DeIorio, Esq., Chairman

Appendix Ba

Financial Report Summary

Monroe County Crime Lab

Final

LEED Platinum Credit Summary

			LEED Platinum (52-69 Points)					
Credit Category	LEED Credits in pursuit		Points	LEED Total Premium	LEED Design & Doc Premium	LEED Construct Premium	Annual Savings	Simple Payback (Years)
SS	Prereq 1	**Construction Activity Pollution Prevention**	p	$140	$140	$0	$0	0
SS	Credit 1	**Site Selection**	1	$140	$140	$0	$0	0
SS	Credit 2	**Development Density & Community Connectivity**	1	$640	$640	$0	$0	0
SS	Credit 3	**Brownfield Redevelopment**	1	$1,280	$1,280	$0	$0	0
SS	Credit 4.1	**Alternative Transportation**, Public Transportation Access	1	$320	$320	$0	$0	0
SS	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1	$1,270	$320	$950	$0	0
SS	Credit 4.3	**Alternative Transportation**,Low-Emitting and Fuel-Efficient Vehicles	1	$1,320	$320	$1,000	$0	0
SS	Credit 4.4	**Alternative Transportation**, Parking Capacity	1	$950	$600	$350	$0	0
SS	Credit 6.1	**Stormwater Design,** Quantity Control	1	$56,049	$2,330	$53,719	$0	0
SS	Credit 6.2	**Stormwater Design,** Quality Control	1	$700	$700	$0	$0	0
SS	Credit 7.1	**Heat Island Effect,** Non-Roof	1	$385	$385	$0	$0	0
SS	Credit 7.2	**Heat Island Effect,** Roof	1	$13,370	$1,600	$11,770	$100	134
SS	Credit 8	**Light Pollution Reduction**	1	$1,200	$1,200	$0	$100	12
WE	Credit 1.1 & 1 2	**Water Efficient Landscaping**,No Potable Water Use	2	$630	$630	$0	$0	0
WE	Credit 2	**Innovative Wastewater Technologies**	1	$50,500	$6,500	$44,000	($17)	0
WE	Credit 3.1 & 3 2	**Water Use Reduction**, 20% & 30% Reductions	2	$3,500	$3,500	$0	$108	32
EA	Prereq 1	**Fundamental Cx of the Building Energy Systems**	p	$160	$160	$0	$0	0
EA	Prereq 2	**Minimum Energy Performance**	p	$1,500	$1,500	$0	$0	0
EA	Prereq 3	**Fundamental Refrigerant Management**	p	$1,000	$1,000	$0	$0	0
EA	Credit 1	**Optimize Energy Performance**	8	$178,812	$45,564	$133,248	$79,741	2
EA	Credit 2.1	**On-Site Renewable Energy** (PV System; see Footnote 1)	1	$207,900	$8,000	$199,900	$3,600	58
EA	Credit 3	**Enhanced Commissioning**	1	$21,410	$160	$21,250	$1,000	21
EA	Credit 4	**Enhanced Refrigerant Management**	1	$1,000	$1,000	$0	$0	0
EA	Credit 5	**Measurement & Verification**	1	$75,974	$4,500	$71,474	$0	0
EA	Credit 6	**Green Power**	1	$4,850	$250	$4,600	$0	0
MR	Prereq 1	**Storage & Collection of Recyclables**	p	$2,450	$1,450	$1,000	$0	0
MR	Credit 2.1 & 2 2	**Construction Waste Management**, Divert 50%/ 75% from Disposal	2	$81,645	$6,700	$74,945	$0	0
MR	Credit 4.1 & 4 2	**Recycled Content**, 10%, 20% (post-consumer + ½ pre-consumer)	2	$7,200	$7,200	$0	$0	0
MR	Credit 5.1	**Regional Materials**, 10%, 20% Extracted, Processed & Mfg. Regionally	2	$6,100	$6,100	$0	$0	0
MR	Credit 7	**Certified Wood**	1	$4,600	$1,800	$2,800	$0	0
EQ	Prereq 1	**Minimum IAQ Performance**	p	$1,500	$1,500	$0	$0	0
EQ	Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	p	$660	$360	$300	$0	0
EQ	Credit 1	**Outdoor Air Delivery Monitoring**	1	$27,200	$2,000	$25,200	$0	0
EQ	Credit 2	**Increased Ventilation**	1	$35,700	$4,000	$31,700	$0	0
EQ	Credit 3.1	**Construction IAQ Management Plan**, During Construction	1	$15,000	$3,000	$12,000	$0	0
EQ	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1	$21,700	$1,000	$20,700	$0	0
EQ	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1	$2,600	$2,600	$0	$0	0
EQ	Credit 4.2	**Low-Emitting Materials**, Paints & Coatings	1	$2,600	$2,600	$0	$0	0
EQ	Credit 4.3	**Low-Emitting Materials**, Carpet Systems	1	$600	$600	$0	$0	0
EQ	Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber Products	1	$1,600	$1,600	$0	$0	0
EQ	Credit 5	**Indoor Chemical & Pollutant Source Control**	1	$3,100	$3,100	$0	$0	0
EQ	Credit 6.1	**Controllability of Systems**, Lighting	1	$1,500	$1,500	$0	$0	0
EQ	Credit 6.2	**Controllability of Systems**, Thermal Comfort	1	$20,200	$1,500	$18,700	$0	0
EQ	Credit 7.1	**Thermal Comfort**, Design	1	$1,500	$1,500	$0	$0	0
EQ	Credit 7.2	**Thermal Comfort**, Verification	1	$4,400	$4,400	$0	$0	0
D	Credit 1.1	**Innovation in Design**: Green Power	1	$400	$400	$0	$0	0
D	Credit 1.2	**Innovation in Design**: Education	1	$12,800	$7,800	$5,000	$0	0
D	Credit 1.3	**Innovation in Design**: Exemplary Performance - Const. Waste Mgt	1	$400	$400	$0	$0	0
D	Credit 1.4	**Innovation in Design**: Exemp. Perform. - Water Efficency	1	$1,900	$1,900	$0	$0	0
D	Credit 2	**LEED® Accredited Professional**	1	$23,410	$23,410	$0	$0	0
		TOTALS:	55	***$905,765***	***$171,159***	***$734,606***	***$84,632***	***11***

Footnotes:

1. Price reflects actual bid values; Also assumes a NYSERDA incentive of $108,000 ($3 Watt)

Appendix Bb

Financial Report Detailed

(Note: The project underwent a financial analysis of each credit in the design phase to determine the cost impact to the project due to LEED. The following analysis is a snapshot in time of that process. This process was utilized to determine which credits would be pursued. The final outcome of this process is rolled up into the LEED Platinum Credit Summary found in the previous appendix Ba.)

Monroe County Crime Lab — LEED Financial Analysis — 7.29.09

Credit Category	LEED Sections. Credits & Options		Responsibility	Construction Approx LEED First Cost or Premium	Design Cost of Additional Design & Documentation	Total LEED Premium	Note	Annual Savings	Simple Payback (years)
SS	Prereq 1	**Construction Activity Pollution Prevention**		**$0.00**	**$140.00**	**$140.00**		$0.00	0
		NYSPES Plan Implementation (no premium over base bid GC)	Construction	$0.00		$0.00	1		
			Larsen		$140.00	$140.00			
SS	Credit 1	**Site Selection**		**$0.00**	**$140.00**	**$140.00**		$0.00	0
		No construction cost implication	Construction	$0.00		$0.00			
			Larsen		$140.00	$140.00			
SS	Credit 2	**Development Density & Community Connectivity**		**$0.00**	**$640.00**	**$640.00**		$0.00	0
		No construction cost implication	Construction	$0.00		$0.00			
			LaBella		$640.00	$640.00			
SS	Credit 3	**Brownfield Redevelopment**		**$0.00**	**$1,280.00**	**$1,280.00**		$0.00	0
		Abatement / Remediation	Construction	$0.00		$0.00	2		
			LaBella		$1,280.00	$1,280.00			
SS	Credit 4.1	**Alternative Transportation**, Public Transportation Access		**$0.00**	**$320.00**	**$320.00**		$0.00	0
		No construction cost implication	Construction	$0.00		$0.00			
			LaBella		$320.00	$320.00			
SS	Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms		**$950.00**	**$320.00**	**$1,270.00**		$0.00	0
		Shower Room	Construction	$0.00		$0.00	2		
		Lockers - allowance	Construction	$0.00		$0.00	2		
		Bike Rack	Construction	$950.00		$950.00			
			LaBella		$320.00	$320.00			
SS	Credit 4.3	**Alternative Transportation**, Low-Emitting and Fuel-Efficient Vehicles		**$1,000.00**	**$320.00**	**$1,320.00**		$0.00	0
		Signage - 4 spaces	Construction	$1,000.00		$1,000.00			
			LaBella		$320.00	$320.00			
SS	Credit 4.4	**Alternative Transportation**, Parking Capacity		**$350.00**	**$600.00**	**$950.00**		$0.00	0
		Signage - 1 space	Construction	$350.00		$350.00			
			Larsen		$280.00	$280.00			
			LaBella		$320.00	$320.00			
SS	Credit 6.1	**Stormwater Design,** Quantity Control (Design to be developed based on options chosen)		**$53,719.00**	**$2,330.00**	**$56,049.00**		$0.00	0
		Base Bid - 35K SF Ashpalt & combined Storm Sewer	Construction	$155,514.00		$0.00			
		Option 1 - Sub-surface detention (45' LF, 4' Pipe) piped to River Storm Sewer, 35K SFAsphalt top	Construction	$164,289.00		$8,775.00			
		Option 2 - 6.5K SF Pervious Grey Concrete + 21.5K SF Grey Conc + 7,736 SF Asphalt	Construction	$199,821.00		$44,307.00			
		Option 3 - 6.5K SF Pervious Grey Concrete + 6K SF Vegetated Roof + 29.2K SF Asphalt	Construction	$442,283.00		$286,769.00	4		
		Option 4 - 6.5K SF Pervious Grey Conc + 6K Vegetated Roof + 31.5K SF Grey Conc + 7,736 Asphalt SF		$551,141.00		$395,627.00	4		
		Option 5 - 10.4K SF Pervious Grey Conc + 17,630 SF Grey Conc + 7,736 Asphalt SF		$209,233.00		$53,719.00			
			LaBella		$1,980.00	$1,980.00			
			Larsen		$350.00	$350.00			
SS	Credit 6.2	**Stormwater Design,** Quality Control		**$0.00**	**$700.00**	**$700.00**		$0.00	0
		Option 1 - Structural Technology - Vortex Filter	Construction	$100,000.00					
		Option 2 - 6.5K SF Pervious Grey Concrete + 17,630 SF Grey Conc + 7,736 Asphalt SF	Construction	$178,536.00			5		
			Larsen		$700.00	$700.00			

Monroe County Crime Lab — LEED Financial Analysis — 7.29.09

Credit Category	LEED Sections. Credits & Options		Responsibility	Construction Approx LEED First Cost or Premium	Design Cost of Additional Design & Documentation	Total LEED Premium	Note	Annual Savings	Simple Payback (years)
SS	Credit 7.1	**Heat Island Effect,** Non-Roof (26,250 SF required)		**$0.00**	**$385.00**	**$385.00**		$0.00	0
		Base Bid (X SF Grey Concrete Sidewalk), 35K SF Asphalt	Construction			$0.00			
		Option 1 - 10,400 SF Pervious Concrete + 17,630 SF Grey Concrete	Construction	$186,025.00			5		
		Option 2 - 10,400 SF Pervious Concrete + 17,630 SF White Concrete	Construction	$212,185.00		$88,618.00			
			Larsen		$385.00	$385.00			
SS	Credit 7.2	**Heat Island Effect,** Roof (Option to be selected)		**$11,770.00**	**$1,600.00**	**$13,370.00**		$100.00	134
		For Reference Only - Black Modified Bitumen- 11,770 SF ($14.37 SF)		$169,134.90		$0.00			
		Base Bid - SRI compliant roof - white Modified Bitumen - 11,770 SF ($15.37 SF)		$180,904.90		$0.00		$100.00	
		Option 2 - Vegetated Roof 6K SF + 11,770 Black EPDM		$296,320.00		$115,415.10			
			LaBella		$1,600.00	$1,600.00			
SS	Credit 8	**Light Pollution Reduction**		**$0.00**	**$1,200.00**	**$1,200.00**		$100.00	12
		Auto Lighting Controls	Construction	$0.00		$0.00			
		IESNA RP-33 compliant fixtures	Construction	$0.00		$0.00			
			Larsen		$1,200.00	$1,200.00			
WE	Credit 1.1 / 1 2	**Water Efficient Landscaping**, Reduce by 50% / No Potable Water Use		**$0.00**	**$630.00**	**$630.00**		$0.00	0
		Plantings / landscaping (allowance, no premium assumed)	Construction	$0.00		$0.00			
			Larsen		$630.00	$630.00			
WE	Credit 2	**Innovative Wastewater Technologies**		**$44,000.00**	**$6,500.00**	**$50,500.00**		-$17.00	0
		Base Bid - EPACT 1992 compliant fixtures	Construction	$0.00		$0.00			
		Captured Water System - Rainwater Harvesting	Construction	$44,000.00		$44,000.00			
		Fixures: toilets (dual flush), urinals (1pt)	Construction	$0.00		$0.00			
			ME Engineering		$6,500.00	$6,500.00			
WE	Credit 3.1 / 3 2	**Water Use Reduction**, 20% & 30% Reductions		**$0.00**	**$3,500.00**	**$3,500.00**		$108.00	32
		Base Bid - EPACT 1992 compliant fixtures	Construction	$0.00		$0.00			
		Fixtures, (see WEcr2 + lavs (auto controls, aerators)	Construction	$0.00		$0.00			
		Rainwater Harvesting (see WEcr2)	Construction				3		
			ME Engineering		$3,500.00	$3,500.00			
EA	Prereq 1	**Fundamental Commissioning of the Building Energy Systems**		**$0.00**	**$160.00**	**$160.00**		$0.00	0
		Cx Authority Services - Pathfinder	Pathfinder	$0.00		$0.00			
		Contractor Cost Premimum for Cx	Construction	$0.00		$0.00			
			Pathfinder		$160.00	$160.00			
EA	Prereq 2	**Minimum Energy Performance**		**$0.00**	**$1,500.00**	**$1,500.00**		$0.00	0
		No premium assumed over base bid allowace for compliance	Construction	$0.00		$0.00			
			ME Engineering		$1,500.00	$1,500.00			
EA	Prereq 3	**Fundamental Refrigerant Management**		**$0.00**	**$1,000.00**	**$1,000.00**		$0.00	0
		No Cost Premiums for CFC free equipment over base bid allowance	Construction	$0.00					
			ME Engineering		$1,000.00	$1,000.00			
EA	Credit 1	**Optimize Energy Performance**		**$133,248.00**	**$45,564.00**	**$178,812.00**		$25,864.00	7
		Amp Lab Heat Recovery - Plate Exchanger and Enthalpy Control	Construction	$15,200.00				$10,367.00	1
		VAV / Chiller option - Air Cooled	Construction	$5,200.00				$1,014.00	5
		High Efficiency Boiler	Construction	$1,500.00				$2,976.00	1
		Annealed Solarban 80	Construction	$29,141.00				$2,742.00	11

Monroe County Crime Lab — LEED Financial Analysis — 7.29.09

Credit Category		LEED Sections. Credits & Options	Responsibility	Construction Approx LEED First Cost or Premium	Design Cost of Additional Design & Documentation	Total LEED Premium	Note	Annual Savings	Simple Payback (years)
		Wall Insulation (R10 Continuous, 2" Extruded polystyrene) R13 Cavity	Construction	$28,305.00				$764.00	37
		Roof Insulation	Construction	$2,900.00				$578.00	5
		Daylight Dimming - Stepped photosensor lighting control	Construction	$11,183.00				$8,001.00	1
		Occupancy Sensor Control in lab hoods	Construction	$39,819.00				$7,171.00	6
			ME Engineering		$7,000.00	$7,000.00			
			SAIC		$38,564.00	$38,564.00			
EA	Credit 2.1	**On-Site Renewable Energy**		**$216,000.00**	**$8,000.00**	**$224,000.00**	12	$3,600.00	62
		PV (36kW array, cost of $324,000 and assuming NYSERDA incentive of $108,000 ($3/W))	Construction	$216,000.00		$216,000.00			
			ME Engineering		$8,000.00	$8,000.00			
EA	Credit 3	**Enhanced Commissioning**		**$21,250.00**	**$160.00**	**$21,410.00**	13	$1,000.00	21
		Cx Authority Services	Pathfinder	$21,250.00		$21,250.00			
			Pathfinder		$160.00	$160.00			
EA	Credit 4	**Enhanced Refrigerant Management**		**$0.00**	**$1,000.00**	**$1,000.00**			
		No Premiums for HCFC free equipment & FP assumed	Construction	$0.00		$0.00			
			ME Engineering		$1,000.00	$1,000.00			
EA	Credit 5	**Measurement & Verification**		**$71,474.00**	**$4,500.00**	**$75,974.00**		$0.00	0
		Meters & additional EMS control points	Construction	$71,474.00		$71,474.00			
		Plan Development	ME Engineering		$3,000.00	$3,000.00			
			ME Engineering		$1,500.00	$1,500.00			
EA	Credit 6	**Green Power**		**$4,600.00**	**$250.00**	**$4,850.00**		$0.00	0
		Green Power Tradeable Certificate Premium	Monroe County	$4,600.00		$4,600.00			
			MC / SPC		$250.00	$250.00			
MR	Prereq 1	**Storage & Collection of Recyclables**		**$1,000.00**	**$1,450.00**	**$2,450.00**		$0.00	0
		Recycling Containers - allowance	Monroe County	$1,000.00		$1,000.00			
		LEED Narrative of Recycling Plan	SPC		$1,200.00	$1,200.00			
			LaBella		$250.00	$250.00			
MR	Credit 2.1 & 2.2	**Construction Waste Management**, Divert 50%, 75% from Disposal		**$74,945.00**	**$6,700.00**	**$81,645.00**		$0.00	0
		Comingled Waste Management Premium	Construction	$74,945.00		$74,945.00			
			LaBella		$2,000.00	$2,000.00			
			SPC		$4,700.00	$4,700.00			
MR	Credit 4.1 / 4 2	**Recycled Content**, 10%, 20% (post-consumer + ½ pre-consumer)		**$0.00**	**$7,200.00**	**$7,200.00**		$0.00	0
			LaBella		$2,200.00	$2,200.00			
			SPC		$5,000.00	$5,000.00			

Monroe County Crime Lab — LEED Financial Analysis — 7.29.09

Credit Category	LEED Sections. Credits & Options		Responsibility	Construction Approx LEED First Cost or Premium	Design Cost of Additional Design & Documentation	Total LEED Premium	Note	Annual Savings	Simple Payback (years)
MR	Credit 5.1 & 5.2	**Regional Materials**, 10%, 20% Extracted, Processed & Manufactured Regionally		**$0.00**	**$6,100.00**	**$6,100.00**		$0.00	0
			LaBella		$1,600.00	$1,600.00			
			SPC		$4,500.00	$4,500.00			
MR	Credit 6	**Rapidly Renewable Materials**		**$40,000.00**	**$5,200.00**	**$45,200.00**		$0.00	0
		Material cost premium	Construction	$40,000.00		$79,568.00			
						$0.00			
			LaBella		$2,200.00	$2,200.00			
			SPC		$3,000.00	$3,000.00			
MR	Credit 7	**Certified Wood**		**$2,800.00**	**$1,800.00**	**$4,600.00**		$0.00	0
		Wood Blocking, Sheathing - assigned 20% premium to Pike estimate ($14K)	Construction	$2,800.00		$2,800.00			
			LaBella		$1,500.00	$1,500.00			
			SPC		$300.00	$300.00			
IEQ	Prereq 1	**Minimum IAQ Performance**		**$0.00**	**$1,500.00**	**$1,500.00**		$0.00	0
			ME Engineering		$1,500.00	$1,500.00			
IEQ	Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**		**$300.00**	**$360.00**	**$660.00**		$0.00	0
		Signage	Construction	$300.00		$300.00			
			LaBella		$160.00	$160.00			
			SPC		$200.00	$200.00			
IEQ	Credit 1	**Outdoor Air Delivery Monitoring**		**$25,200.00**	**$2,000.00**	**$27,200.00**		$0.00	0
		CO2 Controls - allowance	Construction	$18,000.00		$18,000.00			
		EMS enhancements - allowance	Construction	$7,200.00		$7,200.00			
			ME Engineering		$2,000.00	$2,000.00			
IEQ	Credit 2	**Increased Ventilation**		**$31,700.00**	**$4,000.00**	**$35,700.00**		$0.00	0
		Increased ductwork size - allowance	Construction	$15,700.00		$15,700.00			
		Oversized Ventilation Equipment - allowance	Construction	$16,000.00		$16,000.00			
			ME Engineering		$4,000.00	$4,000.00			
IEQ	Credit 3.1	**Construction IAQ Management Plan**, During Construction		**$12,000.00**	**$3,000.00**	**$15,000.00**		$0.00	0
		Specification Development	SPC		$2,000.00	$2,000.00			
		Plan implementation (Contractor cost & Management)	Construction	$12,000.00		$12,000.00			
			ME Engineering		$1,000.00	$1,000.00			
IEQ	Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy		**$20,700.00**	**$1,000.00**	**$21,700.00**		$0.00	0
		Building Flushout							
		Energy Cost	Construction	$1,600.00		$1,600.00			
		Additional Equipment (Filters)	Construction	$5,000.00		$5,000.00			
		Contractor Premium	Construction	$14,100.00		$14,100.00			
			ME Engineering		$1,000.00	$1,000.00			

Monroe County Crime Lab — LEED Financial Analysis — 7.29.09

Credit Category		LEED Sections. Credits & Options	Responsibility	Construction Approx LEED First Cost or Premium	Design Cost of Additional Design & Documentation	Total LEED Premium	Note	Annual Savings	Simple Payback (years)
IEQ	Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants		**$0.00**	**$2,600.00**	**$2,600.00**		$0.00	0
		No cost premiums assumed	Construction	$0.00		$0.00			
			LaBella		$1,600.00	$1,600.00			
			ME Engineering		$1,000.00	$1,000.00			
IEQ	Credit 4.2	**Low-Emitting Materials**, Paints & Coatings		**$0.00**	**$2,600.00**	**$2,600.00**		$0.00	0
		No cost premiums assumed	Construction	$0.00		$0.00			
			LaBella		$1,600.00	$1,600.00			
			ME Engineering		$1,000.00	$1,000.00			
IEQ	Credit 4.3	**Low-Emitting Materials**, Carpet Systems		**$0.00**	**$600.00**	**$600.00**		$0.00	0
		Carpet Tile	Construction	$0.00		$0.00			
			LaBella		$600.00	$600.00			
IEQ	Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber Products		**$0.00**	**$1,600.00**	**$1,600.00**		$0.00	0
		Casework ? Millwork? Wood Doors?	Construction	$0.00		$0.00			
			LaBella		$1,600.00	$1,600.00			
									0
IEQ	Credit 5	**Indoor Chemical & Pollutant Source Control**		**$0.00**	**$3,100.00**	**$3,100.00**		$0.00	0
		Pedimat System	Construction	$0.00		$0.00	2		
		Deck to Deck walls	Construction	$0.00		$0.00	2		
		Negative Air pressurization	Construction	$0.00		$0.00	2		
			ME Engineering		$1,500.00	$1,500.00			
			LaBella		$1,600.00	$1,600.00			
IEQ	Credit 6.1	**Controllability of Systems**, Lighting		**$0.00**	**$1,500.00**	**$1,500.00**		$0.00	0
		Lighting Controls (12 dual switches)	Construction	$0.00		$0.00	2		
			ME Engineering		$1,500.00	$1,500.00			
IEQ	Credit 6.2	**Controllability of Systems**, Thermal Comfort		**$18,700.00**	**$1,500.00**	**$20,200.00**		$0.00	0
		Base Bid - 3 Offices per VAV	Construction						
		VAV system (2 offices per VAV) (based on 13 offices, 7 VAV Bxs)	Construction	$18,700.00		$18,700.00			
			ME Engineering		$1,500.00	$1,500.00			
IEQ	Credit 7.1	**Thermal Comfort**, Design		**$0.00**	**$1,500.00**	**$1,500.00**		$0.00	0
			ME Engineering		$1,500.00	$1,500.00			
IEQ	Credit 7.2	**Thermal Comfort**, Verification		**$0.00**	**$4,400.00**	**$4,400.00**		$0.00	0
		Narrative explaining survey development & implementation	SPC		$2,400.00	$2,400.00			
		Survey development & implementation - allowance/budget	Monroe County		$2,000.00	$2,000.00			
IEQ	Credit 1.1	**Innovation in Design**: Green Houskeeping (other options exist, if not taken)		**$0.00**	**$5,000.00**	**$5,000.00**		$0.00	0
ID	Credit 1.2	**Innovation in Design**: Education		**$5,000.00**	**$7,800.00**	**$12,800.00**		$0.00	0
		LEED Display - Signage- allowance $5K	Construction	$5,000.00		$5,000.00			
		Display Design	LaBella		$3,600.00	$3,600.00			
		Case Study / Website	SPC		$4,200.00	$4,200.00			

Monroe County Crime Lab — LEED Financial Analysis — 7.29.09

Credit Category	LEED Sections. Credits & Options		Responsibility	Construction Approx LEED First Cost or Premium	Design Cost of Additional Design & Documentation	Total LEED Premium	Note	Annual Savings	Simple Payback (years)
ID	Credit 1.3	**Innovation in Design**: Exemplary Performance - Recycled Content		**$0.00**	**$400.00**	**$400.00**		$0.00	0
		Narrative	SPC		$400.00	$400.00			
ID	Credit 1.4	**Innovation in Design**: Exemplary Performance - Water Efficiency		**$0.00**	**$1,900.00**	**$1,900.00**		$0.00	0
		Rainwater Harvesting system	Construction				3		
			ME Engineering		$1,500.00	$1,500.00			
			SPC		$400.00	$400.00			
ID	**Credit 2**	**LEED® Accredited Professional**		**$0.00**	**$23,410.00**	**$23,410.00**		**$0.00**	**0**
		LEED Consultant	SPC		$23,410.00	$23,410.00			
		(52 Points) Total LEED Premuim				**$971,665.00**			
		Relative First Cost Total		**$790,706.00**					
		Additional Design/Doc Total			**$180,959.00**				

Notes:
1: Code Mandated
2: Program Requirement
3: See WEcr2 (cost captured there)
4: Number includes $296,320 of vegetated roof (6K SF VR, 11,770 Black EPDM)
5: See SScr6.1 (cost captured there)
6: Number is a placeholder @ 2.5% of General Construction - Final amount TBD
7: Number for Millwork/Casework is a placeholder. Items to be determined & costs adjusted accordingly
8: Total missing any premiums associated with EAcr1
9: Total includes only recommended options. Total is greater than Total LEED Premium, as several items do not have the base bid deducted.
10. Cost is total cost - incremental cost not determined
11. Credit not pursued
12. PV (36kW array, cost of $324,000 and assuming NYSERDA incentive of $108,000 ($3/W))
13. Estimated Savings of $1K, final to be determined upon completion of Cx.

Appendix C

Life Cycle Analyses

M/E ENGINEERING, P.C.
Mechanical/Electrical
Engineering Consultants

150 Chestnut St., Rochester, NY 14604
Phone: 585.288.5590, Fax: 585.288.0233

Suite 320, 60 Lakefront Blvd., Buffalo, NY 14202
Phone: 716.845.5092, Fax: 716.845.6187

441 South Salina St.,Suite 702, Syracuse, NY 13202
Phone: 315.218.9564, Fax: 315.218.9574

10 Airline Dr., Suite 201, Albany, NY 12205
Phone: 518.533.2171, Fax: 518.533.2177

LIFE CYCLE COST EVALUATION

Project Name:	Monroe County Crime Lab
Project Number:	050246
Calculated by:	Brian Danker Date: 11/4/2008
Base System:	Building without geothermal system - boilers and chiller used to provide the building heating and cooling.
Evaluated System:	Building with geothermal system - a well field, piping, heat pumps to provide the building heating and cooling.
Description:	Geothermal wells with 160 well feet per ton, wells spaced 20' apart and 90 wells total.

Assumptions:

Inflation Rate:	3	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	3	%
Natural Gas:	3	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System	Evaluated System
First Time Capital Cost:	$0	$492,000
Annual Maintenance Cost:	$0	$0
Expected Life:	30 years	30 years
System Replacement % to Initial:	50 %	25 %
Annual Energy Usage:		
Electric:	806,948 kWH/year	775,523 kWH/year
Natural Gas:	24,205 Therm/year	13,516 Therm/year
Total Net Present Cost:	$2,090,543	$2,333,304
Evaluated System Simple Payback:		31.9 yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.
4. The maintenance costs are very similar between the base and geothermal systems so is left at $0.
5. The energy usage is from the energy model performed by SAIC as part of the NYSERDA work.
6. Refer to the attached information for cost backup.

M/E ENGINEERING, P.C.
Mechanical/Electrical
Engineering Consultants

150 Chestnut St., Rochester, NY 14604
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LIFE CYCLE COST EVALUATION

Project Name:	Monroe County Crime Lab
Project Number:	050246
Calculated by:	Brian Danker Date: 11/4/2008
Base System:	Building without geothermal system - boilers and chiller used to provide the building heating and cooling.
Evaluated System:	Building with geothermal system - a well field, piping, heat pumps to provide the building heating and cooling.
Description:	Geothermal wells with 160 well feet per ton, wells spaced 20' apart and 90 wells total.

Assumptions:

Inflation Rate:	3	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	6	%
Natural Gas:	6	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System	Evaluated System
First Time Capital Cost:	$0	$492,000
Annual Maintenance Cost:	$0	$0
Expected Life:	30 years	30 years
System Replacement % to Initial:	50 %	25 %
Annual Energy Usage:		
Electric:	806,948 kWH/year	775,523 kWH/year
Natural Gas:	24,205 Therm/year	13,516 Therm/year
Total Net Present Cost:	$3,043,681	$3,150,890
Evaluated System Simple Payback:		31.9 yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.
4. The maintenance costs are very similar between the base and geothermal systems so is left at $0.
5. The energy usage is from the energy model performed by SAIC as part of the NYSERDA work.
6. Refer to the attached information for cost backup.

GEOTHERMAL - PRELIMINARY ANALYSIS

Initial Assumptions

- 160 to 200 well feet per ton
- Wells spaced 20 feet apart for optimum heat transfer
- Drilling Costs $12 - $15 per bore foot for well/pipe/cirout
- 180 Ton building load
- NYSERDA Reabate: $600/Ton capped @ $200K.

Well Field Costs

- Low: (90 Wells) (320 ft.) ($12/bore ft.) = $345,600
- High: (90 Wells) (400 ft.) ($15/bore ft.) = $540,000

Use $450,000 for the average.

Project Budget

• Well Field Cost:	$450,000
• Manhole & Horizontal Piping:	$75,000
• HVAC System Premium ($,500,000 @ 5% Premium):	$75,000
	$600,000
• NYSERDA Rebate; (180 Tons) ($600/Ton)	<$108,000>
	$492,000

Operational Cost Savings

• DA #1:	VAV w/ Glycol Heat Recovery (HR)	$115,687/yr
• DA #2:	Geothermal w/ Glycol HR	$96,484/yr
• DA #3:	VAV w/ Enthalpy HR	$108,530/yr
• DA #4:	Geothermal w/ Enthalpy HR	$93,096/yr

Simple Payback

- $492,000/yr ÷ $15,434/yr = 31.8 years

Roberts Wesleyan College

- 50 wells @ 344 ft. = 17,200 bore feet
- Building 43,000 SF @ 106 Tons (162 bore feet per Ton)

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LIFE CYCLE COST EVALUATION

Project Name:	Monroe County Crime Lab		
Project Number:	050246		
Calculated by:	Brian Danker	Date:	10/22/2008
Base System:	Building without PV system.		
Evaluated System:	Building with PV system.		
Description:	PV system is 20kW and no NYSERDA $.		

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	6	%
Natural Gas:	6	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$180,000	
Annual Maintenance Cost:	$0		$200	
Expected Life:		years	25	years
System Replacement % to Initial:	100	%	75	%
Annual Energy Usage:				
Electric:	20,000	kWH/year	0	kWH/year
Natural Gas:		Therm/year	0	Therm/year
Total Net Present Cost:	$56,089		$247,964	
Evaluated System Simple Payback:			90.1	yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.
4. The first cost ($9kW) and yearly generation capability was obtained from Rochester Solar Technologies.

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LIFE CYCLE COST EVALUATION

Project Name: Monroe County Crime Lab
Project Number: 050246
Calculated by: Brian Danker Date: 10/22/2008

Base System: Building without PV system.

Evaluated System: Building with PV system.

Description: PV system is 20kW and $90,000 from NYSERDA.

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	3	%
Natural Gas:	3	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$90,000	
Annual Maintenance Cost:	$0		$200	
Expected Life:		years	25	years
System Replacement % to Initial:	100	%	75	%
Annual Energy Usage:				
Electric:	20,000	kWH/year	0	kWH/year
Natural Gas:		Therm/year	0	Therm/year
Total Net Present Cost:	$38,525		$126,787	

Evaluated System Simple Payback: 45.1 yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.
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LIFE CYCLE COST EVALUATION

Project Name:	Monroe County Crime Lab	
Project Number:	050246	
Calculated by:	Brian Danker	Date: 10/22/2008
Base System:	Building without PV system.	
Evaluated System:	Building with PV system.	
Description:	PV system is 20kW and $90,000 from NYSERDA.	

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	6	%
Natural Gas:	6	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$90,000	
Annual Maintenance Cost:	$0		$200	
Expected Life:		years	25	years
System Replacement % to Initial:	100	%	75	%
Annual Energy Usage:				
Electric:	20,000	kWH/year	0	kWH/year
Natural Gas:		Therm/year	0	Therm/year
Total Net Present Cost:	$56,089		$126,787	
Evaluated System Simple Payback:			45.1	yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.
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LIFE CYCLE COST EVALUATION

Project Name:	Monroe County Crime Lab	
Project Number:	050246	
Calculated by:	Brian Danker	Date: 10/22/2008
Base System:	Building without PV system.	
Evaluated System:	Building with PV system.	
Description:	PV system is 20kW and no NYSERDA $.	

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	3	%
Natural Gas:	3	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$180,000	
Annual Maintenance Cost:	$0		$200	
Expected Life:		years	25	years
System Replacement % to Initial:	100	%	75	%
Annual Energy Usage:				
Electric:	20,000	kWH/year	0	kWH/year
Natural Gas:		Therm/year	0	Therm/year
Total Net Present Cost:	$38,525		$247,964	
Evaluated System Simple Payback:			90.1	yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.
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LIFE CYCLE COST EVALUATION

Project Name: Monroe County - Crime Lab
Project Number: 50246
Calculated by: Ron Mead Date: 10/22/2008

Base System: Building without solar collection vacuum tube system.

Evaluated System: Building with solar collection vacuum tube system.

Description: Solar collection system with 126 panels (Sunmaxx 30) to supplement the building heating system and for adsorber supply for cooling.

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	3	%
Natural Gas:	3	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$920,600	
Annual Maintenance Cost:	$0		$5,000	
Expected Life:	30	years	25	years
System Replacement % to Initial:	100	%	25	%
Annual Energy Usage:				
Electric:	36,562	kWH/year	0	kWH/year
Natural Gas:	9,240	Therm/year	0	Therm/year
Total Net Present Cost:	$275,107		$1,167,127	

Evaluated System Simple Payback: 64.8 yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.

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LIFE CYCLE COST EVALUATION

Project Name: Monroe County - Crime Lab
Project Number: 50246
Calculated by: Ron Mead Date: 10/22/2008

Base System: Building without solar collection vacuum tube system.

Evaluated System: Building with solar collection vacuum tube system.

Description: Solar collection system with 126 panels (Sunmaxx 30) to supplement the building heating system and for adsorber supply for cooling.

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	6	%
Natural Gas:	6	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$920,600	
Annual Maintenance Cost:	$0		$5,000	
Expected Life:	30	years	25	years
System Replacement % to Initial:	100	%	25	%
Annual Energy Usage:				
Electric:	36,562	kWH/year	0	kWH/year
Natural Gas:	9,240	Therm/year	0	Therm/year
Total Net Present Cost:	$400,537		$1,167,127	

Evaluated System Simple Payback: 64.8 yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.

M/E ENGINEERING, P.C.	**COST ESTIMATE**	
Mechanical/Electrical	PROJECT NAME: MONROE COUNTY CRIME LAB	
Engineering Consultants	M/E REFERENCE:	DATE: 10/6/2008
150 NORTH CHESTNUT STREET	DIVISION:	BY: RCM
ROCHESTER, NY 14604		APPROVED BY:

ITEM	DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL UNIT COST	TOTAL ITEM COST
A.	SOLAR COLLECTOR					
	Material	126	EA	$1,500.00	$189,000.00	$189,000.00
	Labor	126	EA	$600.00	$75,600.00	$75,600.00
B.	DRY COOLER					
	Material	1	EA	$32,000.00	$32,000.00	$32,000.00
	Labor	40	Hours	$65.00	$2,600.00	$2,600.00
C.	STORAGE TANK (2 @ 8000 Gal.)	2	EA	$13,200.00	$26,400.00	$26,400.00
D.	PIPE, VALVES & FITTINGS	LS			$65,000.00	$65,000.00
E.	PUMP, AIR SEPARATORS, HEAT EXCHANGER	LS			$50,000.00	$50,000.00
F.	INSULATION - PIPE, TANK, FITTINGS	LS			$60,000.00	$60,000.00
G.	CONTROLS	LS				$15,000.00
H.	RIGGINGS	LS				$15,000.00
I.	TEST START-UP & BALANCING	LS				$75,000.00
						$605,600.00
					10% Contingency	**$53,000.00**
	TOTAL COST - Heating Only					**$658,600.00**
A	ABSORPTION CHILLER (60 TON)					
	Material	1	EA	$140,000.00	$140,000.00	$140,000.00
	Labor	1	EA	$16,000.00	$16,000.00	$16,000.00
B.	PIPE, VALVES AND FITTINGS	LS				$30,000.00
C.	PUMPS, AIR SEPARATRS, HEAT EXCHANGERS	LS				$20,000.00
D.	INSULATION	LS				$15,000.00
E.	CONTROLS	LS				$10,000.00
F.	RIGGING	LS				$3,500.00
G.	TEST, START-UP & BALANCING	LS				$3,500.00
						$238,000.00
					10% Contingency	**$24,000.00**
	TOTAL COST - Additional cost for cooling					**$262,000.00**

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LIFE CYCLE COST EVALUATION

Project Name: Monroe County - Crime Lab
Project Number: 50246
Calculated by: Ron Mead Date: 10/22/2008

Base System: Building without solar collection vacuum tube system.

Evaluated System: Building with solar collection vacuum tube system.

Description: Solar collection system with 126 panels (Sunmaxx 30) to supplement the building heating system only.

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	3	%
Natural Gas:	3	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$658,600	
Annual Maintenance Cost:	$0		$5,000	
Expected Life:	30	years	25	years
System Replacement % to Initial:	100	%	25	%
Annual Energy Usage:				
Electric:	0	kWH/year	0	kWH/year
Natural Gas:	9,240	Therm/year	0	Therm/year
Total Net Present Cost:	$204,681		$874,873	
Evaluated System Simple Payback:			62.5	yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.

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LIFE CYCLE COST EVALUATION

Project Name: Monroe County - Crime Lab
Project Number: 50246
Calculated by: Ron Mead Date: 10/22/2008

Base System: Building without solar collection vacuum tube system.

Evaluated System: Building with solar collection vacuum tube system.

Description: Solar collection system with 126 panels (Sunmaxx 30) to supplement the building heating system only.

Assumptions:

Inflation Rate:	3	%
Maintainance Inflation Rate:	6	%
Discount Rate:	6.5	%
Energy Inflation Rate		
Electric:	6	%
Natural Gas:	6	%
Energy Usage Annual Increase:	0	%
Evaluation Duration (years):	30	yr
Energy Costs:		
Electricity:	$0.10	/kWH
Natural Gas:	$1.15	/Therm

System Information:

	Base System		Evaluated System	
First Time Capital Cost:	$0		$658,600	
Annual Maintenance Cost:	$0		$5,000	
Expected Life:	30	years	25	years
System Replacement % to Initial:	100	%	25	%
Annual Energy Usage:				
Electric:	0	kWH/year	0	kWH/year
Natural Gas:	9,240	Therm/year	0	Therm/year
Total Net Present Cost:	$298,001		$874,873	
Evaluated System Simple Payback:			62.5	yrs

Calculation Information:

1. The inflation rate is used for calculating the replacement costs. The average CPI since 2001 is 2.96.
2. The discount rate is the rate of return that could be earned on an investment in the financial markets with similar risk.
3. The energy inflation rate can be any anticipated by the owner. The government Energy Information Administration estimates the natural gas costs to raise an average of 0.3% and the electrical costs to decrease an average of 0.2% until 2030 in todays cost. We recommend at least matching the inflation rate.

SOLAR VACUUM TUBE SYSTEM

Basis of Design

• Sunmaxx 30 - 30 tubes per panel (nominal 9' x 7' array)

• Based on Roof Area: 9 rows @ 14 panels per row = 126 panels

• Solar day BTU output (4hr average)

Low: 518 BTU/Sq.Ft./Solar Day
High: 823 BTU/Sq.Ft./Solar Day

• Recommended Storage: (128 gal/panel) (126 panels) = 16,128 Gallons

• Daily Solar Gain:

Low: (518 BTU) (51 SF) (126 Panels) = 3,328,668 BTU/Day
(SF - Day) (Panel)

High: (823 BTU) (51 SF) (126 Panels) = 5,288,598 BTU/Day
(SF - Day) (Panel)

• Use: 4,400,000 BTU/Day Average

• 30 Ton adsorption chiller uses - 676,000 BTU/hr

Heating Savings

(7 Months) (30 Days) (4.4M BTU) ÷ (100,000 BTU) (.90% EFF) $1.10/Therm
YR Month Therm

= $11,293/yr

Cooling Savings:

• Adsorption Chiller: 4,4000,000 BTU/Day = 6.5 Hr/Day @ 30 Ton Load
676,000 BTU/Hr

• Air Cooled Chiller: 30 Tons @ 1.25 kW/Ton = 37.5kW

• (5 Months) (30 Day) (37.5 kW) (6.5 Hrs.) ($.10) = $3,656/yr
(YR) (Month) (HR) (Day) (KWH)

Conclusion

- Cost of Solar Collectors for Heating: $590,000
- Annual Heating Savings: $12,000/yr
- Simple Payback: 49 Years

- Cost of Upgrades for Cooling: $260,000
- Annual Cooling Savings: $4,000/yr
- Simple Payback: 65 Years

Quick Check (Heating Only)

- Cornell Warren Hall heating: $0.32 / SF / yr savings
  @ 45,000 SF x $0.32/yr = $14,400/yr

LARSEN ENGINEERS

http://www.larsen-engineers.com
700 West Metro Park
Rochester, NY 14623
585-272-7310
585-272-0159 (fax)

07-3-6083

Revised November 6, 2008

LIFE CYCLE COST EVALUATION

Monroe County Crime Lab

Description:

Asphalt Pavement including detention and drainage versus Porous Concrete Pavement

The area proposed for porous concrete is 10,400 square feet (ft^2) The actual NYSDEC stormwater permit required area is 6,535 ft^2.

To have a valid present worth comparison, the two alternatives need to have the same life. To accomplish this comparison, 60 years is the lowest common multiple of expected life for these alternates.

In comparing the two alternates, both surfaces allow traffic to access parking and subsequently leave. Only porous concrete is also able to meet the stormwater quality and quantity requirements of the NYSDEC. The asphalt surface would add to the imperviousness of the site and require additional stormwater quantity storage. The cost of detention, including design and contingencies (150 feet of 30" detention chambers, 5 inlets and 100 feet of 12" pipe) is $56,150.

LEED points are able to be secured with the porous concrete pavement for stormwater quality, quantity and heat island effects. Asphalt would not satisfy any of the LEED points.

Assumptions:

General:

Inflation rate : 6.5%
Maintenance inflation rate: 6.5%

Asphalt:

Cost $3.00/$ft^2$ plus $56,150 site piping including design & contingency
Life 20 years
Maintenance Add 1-inch top after 10 years, at $1.50/$ft^2$;
Vacuum sweep 3 times per year, at $200/year

Porous Concrete:

Cost $8.93/$ft^2$

Life 15 years

Maintenance Vacuum sweep 3 times per year, at $200/year

Water hosing once per year, at $100/year

Compound Interest Factors:

6.5% (P/F)

Year	Value
10	0.5327
15	0.3888
20	0.2838
30	0.1512
40	0.0805
45	0.0588
50	0.0429

6.5% (P/A) 60 years ---- Value 15.033.

Asphalt Present Worth = $87,350 + ($200 X 15.033) + ($87,350 X (0.2838 + 0.0805))
+ ($15,600 X (0.5327 +0.1512 + 0.0429))

Porous Concrete Present Worth = $92,872 + ($300 X 15.033)
+ ($92,872 X (0.3888 + 0.1512 + 0.0588))

Comparison:

Material	**Asphalt**	**Porous Concrete**
Capital cost - 10,400 ft^2	$31,200 plus $56,150	$92,872
Annual maintenance cost	$200	$300
Expected Life years	20	15
Re-top after 10 years	$15,600	
Present worth – 60 year life	$133,500	$153,000

While values are presented, to be a truly valid comparison, the value of the LEED credits would need to be factored into the analysis

Appendix Da

Commissioning (Cx) Report – Building Systems

ENHANCED COMMISSIONING STUDY
PERFORMED AT THE MONROE COUNTY PUBLIC SAFETY LABORATORY
85 WEST BROAD STREET
ROCHESTER, NY 14614

Submitted to:
LaBella Associates, PC
300 State Street
Rochester, NY 14614

Submitted By:
Pathfinder Engineer & Architects, LLP
134 South Fitzhugh Street
Rochester, NY 14608
585-325-6004

Monroe County Crime Lab

EAcr 3- Enhanced Commissioning narrative

Pathfinder Engineers and Architects LLP acted as the third-party Commissioning Authority (CxA) for this project. Pathfinder had no design duties on this project, and is not associated with the Engineer-of Record or any of the project Contractors.

Pathfinder Engineers and Architects has served as Commissioning Authority on 12 building projects in the past 5 years, 6 of which were LEED projects.

The Owner's Project Requirement (OPR) document was reviewed in conjunction with the Engineer-of Record's Basis of Design documentation. All items requested and/or required by the Owner were incorporated into the Basis of Design (BOD) documentation from the Engineer-of-Record (EOR).

A Design Phase Commissioning plan was developed and forwarded to the EOR and a preliminary Construction Phase Commissioning document was prepared. Commissioning specifications (Divisions 0 and 24) were prepared. The specifications and preliminary Construction Phase Commissioning Plan were incorporated into the project specification package for bidders.

The project plans and specifications were reviewed by the CxA at the 60% review. Comments were generated by the CxA and forwarded to the Engineer-of-Record. A second Cx review of drawings and specifications was done at the 90% complete phase. All items noted at the 60% review were resolved, and no new items were found. A copy of the 60% drawing review documents is attached.

After the construction contracts were awarded, a Cx kickoff meeting was held. The meeting was held within 60 days of the signed contracts being returned to the Owner. At this time, the Cx process was presented to the contractors and the attached updated (final) construction phase Cx plan was distributed and discussed. A copy of the final construction phase commissioning plan is attached.

Equipment submittals were reviewed concurrently by the CxA and the EOR. All equipment submittals were found to meet the intent of the specifications and drawing notes.

O/M documentation was received from the PM and a concurrent review of these documents was also done by the CxA in conjunction with the EOR’s review. Some issues were noted and resolved.

All Cx documentation for FIV, OPT and FPT testing was completed by the CxA, and a master binder created which would be in the possession of the PM. This binder was periodically reviewed by the CxA for completeness based on field observations.

During construction, the work progress was reviewed by the CxA to insure the equipment and systems were being installed in general accordance with the design drawings. Equipment was reviewed in regards to maintenance access, serviceability, coordination with design drawings and installation condition. Items found to not comply with any of the above parameters was documented on an ongoing Commissioning Issues Log. This log was sent to the Project Manager for distribution to the Cx team for review and resolution. Some issues required input from the EOR, others required input from the installing Contractor or the Owner. After clarification was received and the issue resolved, the item was marked as being complete on the Issues Log. The Issues Log was constantly updated throughout the project construction and commissioning phases.

The FIV and OPT documentation was reviewed by the CxA at numerous site reviews to insure the forms were being filled out, and the general field conditions matched what was presented in the documents. Numerous comments were made regarding the incomplete forms, and requests made to get the documents up to date at least once a week.

Functional testing procedures (FPT) were conducted after CxA review of all OPT documentation and appropriate startup forms from the installing Contractors and a final balancing report (TAB) was reviewed and accepted by the EOR.

After starting the FPT procedures, all TAB report data was reviewed and verified.

Systems that were commissioned:

AHU-1/RF-1 which serves office and common areas (non-Lab areas).
AHU-2/EF-6/EF-7 which is a 100% outdoor air-100% exhaust system dedicated to Labs, Firing Range and Fume Hoods.
EF-3 which is dedicated to a hazardous fume hood.
EF-4 which is dedicated to the Firing Range.
EF-1, 2 and 5 which are general space exhaust systems.
2 primary heating water and 2 primary cooling water hydronic pumps with variable speed drives and differential sensors and 2 secondary perimeter radiation hot water pumps.
3 high efficiency natural gas fired low pressure hot water boilers.
Air cooled chiller system.
HVAC controls- standalone direct digital control system integrating all room, lab, fume hood and HVAC apparatus as well as exterior building lighting.
Domestic water heating system.
Building lighting controls- internal lighting control system with daylighting control
Building electric demand and consumption monitoring system.
Photovoltaic system
Emergency generator and ATS
Domestic water pressure booster system.
Rainwater harvesting system.
Lab air compressor system.

Functional Performance Testing and verification proved the commissioned systems, equipment and devices were operating as specified. This process is complete.

On-site training for the various commissioned systems is complete.

There are three outstanding commissioning issues at the present time relating to training. All issues will be resolved within the next 2 weeks of the date of this document.

A systems manual incorporating all “as-built” documentation and operating information is prepared and will be turned over to the Owner.

The Commissioning report is complete to date, but since this project is complying with the Enhanced Commissioning Credit, further work is still ongoing in relation to the final Commissioning report including the 10 month warranty review. This final documentation will be added to the report as an addendum.

Results of the Commissioning Process

The Commissioning process was seen to be a definite asset in this case. Numerous installation, access and operational deficiencies were found, documented and resolved. These deficiencies would have compromised the function of the building and the operations ongoing in the Labs after move-in.

Four important results came from the Commissioning process.

First, the TAB contract should be held by the Owner, and treated as a third party verification procedure, the same as Commissioning.

Second, contractor supervision, work timing and completion of tasks is paramount in providing a complete and an on-time project.

Adhering to pre-determined schedules is a necessity.

Training requirements are defined by the Owner in conjunction with the CxA and must be adhered to.

Appendix Db

Commissioning (Cx) Report - Envelope

REPORT ON BUILDING AIR TIGHTNESS TESTING
PERFORMED AT THE MONROE COUNTY PUBLIC SAFETY LABORATORY
85 WEST BROAD ST.
ROCHESTER, NY 14614

Submitted to:
LaBella Associates, PC
300 State Street
Rochester, NY 14614

Submitted By:
Camroden Associates, Inc.
7240 E. Carter Rd.
Westmoreland, NY 13490
(315) 336-7955

Submitted:
February 25, 2011

NOTICE

Camroden Associates, Inc. (CAI) strives to provide accurate, complete and useful information. However; neither CAI nor any person contributing to the preparation of this document makes any warranty, expressed or implied, with respect to the usefulness of any information, method, or process disclosed in this material, nor does CAI assume any responsibility for the use of, or for damages arising from the use of, any information, method, or process disclosed in this document.

EXECUTIVE SUMMARY

Test Result: The building passed the air pressure test. It meets the air tightness specification.
Recommendations: Air seal a small number of locations:

- Improve weatherstripping on doors
- Air seal the fire lagging on the I-beam at the top of the wall that divides the mesh-doored garage from the conditioned space
- Air seal around pipe, conduit and duct penetrations through air barrier walls (all of the ones I saw were through the wall that divides the mesh-doored garage from the conditioned space
- Fluted steel deck where the south stairwell roof meets the CMU wall
- A small number of locations above the suspended ceiling on the top floor of the NE corner of the building where there are some air voids in the cavity spray foam that are visible to the naked eye.

This document is a report on the building envelope air tightness testing performed by Camroden Associates, Inc. on the Monroe County Public Safety (Crime Lab) Laboratory, 85 W. Broad St., Rochester, NY. The purpose of the testing was to determine if the building envelope (the air barrier) met the Owner's air tightness specification of a maximum of 0.40 cubic feet per minute of leakage per square foot (cfm/ft. sq.) of envelope at an indoor/outdoor air pressure difference of 75 Pascals (Pa) (0.3 in. w.c.). The testing was conducted on February 11, 2011.

The facility is a four story structure of approximately sq. ft. The wall assembly air barrier is a minimum 3" polyicynene foam insulation sprayed on the interior side of the ½" glass matt gypsum board exterior sheathing. All seams of the gypsum board sheathing were sealed on the exterior with Henry Blueskin self-adhering air barrier membrane. The roof air barrier is the modified bituminous roofing membrane. The floor air barrier is the concrete floor slab.

The testing consisted of four separate tests; two pressurizing and two depressurizing the facility relative to the outdoor air using calibrated blower doors. The blower door fan speeds were varied to provide several indoor/outdoor pressure differences. The volumes of air and the resultant pressure differences were measured and recorded. These data were analyzed to provide an equation from which the air flow it takes to induce a pressure difference of 75 Pascals could be calculated. The air flows at 75 Pascals for both tests were then averaged and divided by the total air barrier area. This provided the leakage rate, in cubic feet per minute per square foot of air barrier area.

Total air barrier area of enclosure is 56,308 sq. ft. The allowable leakage rate is 0.40 cfm per square foot at 75 pascals. The maximum allowable air flow required to induce 75 pascals indoor-outdoor pressure difference is 22,523 cfm.

The test confirmed the facility meets the air tightness requirement. The average air flow at 75 Pascals for the four tests was found to be 20,144 cfm. This results in an average leakage rate 0.36 cfm/sq. ft. of building enclosure, 10% tighter than the target air leakage rate.

PROCEDURES

Prior to testing the facility was prepared in accordance with ASTM Standard E1827-96 Standard Test Methods for Determining Air Tightness of Buildings Using an Orifice Blower Door. Table 1 presents the preparations made.

Table 1. Building conditions during test.	
HVAC equipment (air handlers, exhaust fans)	Off
Outdoor air intakes	Dampers closed or sealed with duct mask
Exterior doors	Closed
Interior doors	Open
Windows	Closed
Drain traps	Filler with water

The depressurization tests exhausted air from the facility to lower the indoor air pressure relative to the outdoor pressure. The pressurization tests supplied outdoor air into the building to increase the indoor air relative to outdoors. Minneapolis blower doors manufactured by The Energy Conservatory (TEC) were used to supply and exhaust the air. Three fans were placed in the main entrance facing West Broad St. and two fans placed in the South stairwell exit door. Figure 1 illustrates the three-fan set-up in the Main Lobby.

Figure 1. Main lobby fan installation.

Indoor/outdoor pressure relationships were measured on the north, south, east, and west sides of the facility. The indoor/outdoor pressure differences and air flow volumes from each fan were measured using DG700 micromanometers, also manufactured by TEC. In addition, the pressure difference between the 4th and 2nd floor and 1st and 2nd floor were measured. This would verify that pressures in the facility were equal. Figure 2 illustrates three of the micromanometers used to collect the air flow volumes from three of the fans and the north, west, and east indoor/outdoor pressure differences.

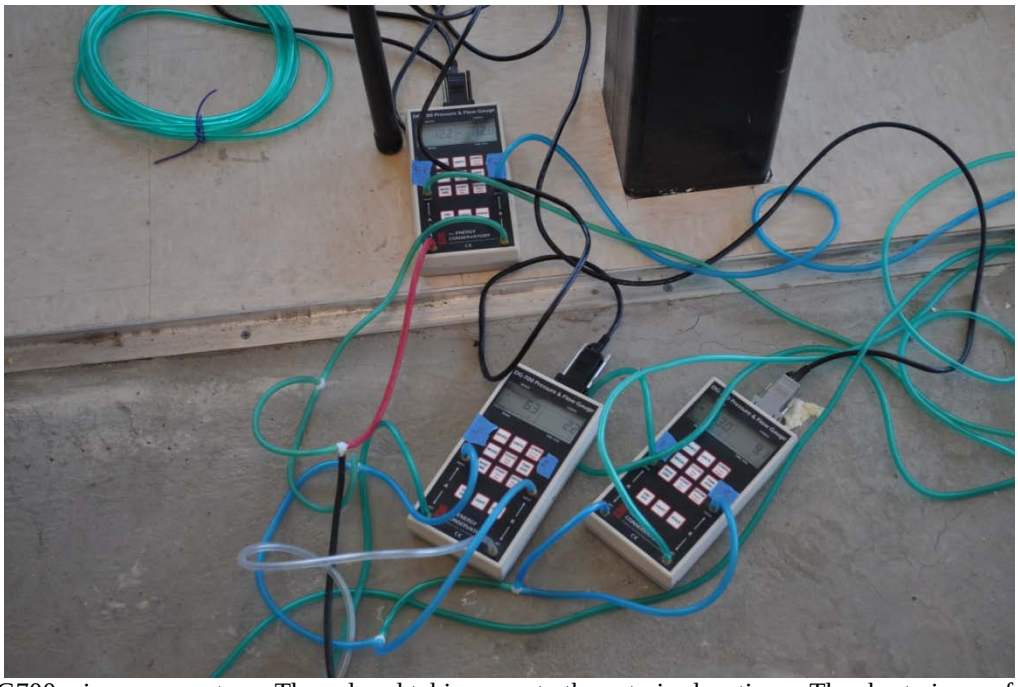

Figure 2. DG700 micromanometers. The colored tubing runs to the exterior locations. The short pieces of tubing tee'd together lead to an indoor location away from the fan location. This is to prevent air movement near the fans from interfering with measurement accuracy.

The micromanometers were connected to a laptop computer via CAT-V cables. Data was collected at 10 second intervals using Techlog2 software. This software, developed by TEC provides data acquisition control, near real-time data viewing and data analysis. Figure 3 illustrates the laptop CAT-V connection. Figure 4 presents a Techlog2 screen shot from an actual test.

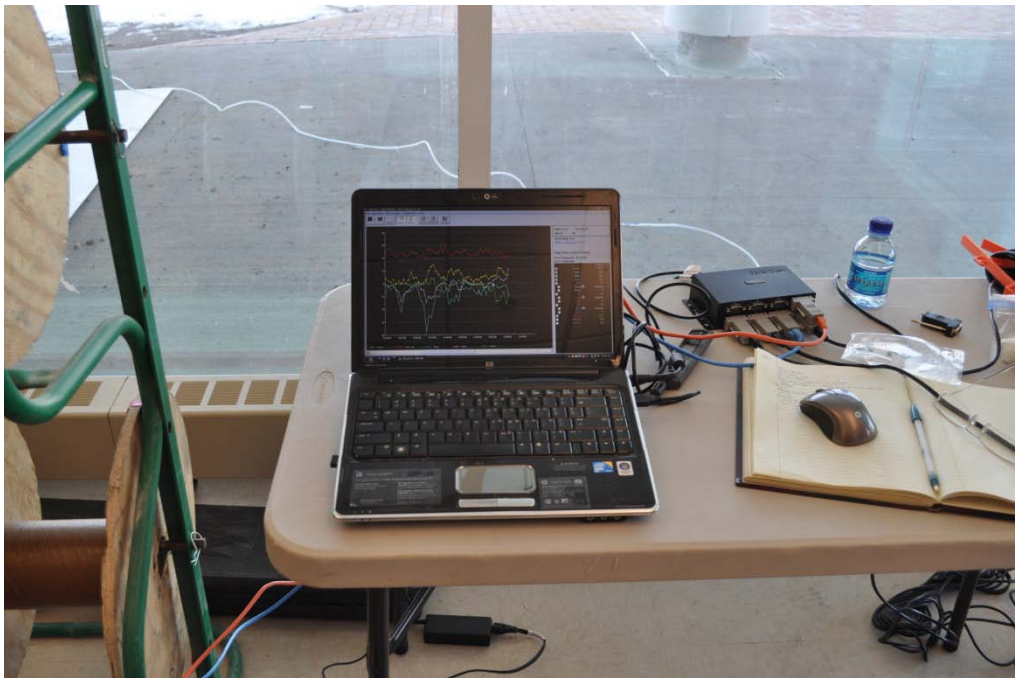

Figure 3. Test control station.

Figure 4. Screen-shot of depressurization test. Colored lines represent the indoor/outdoor pressures. The green rectangles represent periods of records i.e. data used for analysis.

Immediately before and after each test, baseline pressures were collected. The baseline data is collected with the facility in the test condition but with the blower door fans off and sealed. Baseline data provides information concerning the indoor/outdoor pressure differences being induced on the facility by forces other than the fans used for the test, such as wind and temperature differences. Baseline data is used to insure the differential pressure data collected during the test accurately represents the pressures developed by the test fans. For depressurization tests negative baseline pressures are subtracted from the test results. Positive baseline pressures are added. For pressurization tests the opposite is true.

RESULTS

The results of the pressure tests are summarized in Table 1 and 2. The average airflow at 75 pascals induced pressure difference is 20,144 cfm (0.36 cfm/ft^2 of enclosure). This clearly meets the airtightness target.

Table 1 Test 1	CFM at 75Pa	Cfm/ft^2 enclosure at 75 Pa	95% Confidence Interval (%)
Depressurization 1	18989	0.337	±6.5
Pressurization 1	21049	0.374	±2.9
Average	20019	0.356	

Table 2 Test 2	CFM at 75Pa	Cfm/ft^2 enclosure at 75 Pa	95% Confidence Interval (%)
Depressurization 2	19608	0.348	±4.4
Pressurization 2	20930	0.372	±3.5
Average	20269	0.360	
Average of all tests	20144	0.36	

Figures 5, 6, 7 and 8 show the data collected during the four tests plotted on log-log scales. On log-log the data points should fall on a straight line.

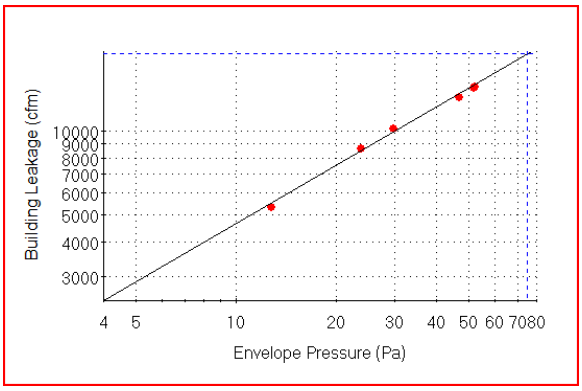

Figure 5. Depressurization test #1 results.

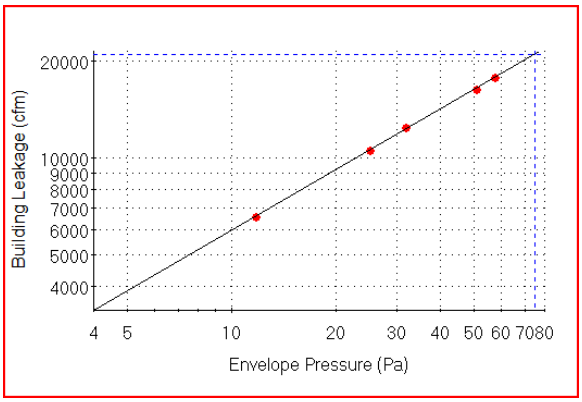

Figure 6. Pressurization test #1 results.

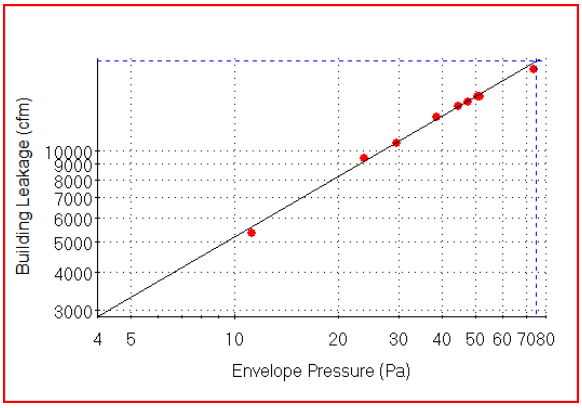

Figure 7. Depressurization test #2 results.

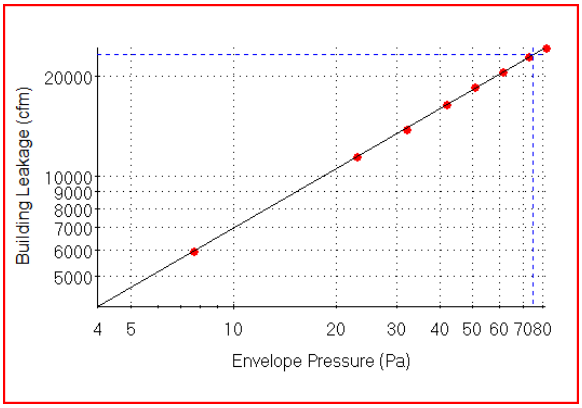

Figure 8. Pressurization test #2 results.

While the building was depressurized by around 20 pascals. In this condition cold air was being drawn in through air leaks, making them easily identifiable by infrared scans. An infrared and visual inspection was made of the building at this time. Infrared and visual images are included in Table 3. A short list of air leaks I recommend for sealing were identified because they may cause later problems:

- Improve weatherstripping on doors.
- Air seal the fire lagging on the I-beam at the top of the wall that divides the mesh-doored garage from the conditioned space. This is the largest single air leak in the building and may result in summertime condensation or wintertime frozen pipe problems. I suggest spraying the fire lagging with an approved fluid applied fire barrier material. Apply the spray from the top of the I-beam and extend it down onto the top two inches of the gypsum board wall.
- Air seal around pipe, conduit and duct penetrations through air barrier walls (all of the ones I saw were through the wall that divides the mesh-doored garage from the conditioned space).
- Air seal the fluted steel deck where the south stairwell roof meets the CMU wall.
- Air seal a small number of locations above the suspended ceiling on the top floor of the NE corner of the building where there are visible air voids in the cavity spray foam.

Table 3 Infrared and Visible Images of the largest air leaks in the building plus one image showing typical wall with no major leaks and a superior insulation condition.

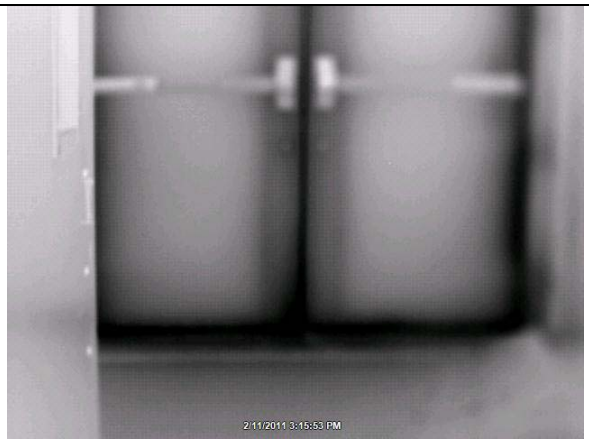

Figure 9 The largest single leaks in the building are at the doors seals. Infrared on the left, visible on the right. In the infrared image the darker areas are cooler. There are two reasons a surface is cooler – the insulation value is lower of cold outdoor air is being drawn in through an air leak. In this image the darkest areas are at the weatherstripped edges. The edges of these areas are poorly defined because they are the result of streamers of air. The two vertical areas at the center of the doors are where the door is reinforced and has less foam insulation in the core – not the result of an air leak but of lower R-value.

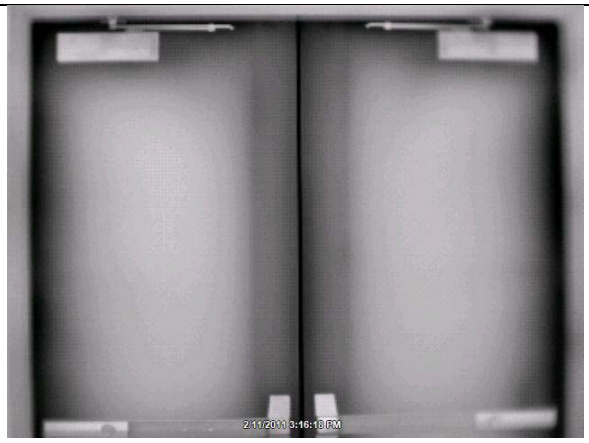

Figure 10 the top of the same door.

Figure 11another door showing air leakage at the perimeter.

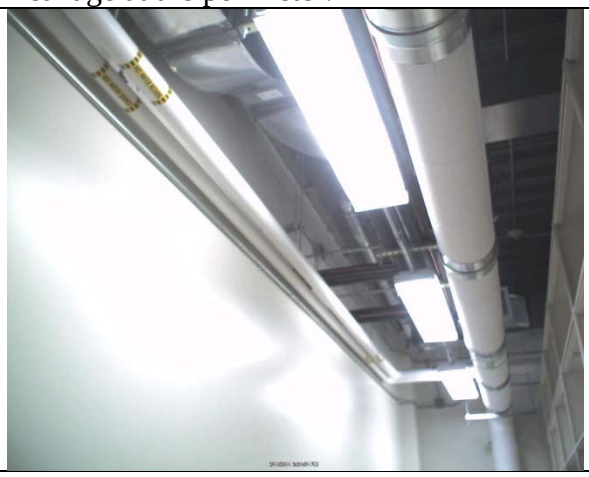

Figure 12 The largest single leak in the building is at the top of the wall separating the garage (with the mesh doors) from the conditioned space. In the IR image the solid portion of the wall shows a uniform,

airtight, high quality insulation installation. The connection to the fluted steel deck above is airtight. However the connection between the bottom of the I-beam and the top of the solid wall shows a significant air leak the dark stripe with streamers). Although the building meets the airtightness target this leak is important as it may cause summer time condensation and winter time pipe freezing problems. The air is coming right through the fire lagging applied to the steel I-beam.

Figure 13 Another location of the showing the air leak at the top of the wall demising wall between garage and conditioned space. The bright vertical lines are infrared reflecting off the shiny steel studs.

Figure 14 Another location showing air leakage through the fire lagging at the top of the garage demising wall.

Figure 15 Air leakage around pipes penetrating the wall between the garage and the conditioned space. There are a number of locations where ducts, conduit and pipe penetrate the garage walls that must be

air sealed.

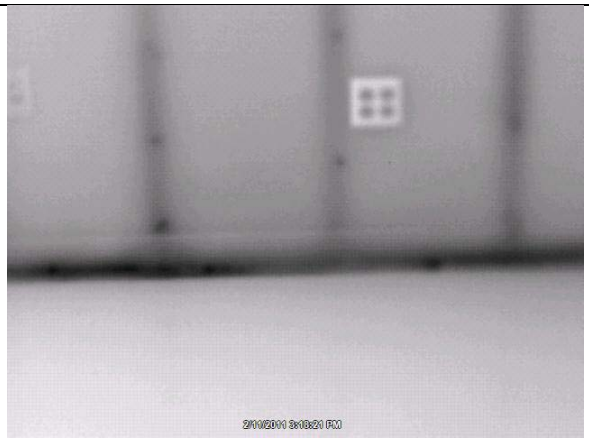

Figure 16 An image to show a section of typical wall at the bottom of the building. The infrared image shows no air leakage at studs – the studs are cooler because they bridge the cavity insulation. Without the exterior foam insulation the effect is much worse. Notice that every gyp board screw can be seen because it runs a little cooler than the surrounding gypsum board. At the bottom of the wall the dark line is mostly the result of the steel C-track acting as a thermal bridge. There may be some minor air leaks that pose no problems.

Appendix Ea

LEED Scorecard

LEED-NC

Monroe County Crime Lab

LEED-NC Version 2.2 Project Scorecard

Yes	?	No	Sustainable Sites	14 Points
12	0	2		

Y			Prereq 1	**Construction Activity Pollution Prevention**	Required
y			Credit 1	**Site Selection**	1
y			Credit 2	**Development Density & Community Connectivity**	1
y			Credit 3	**Brownfield Redevelopment**	1
y			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
y			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
y			Credit 4.3	**Alternative Transportation**, Low-Emitting and Fuel-Efficient Vehicles	1
y			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		n	Credit 5.1	**Site Development,** Protect of Restore Habitat	1
		n	Credit 5.2	**Site Development,** Maximize Open Space	1
y			Credit 6.1	**Stormwater Design,** Quantity Control	1
y			Credit 6.2	**Stormwater Design,** Quality Control	1
y			Credit 7.1	**Heat Island Effect,** Non-Roof	1
y			Credit 7.2	**Heat Island Effect,** Roof	1
y			Credit 8	**Light Pollution Reduction**	1

Yes	?	No	Water Efficiency	5 Points
5	0	0		

y			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
y			Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
y			Credit 2	**Innovative Wastewater Technologies**	1
y			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
y			Credit 3.2	**Water Use Reduction**, 30% Reduction	1

Yes	?	No	Energy & Atmosphere	17 Points
13		4		

Y			Prereq 1	**Fundamental Commissioning of the Building Energy Systems**	Required
Y			Prereq 2	**Minimum Energy Performance**	Required
Y			Prereq 3	**Fundamental Refrigerant Management**	Required
8			Credit 1	**Optimize Energy Performance**	1 to 10
1			Credit 2.1	**On-Site Renewable Energy**	1 to 3
y			Credit 3	**Enhanced Commissioning**	1
y			Credit 4	**Enhanced Refrigerant Management**	1
y			Credit 5	**Measurement & Verification**	1
y			Credit 6	**Green Power**	1

Yes	?	No	Innovation & Design Process	5 Points
5	0	0		

y			Credit 1.1	**Innovation in Design**: Green Power	1
y			Credit 1.2	**Innovation in Design**: Education	1
y			Credit 1.3	**Innovation in Design**: Exemplary Performance - Construction Waste Mç	1
y			Credit 1.4	**Innovation in Design**: Exemplary Performance - Water Efficiency	1
y			Credit 2	**LEED® Accredited Professional**	1

Yes	?	No	Project Totals (pre-certification estimates)	69 Points
55	0	14		

Certified 26-32 points **Silver** 33-38 points **Gold** 39-51 points **Platinum** 52-69 points

Yes	?	No	Materials & Resources	13 Points
7	0	6		

Y			Prereq 1	**Storage & Collection of Recyclables**	Required
		n	Credit 1.1	**Building Reuse**, Maintain 75% of Existing Walls, Floors & Roof	1
		n	Credit 1.2	**Building Reuse**, Maintain 100% of Existing Walls, Floors & Roof	1
		n	Credit 1.3	**Building Reuse**, Maintain 50% of Interior Non-Structural Elements	1
y			Credit 2.1	**Construction Waste Management**, Divert 50% from Disposal	1
y			Credit 2.2	**Construction Waste Management**, Divert 75% from Disposal	1
		n	Credit 3.1	**Materials Reuse**, 5%	1
		n	Credit 3.2	**Materials Reuse**,10%	1
y			Credit 4.1	**Recycled Content**, 10% (post-consumer + ½ pre-consumer)	1
y			Credit 4.2	**Recycled Content**, 20% (post-consumer + ½ pre-consumer)	1
y			Credit 5.1	**Regional Materials**, 10% Extracted, Processed & Manufactured R	1
y			Credit 5.2	**Regional Materials**, 20% Extracted, Processed & Manufactured R	1
		n	Credit 6	**Rapidly Renewable Materials**	1
y			Credit 7	**Certified Wood**	1

Yes	?	No	Indoor Environmental Quality	15 Points
13	0	2		

Y			Prereq 1	**Minimum IAQ Performance**	Required
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	Required
y			Credit 1	**Outdoor Air Delivery Monitoring**	1
y			Credit 2	**Increased Ventilation**	1
y			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
y			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
y			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
y			Credit 4.2	**Low-Emitting Materials**, Paints & Coatings	1
y			Credit 4.3	**Low-Emitting Materials**, Carpet Systems	1
y			Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber Products	1
y			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
y			Credit 6.1	**Controllability of Systems**, Lighting	1
y			Credit 6.2	**Controllability of Systems**, Thermal Comfort	1
y			Credit 7.1	**Thermal Comfort**, Design	1
y			Credit 7.2	**Thermal Comfort**, Verification	1
		n	Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
		n	Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

Appendix Eb

LEED for New Construction – Construction Application Review

LEED for New Construction

How to Interpret this Report

Purpose

The Leadership in Energy and Environmental Design (LEED) Rating System was designed by the US Green Building Council to encourage and facilitate the development of more sustainable buildings.

Environmental Categories

The report is organized into five environmental categories as defined by LEED including:

Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environn

LEED Prerequisites

Prerequisites must be achieved. Non-compliant prerequisites must be resolved before a certification can be awarded.

LEED Credits

The environmental categories are subdivided into the established LEED credits, which are based on desired performance goals within each category. An assessment of whether the credit is earned or denied is made and a narrative describes the basis for the assessment.

Achieved

55

The applicant has provided the mandatory documentation which supports the achievements of the credit requirements, achieving the associated points. Currently the project has scored the adjacent points in this category.

Denied

0

The applicant has applied for a point in a particular credit, but has misinterpreted the credit intent or cannot substantiate meeting the requirements. Currently the project has the adjacent points in this category.

Rating

This Project has achieved enough points for Platinum Rating.

Official Scores

Official LEED v2 Scores: Certified: 26-32 Silver Rating: 33-38 Gold Rating: 39-51 Platinum Rating: 52+

Earned	Denied	Sustainable Sites	Possible Points 14
12	0		

Earned	Denied		
0	0	**Construction Activity Pollution Prevention**	Prerequisite 1-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that the project's erosion and sedimentation control plan conforms to the 2003 EPA Construction General Permit, which outlines the provisions necessary to comply with Phases I and II of the NPDES program. Supporting documentation includes a narrative describing the implemented erosion and sedimentation control measures, the erosion and sedimentation control report, and a site demolition plan.

Earned	Denied		
1	0	**Site Selection**	Credit 1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project site does not meet any of the prohibited criteria.

Earned	Denied		
1	0	**Development Density and Community Connectivity**	Credit 2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project site is located within one half mile of ten community services and one residential district, with a density of 15 units per acre. Additionally, a listing of the neighborhood services has been provided in the Template. The required site map showing the 0.5 mile radius and the locations of the community services and residential district has also been provided.

Earned	Denied		
1	0	**Brownfield Redevelopment**	Credit 3-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project is contaminated, as documented by a Phase II Environmental Site Assessment. A detailed narrative has been provided describing the environmental site analysis and remediation efforts undertaken prior to construction of the project.

Earned	Denied		
1	0	**Alternative Transportation: Public Transportation Access**	Credit 4.1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project is served by two bus lines within 0.25 miles of the project site. A scaled drawing showing the location of the transit stops has been provided.

1 | 0

Alternative Transportation: Bicycle Storage and Changing Rooms

Credit 4.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project is non-residential. The Template states that bicycle storage facilities have been provided to serve 5% of FTE building occupants, measured at peak occupancy, and shower facilities for 0.5% of the FTE building occupants. Plans have been provided showing the location of the shower/changing facilities and the bike storage facilities.

1 | 0

Alternative Transportation: Low-Emitting and Fuel Efficient Vehicles

Credit 4.3-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template and project drawings have been provided stating that four preferred parking spaces for low-emitting and fuel efficient vehicles have been provided on site which represents 5% of the total onsite parking.

1 | 0

Alternative Transportation: Parking Capacity

Credit 4.4-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the on-site provided parking does not exceed the minimum local zoning requirements, and that car/van pool parking has been reserved for a minimum of 5% of the total provided parking spaces. A site drawing and narrative have been included as supporting documentation.

| |

Site Development: Protect or Restore Habitat

Credit 5.1-Version 2.2

| |

Site Development: Maximize Open Space

Credit 5.2-Version 2.2

1 | 0

Stormwater Management: Quantity Control

Credit 6.1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project has implemented a stormwater management plan which results in an 82% decrease (rate and quantity) in runoff from calculated pre-project conditions. Calculations have been provided to demonstrate compliance with the requirements of this credit. The project's Stormwater Pollution Prevention Plan has also been included.

1 | 0

Stormwater Management: Quality Control

Credit 6.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project has implemented a stormwater management plan which reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from 100% of the average annual rainfall using acceptable BMPs. The Submittal Template indicates that the project's BMPs are capable of removing 80-90% of the total suspended solids (TSS) from the average annual post-development runoff.

1 | 0

Heat Island Effect: Non-Roof

Credit 7.1-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that 98.79% of the site hardscape has been paved with highly reflective materials and open grid pavement. The calculations indicate that of 53,291 square feet of total site hardscape, 30,892 square feet (57.97%) have been paved with non-colored concrete, and 10,877 square feet (20.41%) have been paved with open grid pavement. A site plan indicating the hardscape areas has been provided.

However, it appears that the pervious paving was included in calculations for both highly reflective materials and open grid pavement.

TECHNICAL ADVICE:
Please provide a revised LEED Submittal Template that excludes the open grid pavement from the highly reflective materials area calculation.

Construction Application 10/31/2011

A revised LEED Submittal Template, site plan, and response narrative have been provided to address the issues outlined in the Preliminary Review, stating that 78.37% of the site hardscape is paved with highly reflective materials and open grid pavement. The documentation demonstrates credit compliance.

1 | 0

Heat Island Effect: Roof

Credit 7.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the roofing materials used on the project have a minimum SRI value of 100 for 92% of the roof surface. Drawings and product data have also been included as supporting documentation.

1 | 0

Light Pollution Reduction

Credit 8-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project's interior and exterior lighting has been designed in accordance with the requirements of this credit.

Interior Lighting: The narrative indicates that the non-emergency interior lighting fixtures have been

automatically controlled to turn off during non-business hours. Manual override capability has been provided for after hours use. Interior lighting plans have been uploaded to support this claim.

Exterior Lighting Power: The Template indicates that the lighting power densities for exterior area fixtures do not exceed 80% of the ASHRAE recommendations and that the LPD of exterior facade/landscape lighting does not exceed 50% of the referenced ASHRAE Standard recommendations. Exterior lighting plans have been uploaded to support this claim.

Light Trespass: The Template indicates that the project is located in LZ-3. Based on requirements for LZ-3, the project complies with this portion of the credit requirement.

In addition, a Site Lumen calculation has been provided, along with a narrative explaining the light trespass analysis undertaken for the project.

Earned	Denied	
5	0	Water Efficiency — Possible Points 5
2	0	**Water Efficient Landscaping** — Credit 1.1-1.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that no permanent irrigation system has been installed. A narrative has been included describing the landscaping design strategies installed on the site. The narrative states that the planting will only be watered during the initial plant establishment period. Site drawings have been included as supporting documentation.

1	0	**Innovative Wastewater Technologies** — Credit 2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template and water use calculations have been provided stating that the project has reduced potable water use for sewage conveyance by 70.7% from a calculated baseline design through the installation of dual flush toilets and harvested rainwater use. Plumbing fixture product data and a stormwater collection system detail have also been included.

2	0	**Water Use Reduction** — Credit 3.1-3.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project has reduced potable water use by 57% from a calculated baseline design through the installation of dual flush toilets, low flow faucets and showers, and harvested rainwater use. Plumbing fixture product data and a stormwater collection system detail have also been included.

EDUCATIONAL NOTE: Although they are included in the Template, janitor sinks are not included in EPAct 1992 regulations and are not applicable to this credit. For future submittals, please do not include them in calculations.

Construction Application 8/12/2011

This credit was previously awarded in the preliminary design review.

Earned	Denied		
13	0	Energy and Atmosphere	Possible Points 17
0	0	**Fundamental Commissioning of the Building Energy Systems**	Prerequisite 1-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that all fundamental commissioning requirements have been completed. A narrative has been included to describe the commissioned systems and results of the commissioning process. The commissioning plan, supplemental narrative, and issues log have been provided.

0	0	**Minimum Energy Performance**	Prerequisite 2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project complies with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) of ASHRAE 90.1-2004. The Template denotes that the project is pursuing EA Credit 1 and has used a simulation model to confirm satisfaction of this prerequisite. However, this prerequisite cannot be satisfied unless two points or more have been achieved in EAc1.

TECHNICAL ADVICE: This prerequisite is pending the achievement of two points in EAc1.

NOTE: For additional information, please refer to the summary of the required two-point minimum under EAc1 for projects registered after June 26, 2007. The requirements can be accessed at the following link: http://www.usgbc.org/ShowFile.aspx?DocumentID=2303.

Design Application Review 1/20/2010

The project team has provided the clarifications requested for EAc1. The documentation demonstrates prerequisite compliance.

0	0	**Fundamental Refrigerant Management**	Prerequisite 3-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that base building HVAC and R systems use no CFC-based refrigerants.

8	0	**Optimize Energy Performance**	Credit 1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template and supporting documentation have been provided stating that the project has achieved an energy cost savings of 35.7% using the ASHRAE 90.1-2004 Appendix G methodology. Energy efficiency measures include an improved thermal envelope, high efficiency glazing, reduced lighting power density, and energy efficient HVAC system. However, several issues should be addressed for the final review.

TECHNICAL ADVICE:
1. Section 1.3 of the Submittal Template shows a number of warning messages. Please provide a description and justification for each of these warning messages.

2. In Table 1.4, the Baseline case fan power has been listed with a total system fan power of 82.0 kW, which seems to be rather high, and based on the information provided does not appear to be consistent with G3.1.2.9 of the ASHRAE 90.1-2004 Manual. The fan power must be calculated in accordance with G3.1.2.9. ASHRAE 90.1-2004 using the total system fan supply volumes as required. Please revise the sum of the supply, return, exhaust and relief fans for each HVAC system to be equal to the power calculated in G3.1.2.9. Please verify that both cases are modeled for full cooling and heating, as required.

3. In Table 1.4, the Service Water Heating description is using different fuel sources between the Baseline and Proposed buildings. According to G3.1 Section 11, the Service Water Heating system for the Baseline and Proposed buildings must use the same fuel source. Please revise the Submittal Template and simulation to reflect the same fuel source for the Baseline and Proposed buildings. Also, any savings claimed for the service water heating must be indicated using the exceptional calculation method.

4. The energy savings reported for space heating, does not appear to be substantiated based on the energy inputs reported in Tables 1.8.1 and 1.8.2. Please review the Baseline and Proposed inputs for the model to confirm that they conform with Appendix G modeling protocol, and provide sufficient information regarding the energy inputs in Tables 1.8.1 and 1.8.2 to justify the reported energy savings. [Note: you may also submit an accompanying narrative if this would more easily facilitate the confirmation of energy savings].

5. In Table 1.4, the hot water heating loop and pump parameters has been listed with information that does not appear to be consistent with the Baseline protocol as indicated in G3.1.3.3 and G3.1.3.4. The supply water temperature should be based on 180 deg. F at a 50 deg. Delta T and a pump power of 19 W/gpm.

6. It is unclear whether hot water reset controls and supply air temperature reset controls were modeled as required in the Baseline case. Please provide verification that the Baseline supply air temperature reset controls were modeled as required by section G3.1.3.4 for hot water reset and G3.1.3.12 for supply air reset controls. Please update the Submittal Template and simulation based on these requirements.

7. Please provide a narrative addressing each of the comments above, and provide an updated Template, and simulation input and output summaries with the final review. After the LEED Submittal Template has been updated and simulation runs are complete, please resubmit the Submittal Template and simulation results for further review.

NOTE: A project must demonstrate a minimum cost savings of 14% to qualify for two points under EAc1. For additional information, please refer to the summary of the required two-point minimum under EAc1 for projects registered after June 26, 2007. The requirements can be accessed at the following link: http://www.usgbc.org/ShowFile.aspx?DocumentID=2303.

Design Application Review 1/20/2010

Additional documentation consists of a revised LEED Submittal Template, a response narrative, simulation reports, and revised modeling results that demonstrate a 35.7% energy cost savings relative to an ASHRAE 90.1-2004 Appendix G Baseline building, with annual electric and natural gas consumptions of 1,097,703 kWh and 32,791 therms, respectively.

1 | 0

On-Site Renewable Energy

Credit 2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that 2.51% of the project's energy cost is being offset by renewable site generated energy and that the project has used a computer model simulation to document improved building energy performance under EA Credit 1. A narrative has been provided to confirm this claim. However, further clarification is needed for EA Credit 1 to confirm that the total energy cost is correctly reported before credit can be awarded for renewable energy.

TECHNICAL ADVICE: After responding to the EAc1 documentation clarification requests, confirm that the total energy and cost in the EAc2 Template matches the numbers reported in the final EAc1 submittal.

Design Application Review 1/20/2010

The project team has provided a revised LEED Submittal Template, response narrative, and the clarifications for EAc1 to address the issues of the preliminary review. The reviewer has determined that 2.5% of the project's energy cost is being offset by renewable site generated energy. The documentation demonstrates credit compliance.

1 | 0

Enhanced Commissioning

Credit 3-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that all enhanced commissioning requirements have been completed. A narrative has been provided to describe the enhanced commissioning processes employed on the project. Supporting documentation includes a supplemental narrative, design and construction phase commissioning plans, and a BOD review report.

1 | 0

Enhanced Refrigerant Management

Credit 4-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project selected refrigerants and HVAC and R equipment that minimize the emission of compounds which contribute to ozone depletion and global warming. The completed Refrigerant Impact Calculation indicates that the project's total refrigerant impact is 76.9 per ton, which is less than the maximum allowable value of 100. However, the project includes spaces, Refrigerator (101C) and Freezer (101E), which appear to include refrigeration equipment. All commercial

refrigeration equipment that contain more than 0.5 lbs of refrigerant must be included in the calculations.

TECHNICAL ADVICE: Please provide a narrative describing the refrigeration equipment used for these spaces, and revise the Submittal Template to include all refrigeration equipment with 0.5 lbs of refrigerant as required.

Design Application 1/20/2010

The LEED Submittal Template has been revised to include two additional pieces of refrigerant equipment as requested, and additional documentation has been provided to clarify leakage rates. The revised Refrigerant Impact Calculation is 95.4, which is within credit requirements. All preliminary review issues have been addressed, and the documentation demonstrates credit compliance.

1	0	**Measurement and Verification**	Credit 5-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that a measurement and verification plan consistent with Option D of the IPMVP has been developed and implemented for the project. The M and V plan and an electrical diagram have been included.

1	0	**Green Power**	Credit 6-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that 145.8% of the building's electricity usage will be provided by renewable sources, and that Green-e accredited Tradable Renewable Certificates (RECs) have been purchased equal to 145.8% of the predicted annual electrical consumption over a two-year period. A purchase order and purchase agreement have been included, stating that a total of 1,600,000 kWh have been purchased from OneEnergy Renewables in order to meet the exemplary performance requirement.

Earned	Denied		
7	0	Materials and Resources	Possible Points 13
0	0	**Storage and Collection of Recyclables**	Prerequisite 1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project has provided appropriately sized dedicated areas for the collection and storage of recycling materials, including cardboard, paper, plastic, glass, and metals. A narrative, project drawings, and product data have also been included.

		Building Reuse	Credit 1.1-1.2-Version 2.2

		Building Reuse, Non-Structural	Credit 1.3-Version 2.2
2	0	**Construction Waste Management**	Credit 2-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that 2,158.32 tons (97.98%) of on-site generated construction waste have been diverted from landfill. Calculations have been provided to document the waste types and receiving agencies for recycled materials. A narrative has been included, as well as the Construction Waste Management Plan.

0	0	**Resource Reuse**	Credit 3-Version 2.2
2	0	**Recycled Content**	Credit 4-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that 21.98% of the total building materials content, by value, was manufactured using recycled materials.

2	0	**Regional Materials**	Credit 5-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that 30.61% of the total building materials value includes materials and/or products that were extracted, harvested or recovered, as well as manufactured within 500 miles of the project site. A supplemental tracking spreadsheet has been included.

0	0	**Rapidly Renewable Materials**	Credit 6-Version 2.2
1	0	**Certified Wood**	Credit 7-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that 84.99% of the total wood based building materials were harvested from FSC certified forests. Vendor invoices have been included.

Earned	Denied		
13	0	Indoor Environmental Quality	Possible Points 15

1 | 0

Minimum IAQ Performance

Prerequisite 1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project complies with the minimum requirements of ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality, using the Ventilation Rate Procedure. A supplemental narrative has been provided describing the project's ventilation design, which also includes specific information regarding fresh air intake volumes.

0 | 0

Environmental Tobacco Smoke (ETS) Control

Prerequisite 2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that smoking is prohibited inside buildings within the project and that designated smoking areas have been located at least 25 feet away from building openings and air intakes.

1 | 0

Outdoor Air Delivery Monitoring

Credit 1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that carbon dioxide concentrations are monitored within all densely occupied spaces and that direct airflow measurement devices have been provided for each mechanical ventilation system serving non-densely occupied spaces. The Template further states that monitoring equipment has been configured to generate an alarm when conditions vary by 10% or more from the setpoint. A narrative describing the project's ventilation design and CO2 monitoring system has been included, as required. Drawings have been provided documenting the location and type of installed sensors.

1 | 0

Increased Ventilation

Credit 2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project has increased breathing zone outdoor air ventilation rates to all occupied spaces by 30% above the minimum rates required by ASHRAE Standards 62.1-2004 as determined by EQp1. A detailed narrative has been provided describing the project's ventilation system design. Specific information regarding the fresh air intake volumes for each occupied zone has been provided.

1 | 0

Construction IAQ Management Plan: During Construction

Credit 3.1-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that a construction IAQ Management Plan following the referenced SMACNA Guidelines has been implemented for the project, and that permanently installed air handling equipment was not operated during construction. The IAQ Management Plan and a narrative have been provided, as well as photographs highlighting the implemented IAQ measures.

1 | 0

Construction IAQ Management Plan: Before Occupancy

Credit 3.2-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that a flush-out has been performed prior to occupancy, supplying a total air volume of 14,000 cubic feet of outdoor air per square foot of floor area while maintaining an internal temperature of 67.81-71.85 degrees F and relative humidity less than 60%. A narrative has been provided to describe the process, including data regarding the temperature, air flow, and duration of the flush-out. The IAQ Management Plan, specification, and filter product data sheets have been provided.

1 | 0

Low-Emitting Materials: Adhesives and Sealants

Credit 4.1-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that all indoor adhesive and sealant products comply with the VOC limits of the referenced standards for this credit. The template includes all required product details.

1 | 0

Low-Emitting Materials: Paints and Coatings

Credit 4.2-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that all indoor paint and coating products comply with the VOC limits of the referenced standards for this credit.

However, the required product details for the PPG Industrial Acrylic and Glidden paints have not been included.

TECHNICAL ADVICE:
Please provide the product name/ model for each product.

Construction Application 10/31/2011

A revised LEED Submittal Template and response narrative have been provided to address the issues outlined in the Preliminary Review, confirming that all indoor paint and coating products comply with VOC credit limits. The documentation demonstrates credit compliance.

1 | 0

Low-Emitting Materials: Carpet Systems

Credit 4.3-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that the installed carpet complies with testing and product requirements of the CRI Green Label Plus Program, there are no installed carpet cushions, and all carpet adhesives comply with the requirements of EQc4.1 Low-Emitting Materials-Adhesives and Sealants.

However, all required information has not been included.

TECHNICAL ADVICE:
Please provide the product name/ model for the carpet.

Construction Application 10/31/2011

A revised LEED Submittal Template and response narrative have been provided to address the issues outlined in the Preliminary Review, confirming that the installed carpet complies with CRI Green Label Plus Program requirements. The documentation demonstrates credit compliance.

1 | 0

Low-Emitting Materials: Composite Wood and Agrifiber

Credit 4.4-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that all composite wood and agrifiber products used in the building contain no added urea-formaldehyde resins. The required product details have been included for each listed product.

However, laminate adhesives have not been listed, and it appears that laminates may be within the project scope, for example in Security Office 102, Admin Office 201, Conference 203, Open Office 401, and Break Room 403. Note that all laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies must be included.

TECHNICAL ADVICE:
Please provide a revised template that includes all laminate adhesives, with supplemental documentation to confirm that all installed products contain no added urea-formaldehyde, or a narrative verifying that no laminate adhesives were used.

Construction Application 10/31/2011

A revised LEED Submittal Template and response narrative have been provided to address the issues outlined in the Preliminary Review, including all laminate adhesives and confirming that all composite wood and agrifiber products used contain no added urea-formaldehyde. The documentation demonstrates credit

1 | 0

Indoor Chemical and Pollutant Source Control

Credit 5-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project has installed the required indoor chemical and pollutant source control measures required by this credit. A listing of each entryway product installed for the building has been provided. Copies of the project's construction drawings have been provided to show the installed entryway systems, room separations and required ventilation systems. The Template also confirms that MERV 13 filtration media has been installed in all HVAC systems prior to occupancy.

1 | 0

Controllability of Systems: Lighting

Credit 6.1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that a sufficient quantity of lighting controls are provided for individual workstations, and that appropriate lighting controls are available for shared multi-occupant spaces. A narrative has also been provided describing the project's lighting control strategy with a description of the type and location of the lighting controls.

1 | 0

Controllability of Systems: Thermal Comfort

Credit 6.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that thermal controls are provided for 27 individual workstations, and describing the thermal controls available for all shared multi-occupant spaces. A narrative has been provided describing the project's thermal control strategy. However, the quantity of individual thermal controls listed does not appear to match the description of workstations provided in the narrative. Beyond the 20 individual offices, it is not clear where the seven additional workstations equipped with individual thermal controls are located.

TECHNICAL ADVICE: Please revise narrative and/or drawings to clearly indicate the workstations which are equipped with individual thermal controls.

Design Application 1/20/2010

The LEED Submittal Template narrative and project drawings have been revised so that workstations equipped with individual thermal controls are clearly indicated as requested. The documentation demonstrates credit compliance.

1 | 0

Thermal Comfort: Design

Credit 7.1-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the HVAC systems and building envelope have been designed to meet the requirements of the ASHRAE Standard 55-2004. A narrative describing the project's HVAC systems has been provided, including the specific seasonal temperature and humidity design criteria. However, the project team has not provided a sufficient description of the method used to establish thermal comfort criteria for the project.

TECHNICAL ADVICE: Please provide a detailed narrative describing the method used to establish the thermal comfort conditions for the project. Include specific information about psychrometrics, occupancy, metabolic activity, clothing level, and any special conditioning requirements.

Design Application 1/20/2010

The LEED Submittal Template narrative has been revised to provide all information requested in the preliminary review, and ASHRAE 55-2004 Thermal Comfort Calculations have been included. The documentation demonstrates credit compliance.

1	0

Thermal Comfort: Verification

Credit 7.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided describing the thermal comfort survey which will be distributed to building occupants within the first 6 to 18 months of occupancy. The narrative includes an appropriate corrective action plan if the survey results indicate that 20% of the building occupants are dissatisfied with thermal comfort based on the environmental variables outlined in ASHRAE 55-2004. However, achievement of EQc7.2 cannot be awarded without demonstrated achievement of EQc7.1.

TECHNICAL ADVICE: Please clarify the pending issues noted in EQc7.1

Design Application 1/20/2010

Pending issues for credit EQc7.1 have been clarified as requested. The documentation demonstrates credit compliance.

0	0

Daylighting and Views: Daylight 75% of Spaces

Credit 8.1-Version 2.2

0	0

Daylighting and Views: Views for 90% of Spaces

Credit 8.2-Version 2.2

Earned	Denied
5	0

Innovation and Design Process — Possible Points 5

1	0

Innovation in Design

Credit 1.1-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that the project team has developed and implemented a Public Education program. This strategy is detailed in LEED-NC v2.1 IDc1.1 CIR ruling dated 9/24/2001 (LEED Interpretation 3115). The LEED Interpretation states that to take educational advantage of the green building project and to earn a LEED point, any approach should be actively instructional. Two of the following three elements must be included: a comprehensive signage program; a manual, guideline, or case study; and an outreach program or guided tour. Supplemental documentation includes a draft case study, narrative, and display mock-up.

However, it is not clear which strategies are proposed, therefore additional information is requested. It appears that the mock-up may be intended to meet the signage requirement, but consists of a single outdoor display, which cannot be considered comprehensive. In addition, although information on the project is included on the county sustainability website, this alone does not meet the requirement for an outreach program.

TECHNICAL ADVICE:
Please provide documentation describing either an outreach program or guided tour, or electronic examples of a comprehensive signage program.

Construction Application 10/31/2011

A response narrative, video scripts, and case study have been provided to address the issues outlined in the Preliminary Review. The information confirms the development of more than two required elements of the educational program. The documentation demonstrates credit compliance.

1 | 0 **Innovation in Design** Credit 1.2-Version 2.2

Design Application 11/9/2009

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for WEc3 Water Use Reduction as specified in the LEED-NC v2.2 Reference Guide, Third Edition. The guideline for exemplary performance in WEc3 is 40%. The project team has provided documentation demonstrating a 56.9% reduction in water use, which meets the exemplary performance requirement.

1 | 0 **Innovation in Design** Credit 1.3-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for MRc2: Construction Waste Management as specified in the LEED Reference Guide for New Construction v2.2, Third Edition. The requirement for exemplary performance in MRc2 is 95%. The documentation provided demonstrates a diversion rate of 97.98%, which meets the exemplary performance requirement.

1 | 0 **Innovation in Design** Credit 1.4-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that the project achieves exemplary performance for EAc6: Green Power as specified in the LEED Reference Guide for New Construction v2.2, Third Edition. The requirement for exemplary performance in EAc6 is double the base credit requirement. The documentation provided demonstrates RECs equal to 145.8% of the predicted annual electrical consumption over a two-year period, which meets the exemplary performance requirement.

1 | 0 **LEED Accredited Professional** Credit 2-Version 2.2

Construction Application 8/12/2011

The LEED Submittal Template has been provided stating that a LEED AP has been a participant on the project development team. A copy of the LEED AP award certification for Tammy Schickler has been included as required.

Earned	Denied	Administrative Inquiries	Possible Points	0
0	0			