

**EXHIBIT A**

**ESRT HIGH PERFORMANCE DESIGN AND CONSTRUCTION GUIDELINES**

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**A. General:**

Smoking and vaping shall not be permitted anywhere indoors or outside the building, except in designated smoking areas located at least 25 feet (or the maximum extent allowable by local codes) from all entries, outdoor air intakes, and operable windows.

1. For the avoidance of any doubt, nothing contained in these ESRT High Performance Design and Construction Guidelines shall be construed to modify the provisions of Article 1 of this Lease or impair any of Landlord's consent rights pursuant to Article 8 of this Lease.

**B. Energy Efficiency:**

1. Exceed ASHRAE 90.1-2016 and IECC 2018 standards, meeting or exceeding NYStretch Energy Code 2020, meet or exceed 2020 NYC Energy Code and relevant successor codes.
2. Comply with Energy Star for Tenant Spaces requirements for design, construction and data sharing.
3. Cooperate with Landlord to follow and implement the Tenant Energy Optimization Process (TEOP) including development of an energy model during early schematic design and integration of recommended energy measures package into final design and construction.
4. Purchase only ENERGY STAR certified equipment when available. When purchasing new equipment, visit [www.energystar.gov/products](http://www.energystar.gov/products) for a list of ENERGY STAR certified products and/or look for the ENERGY STAR certification mark in product descriptions.
5. Submeter and pay for utilities based on usage. Submeter HVAC, plug loads, and lighting loads separately. Assign circuits for lighting, HVAC, and plug loads (for example, circuits 1-4 lighting, 5-8 HVAC, and 9-12 plug load. Submetering approach shall be detailed on tenant's final Load Letter. Ensure compatibility of submeters for 15 minute interval data reporting and monitoring through base building BMS.

**C. Lighting:**

1. Target LPD of 0.5W/SF or less. This can be achieved in most cases through efficient lighting design, use of low wattage fixtures and lamps and reflective surfaces as well as LED task lights.
2. Specify 100% LED lamps.
3. Implement continuous dimming throughout.
4. Implement lighting controls, including daylight dimming controls for all daylit areas and vacancy/occupancy sensors for all of connected lighting load. Daylight-responsive controls shall be provided to control lighting within 15 feet of windows and under skylights.
5. Vacancy sensor controls shall be installed to control lights in enclosed offices, training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges, employee lunch and break rooms, storage rooms, closets, other spaces enclosed by floor-to-ceiling height partitions.
6. Occupancy sensor (dual technology) controls shall be installed to control lights in open plan office areas and restrooms.
7. All lights in the space are to be tied into occupancy sensor-based controls to ensure all lights are turned off following 15 minutes of all occupants leaving the space.

8. Tie in lighting controls to base building BMS for energy data reporting and monitoring. Properly document occupancy sensor zone names on floor plans to allow automatic energy saving in the HVAC system using lighting system data.
9. Design and build to optimize daylight and views for occupants, which may be achieved through a design that includes interior rather than perimeter offices or perimeter offices with glass fronts if perimeter offices are a design requirement.
10. Lighting calculations to demonstrate alignment with circadian rhythm and electric lights maintain illuminance equivalent melanopic lux of 150-200 at workstations (measured on the vertical plane facing forward four feet above the finished floor to simulate the view of the occupant).
11. Consider furniture partitions to be 42" or lower in height in order to allow for access to daylight and views. Additional privacy may be achieved through clear partition glass installed above the furniture panels.
12. Design and build to offer occupants control of lighting. Consider providing task lights with dimmers or at least three light levels (on/off/mid) at all workstations. Consider providing multi-zone controls in multi-occupant spaces (such as conference rooms) with at least three lighting levels or scenes.
13. Use light sources with a CRI of 90 or higher.
14. Consider providing manual or automatic glare control devices (shades or blinds) in all regularly occupied spaces.

**D. HVAC:**

1. All HVAC systems shall exceed ASHRAE 90.1-2016 or IECC 2018, meet or exceed NYStretch Energy Code 2020, 2020 NYC Energy Code and relevant successor codes.
2. Air or waterside economizer to be included in all applicable work.
3. Motorized outside air dampers and air flow measurement stations must be designed, installed, tied into BMS and commissioned. Dampers must be AMCA leakage class 1A.
4. All sources of heating and cooling within a single space shall be controlled and interlocked together. For example perimeter heating must be controlled using the perimeter heating output on a VAV box controller. A supplemental VRF fan coil system must have continuously synchronized heating and cooling setpoints with base building systems. Having independent and uncoordinated controls for multiple systems within the same space is prohibited by this standard and energy code.
5. Where multiple HVAC zones exist within a single space, setpoints shall be synchronized between all controls within the space and shall not vary more than 1 deg F above or below an average for all controls within the space.
6. Where a single zone serves multiple spaces, the spaces shall have similar loads and the same solar orientation. Do not combine, for example, north and east facing perimeter offices on the same zone. Consider providing averaging sensors for each space within the zone.

7. Multiple-zone VAV systems shall have automatic controls configured to reduce outdoor air intake flow below design rates in response to changes in system ventilation efficiency (Ev).
8. Implement Demand Controlled Ventilation for the space through the use of CO2 sensors in densely occupied areas, throughout the space (CO2 monitors must be between 3 and 6 feet above the floor in open office areas) and in the return air stream to the Air Handling Unit serving the space and tie in to controls including an air-side economizer and automatic modulating control of the outdoor air damper. Provide ventilation calculations on drawings. Calculate VAV box minimum flow setpoints. Indicate design and DCV minimum ventilation rates for each space and system. Indicate Ez for each space.
9. Right size equipment based on efficient lighting and plug loads (As stated in the plug load section below target lighting and plug load of 2.0-2.5 Watts per square foot or less of demand load).
10. Static pressure sensors used to control VAV fans shall be located such that the controller set points is not greater than 0.4 inches w.c. (100 Pa). Not less than one sensor shall be located on each major branch to ensure that static pressure can be maintained in each branch.
11. Duct design shall be streamlined. Plenum connections should have a minimum 4" 45 degree bevel/chamfer and 6" when transitioning to duct velocities greater than 1200 FPM. Plenum velocities should not exceed 500 FPM. Bullheaded tees with boot taps on main branches shall not be used above 700 FPM. The index run should not pass through any boot taps above 800 FPM. Boot taps for branches shall not be used above 1100 FPM main velocity. Mitered elbows with turning vanes shall not be used above 1400 FPM. To avoid system effects mitered elbows with turning vanes or radiused elbows with splitter vanes shall be used when other fittings are within 5 diameters/characteristic dimensions downstream of an elbow. Higher duct velocities are possible without impacting static pressure by using duct splits and radiused elbows with splitter vanes instead of boot taps.
12. Specify CFC and HCFC-free and low GWP refrigerants.
13. Monitor delivery of outside air using direct airflow measurement to ensure indoor air quality and outdoor airflow compliance with requirements of NYC Mechanical Code, ASHRAE 62.1-2016 and ASHRAE 55 requirements to maintain required outside air flowrates under varying ventilation and cooling demands.
14. Install energy recovery devices on ventilation systems. Energy recovery systems shall be selected to meet minimum effectiveness requirements of energy code and so as to not impose a fan energy penalty under the fan system power limitations of ASHRAE 90.1-2016 as modified by the 2020 NYCECC or successor codes.
15. Install MERV 13 or better filters, or the highest MERV filters supported by the building's ventilation system.
16. Consider installing an air purification system (such as UV photocatalytic oxidation treatment) to reduce gas phase contaminants and biological contaminants in the air stream.

17. Consider installing an IEQ monitoring system should be designed to measure and track the following parameters: CO2, PM2.5, TVOC, temperature, and relative humidity. The monitoring system should ensure no or negligible ozone production.
18. If air purification and IEQ monitoring systems are to be installed, consider pursuing RESET Air Standard certification to demonstrate achievement of IEQ performance: <https://www.reset.build/standard/air>
19. Consider radiant cooling in lieu of traditional VAV systems.
20. Design and build to offer occupants control of temperature balanced with efficiency.
21. Provide thermostat controls for all multi-occupant spaces, such as conference rooms. Provide automatic ventilation and temperature setback based on positive and automatic detection of vacancy. This can be accomplished through a communication link to the lighting control system.
22. Ensure HVAC design specifications include operational set points and schedule to meet ASHRAE 55-2017 requirements. (Controls contractor to ensure set points are programmed; Commissioning Authority to verify.)
23. Provide CO2 monitors in all densely occupied spaces such as conference rooms and open workspaces.

**E. Plug Loads:**

1. ESRT's standard Load Letter form shall be utilized and completed for ESRT review prior to CD phase.
2. Reduce plug loads by specifying equipment and appliances including, without limitation: computers, monitors, printers, refrigerators, dishwashers, water coolers, food service and pantry equipment, copiers, and A/V and IT equipment that meet or exceed Energy Star and California Energy Commission's 2019 appliance standards.
3. Implement automatically controlled plug load management strategies including occupancy sensors, outlet-based controls, circuited controls, and/or software programs for 50% of all 125 volt 15- and 20-amp receptacles in the space, other than critical server loads, which may be controlled through software-based technology. Controlled receptacles must be visually marked to differentiate from uncontrolled receptacles and uniformly distributed throughout the space.
4. Enable sleep/hibernate mode on all equipment. Computers are enabled for overnight software updates in this mode.
5. Target lighting and plug load of 2.0-2.5 Watts per square foot or less average demand during operating hours.

**F. Water Efficiency:**

1. Specify WaterSense fixtures for any fixture type that is eligible (water closets, urinals, and showerheads).

2. Specify fixtures having the following maximum flush/flow rates:
  - a) Water closet flush volume 1.28 GPF
  - b) Urinal flush volume is 0.125 GPF
  - c) Pantry sink flow rate is 1.0 GPM and include specification for an aerator
  - d) Lavatory faucet flow rate is 0.35 GPM.
  - e) Shower flow rate is 1.5 GPM.
3. Install local instantaneous hot water heaters. Hot water storage tanks must be separately called out along with an explanation for their requirement versus instantaneous hot water heaters. Water heaters for lavatories shall be under counter instantaneous or within 20 feet of the lavatory wet wall. Comply with IECC 2018 C404.5.2 for dead length and pipe sizing.
4. All newly installed residential/commercial clothes washers, residential dishwashers, and ice machines must be ENERGY STAR labeled.

**G. Materials and Resources:**

1. Provide dedicated clearly labeled areas for the collection and storage of recyclable materials.
2. Recyclable materials must include mixed paper, corrugated cardboard, glass, plastics, and metals. Take appropriate measures for the safe collection, storage, and disposal of batteries, mercury-containing lamps, and electronic waste. All eligible materials must be properly disposed of in receptacles labeled per NYC Department of Sanitation regulations. Post educational signs in common areas routinely visited to educate employees on requirements.
3. Specify recycled content materials whenever possible, which may include, without limitation, gypsum board, acoustical tiles, carpet and carpet backing.
4. Specify regionally produced and extracted materials (within a 500-mile radius) whenever possible.
5. Specify rapidly renewable resources whenever possible, such as bamboo, wool, linoleum and cork.
6. Specify and use wood products certified by the Forest Stewardship Council (FSC).
7. Specify products that have Environmental Product Declarations (EPD).
8. Specify products that have Health Product Declarations (HPD), Cradle-to-Cradle certification, or Declare labels.
9. Specify and install low-emitting (low or no Volatile Organic Compounds) wet-applied products, including adhesives, sealants, paints, and coatings. Wet-applied products should be Greenguard Gold certified.
10. Specify and install low-emitting flooring systems. Flooring products should be certified by either CRI Green Label Plus (carpet) or FloorScore (resilient flooring).
11. Specify and install low-emitting ceiling systems. Ceiling systems should be Greenguard Gold certified.
12. Specify and install low-emitting systems furniture and seating.

13. Specify and install composite wood and agrifiber products, including particleboard, MDF, veneer plywood, and plywood to meet EPA TSCA Title VI or California Air Resources Board (CARB) ATCM for formaldehyde requirements for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins (NAF).
14. Do not specify materials listed on the International Living Future Institute Red List: <https://living-future.org/declare/declare-about/red-list/>

**H. Contractor Guidelines:**

1. Abide by all specification requirements in sections above and below.
2. Develop and implement a construction waste management plan at least as rigorous as ESRT's Construction Waste Management Plan.
3. Divert construction waste from landfills through methods such as material reuse, source-separated recycling, purchasing to reduce packaging, manufacturer take-back programs, and donation programs.
4. Achieve minimum 50% total waste diversion, and aim to achieve 75%. Include target recycling and diversion percentages and monthly diversion reporting in waste hauler contracts. Monthly waste diversion records by weight to be provided to ESRT.
5. Implement Construction Indoor Air Quality Management Plans during performance of work and prior to occupancy to minimize the presence and spread of air pollutants.
6. Implement strategies for HVAC protection, source control, pathway interruptions, housekeeping, and scheduling at least as rigorous as those detailed in ESRT's Construction Indoor Air Quality Management Plan.
7. Consider conducting indoor air quality testing after construction is complete and prior to occupancy to demonstrate that contaminant maximum concentrations are not exceeded. At a minimum, testing should be conducted for C)2 and TVOC concentrations.

**I. Commissioning:**

1. A third party commissioning agent shall perform commissioning of energy systems within the tenant space or installed as part of the tenant's lease agreement including, without limitation, lighting, lighting controls, HVAC systems, BMS (including, but not limited to, VFD's, CO2 sensor calibration and DCV BMS and OA tie-in, motorized OA damper tied into DCV and BMS, static pressure or discharge air temperature reset, supply and return air setback schedules, air and water side economizers), Testing and Balancing of air and hydronic systems, functional testing of applicable equipment, and electrical to ensure design optimizes performance and systems are constructed and function per efficient design.
2. Commissioning Report shall be submitted to ESRT for review prior to occupancy of the space and shall include, but not be limited to, all systems listed above.