Green Language **7/20/99**
Kansas City Kansas Regional Lab SFO **prefgreensfo**

37,000 Net Useable Square Feet
55,000 Gross Square Feet
Source Selection Procurement

Preferred Green Language Contained in SFO

General References

p 5 2.1.3.3 Building to Reflect EPA's Mission. Offerors are encouraged to design, build, and operate a safe, reliable, and cost-competitive facility that reflects, to the maximum extent possible within the requirements of this Solicitation for Offers, EPA's environmental protection mission and its commitment to having a positive impact on the communities where it is located. The following are concepts that should be considered during the design, construction, and operation of this facility:

Energy Conservation, via careful consideration of building siting, passive solar design approaches, day lighting, energy efficient building shell design, low E glass, efficient mechanical systems, minimizing waste energy and recapturing waste energy streams, use of solar power and other renewable or innovative energy sources, "Greenlights", advance building and mechanical control systems, thoughtful building maintenance and operation, etc.

Water Conservation, via use of low flow toilet fixtures and through sensitive mechanical system design, landscape design using native species and drip irrigation systems, and thoughtful site design.

Resource Conservation, via the use of materials with recycled contents or above average recycled contents, use of materials that are manufactured, packaged, or transported in an way that reduces energy or material expenditures, construction period recycling and waste minimization, and designing, building, and operating the building to accommodate EPA's active recycling program.

Indoor Air Quality, via careful placement of exhaust and air intakes in relative positions that prevent cross contamination, consideration regarding radon in the building, protection of the HVAC system during construction, the use of low VOC adhesives, paints, sealants, and caulks, construction period installation sequencing, sensitive janitorial and cleaning approaches during the building's operating life. No use of asbestos or asbestos containing materials.

Other Environmental Factors, such as Protection of the Ozone Layer through the avoidance of CFC's as refrigerants and blowing agents for insulation; Protection of Endangered Ecosystems and support of sustainable forestry practices by avoiding

consumptive use of endangered rain forest species and obtaining products from certified sustainable sources, use of non leaded paints, and provision of plumbing systems that prevent elevated lead levels in water. Consider partnerships with local utilities and energy savings companies to assist in financing low emissions low operating cost mechanical systems.

The challenge is to minimize the conflicts between and maximize the benefits of these environmental requirements while meeting the other goals and specification associated with this project.

p. 5 2.1.3.6 LEED Building Bronze™ Certification. The Building's design should, at a minimum, meet the level of performance consistent with criteria assigned to the LEED™ Building Bronze™ Certification. The Leadership in Energy and Environmental Design (LEED™) GREEN Building Rating System has been developed by the US GREEN Building Council. Description and criteria for the LEED™ system can be viewed at http://www.usgbc.org/programs/leed.htm or received from the US Green Building Council at 90 New Montgomery Street, Suite 1001, San Francisco, CA 94105 or dialing 415-543-3001. Offerors shall provide (3) copies of supporting documentation that demonstrates its participation in the LEED™ Rating system (i.e. a notebook detailing how the building earned the LEED™ Bronze Certification).

Documentation

2.4.3 Co-operation on Documentation of Green Benefits. The successful offeror, his design team, and contractor and sub-contractors agree to cooperation with GSA and EPA in developing a final "Green Report" on leased facility, which will document the "Green" benefits of the facility, its planning, design, construction, and operation.

The Green Report will include discussions of:

- The design approach used by the architects and engineers regarding the conservation features of the building shell, basic mechanical and electrical systems, and site design,
- Energy efficiencies obtained because of the design approach, including energy use calculations and projections,
- Extent of recycled materials used, including recycled contents, manufacturers, and price differentials, if any,
- Indoor Air Quality features,
- Construction approaches and activities that reflect resource conservation, and
- Innovative energy systems or building operations that conserve resources and prevent pollution.

The offeror is not required to write the Green Report, but is required to provide GSA and EPA access and information from its design, construction, and facility management team and fact sheets on the Green features of the project. Offeror shall also provide a lump sum of $10,000 to be used to typeset and print the "Green Report". GSA retains the ownership of any report, typeset masters, and printed documents.

2.4.4 Documentation (Part II). The offeror must provide the following environmental documentation with his technical proposal, submission of the final design, prior to acceptance of the building by GSA, or within 4 weeks of acceptance of the building by GSA, as specified below:

Environmentally Preferable Products – documentation of Environmentally Preferable Products considered during the design, construction, or operating phase of the building, rational for use or non use of these products, and summary of benefits derived from use of the selected products. (Due: prior to acceptance of building by GSA)

Comprehensive Procurement Guidelines – documentation of the products in the CPG considered during the design and construction of the project, the recycled content of the products used, and manufacturer of same, cost differential with a standard non-recycled product. (Due: at the submission of the final design)

Water Conservation Measures – documentation of alternatives considered, and products and approaches used that conserve water. (Due: at the submission of the final design)

Energy Conservation – copy of the life cycle cost analysis of the mechanical systems, and a discussion of energy conservation features included in the building, including a discussion of the cost impacts of various choice up front or during the life of the lease. (Due: at the submission of the final design)

Natural Landscaping – documentation of alternatives considered, and products and approaches adopted that are part of a landscaping plan that reflect native, low maintenance species, and minimized watering requirements. (Due: at the submission of the final design).

Solar Applications – documentation of solar applications considered, cost analyses of alternatives considered, documentation of final applications, if any, used, and cost impacts, both construction and operation costs of this applications. (Due: at the submission of the final design).

Indoor Air Quality Standards – documentation that the building has met the standards set forth *in Appendix B.1.2.3 of* EPA's Facilities Manual, Appendix H of the SFO. (Due: prior to acceptance of building by GSA)

Construction Period Recycling – documentation of approaches, quantities recycled, cost impacts and landfill impacts of construction period recycling. (Due: within four weeks of acceptance of building by GSA).

Update of these reports due within four weeks of acceptance of building by GSA.

Source Selection Language – Technical Proposal Requirements

4.1.1 Technical Proposal, Design Narrative (1) Architectural f. Provide a narrative description of the approaches, systems, and elements of the design that will reflect EPA's environmental mission.

4.1.1 Technical Proposal, Design Narrative (3) Mechanical i. Provide a narrative description of the approaches, elements, and concepts that will be incorporated into the design that encourage energy efficiency and conservation, without affecting the health, safety, and operational aspects of the facility.

4.1.1 Technical Proposal, Design Narrative (3) Electrical i. Provide a narrative description of the approaches, elements, and concepts that will be incorporated into the design that encourage energy efficiency and conservation, without affecting the health, safety, and operational aspects of the facility.

Source Selection Language – Evaluation Factors

4.10.1 Evaluation Factors for Award 1) Mechanical. .... Indoor air quality and cross-contamination are primary concerns..... Judgement of operational effectiveness will be based on fuel type, energy conservation features, system flexibility, and expand-ability.

4.10 Evaluation Factors for Award 2) Architectural Architectural evaluation will consider the building construction, energy conscious design features, materials, design flexibility and an indoor air quality plan. .....

> b. Energy-conscious design features means those features incorporated in the design which relate to energy conservation. The design will be evaluated for inclusion of active and passive design techniques to minimize heating and cooling loads (e.g. green lighting, use of solar panels, window reveals), facility siting to take advantage of sun and wind paths and existing vegetation, day lighting features, and solar shading design, etc.

4.10 Evaluation Factors for Award 3) Electrical d The system incorporates energy conserving features, including: use of photo sensors, daylight/occupancy sensors, and programable lighting fixture controls, etc.

Life Cycle Costing

7.7.7 HVAC Energy Efficiency. The HVAC Systems shall be energy efficient, resulting in the lower life cycle cost for the facility based on a 20 year life cycle cost (LCCA). A LCCA of at least two different air conditioning systems is required for the project, however, the air distribution system shall be as specified herein. The LCCA shall be performed in accordance with the method and evaluation procedures prescribed in the "U.S. Department of Commerce, NBS

Handbook 135, (rev 1987). (See also Energy Efficiency)

Day Lighting

5.17.10 Day Lighting. The use of natural but controlled day lighting should be maximized, without compromising EPA energy conservation objectives. The EPA values natural light and perceives it as part of exemplary working environment where possible. The building organization and design concept shall bring adequate natural light into personnel spaces. Use of windows, skylights, and clerestories in the design is encouraged.

Energy Efficiency

4.1.1 Technical Proposal, Design Narrative (3) Mechanical i. Provide a narrative description of the approaches, elements, and concepts that will be incorporated into the design that encourage energy efficiency and conservation, without affecting the health, safety, and operational aspects of the facility.

4.1.1 Technical Proposal, Design Narrative (3) Electrical I. Provide a narrative description of the approaches, elements, and concepts that will be incorporated into the design that encourage energy efficiency and conservation, without affecting the health, safety, and operational aspects of the facility.

4.10.1 Evaluation Factors for Award 1) Mechanical. .... Indoor air quality and cross-contamination are primary concerns..... Judgement of operational effectiveness will be based on fuel type, energy conservation features, system flexibility, and expand-ability.

4.10 Evaluation Factors for Award 2) Architectural Architectural evaluation will consider the building construction, energy conscious design features, materials, design flexibility and an indoor air quality plan.

> b. Energy-conscious design features means those features incorporated in the design which relate to energy conservation. The design will be evaluated for inclusion of active and passive design techniques to minimize heating and cooling loads (e.g. green lighting, use of solar panels, window reveals), facility siting to take advantage of sun and wind paths and existing vegetation, day lighting features, and solar shading design, etc.

4.10 Evaluation Factors for Award 3) Electrical d The system incorporates energy conserving features, including: use of photo sensors, daylight/occupancy sensors, and programable lighting fixture controls, etc.

5.17.1 General: This solicitation requires that energy conservation features be designed into the facility. These features, if not in conflict with specific requirements of this Solicitations, shall be those described in the “GSA Energy Conservation Guidelines for New Buildings” Handbook.

5.17.5 Environmental Design Requirements:(A) Energy Conscious Facility Design: Fundamental design decisions related to energy conservation shall be made during conceptual planning stages. The new design shall utilizes passive design techniques to minimize heating and cooling loads. When necessary, the Offeror shall use window reveals sized to allow maximum window shading in summer and minimize shading of windows in winter months. Siting of the facility in relation to sun and prevailing wind paths and vegetation, efficient design of building form and envelope in response to the climate, reduced cooling load through use of day lighting, and reduced solar heat gains through proper design of solar shading devices should be combined with proper selection of building materials and of HVAC system design for an integrated energy conserving facility. The new facility shall meet Energy Efficiency Standards set by ASHRAE 90-1 (1989) for Buildings. The building design and all construction features (materials, methods of installation, including mechanical and electrical systems) should provide concepts that will reflect and provide reduced energy consumption within the other requirements and constraints of this solicitation.

5.17.4 Landscape: Existing trees should be used to proved shade and wind breaks, insulation, and humidity control for building external surfaces. Also the Lessor shall:

(A) provide a facility design that takes into consideration opportunities to gain energy efficiently through orientation, massing and use of appropriate building and landscaping materials. This configuration does not supersede air exhaust and intake locations requirements defined elsewhere to prevent cross-contamination between supply and exhaust air and between blocks and building(s).

5.17.2 Energy Conservation Design: the offeror, at a minimum, meet the energy efficiency performance standards at 10 CFR 435 or ASHRAE Standard 90.1 using the prospective methods. Thermal insulation shall be inside the perimeter walls. Wall heat capacity shall be calculated by the offeror based on the mass and the specific facing materials offered. The office segment of the building shall meet an operational performance guidelines of 55,000 BTU/Equivalent gross Square foot/year. The consumption rate includes energy supplied by conventional fuel sources plus solar collected and transferred energy through the building HVAC system. This consumption rate is exclusive of passive collected energy through windows, walls, and their external surfaces. Consideration shall be given to the following design features:

(A) use of double glazed, low E, insulating glass windows to minimize absorbed summer sunlight.

(B) use of window reveals sized to allow maximum window shading in summer months while not shading windows in winter months (November- March).

5.17.11 Low E Glass All Windows, skylights and clerestories used in heated or air conditions spaces shall be double glazed, low e, insulation type (see 5.23.1)

Note:	*Block A* --	*Lab Administrative Personnel Space*
	Block B	*Administrative Support Space*
	Block C	*Lab Space*
	Block D	*Lab Related Office Space*
	Block E	*Shipping/Receiving/LMHF*

7.1.7 Variable Air Volume HVAC System: Blocks A, B and D. .... The HVAC system for Blocks A, B, and D shall be recirculating type with an economizer cycle, variable air volume system, with set back at night and unoccupied periods (ref 7.18.1) and may be designed utilizing a separate air handling unit. Unless otherwise indicated, one pass air is required in all rooms in Block C and E.

7.1.8 Variable Air Volume HVAC system: Blocks C and E ....The HVAC system for Block C and E shall be variable volume supply air terminals with variable speed fans and variable volume general area exhaust with variable speed fans.

7.7.7 HVAC Energy Efficiency. The HVAC Systems shall be energy efficient, resulting in the lower life cycle cost for the facility based on a 20 year life cycle cost (LCCA). A LCCA of at least two different air conditioning systems is required for the project, however, the air distribution system shall be as specified herein. The LCCA shall be performed in accordance with the method and evaluation procedures prescribed in the "U.S. Department of Commerce, NBS Handbook 135, (rev 1987). (See also Life Cycle Cost Analysis)

7.9.3 Econimizer Cycle. Provisions shall be made for an outside air economizer cycle when ambient conditions satisfy temperature and humidity requirements.

7.2.8 Manifolding of Fume Hood Exhaust ..... Combining or manifolding of fume hood exhaust systems is allowed except for hoods that required special exhaust treatment (see list below).....The flow volume of the manifolded system shall be controlled by a variable speed drive exhaust fan in order to attain the maximum energy savings, however, the minimum exhaust discharge velocity established in 7.2.7 shall be maintained.

7.1.4 Energy Efficiency and Heat Recovery Devices. Use of heat recovery devices and other types of devices are desirable. These devices must be proven and demonstrated as reliable and avoiding cross contamination between the supply air and the exhaust air. These devices shall have been in the market/industry for a minimum of two (2) years, they should currently be in use in at least 3 facilities for a period of at least two (2) years. The proposed devices systems efficiency must be demonstrated by a life cycle cost analysis. The LCCA shall be performed in accordance with the method and evaluation procedures prescribed in the "US Department of Commerce, NBS Handbook 135 (Rev. 1987).

7.1.12 Facility Management System. The entire facility, including all equipment components of the HVAC system, shall be controlled by a Facility Management System (FMS) that will be integrated to control and monitor interior environment, energy management, lighting, fire management and security functions. The system must be a digital,computer based systems with advanced energy management control and documentation capabilities. The system shall be METASYS by Johnson Controls or approved equal. The system must be designed for 24 hour operation without operator attendance. Control panels shall be placed at the EPA Building Facility Manager's desk and at a location to be determined by the Lessor for use by the Lessor's maintenance personnel.

The HVAC system controls shall be sized and adjusted for full hood operations (including night time set back speed setting) in Blocks C and E. The HVAC systems shall be automatically controlled for temperature, airflow and room pressurization. *(See also Building Automation System)*

8.3.2 Energy Efficient Lighting Systems .....The lighting system shall use energy efficient lighting fixtures consisting of energy efficient, electronic high frequency ballasts, T-8 energy saving fluorescent lamps and high quality interior reflective surfaces and lenses. Compact fluorescents shall be used in place of incandescent bulbs for accent lighting and down-lighting. The facility lighting system shall meet EPA's "Greenlights" guidelines. Exit lighting shall utilize energy efficient illumination.

8.3.3 Lighting Controls include Occupancy Sensors and Light Level Sensors/Dimmer Controls. In general, lighting will be controlled by occupant sensors arranged to control open areas of 1,000 square feet or less, and within individual offices, conference rooms, toilet areas, and general use rooms. The control systems will provide an optimal mix of infrared and ultrasonic sensors suitable for to the configuration and type of space. Conference room controls will be arranged to provide manual override switches. The zone adjacent to all perimeter walls with windows shall be additionally controlled by light level sensors coordinated with occupant sensors and connected to light dimmers. This control system shall maintain 50 foot candles at desk surface levels. Occupancy and light level sensors shall not be installed in the lab modules unless approved by the Government. Lab module lighting shall be manually controlled except for night time setback. The capacity to switch light levels (dual switching) from 50% to 100% of intensity shall be provided as indicated herein. Provide 3 -ways switching arrangements for areas that have two or more main entry points. Timers, dimmers or programable lighting fixture controls shall be provided in areas where natural light is available as practical and appropriate. Control systems are to include controllers and associated devices necessary for the operation of the system.

8.3.1.1 Lighting Night Time Setback. The interior general overhead lighting fixtures in the lab modules and the main corridors, adjacent and leading to the lab modules, shall be connected to the HVAC nighttime setback system for the laboratory modules. The lighting and HVAC systems shall be placed in the nighttime setback mode concurrently. Night time setback for the overhead lighting will turn the lighting fixtures "off" and return the lights to the "on" condition when the HVAC system is taken out of the night time setback mode of operation. The lighting fixtures shall have an override capability if the HVAC system does to allow the lighting of selected lab modules to be returned "On and Off' concurrently with the HVAC system

8.4.2 Photo Electric Cells for Exterior Lighting. ... All exterior lights shall have an automatic turn on/off system such as a solar sensor or photo electric cell.

5.17.3 Domestic Hot Water: Domestic Hot Water shall be provided at 105 degrees Fahrenheit for wash room and domestic purposes. The water temperature shall not be boosted and stored at higher than usage temperature.

DOE 2 Modeling

7.11.29 DOE-2 Modeling. EPA has funded the cost of a DOE-2.1 computer analysis of the energy use of the proposed facility. After award, the offeror agrees to provide the information necessary to EPA's DOE-2 contractor to develop the energy use analysis, and agrees to co-operate with GSA and EPA in evaluating and incorporating cost-effective alternatives suggested as a result of the DOE -2 analysis that will reduce facility energy consumption.

Recycled Materials Uses/Comprehensive Procurement Guidelines

5.17.7 Use of Recycled Materials: Under Section 6002 of the Resource Conservation and Recovery Act (RCRA), the EPA has set guidelines for Federal State and local procuring agencies, using appropriated Federal funds, to purchase items composed of the highest percentage of recovered materials practicable. The EPA requires that its facilities follow the guidelines of the Comprehensive Guidelines for Procurement of Products containing Recovered Materials, Final Rule 40 CFR 247, Federal Register, Monday, May 1, 1995; Recovered Materials Advisory Notice (SWH-FRL-5198-8) Federal Register Monday, May 1, 1995; Comprehensive Procurement Guide II, 62 Federal Register 60961, November 13, 1997; and Recovered Materials Advisory Notice II, 62 Federal Register 60976, November 13, 1997. If CPG products are not used, provide documentation. The following exceptions are allowed: (1) when the cost is unreasonable: (2) inadequate competition exists: (3) items are not available within a reasonable period of time; or (4) items do not meet the solicitation performance standards.

5.17.8 Use of Recovered Materials in Building Insulation Products: Building insulation products used in the construction of ceiling, floors, foundations, and walls, (including blanket, board, spray-in-place and loose-fill insulations) shall conform to the following minimum standards for recovered materials:

Material Type	Percent by Weight
Cellulose Loose-fill and spray on	75% post consumer recovered paper
Fiberglass	20% Glass Cullet
Perlite composition board	23% post -consumer recovered paper
Plastic Rigid Foam, polyisocyanurate/ polyurethane: rigid foam	9% recovered material
Foam-in-place	5% recovered material
Glass fiber reinforced	6% recovered material
Phenolic rigid foam	5% recovered material
Rock Wool	75% recovered material
Plastic Non-woven Batt	100% recovered or post consumer plastics

Note: The minimum content standards are based on the weight of the material (not volume) in the insulating core only.

In the case of Fiberglass Insulation, products shall meet the requirements established in ASTM standard specification D5359, "Glass Cullet Recovered from Waste for Use in Manufacture of Glass Fiber"

5.8.2.2 Toilet Room Dividers/Partitions. All restroom dividers/partitions construction of steel or plastic must adhere to the requirements of the Comprehensive Procurement Guide for post consumer content and total recovered content.

Material Type	Post consumer Content	Total Recovered Materials Content
Steel	16%	20-30%
Plastic	20-100%	20-100%

5.13.10 Exterior Paint: Where applicable on exterior surfaces only, the use of consolidated and reprocessed latex paint meeting the requirements of the Comprehensive Procurement Guide for post Consumer content and total recovered content should be considered, if feasible.

Product	Post Consumer Content	Total Recovered Materials Content
Reprocessed Latex Paint		
*White, Off-White, Pastel Colors	20%	20%
* Grey, Brown, Earthtones, and Other Dark Colors	50-99%	50-99%
Consolidated Latex Paint	100%	100%

5.10.8 Patio Blocks: If patio blocks are used in the recreation area specified in 5.3.4, the recycled content of the patio blocks shall be (as outlined in the Comprehensive Procurement Guidelines):

Material Type	Post Consumer Content	Total Recovered Materials Content

Rubber or Rubber Blends	90-100%	-------
Plastic or Plastic Blends	--------	90-100%

The exceptions allowed in the Comprehensive Procurement Guidelines can be used by the offeror if products cannot be found meeting performance or price specifications.

6.5.3 Note on Coal Fly Ash and Ground Granulated Blast Furnace Slag EPA's Comprehensive Procurement Guidelines recommend the use of Cement and Concrete containing Coal Fly Ash and Ground Granulated Blast Furnace Slag (GGBF), but due to variation in coal fly ash, GGBF slag, cement, strength requirements, costs, and construction practices, EPA is not recommending and does not recommend recovered materials content levels for cement or concrete containing coal fly ash or GGBF slag. EPA is however, providing the following information about recovered materials content:

- Replacement rates for coal ash for cement in the production of blended cement generally do not exceed 20 to 30 percent, although fly ash blended cement may range from 0 to 40 percent coal fly ash by weight, according to the American Society for Testing and Materials (ASTM) C 595, for cement types IP and I (PM). Fifteen percent is a more accepted rate when coal fly ash is used as a partial cement replacement as an add mixture in concrete.

- According to ASTM C 595, GGBF slag can replace up to 70 percent of the Portland cement in some mixtures. Most GGBF slag concrete mixtures contain between 25 and 50 percent GGBF by weight. EPA recommends that the offeror refer, at a minimum, to ASTM C 595 for the GGBF slag content appropriate for the intended use of the cement and concrete.

6.5.2 Use of Coal Fly Ash as a Partial Replacement for Cement in Concrete: Consistent with the performance requirements of cement and concrete products required in this SFO and all applicable State, local, and other building codes, the contractor shall use Coal Fly Ash, a finely divided residue resulting from the combustion of coal, as a partial replacement for cement in concrete to the maximum extent practicable within the given constraints of cost and performance and in accordance with ANSI/ASTM standards and all applicable codes. For additional information on the use of Coal Fly Ash and GGBF, see the following:

Cement Specifications

C. ASTM C 595 Standard Specification for Blended Hydraulic Cements.
D. ASTM C 150 Standard Specifications for Portland Cement
E. AASHTO M 240 Blended Hydraulic Cements.

Concrete Specifications

A.	ASTM C 618	Standard Specification for Fly Ash and Raw or Calcined Natural Pazzolan for use as a Mineral Admixture in Portland Cement Concrete
B.	ASTM C 311	Standard Methods of Sampling and Testing Fly Ash and Natural Pazzolans for use as a Mineral Admixture in Portland Cement Concrete.
C.	ASTM C 989	Ground Granulated Blast Furnace Slag for use in Concrete and Mortars
D.	ACI 226.RI	Ground Granulated Blast Furnace Slag as a Cementitious Constituent in Concrete.

5.23.11.1 Other CPG Products. There are additional products containing recycled materials that are contained in the Comprehensive Procurement Guidelines that could be used in this project. The above products and recycled content specifications are included to emphasize the importance and applicability of CPG products.

5.10.2 Vinyl Composition Tile. All Vinyl Composition Tile shall have a minimum recycled content of 5%.

5.10.7 Ceramic Tile Flooring. All ceramic tile shall have a minimum recycled content of 50%.

5.25.7 Recycled Content of Acoustical Ceiling Tile. All Acoustical Ceiling Tile shall have a minimum recycled content of 80%, unless a product is not available that meets the other acoustical ceiling tile specifications and parameters contained in this SFO.

5.7.3 Gypsum Wallboard: All gypsum wall board utilized for new partitions or wall surfaces shall have face paper with a 100% recycled (pre- or post-consumer) content. A number of manufacturers currently manufacture gypsum wall board with recycled gypsum content. To the maximum extent practicable without sacrificing functional or price performance gypsum wallboard containing recovered gypsum filler material shall be used. All gypsum wallboard shall be equivalent to standard, commercial grade, locally available products and shall comply with and be used in accordance with all applicable ANSI/ASTM Standards

Indoor Air Quality

4.10.1 Evaluation Factors for Award 1) Mechanical. .... Indoor air quality and cross-contamination are primary concerns..... Judgement of operational effectiveness will be based on fuel type, energy conservation features, system flexibility, and expand-ability.

4.10 Evaluation Factors for Award 2) Architectural Architectural evaluation will consider the building construction, energy conscious design features, materials, design flexibility and indoor air quality.

7.2.4 Air Volume: the volume of air supplied by the HVAC system shall be as established in

ASHRAE 62-1989,. HVAC systems shall be designed and operate to provide: (a) 20 CFM of outdoor air per person in offices and 20 CFM of outdoor air per person plus other laboratory related requirements, in laboratories (Note: laboratories should exceed this using one pass air.) (See also Indoor Air Quality)

2.1.2.1 EPA Standards: The design of the building, and of all its components shall be in accordance with the recommendations and guidelines contained in the "EPA Facilities Manuals" Volumes 1 and 4, herewith attached in Appendices H and J. .....

> Appendix J – Volume 1 of the EPA Facilities Manual entitled "Architecture, Engineering, and Planning Guidelines" provides the EPA recommended guidelines that supplement code requirements. The lessor is required to abide with these guidelines as well as the local codes and the codes stated in this document.
>
> See Appendix B Indoor Air Quality Requirements.

3.4.5 Location of Exhausts: fume hood exhausts, cooling towers, emergency generator exhausts, truck loading areas etc must be located so as to avoid any entrainment by air handling systems fresh air intakes. .....

5.6 Finish Installation/Sequencing for Indoor Air Quality Considerations.

5.6.1 General. Special construction scheduling involves defining and controlling sequencing of finishes applications to ensure dissipation of high emissions from the finishes that off-gas unacceptably high quantities of potentially harmful material during curing, and to separate and avoid the installation of adsorptive materials that would act as a "sink" for storage and subsequent release of these unwanted substances into building spaces and mechanical systems after project occupancy. Special procedures involve provision of temporary construction ventilation as well as restrictions and controls on the use of building mechanical systems to prevent contamination by construction wastes and other deleterious substances.

5.6.2 Type 1 Materials and Finishes: Materials and finishes which have a potential for short-term levels of off-gassing from chemicals inherent in their manufacturing process, or which are applied in a form requiring vehicles or carriers for spreading which release a high level of particulate matter in the process of installation and/or curing. Type 1 Finishes include, but are not limited to the following:

1) Composite wood products, specifically including particle board and plywood from which millwork, wood paneling, doors, or furniture may be fabricated.
2) Adhesives, sealants, and glazing compounds.
3) Wood preservatives, wood finishes, primers and paints, and paint-like finishes.
4) Control and/or expansion joint fillers, fire stopping materials, and caulking.
5) Hard Finishes requirement adhesive installation including but not limited to plastic laminate, linoleum, and rubber tile.
6) Gypsum board and associated finish processes and products.

5.6.3 Type 2 Finishes: Soft materials and finishes which are woven, fibrous, or porous in nature and may adsorb chemicals off-gassed by Type 1 Finishes, or may be adversely affected by airborne particulates. These materials have the potential to become sinks for deleterious substances which may be released much later, or act as collectors of contaminates that may promote subsequent bacterial growth. Type 2 Finishes include, but are not limited to the following:

1) Carpet and padding, and other woven or fibrous floor finishes.
2) Fabric wall covering
3) Insulation materials exposed to the airstream.
4) Acoustic ceiling materials
5) Furnishings and fabric coverings

Note: Materials that can be categorized as both Type 1 and Type 2 materials shall be considered Type 1 Materials.

5.6.4 Sequence. Offeror shall sequence construction to complete off-gassing of Type I materials prior to installation of Type 2 materials during the construction, build out, and finishing of the space and segregate the operation of the HVAC systems so that emissions in works zones do not contaminate areas where construction and installation of Type 2 materials and finishes has been completed.

At a minimum, following completion of installation of Type 1 materials in an area, the facility should be off-gassed for at least 48 hours, unless curing schedules provided by materials manufacturers call for a longer curing process, in which case, an appropriate and longer period for off-gassing should be used. Provide the maximum rate of fresh air to the HVAC system during the off-gassing period.

The HVAC system may be used to move both supply and return air except that permanent return air ductwork or finished plenum systems shall not be used in areas subject to any construction or finish installation work. No recirculating of inside air is permitted -- temporary exhaust systems must be used with exhaust air directly to the outside from the construction area.

Apply all Type 1 interior finishes throughout the entire controlled building segment and allow such finishes to completely cure according to intervals and times stated in respective finish manufacturer's printed instructions before commencing installation of any Type 2 materials in the same area. Do not store any Type 2 materials in areas where installation or curing of Type 1 Materials is in progress.

5.29.1 Off-Gassing after completion of interior fit up/furniture installation. At a minimum, following completion of the interior build out and installation of tenant furniture, the facility should be off-gassed for at least 48 hours prior to occupancy. Provide the maximum rate of fresh air to the HVAC system while maintaining other normal operating parameters and conditions regarding humidity and temperature.

Where construction and finish work is being performed in portions of a building while other parts

of the building are being occupied, each construction and finish work area shall be segregated from the HVAC system so that exhaust from the construction and finish work area does not enter into the HVAC system and contaminate parts of the building where construction and finish work and/or furniture installation is complete.

HVAC ductwork should be sealed and protected from dust and dirt infiltration during construction, especially for dust generating activities such as gypsum wall board finishing and sanding.

5.10.1 Carpet Content.1 (a) 0% PVC, 0% 4PC, No SBR Latex

5.10.2 Carpet, Green Label Requirement All carpet shall meet the "Green Label" requirements of the Carpet Research Institute ("CRI") as a minimum. All carpet shall be certified as meeting the "Green Label" requirement.

5.17.5 Environmental Design Requirements:(c) Caulks. All caulks shall be lower VOC. emitting sealants such as acrylic, oleoresins, polysulfides or silicone products n lieu of solvent based acrylic sealants, butyl rubber based sealants (such as neoprene) and SBR sealants. The offeror shall provide Material Safety Data Sheets (MSDS) for all caulking as soon as possible after award. Where these specified caulks do not provide the adequate performance, contact the contracting officer for approval of substituted products.

5.7.5 Environmental Design Requirements:(d) Adhesives and Sealant. All adhesives and sealants employed on the project (including but not limited to, adhesives for carpet, plastic laminate, wood adhesives, and sealants are to be those with the lowest Volatile Organic Compound (VOC.) contents consistent with price and performance and which meet the requirements of the manufacturer of the products involved or adhered. The offeror is to provide the contracting officer the Materials Safety Data Sheet (MSDS) for all adhesives.

7.3.5 Location of Air Intakes and Airflow Analysis Requirements**.** Outside air intake(s) shall be located so as to provide the cleanest possible air for the building and shall be located so as to prevent contamination from the building's exhaust air, vent stacks, or the vehicle fumes from the loading dock. Air intakes shall be designed so that they are inherently protected from bird or bat droppings or other contamination.

Before the Best and Final Offers, the Offeror shall provide a qualifications statement for a firm or engineer, showing a familiarity with computer air flow modeling. The firm or engineer will provide the services described below. Prior to the 50% design review, when the buildings architectural configuration and the HVAC system concept (primarily locations of air intakes and exhaust) have been set, the Lessor shall provide a site atmospheric air flow characteristics study and exhaust stack dispersion performance analysis. This analysis shall be performed by a qualified firm or engineer with past experience in conducting computer modeling or air flow analysis around buildings, as specified by the latest ASHRAE Fundamentals Handbook. The purpose of the study is to demonstrate that the proposed system will prevent re-entry of exhaust fumes, odors, plumbing vents or vehicular exhaust into the facility.

7.4.38 Mechanical Exhaust for Certain Rooms. The following rooms shall be exhausted to the outside and have negative pressures:

1) copy rooms, copy centers, satelite copy centers, record center copy areas

All copy rooms are to be provided with mechanical exhaust systems ducted to the exterior of the building other acceptable exhaust plenum with no recirculation to building air supply. Supply and exhaust air volumes for these room types are to be balanced to provide a negative pressure in accordance with good design practice to reduce the spread of odors and contaminants throughout the building.

2) toilet rooms

All toilet rooms are to be provided with mechanical exhaust systems ducted to the exterior of the building other acceptable exhaust plenum with no recirculation to building air supply. Supply and exhaust air volumes for these room types are to be balanced to provide a negative pressure in accordance with good design practice to reduce the spread of odors and contaminants throughout the building.

3) break rooms with microwave or food preparation areas

All break rooms are to be provided with mechanical exhaust systems ducted to the exterior of the building other acceptable exhaust plenum with no recirculation to building air supply. Supply and exhaust air volumes for these room types are to be balanced to provide a negative pressure in accordance with good design practice to reduce the spread of odors and contaminants throughout the building.

4) janitors closets. All janitors closets are to be provided with mechanical exhaust systems ducted to the exterior of the building other acceptable exhaust plenum with no recirculation to building air supply. Supply and exhaust air volumes for these room types are to be balanced to provide a negative pressure in accordance with good design practice to reduce the spread of odors and contaminants throughout the building.

5) battery/rectifier/UPS Rooms

All battery/rectifier/UPS Rooms are to be provided with mechanical exhaust systems ducted to the exterior of the building other acceptable exhaust plenum with no recirculation to building air supply. Supply and exhaust air volumes for these room types are to be balanced to provide a negative pressure in accordance with good design practice to reduce the spread of odors and contaminants throughout the building.

The exhaust to the Battery/rectifier/UPS room must be connected to the emergency power system. Battery room must be exhausted at a minimum of three air changes per hour.

6) Diesel Generator rooms

Air supply and exhaust shoud be located so aid does not short circuit. Generator exhaust must be carried up to roof level in a flue or exhausted by way of a vault located away from any building wall. Horizontal exhaust through the building wall is not permitted.

5.7.3 Gypsum Wallboard Joint Compounds: Without sacrificing cost or product performance, all joint compound materials are to have the lowest VOC. possible and shall not contain any antifreeze.

5.17.5 Environmental Design Requirements (h) Radon Abatement. The EPA seeks to limit the presence of radon or radon drafts into the new facility by appropriate selection of building materials and thoughtful facility design. The offeror shall carefully examine the site geological surveys to obtain predictive radon infiltration data from subgrade geological structures. The offeror shall also use building materials such as concrete aggregate and stone from sources with low probabilities of radioactivity. The level of radon in any area of the finished building shall not exceed four picoCuries per liter of air.

9.20 Radon in Air (Oct 1996) The radon concentration in the air of space leased to the Government shall be less than the Environmental Protection Agency (EPA) action concentration for homes of 4 picoCuries per liter (Pc/L), herein called the "EPA action concentration".

Initial Testing:

The lessor shall test for radon that portion of space planned for occupancy by the Government in ground contact or closest to the ground up to and including the second floor above grade (space on the third or higher floor above grade need not be measured). The Lessor shall, if possible, perform the Standard Test during build out and just before Government Occupancy of the space. If the Contracting Officer decides that it is not possible to complete the Standard Test before occupancy, the Lessor shall complete the Short test before occupancy, and the Standard test not later than 150 days after occupancy. The lessor shall report results to the Contacting Officer just prior to substantial completion, and promptly carry out a corrective action program for any radon concentration which equals or exceeds the EPA action level.

Testing sequence: The lessors shall measure radon by the Standard Test in Subparagraph (d)(1), completing the Test, unless the Contracting officer decides that there is not enough time to complete the Test before Government occupancy, in which case, the Lessor shall perform the Short test in subparagraph (d)(2).

Corrective action program: .....

1.6.1 Building Design should Reduce Pesticide, Fungicide, and Rodentide Applications. The Offeror's design shall minimize the need for ongoing pesticide, fungicides, and rodenticide applications by selection of materials and construction details during design (examples are choosing materials not subject to attach by micro-organisms and design details that do not provide

locations for pests to hide, colonize, or move about.)

Water Conservation

5.17.5 Environmental Design Requirements: (I) Water Conservation: The EPA requires that its new facility be designed to minimize water consumption through use of water saving measures. The facility design should consider optimum sizing of plumbing systems, use of flow restricting spray nozzles and faucets and showers and low flush volumes for fixtures.

5.3.1 Landscaping. General. Consideration should be given to use of natives species that require less watering, fertilization, and pesticide applications to preserve their appearance and or/and xeriscaping, the use of species that require minimum water and fertilization. Offerors are required to submit a landscaping plan which identifies the names, caliper sizes, and number of trees, shrubs, and other plantings in their submission. Consideration should also be given to landscaping that will provide significant shading in parking areas to reduce summer heat build up, and positioning of plants to reduce heat gain in the facility itself. Landscaping should also consider the positive benefits of removing carbon dioxide from the air

9.18.4 Landscaping Irrigation. Provide a drip irrigation system for exterior landscaping wherever possible. Only in landscaped areas where drip irrigation systems or where reliance on native vegetations' hardiness to survive dry conditions would present appearance/replacement problems shall sprinkler systems be used. All sprinkler systems shall be fully automatic underground sprinkling system using pop-up sprinkler heads and shall be controlled by moisture probes.

7.15.1 Low Flow Toilet Room Fixtures. Offeror shall provide low flow plumbing fixtures (ie. 1.5 gallons per flush for toilets and urinals and 0.5 gallons per minute for all faucet aerators)

Landscape Conservation

5.2.1 Physical Character of Site. (B) Natural Features Natural site features such as existing trees, ground forms, and water shall be preserved and utilized to the maximum extent possible.

Construction Period Recycling.

4.1.1. Design Narrative. (6) Miscellaneous C. Construction Period Recycling Plan As part of the technical proposal, the offeror shall submit an Construction Period Recycling plan that outlines the materials chosen to be recycled on or off site. Upon award, the winning offeror must supplement this outline proposal with a complete Construction Period Recycling plan that lists materials to be recycled on or off site. the methods employed to recycle those materials, identify the off-site receiver of those materials and detail the ultimate use of those materials by the receiver. Note that the offeror is required to document Construction Period Recycling accomplishments, including quantities recycled, under 2.4.4.

Recycling room

3.4.9 Recycling Room. A Recycling Room is to be located in Block E. The room should be conveniently located to Blocks B, C and E. This room will serve as a central collection and pick-up area for recycled materials (i.e. paper, cans, cottles, etc.) Direct access to the rear paved area is desirable. Standard HVAC and electrical speficied for Storage areas is required.

5.17.5 Environmental Design Requirements: (g) Recycling requirement The facility shall be designed to support an aggressive Solid Waste Management Plan. The facility shall properly locate and provide for spaces that facilitate the collection, separation, compacting, storage and shipment of all recyclable materials. General office space, shipping and storage areas and loading docks shall be designed to respond to this important activity.

Lead in Drinking Water

7.14.3 Testing: In accordance with the provisions of the Safe Drinking Water Act Amendments of 1986, the drinking water from the drinking water system within the facility must be tested in accordance with EPA guidelines to assure that the levels of lead and Copper do not exceed the permissible levels established by EPA. The protocol for sampling and testing provide in EPA publication: Lead in Drinking Water, EPA 570/9-89-001, January 1989, and guidelines provided in EPA CD-Rom entitled: SHEMD Disk #1, Release 6, September 1997 should be followed in conducting and testing. The testing should be conducted by the lessor prior to occupancy and thereafter annually utilizing qualified personnel to conduct the sampling and a SDWA certified Laboratory to perform the Testing and evaluation.

Lead in Paint

5.13.1 Painting. General. ....Paint containing more than 0.06% lead is prohibited.

Asbestos

5.23.23 Asbestos Use Prohibited. No asbestos containing materials shall be used.

Ozone Layer Protection

5.7.5 Environmental Design Requirements:(E) Ozone Depletion. As a contribution to stop depletion of the ozone layer of the geosphere, the use of CFC's or insulation made with CFC blowing agents is not permitted.

Building Operating Considerations

1.6.1 Application of Pest Control Products. When using insecticides, fungicides, and rodenticides, careful planning and monitoring shall be used to avoid misapplication or inappropriate timing of application. Materials shall be carefully selected to minimize air levels of irritating substances.

9.15.5 Selection of Cleaning Products. Careful selection of janitorial cleaning supplies shall be made by the offeror to minimize irritating fumes or the use of harsh chemicals.