**SUSTAINABLE CHECKLIST FOR RENOVATION PROJECTS**

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| Date: |       |
| College: |       |
| Project Name: |       |
| Project Number: |       |
| Program Criteria Architect Name: |       |

Program Criteria Architect to complete as appropriate for specific to the renovation project. Add sustainable requirements as appropriate:

| **ITEM** | **INCORPORATE IN DESIGN** |
| --- | --- |
| **DAYLIGHTING** |
| 1 | Incorporate daylighting through windows in the following spaces. Minimize direct sunbeam penetration.1. All Classrooms and Offices (Min)
2.
 | [ ]  YES [ ]  NO |
| 2 | Use light shelves for exterior envelope in the following building elevations 1.
2.
 | [ ]  YES [ ]  NO |
| 3 | Use skylights to allow for day lighting in the following spaces: Ensure that energy savings gains exceed energy losses from increased solar load.1.
2.
 | [ ]  YES [ ]  NO |
| 4 | Use solartube to allow for day lighting in the following spaces: 1. Interior Corridors (Example)
2.
 | [ ]  YES [ ]  NO |
| 5 | Lighting fixtures should be controlled by photocells, occupancy sensors and connected to the Energy Management System. | [ ]  YES [ ]  NO |
| 6 | Maintain floor to ceiling height per base design standards. | [ ]  YES [ ]  NO |
| **ENERGY SHELL OF A BUILDING** |
| 1 | Maximize energy efficiency to achieve 10% better than Title 24. | [ ]  YES [ ]  NO |
| 2 | Provide operable windows for ventilation in offices. | [ ]  YES [ ]  NO |
| 3 | Insulate the Roof – R30 | [ ]  YES [ ]  NO |
| 4 | Insulate the Walls- R-25 | [ ]  YES [ ]  NO |
| 5 | Use double pane high efficiency glazing to reduce heat gain while still allowing daylight into the space. (include specific glazing requirements here)      | [ ]  YES [ ]  NO |
| 6 | Use passive or built-in exterior shading devices such as awnings, overhangs, trees, thermal mass, berms etc. to prevent solar heat gain entering through windows and doors. | [ ]  YES [ ]  NO |
| 7 | Use sound-reducing glass on all windows and glass doors facing noisy streets. (Include applicable technical requirement)      | [ ]  YES [ ]  NO |
| 8 | Use a minimum of10% exterior building shell materials that are recyclable and are manufactured within 500 miles of the college. | [ ]  YES [ ]  NO |
| 9 | For roofing projects, the design team must use mandatory roof requirement in the sustainability standards. | [ ]  YES [ ]  NO |
| **ENERGY EFFICIENT LIGHTING AND ELECTRICAL SYSTEMS** |
| 1 | Use LED fixtures | [ ]  YES [ ]  NO |
| 2 | Use LED in place of incandescent lights. | [ ]  YES [ ]  NO |
| 3 | Use dimmable switches for all lighting applications. | [ ]  YES [ ]  NO |
| 4 | In perimeter day lit zones use daylighting controls to dim areas that do not need to be illuminated to 100%. | [ ]  YES [ ]  NO |
| 5 | For all spaces employ a comprehensive use of occupancy sensors to control both lighting and plug loads. | [ ]  YES [ ]  NO |
| 6 | Use energy star LED exit signs. | [ ]  YES [ ]  NO |
| 7 | Offices shall have direct control of office and task lighting by use of dimmable control. | [ ]  YES [ ]  NO |
| 8 | Specify a color temperature of 4000K or less and specify a Color Rendition Index (CRI) of 80 or higher. | [ ]  YES [ ]  NO |
| 9 | Provide Direct Digital Control (DDC) of primary equipment in order to employ energy saving strategies and of terminal air-conditioning unit’s e.g. variable air volume (VAV) terminals and lighting panels for better control of individual spaces. | [ ]  YES [ ]  NO |
| **ENERGY EFFICIENT MECHANICAL AND VENTILATION SYSTEM** |
| 1 | The following spaces were programmatically identified for natural ventilation. Design for natural ventilation and write a detail narrative on how this will be achieved.1. All Classrooms and Offices (Min)
2.
 | [ ]  YES [ ]  NO |
| 2 | The HVAC system must be designed to maximize energy efficiency. 10% over title 24 is required for renovation projects. | [ ]  YES [ ]  NO |
| 3 | The Energy Management System (EMS) will be a full DDC system. The controls must be designed to account for the maximum energy savings possible. These include but are not limited to the following: | [ ]  YES [ ]  NO |
|  | 1. Upon opening of a window the corresponding air conditioning terminal unit automatically shuts down.
 | [ ]  YES [ ]  NO |
|  | 1. Consider the use of “smart building” design such as one in which when an occupant is no longer occupying a space, the HVAC and lighting systems for that space shut down automatically. One method is to use a combined function motion detector, one signal to turn off the lighting and the other to shut down the air conditioning terminal unit.
 | [ ]  YES [ ]  NO |
|  | 1. The EMS software must be able to schedule automatic changeover for run and standby machines.
 | [ ]  YES [ ]  NO |
|  | 1. Provide carbon dioxide (CO2) sensors that provide outside air requirements on demand for those areas that have a high occupancy levels and COVID requirements as dictated by LACCD.
 | [ ]  YES [ ]  NO |
|  | 1. Consider the use of night purge which takes advantage of nighttime cool dry air and exploits the thermal capacity of the building by pre-cooling air for the next day.
 | [ ]  YES [ ]  NO |
|  | 1. Use the EMS for optimum start/stop that takes advantage of the building’s thermal capacity and minimizes equipment run time.
 | [ ]  YES [ ]  NO |
|  | 1. Use the EMS to provide chilled water temperature and condenser water temperature reset.
 | [ ]  YES [ ]  NO |
| **ENVIRONMENTALLY SENSITIVE BUILDING PRODUCTS AND SYSTEMS** |
| 1 | Establish a storage and collection area for recyclables at each facility during construction and during occupancy. | [ ]  YES [ ]  NO |
| 2 | Use rapid renewable materials these include bamboo, cork, linoleum flooring, sunflower seed board, wheatgrass cabinetry in the following spaces:1. All Classrooms (Example)
2. Library (Example)
3. Administrative Offices (Example)
 | [ ]  YES [ ]  NO |
| 3 | Maximize the use of wood-based materials certified in accordance with components, including but not limited to: structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, wood formwork where specified and pedestrian barriers. | [ ]  YES [ ]  NO |
| 4 | Incorporate re-used items, seconds, surplus, donations etc. in order to reduce capital expenditure. | [ ]  YES [ ]  NO |
| **INDOOR ENVIRONMENTAL QUALITY** |
| 1 | Comply with the latest edition of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62 for air ventilation. Use 22 cfm of outside air per occupant in all occupied spaces. Programming criteria will apply if there is a conflict between this requirement and program criteria. Where there is a difference between ASHRAE outside air requirement and the 22 cfm (and no program criteria guidance) use the most stringent requirement. | [ ]  YES [ ]  NO |
| 2 | Meet operational, maintenance and record keeping requirements of Cal/OSHA. | [ ]  YES [ ]  NO |
| 3 | Outside air intakes shall be at least 20 ft from temporary and/or permanent sources of contamination. | [ ]  YES [ ]  NO |
| 4 | Prevent accumulation of water under in or near buildings. | [ ]  YES [ ]  NO |
| 5 | To maximize the containment of COVID: use MERV 15 filters at a minimum MERV 13. Use UVC system for both in- airstream and condensate application.  | [ ]  YES [ ]  NO |
| 6 | Provide CO2 controlled ventilation for high-level occupancies e.g. classrooms, auditoriums, cafeterias, conference room etc. | [ ]  YES [ ]  NO |
| 7 | Perform a flush out prior to substantial completion and occupancy. | [ ]  YES [ ]  NO |
| 8 | Return ventilation system to normal operation following flush-out period to minimize energy consumption. | [ ]  YES [ ]  NO |
| 9 | Air out materials and equipment before installation to minimize off gassing during occupancy. | [ ]  YES [ ]  NO |
| 10 | Use paint, carpet, adhesives, sealants and interior finishes with low or no volatile organic compounds (VOC): | [ ]  YES [ ]  NO |
|  | 1. Carpet systems shall comply with the limits set by the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.
 | [ ]  YES [ ]  NO |
|  | 1. Paints and coatings must comply with the VOC and chemical compound limits of Green Seal requirements.
 | [ ]  YES [ ]  NO |
|  | 1. Composite wood or agrifiber products may not contain any added urea-formaldehyde resins.
 | [ ]  YES [ ]  NO |
|  | 1. Adhesives shall comply with the VOC limits of South Coast Air Quality Management District Rule 1168 (SCAQMD) and all sealants used as fillers must comply with Bay Area Air Resources Board Reg. 8, Rule 51.
 | [ ]  YES [ ]  NO |
| 11 | Install permanent entryway systems for (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways into the building. | [ ]  YES [ ]  NO |
| 12 | Provide areas with structural deck-to-deck partitions with separate outside exhausting, no air recirculation and negative pressure where chemical use occurs (housekeeping areas, copying/print rooms). | [ ]  YES [ ]  NO |
| 13 | Provide drains plumbed for appropriate disposal of liquid waster in spaces where water and chemical concentrate mixing occurs. | [ ]  YES [ ]  NO |
| **WATER CONSERVATION AND MAINTENANCE** |
| 1 | Use reduced water consumption fixtures including the following:(use programming criteria when information is available there for latest fixture flow and flush requirements. Also comply with sustainability Standards requirements) | [ ]  YES [ ]  NO |
| 2 | Use water-conserving appliances in cafeterias and kitchen and/or laundry facilities. | [ ]  YES [ ]  NO |
| 3 | Consider using condensing boilers or instantaneous point-of-use water heaters on restroom, kitchen or cafeteria sink fixtures to provide hot water on demand. Justify selection based on life-cycle cost analysis. | [ ]  YES [ ]  NO |
| 4 | Provide a gray water system for Landscaping. See the programming criteria for more requirements. (this requirement if selected should be clearly spelled out in the programming criteria requirements) | [ ]  YES [ ]  NO |
| 5 | Provide green roof. See the programming criteria for more requirements. (this should be clearly spelled out in the programming criteria requirements) | [ ]  YES [ ]  NO |
| 6 | infiltrate x% of stormwater on site through the use of cisterns, porous paving, on site infiltration, and bioswales. | [ ]  YES [ ]  NO |
| **RECYCLING SYSTEMS AND WASTE MANAGEMENT** |
| Provide in the construction documents the following requirements: |
| 1 | Construction waste management plan is mandatory. During construction sort wood waste, cardboard, scrap, metal and drywall at a minimum. | [ ]  YES [ ]  NO |
| 2 | Install dual bin system of recyclables and trash at each college for use during construction and occupancy. | [ ]  YES [ ]  NO |
| 3 | Use materials that are factory cut and finished to minimize waste, such as carpet tiles instead of broadloom carpet. | [ ]  YES [ ]  NO |
| 4 | Where feasible, removal of vegetation during construction shall be mulched and stored on site for use as ground cover after final grading. | [ ]  YES [ ]  NO |
| 5 | Grind and reuse all concrete and asphalt. | [ ]  YES [ ]  NO |
| 6 | Recycle all sheetrock. | [ ]  YES [ ]  NO |
| **CLEAN ENERGY AND SUSTAINABILITY RESOLUTION (JULY 8, 2020)** |
| This Resolution applies to all projects and establishes LACCD's ongoing commitment to sustainability and climate leadership. |
| 1 | Eliminate the use of any fossil fuel appliance and equipment such as boilers, furnaces, kitchen equipment, hot water heaters etc. Fossil fuels are hydrocarbon fuels as combustion of fossil fuels release carbon dioxide which contributes to climate change. Fossil fuels that cannot be used include: diesel, gasoline, natural gas, propane, etc. | [ ]  YES [ ]  NO |
| 2 | Select refrigerants for A/C equipment that does not impact global warming and ozone depletion. | [ ]  YES [ ]  NO |
| 3 | Pursue rebates & incentives from the utility companies and grants from all other sources. | [ ]  YES [ ]  NO |
| 4 | Optimize plug loads to promote efficient energy consumption and on-site renewable generation. | [ ]  YES [ ]  NO |
| 5 | Provide Carbon Emissions calculations. | [ ]  YES [ ]  NO |

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| Program Criteria Architect (Print Name) |  | Signature |  | Date |