

Menomonee Valley Industrial Center (MVIC) Sustainable Design Guidelines

I. SITE DESIGN		Maximum Value	Project Value
1 Site Analysis & Planning			
<input type="checkbox"/> A.	Maintain a ratio of total gross floor area to total lot area of no less than 33% for initial site build-out.	Required	
<input type="checkbox"/> B.	Build to street-fronting property lines, or to the setback of neighboring buildings.	Required	
<input type="checkbox"/> C.	Design all parking facilities and open spaces to work together to manage stormwater and improve the aesthetics of your site.	1	
<input type="checkbox"/> D.	From the outset of the development project, integrate site, landscape, soil and materials management into architectural and construction sequences.	1	
<input type="checkbox"/> E.	Utilize beneficial reuse practices with construction materials, including soils.	1	
<input type="checkbox"/> F.	Do not construct within ten feet of any interior side lot line of the property.	1	
<input type="checkbox"/> G.	Attach signage to a vertical surface of the building or to a ground-mounted base. Do not post signs other than corporate identification signs, directional and educational or interpretive signs.	1	
<input type="checkbox"/> H.	Where feasible, install utility lines underground.	1	
2 Stormwater Management			
<input type="checkbox"/> A.	Connect to the regional stormwater treatment area, or share stormwater management practices with neighboring parcels.	Required	
<input type="checkbox"/> B.	Use drought resistant plantings and eliminate irrigation other than collected rainwater.	Required	
<input type="checkbox"/> C.	Design your stormwater treatment system to avoid the direct concentrated discharge of stormwater into the river and stormwater treatment areas, providing features (swales, roof cisterns, raingardens or green roof) that detain first flush and detain sediment	1	
<input type="checkbox"/> D.	Design landscape planting materials, soils and sub-soils for infiltration and evapotranspiration of rainwater. Note that soils and subsoils placed above a remedial cover can serve to store and evapotranspire collected stormwater.	1	
<input type="checkbox"/> E.	Use drought resistant plantings, eliminating irrigation other than collected rainwater.	1	
3 Natural Landscape			
<input type="checkbox"/> A.	Landscape all open areas, except those required for driveways, parking, or walks, not later than 6 months after occupancy.	Required	
<input type="checkbox"/> B.	Provide 1 deciduous native shade tree per 2400 square feet of parking lot surface, or 1 deciduous native shade tree per ten parking spaces. Trees shall be placed in protected pervious plots of at least 60 SF area.	Required	
<input type="checkbox"/> C.	Specify native plant and tree species from the Menomonee Valley Species Palette for at least 80% of planted area (excluding low maintenance turf areas for expansion parcels.	Required	
<input type="checkbox"/> D.	Exclude all invasive exotic species identified by the Invasive Plant Association of Wisconsin (www.ipaw.org).	Required	
<input type="checkbox"/> E.	Where rooting area will be limited, use strategies such as connected planting beds, rooting breakouts under parking, or walkways floating on root-permeable soils to extend rooting space and increase plant vigor. Establish engineering specifications for these strategies, drainage patterns, and installation of structural soils as part of the building design and site grading plans.	1	
<input type="checkbox"/> F.	Use Integrated Pest Management practices and appropriate plantings to eliminate the use of pesticides, herbicides and fertilizers.	1	

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4 Parking and Transportation

<input type="checkbox"/> A.	Do not locate parking or waste facilities within 10 feet of the front line of the property, and screen these areas from view. Contain all refuse in an appropriate receptacle further enclosed by a 6-foot fence of solid material.	Required
<input type="checkbox"/> B.	Provide no more than two drive openings, and provide appropriate traffic control measures at all entrances to public rights-of-way.	Required
<input type="checkbox"/> C.	Include future on-street and shared parking resources in parking calculations. Minimize parking stall dimensions to 9' x 18', as smaller stalls will decrease the parking lot size and allow for a large building footprint.	Required
<input type="checkbox"/> D.	Locate truck loading berths at the side or rear of the building.	Required
<input type="checkbox"/> E.	Encourage transportation alternatives for employees and visitors by providing:	
	<ul style="list-style-type: none"> ● Contiguous walkways linking parking areas, building entrance, public sidewalks, bicycle racks, and any existing transit facility. Note: free bike racks are available from the City of Milwaukee 	1
	<ul style="list-style-type: none"> ● Shower and changing facilities for bikers, walkers and runners. 	1
	<ul style="list-style-type: none"> ● Preferred parking for carpools and shared parking with adjacent lots. 	1

5 Site Lighting

<input type="checkbox"/> A.	Provide site lighting appropriate for the security needs of the site while maintaining an overall "low-lighting profile" for the complex.	1
<input type="checkbox"/> B.	Use high efficiency lighting (metal halide or high pressure sodium lamps) with low cut off angles and down-lighting for landscaping.	1
<input type="checkbox"/> C.	Utilize reflective-type lighting fixtures to reduce or eliminate glare and provide safer, more human-scaled nightscapes.	1
<input type="checkbox"/> D.	Allow zero direct-beam exterior lighting at the property line.	1
<input type="checkbox"/> E.	To reduce dependence on high-wattage electrical lighting at night, use light colored or reflective edges along driveways or walkways.	1

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II. Building Design & Energy Use		Maximum Value	Project Value
1 Building Design			
<input type="checkbox"/> A.	Ensure that the scale and design of new buildings are compatible with adjacent buildings. At pedestrian areas of the building, use awnings, landscaping, windows and doors to lower the scale of the building.		Required
<input type="checkbox"/> B.	Design a principal façade and obvious main entrance parallel to the public street edge. Do not face blank walls towards public streets.		Required
<input type="checkbox"/> C.	Screen sources of mechanical noise, odors and loading operations from public open space areas and adjacent properties.		Required
<input type="checkbox"/> D.	Utilize brick (reclaimed or new), architectural pre-cast concrete or architectural steel panels, decorative concrete block or cut stone. Sheet metal, vinyl siding and reflective glass are discouraged.	1	
<input type="checkbox"/> E.	Locate utility meters and exhaust vents on the side or rear of building.	1	
<input type="checkbox"/> F.	Screen or locate roof-top mechanical equipment so it is not visible from the street.	1	
<input type="checkbox"/> G.	Design to accommodate areas for recycling of waste materials. Provide a centralized location for collection and storage of recyclables and screen exterior collection areas.	1	
<input type="checkbox"/> H.	Where possible, orient buildings on an east-west access to allow for maximum daylighting benefits.	1	
2 Energy Efficiency			
<input type="checkbox"/> A.	Design for energy performance that improves upon State of Wisconsin Building Code by 25%, and demonstrate energy efficiency using hourly simulation tools. Consider the following strategies to help achieve this objective: <ul style="list-style-type: none"> ● Group spaces for similar functions or requirements to concentrate similar heating and cooling demands, and use non-program spaces as climate buffers. ● Use thermal mass such as masonry or concrete to moderate interior temperatures and to achieve desired R-value in foundation, walls and roof. ● Design air-lock entrances to reduce heat loss or gain. ● Use Energy Star Roof-compliant, high reflectance and high emissivity roofing to reduce heat retention in summer, unless using a green roof. 		Required
<input type="checkbox"/> B.	Specify Energy Star equipment and appliances.	1	
<input type="checkbox"/> C.	Install separate circuitry to isolate HVAC, lighting and plug loads, enabling operations and maintenance staff to monitor energy use on site.	1	

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3 Daylighting and Interior Lighting

A. Maximize daylight in your building through the appropriate use of the following strategies:			
<input type="checkbox"/>	i. Maximize window height, and use roof monitors, clerestory windows, skylights, and light-pipe technology to transmit light to spaces not reachable by other means.	1	<input type="checkbox"/>
<input type="checkbox"/>	ii. Balance glazing color for view, daylight and energy performance. Choose clear, transparent glass to allow for double panes and energy efficiency.	1	<input type="checkbox"/>
<input type="checkbox"/>	iii. Use interior windows, light shelves and low partitions to bring daylight deeper into the space, manage glare, and balance light levels.	1	<input type="checkbox"/>
<input type="checkbox"/>	iv. Use south-facing windows with appropriate overhangs to reduce summer sun and admit winter sun.	1	<input type="checkbox"/>
B. Supplement daylighting with highly efficient electric light distribution that improves visual quality while reducing electricity use. For instance:			
<input type="checkbox"/>	i. Rely on low ambient lighting levels for general illumination (predominantly light reflected from the ceiling where achievable) boosted by high quality, flexible task lighting. For general office space and non-critical manufacturing task areas, consider achieving a lighting power density (LPD) goal of between 0.8 and 1.0 watts/ft2.	1	<input type="checkbox"/>
<input type="checkbox"/>	ii. Use high efficiency lamps and luminaires with electronic ballasts.	1	<input type="checkbox"/>
<input type="checkbox"/>	iii. Employ efficiency-based controls such as dimmers, occupancy sensors, and lumen maintenance controls.	1	<input type="checkbox"/>
<input type="checkbox"/>	iv. Wire luminaires parallel to walls with windows so they can be dimmed or turned off by row.	1	<input type="checkbox"/>

4 Alternative Energy

<input type="checkbox"/>	A. Purchase power generated from renewable sources (solar, wind, biomass, or low impact hydro sources) through We Energies' Energy for Tomorrow Program.	1	<input type="checkbox"/>
<input type="checkbox"/>	B. Where feasible, utilize a closed loop ground source (geothermal) heating and cooling system.	1	<input type="checkbox"/>

5 Building Commissioning (Quality Control)

<input type="checkbox"/>	A. Contract with an independent commissioning authority from the beginning of the design process to review design options and expected operation of building and its component systems.	1	<input type="checkbox"/>
<input type="checkbox"/>	B. Have commissioning agent train building staff to operate and maintain the building.	1	<input type="checkbox"/>
<input type="checkbox"/>	C. Ensure that energy measures are installed and operating one year after completion of construction.	1	<input type="checkbox"/>
<input type="checkbox"/>	D. Use long-term continuous measurement of performance for building and site systems.	1	<input type="checkbox"/>

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III. Materials & Resources		Maximum Value	Project Value
1 Exterior and Interior Materials			
<input type="checkbox"/> A. Use with Wisconsin Green Building Alliance's Wisconsin Built Directory to locate sources of the following building materials, and achieve the following goals: <ul style="list-style-type: none"> ● Use 25% materials with post-consumer and post-industrial recycled content. ● Use 20% materials and products that are manufactured within a radius of 500-mile radius. ● Specify US Forest Stewardship Council-certified wood-based materials and products for 25% of all wood used in the project. 		Required	
<input type="checkbox"/> B. Specify mold- and moisture-inhibiting construction materials.	1		
<input type="checkbox"/> C. Use low-VOC sealants and adhesives.	1		
<input type="checkbox"/> D. Use paints and coatings that are certified by Green Seal for VOC and chemical component limits. Use carpet systems that meet the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.	1		
<input type="checkbox"/> E. Use composite wood and agrifiber products that do not contain added urea-formaldehyde resins. Specify building materials (e.g. insulation, carpet pad) that do not use CFC's or HCFC's as foaming agents or in other parts of the manufacturing products.	1		
<input type="checkbox"/> F. Use CFC-free HVAC&R equipment.	1		
2 Water Conservation			
A. Employ whole-building design strategies and use the following high-efficiency plumbing fixtures to reduce aggregate water use:			
<input type="checkbox"/> i. Specify lavatory faucet aerators and low-flow electronic sensor faucets in lavatories or provide lavatories with pedal controls.	1		
<input type="checkbox"/> ii. Install waterless urinals as a way of reducing first cost in plumbing risers and to reduce water consumption.	1		

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IV. Construction & Demolition		Maximum Value	Project Value
1 Waste and Recycling			
<input type="checkbox"/> A. Implement a Construction and Demolition (if applicable) Waste Management Plan to recycle and/or salvage at least 50% of construction, demolition and land clearing waste. Include waste reuse and recycling in project specifications. Calculations can be done by weight or volume, but must be consistent throughout. This plan should cover: <ul style="list-style-type: none"> ● Identification of a Plan Manager. ● Identification of opportunities to reduce site disturbance and minimize environmental impact of construction activities. ● A list of materials to be separated for recovery and designation of areas for collection. ● A plan to educate workers about separation requirements ● Procedures for waste auditing. ● On-site soils management, including areas of concern, types of contamination and disposal or encapsulation methods. ● List sorting/separation/tracking rules. 		Required	
<input type="checkbox"/> B. Salvage 80% of construction materials for reuse or resale.	1		
2 Erosion and Dust Control			
<input type="checkbox"/> A. Follow Wisconsin Administrative Code NR 216 and City of Milwaukee Chapter 290 to control erosion regardless of the size of land disturbance.			
<input type="checkbox"/> B. Spray loose soils with water.		Required	
3 Pre-Occupancy Controls for Indoor Air Quality			
<input type="checkbox"/> A. Protect stored on-site or installed absorptive materials from moisture damage and mold, and replace all filtration media immediately prior to occupancy.	1		
<input type="checkbox"/> B. Install wet materials before dry in construction sequence to reduce indoor air pollutants.	1		

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V. Indoor Environmental Quality		Maximum Value	Project Value
1 Indoor Air Quality			
<input type="checkbox"/>	A. Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality, and approved Addenda (see ASHRAE 62-2001, Appendix H, for a complete compilation of Addenda) using the Ventilation Rate Procedure.		Required
<input type="checkbox"/>	B. Provide direct exhaust for all spaces that generate moisture and pollutants, including manufacturing, toilet and locker rooms, copy rooms and rooms where chemicals and cleaners are stored.		Required
<input type="checkbox"/>	C. Prohibit smoking in the building.		Required
<input type="checkbox"/>	D. Replace all filtration media immediately prior to occupancy using filtration media that have a Minimum Efficiency Reporting Value (MERV) of 13, as determined by ASHRAE 52.2-1999.	1	
<input type="checkbox"/>	E. Increase ventilation to exceed air change effectiveness of 0.9 per ASHRAE 129-1997.	1	
<input type="checkbox"/>	F. Provide for the use of natural ventilation in transition seasons. Take advantage of cross ventilation, prevailing winds and stack effects when possible.	1	
<input type="checkbox"/>	G. Provide mats or grills at entry areas to control dirt and dust.	1	
<input type="checkbox"/>	H. Utilize a carbon dioxide monitoring system in spaces of variable occupancy to provide feedback on space ventilation performance. Specify initial operational set point parameters to ensure indoor carbon dioxide levels do not exceed outdoor levels by more than 530 ppm at any time.	1	
<input type="checkbox"/>	I. Conduct a two-week flush of systems at 100% outside air before occupancy.	1	
2 Acoustic Quality			
<input type="checkbox"/>	A. Maintain a maximum interior Noise Criteria of 35 decibels in occupied areas. Ceiling panels and carpeting can assist in absorbing sound.	1	
<input type="checkbox"/>	B. Place acoustic buffers (corridors, lobbies, stairwells, storage rooms, etc.) and sound-insulated partitions between noise-producing spaces and noise-sensitive areas.	1	
<input type="checkbox"/>	C. Place vibrating equipment on isolation pads and enclose in sound-absorbing walls, floors and ceilings.	1	
<input type="checkbox"/>	D. Maintain a maximum external decibel reading of 50 db at property line.	1	
<input type="checkbox"/>	E. In areas of high ambient noise, specify windows rated at an STC of 40 or better.	1	
<input type="checkbox"/>	F. In other areas, specify windows rated at 35 or better.	1	

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VI. Operations & Maintenance		Maximum Value	Project Value
1 Operations Manual and Monitoring			
<input type="checkbox"/>	A. Prepare an Operations & Maintenance manual, including monitoring of energy use, luminaire and filter maintenance, in accordance with ASHRAE 4-1993. This plan should clearly describe the principles of design intentions, O&M procedures, and should be accessible to building occupants.	1	
<input type="checkbox"/>	B. Schedule regular systems review and maintenance.	1	
<input type="checkbox"/>	C. Prepare an operational waste prevention and recycling plan.	1	
2 Facility Maintenance			
<input type="checkbox"/>	A. Maintain healthy and efficient custodial operations using Green Seal or equivalent cleaning products.	1	
<input type="checkbox"/>	B. Frequently inspect for fungus and molds.	1	
<input type="checkbox"/>	C. Form an in-house "Green Team" to raise awareness of workplace associated environmental concerns.	1	
<input type="checkbox"/>	D. Provide centralized ground-floor location for collection and storage of recyclables. Train occupants on recycling procedures and consider incorporating recycling facilities such as compactors, chutes or other technologies to accommodate predicted volumes.	1	
<input type="checkbox"/>	E. Do not store materials, products or equipment outdoors, except finished product in transit and company-owned vehicles.	1	
3 Maintenance and Stewardship of Site and Landscape Elements			
<input type="checkbox"/>	A. Prepare and implement a landscape care and maintenance manual or plan to ensure long term viability of plantings. This should identify any long term sequencing actions that are intended by the landscape designer.	1	

	Sub-Totals	Maximum Value	Project Value
I. Site Design		19	0
II. Building Design & Energy Use		21	0
III. Materials & Resources		7	0
IV. Construction & Demolition		3	0
V. Indoor Environmental Quality		12	0
VI. Operations & Maintenance		9	0
Totals		71	0
Percent Compliant		0%	
Compliance Target		85%	60

Signed by: _____ Date: _____ 30% Project

Signed by: _____ Date: _____ 60% Project

Signed by: _____ Date: _____ 90% Project