Architectural drawings should show how a building was designed to perform

24 August 2021

(Not just how to assemble the pieces)

SUSTAINABILITY METRICS DRAWING SET TEMPLATE & TRACKER
This PDF is a template for presenting project performance metrics as part of an architectural drawing set. To populate the sheet, use the modified version of the AIA Common App spreadsheet. You are welcome to use or adapt these graphics to communicate sustainability measures in your own construction documents.

We welcome your feedback. Please send comments, suggestions, or questions to generativeimpacts@msrdesign.com
Download the latest at msrdesign.com/generative-impacts

1. INCLUDE THE SHEET IN YOUR SET

In our office, this template is loaded into every Revit file. Our materials table is a Revit schedule that populates as sustainability parameters are clicked within a Revit material ID tag. Whether you use Revit, AutoCAD, or another BIM software, the principle remains: Be efficient. Use a template. Share performance.

Use the modified AIA Common App Tracker
Notes in the Tracker tell you where to find a number, or make the calculations for you, so you can capture project performance data.

Use the numbers to populate the sheet
Once you have the numbers and narratives, use the Metrics tab to help fill in your sheet and build the graphics.

Start early
Meaningful outcomes, such as deep community engagement or substantive reductions in embodied carbon footprint, are more likely when you launch these efforts early in the design process.

2. COMMUNICATE PERFORMANCE

Many building projects are designed with high performance features, but the design performance metrics get filed away in inboxes and spreadsheets. We already use drawings to convey design intent - including a Sustainability Metrics sheet allows us to convey performance intent as well.

Bring the project team together
Educate consultants to ensure the team is aligned on key performance measures, and the deliverables needed to understand performance.

Stay on target through construction
During construction, questions come up and modifications and substitutions are proposed. Support critical materials or design elements with a reminder of how they contribute to performance. Include performance as a consideration in every value engineering decision.

3. TRANSFORM YOUR PRACTICE

When we evaluated ourselves on how well we were doing in different areas of sustainability, across our different project types, we discovered we had a tendency to focus on some areas (operational energy use, for example), while leaving others out (embodied carbon, for example). This sheet reminds us to consider a set of metrics across every project.

View projects holistically
Two years in, MSR Design teams report that as a result of using this sheet and tracker, the holistic set of measures is becoming ingrained in how we think, even when the project is not receiving a sustainability certification. In this way, a simple sheet in a drawing set has become a process for transforming how we think and work.

Build institutional memory
Performance decisions and intent are captured in one place, both for reference on future projects, and to capture performance trends as a firm.

Using the modified Common App spreadsheet tool

24 August 2021

Updated August 2021

FRAMEWORK FOR DESIGN EXCELLENCE (modified)
Metrics

AIA COTE Top Ten Toolkit

NOTE: This tracker is a modified, augmented version of the official AIA Common App.
To submit a project for an AIA award, please download the official Common App at AIA.org

It was designed to support project teams in populating the Sustainability Metrics Drawing Sheet.

Project Information	INPUTS	UNITS / DEFINITION
Project Name		
Client		
Is client to remain confidential?	☐	
2030 commitment & Rating Systems		
Is your firm a signatory of the AIA 2030 Commitment?		
If yes, is the project recorded in the AIA 2030 Design Data Exchange (DDx)?		AIA 2030 DDX
Is the project certified with a third party rating system?		
Additional Metrics – Project Information		
Building Lifetime (60 years)	60	For new construction or major renovation, set building lifetime in Tally to 60 years For an interior project, set building lifetime in Tally to 15 years
Interior refresh / recurrence period	15	Only for interior projects. We assume interior refreshes occur every 15 years
Number of assumed interior building refreshes	4.00	Only for interior projects. We assume interior refreshes occur every 15 years
Measure 1 Design for Integration		
Project Summary Statement *Please describe your project emphasizing elements of design achievement including project intentions, programming requirements, and the distinguishing aspects of your resolution. Describe how performance strategies are integrated within the projects overall design and performance goals.*	Note: This field is not required for the Sustainability Metrics drawing sheet	
Client Impact Statement *Relate how the project came to be including the client's goals and what impact the finished project has made on the client, users, and/or the community.*	Note: This field is not required for the Sustainability Metrics drawing sheet	
Performance Statement (select up to 3 measures) *Choose from the Ten Measures for Design Excellence: Integration, Community, Ecology, Water, Economy, Energy, Wellness, Resources, Change, Discovery. Describe how building performance strategies are integrated within the project's overall design goals. You are encouraged to describe carbon reduction and environmental strategies throughout your*	100 words to be include on the Sustainability Metrics drawing sheet	
Measure 2 Design for Equitable Communities		
Walk Score		Walk Score
Transit Score		Transit Score
Bike Score		Bike Score
Community engagement level		
Additional Metrics – Community Engagement		
Was a community-based knowledge broker engaged?		
Was the knowledge broker compensated?		
What engagement strategies did the design team use?	50 words to be include on the Sustainability Metrics drawing sheet	
Did you follow up with the community group?		
How, and how many times?	Note: This field is not required for the Sustainability Metrics drawing sheet	
Comfort/Wellness Spaces *Does the project include spaces that support retreat and privacy for diverse health and wellness needs?*		
Binary and Non-Binary Restrooms *Does the project include both binary gender and gender-inclusive restrooms?*		
Variety of Ways to Interface with the Space *How does the project support diverse physical use patterns, beyond ADA requirements?*	50 words to be include on the Sustainability Metrics drawing sheet	
Measure 3 Design for Ecology		
Site Environment		
Previously developed site?		
Is stormwater managed on site?		
Is landscape design focused on native plants?		
Is landscape design promoting biodiversity?		
Additional Metrics – Vegetation and Native Plantings		
% of site pre-project supporting vegetation		
% of site designed to support vegetation		
% of landscaped areas covered by native or climate-appropriate plants		
Additional Metrics – Biodiversity		
How does this project promote biodiversity and support native species?	50 words to be include on the Sustainability Metrics drawing sheet	

Start with numbers and narratives

The AIA Common App for Design Excellence helps projects track and report project performance intent in each of the Committee on the Environment (COTE) Ten Measures. Expanding on a great framework, we have added some additional metrics we find useful in tracking performance intent. (Note that the modified version cannot be used for AIA award submissions. Please use the official Common App provided in the AIA award submission portal.)

INTEGRATION
A brief version of the performance statement should be included on the Sustainability Metrics sheet. Keep in mind the audience for this statement includes the client and the general contractor, so be mindful of lingo and acronyms.

EQUITABLE COMMUNITIES
One of the most important factors in achieving equitable design outcomes is the diversity of voices at the table from the beginning. Added metrics expand on the topic of community engagement through the use of a community-based knowledge broker. Designers asked to consider whether a diversity of spacial needs have been considered in addition to compliance with ADA minimum requirements.

ECOLOGY
Compare pre- and post-project land use to determine total net gain or loss of vegetated land area, and the percentage of land area devoted to native species. Specifically identify elements of the project and landscape that are designed to support native species.

Using the modified Common App, continued

Measure 4
Design for Water

Is potable water used for irrigation?		
Is potable water used for cooling?		
Is grey/blackwater reused on site?		
Is rainwater collected on site?		
Additional Metrics – Water Use		
Project potable water use		gallons/yr Information provided by plumbing consultant
Baseline potable water use		gallons/yr Information provided by plumbing consultant. Use LEEDv4.1 Water Use Reduction.
Predicted reduction from baseline		Target 40% reduction from LEEDv4.1 Water Use Reduction. A negative value means your project is using MORE water than the baseline.
Additional Metrics – Low Flow Fixtures		
Do your fixtures meet LEED v4 for low flow rate?		
Additional Metrics – Rainfall Capture		Rainfall calculator
How much rainfall can be collected on the entire site?		gallons/yr Measure site area and / or roof area. Find average rainfall data for your climate.
How much rainfall can be collected on the project's roof?		gallons/yr Use link to calculate annual rainfall hitting a surface area.
How much rainfall is your project capturing?		gallons/yr You will have to enter your site area using the predetermined L x W drop down boxes in the linked calculator.
Additional Metrics – Stormwater Management		Rainfall management
% Rainwater that can be managed on site		Calculation will come from a civil or landscape engineer. See LEEDv4.1 Sustainable Sites - Rainwater Management credit for guidelines on rainwater management strategies. Target is 75%.

Measure 5
Design for Economy

Building efficiency / right sizing		SF/Occupant
Briefly describe how this project was right-sized.	50 words to be include on the Sustainability Metrics drawing sheet	

Measure 6
Design for Energy

Operational Data		
Baseline Energy Use Intensity (EUI)		kBTU/sf/yr
		*Optional override with ZeroTool baseline
Energy Code that the project was built to?		If "Other" please enter the energy code here
Prescriptive Performance		
Did you use prescriptive performance to meet the Energy code?		If no, skip to Modeled Performance
If your project complied prescriptively, but your goal was to exceed minimum performance, briefly describe your energy efficiency strategy.	Note: This field is not required for the Sustainability Metrics drawing sheet	
Modeled Performance		
Predicted Net EUI		kBTU/sf/yr From your whole building energy model. Includes renewables.
Predicted reduction from baseline		
Does the project meet the 2030 Challenge?		
Did you use the energy model to inform decisions during design?		
Who performed the energy modeling?		Enter the name of the person and company
Contact email for energy modeler		
Measured Performance		
Actual Net EUI		If you have actual energy used for 12 months from utility bills, enter it as EUI in kBtu/sf/year. Please include renewables.
Measured reduction from baseline		
% of project's total energy use met by renewables		
Explain the role and type of renewables		
Additional Metrics – Energy Targets		
AIA 2030 Challenge Target EUI		kBTU/sf/yr Beginning in 2020, the AIA 2030 Commitment Target is 80% reduction from Baseline EUI.
Predicted EDI (energy demand intensity)		
Predicted EPI (energy production intensity)		
Additional Metrics – Lighting Power Density		
Project Lighting Power Density (LPD)		W/sf Information provided by lighting and/or electrical consultant.
Baseline Lighting Power Density (LPD)		W/sf LPD baselines are from ASHRAE 90.1 2007 at the link below. See table 9.5.1 Lighting Power Densities using the Building Area Method
Predicted reduction from baseline		https://ashrae.iwrapper.com/ViewOnline/Standard_90.1-2007_(I-P)
Additional Metrics – Post Occupancy Energy Performance Monitoring		
Will your project monitor post occupancy energy performance?		W/sf Information provided by lighting and/or electrical consultant.

Measure 7
Design for Wellness

Was a Post Occupancy Evaluation or Occupant Satisfaction Survey conducted?		
Do regularly occupied spaces have operable windows?		
Do regularly occupied spaces have abundant daylight?		
Additional Metrics – Views, Daylight and Ventilation		
% regularly occupied floor area within 30' of operable windows		% regularly occupied floor area Living Building Challenge: Health & Happiness Petal
% of regularly occupied floor area with direct views outdoors		% regularly occupied floor area LEEDv4.1 Quality Views Credit Target is 75%.
% of regularly occupied floor area with adequate daylighting		% sDA300/50% Use daylight analysis to calculate. Daylight autonomy (DA) measures the % of the regularly receives at least 300 lux (30 fc) for at least 50% of the year. Target is 75% from LEED v4.1 Daylight Credit.
% of the square footage with interior plantings		LBC Biophilia Metric
What number of products used on this project are Red List Free?		Enter number at left. List materials in the SUSTAINABLE MATERIALS table on the Sustainability Metrics Sheet

WATER
The additional water use metrics are typically provided by the MEP consultant on many commercial-scale projects. LEED provides a number of calculators that are helpful in generating water use estimates. In addition, by comparing available rainfall and roof capture area to the project's water needs, the team is prompted to consider the volume of available water, and methods and uses for rainwater capture.

ECONOMY
In addition to the number of square feet per occupant, we ask the team to briefly describe what right-sizing means for this project.

ENERGY
Lighting power density is included as a measure of energy performance for interior renovation projects.

WELLNESS
As a measure of Wellness we include LEED-based metrics on spatial daylight autonomy and direct views outdoors from regularly occupied spaces. New metrics also address biophilia and operable windows, and the total number of Red List Free products that were used on the project.

Using the modified Common App, continued

Measure 8
Design for Resources

Primary Structural System		If "Other", please specify here
Building Embodied Carbon (metric tons)		http://buildcarbonneutral.org/ Metric tons CO2 equivalent Building Embodied Carbon can be estimated using the link above. It can also be calculated using the Tally Revit Plugin. A Tally analysis usually takes about 16 hours to complete.
Building Embodied Carbon / SF	0	lbs CO2/sf
Building Embodied Carbon / SF baseline	0	lbs CO2/sf
Building Embodied Carbon reduction from baseline		Target is a 40% reduction from the Building Embodied Carbon Baseline set by the 2030 Challenge For Materials.
Was a Whole Building Life Cycle Analysis (LCA) conducted?		
Were local and/or recycled materials a consideration for materials selection?		
Was a "Chemicals of Concerns" list used to inform material selection?		
Did the project incorporate existing structure or infrastructure?		
If so, what innovative design features evolved?	Note: This field is not required for the Sustainability Metrics drawing sheet	
Additional Metrics – Carbon Equivalency of Operating Energy		
Convert kBtu of natural gas to therms		kBtu Natural gas must be in therms to use the conversion calculator below.
	0.00	Therms
Convert kBtu of electricity to kWh		kBtu Electricity must be in kWh to use the conversion calculator below.
	0.00	kWh
		http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
Carbon Equivalency of Annual Operating Energy (metric tons)		Metric tons CO2 e
Carbon Equivalency of Annual Operating Energy / SF	0	lbs CO2/sf
Total Building Lifetime Carbon / SF (embodied plus 20 years of operation)	0	lbs CO2/sf
Total Building Lifetime Carbon / SF (embodied plus 60 years of operation)	0	lbs CO2/sf
Additional Metrics – Adaptive Reuse		
Does the project incorporate existing structure?		
Does the project incorporate existing envelope?		
Additional Metrics – Material Optimization and Disassembly Strategies		
Material Optimization and Disassembly Strategies *Brief list of material optimization strategies:*	50 words to be include on the Sustainability Metrics drawing sheet	

Measure 9
Design for Change

What is the designed lifespan of the building?		e.g. 30yrs– Stick frame, 200yrs– concrete, steel, heavy timber, 1000yrs– solid masonry
Was the building designed for disassembly and/or with flexible future use?		
Main resiliency strategies *Describe what are the most likely building threats (e.g. flooding, drought, earthquakes, etc.) and how the building's resiliency strategies are addressing them.*		

Measure 10
Design for Discovery

Was a post occupancy evaluation conducted on this project?		
Design for Discovery Narrative *Describe the type of evaluations conducted and document the lessons learned.*	Note: This field is not required for the Sustainability Metrics drawing sheet	
Additional Metrics – Alternate Design for Discovery Question		
How did this project make high performance experiential and serve as an educational opportunity? *(Answer one of the two essay questions within Design for Discovery)*	100 words to include on the Sustainability Metrics drawing sheet	

RESOURCES

In the original version of the Common App, the Resources measure is primarily focused on embodied carbon. We have expanded the embodied carbon sections to address material categories mor in depth. For whole building or major renovation projects, embodied carbon and operating carbon, translated to lbs CO2e per square foot, are compared graphically over a 20-year lifespan in the Total Lifetime Carbon graph. Refer to illustrated metrics clarification below.

Additional data on materials

In addition to embodied carbon calculations, notes on the human health and environmental sourcing impacts of key materials are indicated in the table on the upper left corner of the Sustainability Metrics Drawing Set sheet.

CHANGE

A brief description of resiliency and passive survivability strategies should be included on the Sustainability Metrics sheet. Keep in mind the audience for this statement includes the client and contractor - be mindful of lingo and acronyms.

DISCOVERY

Since the Sustainability Metrics sheet is included in the construction document set, in this case, the narrative is a brief description of evaluation strategies recommended in order to document lessons learned.

Embodied carbon summary

24 August 2021

The global warming potential (GWP) summary tab autopopulates compiled embodied carbon footprint from the building life cycle assessment, the casework calculator and the furniture calculator tabs. Refer to either the whole building or interior-only columns, depending on the project type.

GWP Summary | New and major renovation project *(Project total is only Construction Materials)*

This summary will be compared to the AIA COTE embodied carbon baseline.

	GWP per square foot	New vs Salvaged	Impact compared to total project	
08 - Openings and Glazing				
New	0.000	#DIV/0!	#DIV/0!	
Salvaged	0.000	#DIV/0!	#DIV/0!	
New + Salvaged	0.000		#DIV/0!	
		#DIV/0!	#DIV/0!	QA check
09 - Finishes				
New	0.000	#DIV/0!	#DIV/0!	
Salvaged	0.000	#DIV/0!	#DIV/0!	
New + Salvaged	0.000		#DIV/0!	
		#DIV/0!	#DIV/0!	QA check
Construction Materials				
New	0.000	#DIV/0!	#DIV/0!	
Salvaged	0.000	#DIV/0!	#DIV/0!	
New + Salvaged	0.000		#DIV/0!	
		#DIV/0!	#DIV/0!	QA check

GWP Summary | Interior project *(Project total is Construction Materials, Casework & Furniture)*

This summary will be compared to the CLF 2019 interior project embodied carbon baseline.

	GWP per square foot		New vs Salvaged	Impact compared to total project	
	initial	multiplied by # refreshes			
08 - Openings and Glazing					
New	0.000	0.000	#DIV/0!	0.00%	
Salvaged	0.000	0.000	#DIV/0!	0.00%	
New + Salvaged	0.000	0.000		0.00%	
			#DIV/0!	0.00%	QA check
09 - Finishes					
New	0.000	0.000	#DIV/0!	0.00%	
Salvaged	0.000	0.000	#DIV/0!	0.00%	
New + Salvaged	0.000	0.000		0.00%	
			#DIV/0!	0.00%	QA check
Construction Materials					
New	0.000	0.000	#DIV/0!	0.00%	
Salvaged	0.000	0.000	#DIV/0!	0.00%	
New + Salvaged	0.000	0.000		0.00%	
			#DIV/0!	0.00%	QA check
Casework					
New	8.201	32.802	100.00%	99.20%	
Salvaged	0.000	0.000	0.00%	0.00%	
New + Salvaged	8.201	32.802		99.20%	
			100.00%	99.20%	QA check
Furniture					
New	0.066	0.264	100.00%	0.80%	
Salvaged	0.000	0.000	0.00%	0.00%	
New + Salvaged	0.066	0.264		0.80%	
			100.00%	0.80%	QA check

Project Total

	GWP per square foot	New vs Salvaged
New	0.000	#DIV/0!
Salvaged	0.000	#DIV/0!
New + Salvaged	0.000	
	0.000	#DIV/0!
QA check (total of individual divisions)		
new	0.000	#DIV/0!
salvaged	0.000	#DIV/0!
New + Salvaged	0.000	#DIV/0!

Project Total

	GWP per square foot		New vs Salvaged		
	Interior Lifetime	multiplied by # refreshes			
New	8.267	33.066	100.00%	100.00%	QA check (sum of C.M. + casework + furniture)
Salvaged	0.000	0.000	0.00%	0.00%	QA check (sum of C.M. + casework + furniture)
New + Salvaged	8.267	33.066			
	8.267	33.066	100.00%	100.00%	QA check (sum of New + Salvaged)
QA check (total of individual divisions + caseweork + furniture)					
new	8.267		100.00%		
salvaged	0.000		0.00%		
New + Salvaged	8.267		100.00%		

Intro | Abbreviations | Common App_MSR version | Sustainability Metrics Sheet | GWP Summary | GWP Calculator | Building | GWP Calculator | Furniture | GWP Calculator | Casework | EPD Sources | Tally Casework Outputs | Building Type Benchmarks

Embodied carbon calculator for furniture

24 August 2021

The furniture calculator references embodied carbon life cycle assessment data from Environmental Product Declarations (EPDs) provided by furniture manufacturers. An average from three different EPDs is used to approximate the impact of a single product type. Users enter quanitites of new and salvaged items. Users can also enter additional rows of data for furniture types not covered in the tracker.

GWP Summary | Furniture

GWP per square foot		
New furniture	0.066	lbs CO2e/sf
Salvaged furniture	0.000	lbs CO2e/sf
New + Salvaged furniture	0.066	lbs CO2e/sf

Total GWP with QTO, lb CO2e		
New furniture	5,559.469	lb CO2e
Salvaged furniture	0.000	lb CO2e
New + Salvaged furniture	5,559.469	lb CO2e

Furniture / Furniture EPD Data Ranges *(see notes below)* / GWP Calculator | Furniture

		Quantity of Material		EPD 1		EPD 2		EPD 3		CLF baseline GWP	GWP Averages		GWP with QTO, lb CO2e	
Item	Notes	New	Salvaged	Manufacturer	kg CO2e	Manufacturer	kg CO2e	Manufacturer	kg CO2e	kg CO2e	kg CO2e	lb CO2e	New	Salvaged
Chair - Conference	with casters			Herman Miller	34.40	Herman Miller	73.00	Knoll	110.00		72.467	159.762	0.000	0.000
Chair - Task	with casters and adjustability	3		Herman Miller	75.70	Knoll	88.30	Steelcase	106.40	77.80	90.133	198.710	596.130	0.000
Chair - High Density Stacker	typically 40+ chairs stacking on dolly			Emeco	16.30	Howe	30.60	KI	48.30		31.733	69.960	0.000	0.000
Chair - Guest/Study	poly seat, wood legs			Emeco	19.00	Knoll	51.90	Haworth	67.00		45.967	101.339	0.000	0.000
Chair - Barstool	painted metal base with poly seat			Emeco	21.00	Howe	38.50	KI	57.17		38.890	85.738	0.000	0.000
Chair - Stool (18" seat height)	18"seat height			Emeco	8.46	Mark Products	11.00				9.730	21.451	0.000	0.000
Table - Height Adjustable	24"x36" typ size			Teknion	156.00	Steelcase	160.00	Haworth	200.00		172.000	379.195	0.000	0.000
Table - Conference/Study Table	36"x72" typ size			Haworth	130.00	Steelcase	190.00	Gunlocke	310.00	134.00	210.000	462.971	0.000	0.000
Table - Flip Top	flip top with casters			Howe	79.30	KI	110.00	KI	130.00		106.433	234.645	0.000	0.000
Table - Laptop	wood or metal base with lam or quartz top			Arper	50.00						50.000	110.231	0.000	0.000
Table - Coffee/Occasional Table	wood or metal base with lam or quartz top	1		Koleksiyon	66.00	Haworth	180.00	Haworth	270.00		172.000	379.195	379.195	0.000
Workstation - 6x6 Station	6' x 6' floor plate desk configuration (L shaped)	2		Teknion	105.00	Haworth	300.00	Knoll	572.00	435.00	325.667	717.972	1,435.944	0.000
Workstation - Private Office	L shaped with wall mounted elements	1		Knoll	208.00	Gunlocke	220.00	Haworth	570.00	489.00	332.667	733.404	733.404	0.000
Lounge - 3-seat Sofa	3 seat upholstered sofa	1		Haworth	89.00	Koleksiyon	309.00	ForaForm	364.00	98.20	254.000	559.974	559.974	0.000
Lounge - Ottoman	small ottoman/pouf			ForaForm	24.00	Koleksiyon	40.00	Haworth	75.00		46.333	102.148	0.000	0.000
Lounge - Highback	wood or metal base with upholstered seat an	2		Haworth	120.00	Vitra	270.00	Haworth	430.00		273.333	602.597	1,205.194	0.000
Lounge - Low/Mid Back	wood or metal base with upholstered seat an	2		Haworth	120.00	Vitra	152.00	KI	170.00		147.333	324.814	649.628	0.000
Shelving - 66"H Double Face Shelving	welded frame unit					MSR Design STUDY VIA TALLY - modeled after Estey			217.50		217.500	479.505	0.000	0.000
Shelving - 66"H Single Face Shelving	welded frame unit					MSR Design STUDY VIA TALLY - modeled after Estey			124.29		124.290	274.013	0.000	0.000
Shelving - Metal Typical End Panel	66"H End panel					MSR Design STUDY VIA TALLY - modeled after Estey			54.22		54.220	119.535	0.000	0.000
Shelving - Metal Typical Canopy Top						MSR Design STUDY VIA TALLY - modeled after Estey			26.30		26.300	57.982	0.000	0.000
add additional furniture as needed				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000
				0.00							0.000	0.000	0.000	0.000

Intro | Abbreviations | Common App_MSR version | Sustainability Metrics Sheet | GWP Summary | GWP Calculator | Building | GWP Calculator | Furniture | GWP Calculator | Casework | EPD Sources | Tally Casework Outputs | Building Type Benchmarks

MSRDesign

Embodied carbon calculator for casework

24 August 2021

The casework calculator allows the user to select cabinet and countertop materials for each group, making the choice in the appropriate column for new versus salvaged material. GWP factors are based on an MSR Design study of casework assemblies using Tally. The user enters quantity takeoffs in lineal feet to find the GWP for each casework group.

GWP Summary | Casework

GWP per square foot		
New casework	8.201	lbs CO2e/sf
Salvaged casework	0.000	lbs CO2e/sf
New + Salvaged casework	8.201	lbs CO2e/sf

	Total GWP with QTO, lb CO2e	
	New	Salvaged
	689,826.233	0.000
New + Salvaged	689,826.233	

GWP Calculator | Casework Group Breakout

*Select the BIOGEN option only if using FSC lumber or other natural product that is certified, proving that it sequesters carbon

	Casework and Countertop Materials		GWP per LF, kg CO2e	GWP per LF, lbs CO2e			GWP with QTO, lbs CO2e	
	New *	Salvaged		New	Salvaged	QTO in LF	New	Salvaged
Casework Group 1 *input group description here*								
base cabinets	VENEER	N/A	1,614.641	330.704	0.000	17.500	5,787.327	0.000
upper cabinets	N/A	N/A	0.000	0.000	0.000		0.000	0.000
tall cabinets	N/A	N/A	0.000	0.000	0.000		0.000	0.000
countertop	STONE	N/A	100.589	20.602	0.000	23.000	473.851	0.000
						Total GWP	6,261.178	0.000
Casework Group 2 *input group description here*								
base cabinets	VENEER	N/A	1,614.641	330.704	0.000	599.250	198,174.622	0.000
upper cabinets	VENEER	N/A	1,168.423	239.312	0.000	612.500	146,578.469	0.000
tall cabinets	VENEER	N/A	3,764.841	771.100	0.000	384.750	296,680.660	0.000
countertop	STONE	N/A	100.589	20.602	0.000	1,313.000	27,050.687	0.000
						Total GWP	668,484.437	0.000
Casework Group 3 *input group description here*								
base cabinets	LINOLEUM	N/A	421.246	86.278	0.000	5.000	431.390	0.000
upper cabinets	PLY	N/A	125.346	25.673	0.000		0.000	0.000
tall cabinets	N/A	N/A	0.000	0.000	0.000		0.000	0.000
countertop	ENG. STONE	N/A	241.219	49.406	0.000	203.100	10,034.276	0.000
						Total GWP	10,465.665	0.000

Intro | Abbreviations | Common App_MSR version | Sustainability Metrics Sheet | GWP Summary | GWP Calculator | Building | GWP Calculator | Furniture | GWP Calculator | Casework | EPD Sources | Tally Casework Outputs | Building Type Benchmarks

MSRDesign

Using the Sustainability Metrics Drawing Template

24 August 2021

Numbers and narratives go here

These core ten rows of data at the center of the sheet are the COTE Ten Measures, also known as The AIA Framework for Design Excellence. Info needed for the sheet is summarized in the **Sustinability Metrics Sheet** tab of the Tracking Tool.

Diagram or illustration

A compelling diagram or illustration that highlights sustainability features.

Tip: Use something you have already made, for example a diagram you presented to your client.

MSRDesign

Different information graphics for whole building and interior projects

24 August 2021

Whole building or major renovation

Interior-only project

MSRDesign

Whole building or major renovation illustrated metrics

24 August 2021

Operating energy

Graphically compare annual operating energy per square foot or energy use intensity (EUI) to the AIA 2030 Commitment baseline. This is an opportunity to highlight achievements and room for improvement in meeting AIA 2030 reduction targets.

Embodied carbon

Graphically compare the embodied carbon footprint of the project to the AIA COTE baseline. If a portion of the building was reused, demonstrate embodied carbon saved by reusing existing materials.

Total lifetime carbon

Compare embodied and operating carbon over the life of the project. You might choose to extend the timeframe to capture the expected lifetime of the building. How to balance reducing operating energy and appropriate embodied energy, for the lowest lifetime carbon footprint?

Water use

Illustrate annual water use, LEED baseline, and rainwater harvest. Compare stormwater capture to the LEED target.

Wellness

Compare spatial daylight autonomy and percent of regularly occupied spaces with exterior views to LEED targets.

MSRDesign

Interior project illustrated metrics

24 August 2021

Embodied carbon

For interior projects, especially where refreshes may occur every 5-10 years, the impact of embodied carbon is among the most important considerations.

Our workflow includes a Tally model based on a Revit BIM model. Furniture and casework are estimated using calculators in the Tracker.

The total reduction in impact due to the use of salvaged material

Furniture and casework numbers from dedicated tabs in the Tracker spreadsheet. Salvaged is shown dashed

The total interior embodied carbon of a project is compared to the Carbon Leadership Forum (CLF) 2019 baseline range for interior remodels.

Multiplied by a number of predicted refreshes over the lifetime of the building, the impact of interior finish materials becomes significant in comparison to high-volume materials such as structure and envelope

Further breakdown of embodied carbon in construction materials by CSI division

New vs salvaged

Embodied carbon impact reduction due to use of salvaged building materials is shown as a dashed outline.

Furniture and casework

Furniture and casework numbers are typically not included in a whole building life cycle assessment (LCA). Calculator tabs in the Tracker spreadsheet enables us to include this information in our breakdown.

Construction material impacts by division

The comparative embodied carbon impact of different materials is broken out by percentage and represented by CSI division. Precise numbers can be found in the Tally spreadsheet export, or percentages estimated from a Tally PDF report.

Materials metrics

24 August 2021

MATERIAL SOURCING AND HUMAN HEALTH

MSR Design is a signatory to the AIA Materials Pledge, committing to material selections that support Human Health, Climate Health, Ecosystem Health, Social Health & Equity, and Circular Economy. The following materials specifically address health and sustainability criteria.

MSR requires listing to the right at a minimum 5 architectural materials & 5 interior finishes to be deeply investigated based on the below criteria from the AIA 2050 Materials Pledge.		**HUMAN HEALTH**	No Added Performance Finish	Declared Label Red List Free	**CLIMATE HEALTH**	Carbon Neutral	Transparency Documentation	**ECOSYSTEM HEALTH**	Made within 500mi	Biobased Material	**SOCIAL HEALTH**	JUST Label Manufacturer	B-Corp Manufacturer	**CICULAR ECONOMY**	Reclamation Program	Salvaged Material
CPT-1	Carpet Tile		•				•									
CPT-2	Carpet Tile		•				•									
FILM	Insulation		•	•			•									
GBD-1	Gypsum Board									•					•	
INSUL-1	Insulation		•	•			•									
INSUL-2	Insulation						•								•	
PBD-1	Wood Composite Board						•									
PT-2A	Paint		•						•	•		•				
PT-3A	Paint		•						•	•		•				
WD-1	Wood														•	•

Materials selection comment

CPT-1	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, Eiusmod tempor incididunt ut labore et dolore magna aliqua. Sit amet porttitor eget dolor morbi. Risus feugiat in ante metus dictum at tempor commodo. Tincidunt lobortis feugiat vivamus at.
CPT-2	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
FILM	Insulation	
GBD-1	Gypsum Board	
INSUL-1	Insulation	
INSUL-2	Insulation	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In ornare quam viverra orci.
PBD-1	Wood Composite Board	
PT-2A	Paint	
PT-3A	Paint	Lorem ipsum dolor sit amet, consectetur adipiscing elit
WD-1	Wood	

Material sourcing and human health

This table highlights materials that meet exceptional sourcing, human health or embodied carbon criteria, setting an example for the transformation of the building product industry.

Use the list to capture the impact of certain materials for which a substitution may compromise sustainable performance, or comments on key strategies to preserve this material through value engineering and during construction.

TRANSFORMING THE MATERIALS INDUSTRY

How many manufacturers were contacted to request product transparency documentation?
###

Non-Toxic Interior Environments
What number of products used on this project are Red List Free?
###

How does this project contribute to a healthier, more sustainable building product industry?
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Transforming the materials industry

Record the number of products with transparency documentation, and the number that are free of Red List ingredients.

EMBODIED CARBON PER SQUARE FOOT: HIGH-VOLUME INTERIOR MATERIALS

Comparison of specified manufactor / product to the embodied carbon baseline (lb CO2e/sf) for wall, floor and ceiling surfaces, using the EC3 tool.

Embodied carbon of high-volume interior materials

The EC3 online tool enables comparison of many common carpet, acoustic ceiling and gypsum board brands to an embodied carbon baseline. Choose the lowest-carbon option for your project.

[Envelope optimization]

24 August 2021

ENVELOPE OPTIMIZATION

BUILDING CODE: [Insert here]
ENERGY CODE: [Insert here]

Prescriptive requirements below do not account for modeled performance to achieve alternate code compliance.

WINDOW TO WALL RATIO

Location		Area	Percent
North Wall	Opaque	xx,xxx SF	xx%
	Glazed	xx,xxx SF	xx%
East Wall	Opaque	xx,xxx SF	xx%
	Glazed	xx,xxx SF	xx%
South Wall	Opaque	xx,xxx SF	xx%
	Glazed	xx,xxx SF	xx%
West Wall	Opaque	xx,xxx SF	xx%
	Glazed	xx,xxx SF	xx%
Entire Envelop	Opaque	xx,xxx SF	xx%
	Glazed	xx,xxx SF	xx%

GLAZING CRITERIA

Location	U-Factor		SHGC		VLT
	Code Req.	Project	Code Req.	Project	Project
North Wall	0.xx	0.xx	0.xx	0.xx	0.xx
East Wall	0.xx	0.xx	0.xx	0.xx	0.xx
South Wall	0.xx	0.xx	0.xx	0.xx	0.xx
West Wall	0.xx	0.xx	0.xx	0.xx	0.xx
Skylight	0.xx	0.xx	0.xx	0.xx	0.xx

OPAQUE ENVELOPE CRITERIA

Location	U-Value		R-Value	
	Code Req.	Project	Code Req.	Project
Roof	0.xx	0.xx	R-xx	R-xx
Walls: Above Grade	0.xx	0.xx	R-xx	R-xx
Walls: Below Grade	0.xx	0.xx	R-xx	R-xx
Floors	0.xx	0.xx	R-xx	R-xx
Slab on Grade	0.xx	0.xx	R-xx	R-xx

DOOR PERFORMANCE CRITERIA

	U-Factor		**Air Infiltration** (CFM/SF)	
	Code Req.	Project	Code Req.	Project
Exterior Swing Doors	0.xx	0.xx	0.xx	0.xx
Exterior Overhead Doors	0.xx	0.xx	0.xx	0.xx

HEAT ISLAND REDUCTION

	LEED Target SRI	Project SRI	Area
Roof Initial SRI	XX	XX	xx,xxx SF
Non-Roof SRI Measures	XX	XX	xx,xxx SF
Vegetated Roof	NA	NA	xx,xxx SF

Envelope optimization is now located on the types sheet in our drawings set

Record the applicable version of the energy code. Fill out the table with project values and code values for comparison. These values are useful reference points throughout design and construction.

MATERIAL SOURCING AND HUMAN HEALTH

MSR Design is a signatory to the AIA Materials Pledge, committing to material selections that support Human Health, Climate Health, Ecosystem Health, Social Health & Equity, and Circular Economy. The following materials specifically address health and sustainability criteria.

MSR requires listing to the right at a minimum 5 architectural materials & 5 interior finishes to be deeply investigated based on the below criteria from the AIA 2050 Materials Pledge.		HUMAN HEALTH	No Added Performance Finish	Declared Label Red List Free	CLIMATE HEALTH	Carbon Neutral	T Transparency Documentation	ECOSYSTEM HEALTH	Made within 500mi	Biobased Material	SOCIAL HEALTH	JUST Label Manufacturer	B-Corp Manufacturer	CIRCULAR ECONOMY	Reclamation Program	Salvaged Material
CPT-1	Carpet Tile		•				•									
CPT-2	Carpet Tile		•				•									
FILM	Insulation		•	•			•									
GBD-1	Gypsum Board									•					•	
INSUL-1	Insulation		•	•			•									
INSUL-2	Insulation						•								•	
PBD-1	Wood Composite Board						•									
PT-2A	Paint		•						•	•		•				
PT-3A	Paint		•						•	•		•				
WD-1	Wood														•	•

Materials selection comment

CPT-1	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, Eiusmod tempor incididunt ut labore et dolore magna aliqua. Sit amet porttitor eget dolor morbi. Risus feugiat in ante metus dictum at tempor commodo. Tincidunt lobortis feugiat vivamus at.
CPT-2	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
FILM	Insulation	
GBD-1	Gypsum Board	
INSUL-1	Insulation	
INSUL-2	Insulation	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In ornare quam viverra orci.
PBD-1	Wood Composite Board	
PT-2A	Paint	
PT-3A	Paint	Lorem ipsum dolor sit amet, consectetur adipiscing elit
WD-1	Wood	

TRANSFORMING THE MATERIALS INDUSTRY

How many manufacturers were contacted to request product transparency documentation?
###

Non-Toxic Interior Environments
What number of products used on this project are Red List Free?
###

How does this project contribute to a healthier, more sustainable building product industry?

[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

EMBODIED CARBON PER SQUARE FOOT: HIGH-VOLUME INTERIOR MATERIALS

Comparison of specified manufactor / product to the embodied carbon baseline (lb CO2e/sf) for wall, floor and ceiling surfaces, using the EC3 tool.

DEFINITIONS

ASE (ANNUAL SUNLIGHT EXPOSURE): Percentage of floor area receiving direct sunlight, which can indicate visual discomfort (glare). 10% or less is often preferred.

EUI (ENERGY USE INTENSITY): A building's annual energy use per unit area. A lower EUI indicates a more energy efficient building.

GWP (GLOBAL WARMING POTENTIAL) : A measure of the impact of emissions resulting from manufacturing, transportation, and other activities

LPD (LIGHTING POWER DENSITY): A measure of the lighting watts per square foot. The lower the number, the less electricity is needed to operate the building's lighting.

R-VALUE: The capacity of a material to resist heat flow. Higher R-value indicates more heat resistance.

sDA (SPATIAL DAYLIGHT AUTONOMY): A measure of how much daylight a space received over an annual basis on a scale of 0 - 100%.
75%+ is bright enough to work without electric lighting in most instances.
55 - 74% will occasionally be acceptable for working without electric lighting.

SHGC (SOLAR HEAT GAIN COEFFICIENT): The amount of solar radiation admitted through a window and released as heat to the interior. The higher the number, the more heat will be transmitted.

U-FACTOR: The rate at which an assembly conducts heat. Lower U-factor indicates better heat resistance (inverse of R-value).

VLT (VISIBLE LIGHT TRANSMITTANCE): The amount of the visible spectrum of sunlight transmitted through the glazing. The higher the number, the more light will enter the space.

DESIGN FOR ENERGY

Project Information
Climate zone **?**
Primary building use **?**
Post occupancy energy performance monitoring? **?**

Lighting Power Density (LPD)
Baseline LPD **NA** kbtu/sf
Project LPD **NA** kbtu/sf
LPD Reduction % **NA** kbtu/sf

Operating Energy (EUI)
Baseline EUI **xx** kbtu/sf
2030 Challenge target EUI **xx** kbtu/sf
Project EDI (energy demand intensity) **xx** kbtu/sf
Project EPI (energy production intensity) **xx** kbtu/sf
Project EUI (net energy use intensity) **xx** kbtu/sf
Project net energy use reduction % **xx**%

DESIGN FOR RESOURCES

Adaptive Reuse
Does the project incorporate existing structure? **Y/N**
Does the project incorporate existing envelope? **Y/N**

Material Optimization and Disassembly Strategies
Brief list of material optimization strategies here

Material Reuse & Salvaged Materials
Embodied carbon saved through material reuse? **Y/N**
% reduction in embodied carbon from material reuse **xx**%

Embodied Carbon
Baseline building embodied carbon/sf **xx** metric ton CO2
Project building embodied carbon/sf **xx** lbs CO2/sf
Project building embodied carbon reduction % **xx**%

DESIGN FOR WATER

Water Reuse
Is greywater reused on site? **?**

Low Flow Fixtures
Do your fixtures meet LEED V4 for low flow rate? **?**

Water Use
Baseline potable water use **xx,xxx** gal/yr
Project potable water use **xx,xxx** gal/yr
Potable water use reduction % **xx**%

DESIGN FOR WELLNESS

Natural Ventilation
% regularly occupied floor area within 30' of operable windows **xx**%

Occupancy Satisfaction
Will a post occupancy evaluation be conducted? **Y/N**

Biophilia
% of the square footage with interior plantings **xx**%

Views
% of regularly occupied floor area with direct views outdoors **xx**%

Daylight
% of regularly occupied floor area with adequate daylighting (spatial daylight autonomy) **xx**%

DESIGN FOR EQUITABLE COMMUNITIES

Engagement Metrics
What was the level of community engagement? **x (0-5)**
Was a community-based knowledge broker engaged? **Y/N**
Was the knowledge broker compensated? **Y/N**
Did you follow up with the community group? **Y/N**

Community Engagement Strategy *What engagement strategies did the design team use?*

[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Comfort/Wellness Spaces
Does the project include spaces that support retreat and privacy for diverse health and wellness needs? **Y/N**

Binary and Non-Binary Restrooms
Does the project include both binary gender and gender-inclusive restrooms? **Y/N**

Variety of Ways to Interface with the Space *How does the project support diverse physical use patterns, beyond ADA requirements?*

[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Examples; ergonomic needs, circulation, visibility, adjustable height surfaces

DESIGN FOR ECOLOGY

Site Metrics
Percent of site pre-project supporting vegetation **##**%
Percent of site designed to support vegetation **##**%
Percent of landscaped areas covered by native or climate appropriate plants **##**%

Site Features *How does this project promote biodiversity and support native species?*

[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

DESIGN FOR ECONOMY

Efficiency Metric
How many square feet per occupant? **xx** sf/Occupant

Efficiency Strategies *How was the program right-sized; does it leverage adjacencies; does it reduce the total quantity of materials?*

[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

DESIGN FOR INTEGRATION

Project Summary Statement *Describe how performance strategies are integrated within the project's overall design and performance goals.*

[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

DESIGN FOR DISCOVERY

Experiential Performance Statement *How did this project make high performance experiential and serve as an educational opportunity?*

[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

DESIGN FOR CHANGE

Resiliency Strategy *What are the project's resiliency and passive survivability strategies?*

[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

MSR Design Note: The performance measures recorded on this drawing represent the designed performance. This information is intended to provide our client and other parties with useful information. Actual performance may vary due to many factors. Please contact the design team with questions.

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612.375.0336

Project No: 2021000

2021 template

Enter address here

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Minnesota.

Architect Seal

Signature _____

Print Name _____

Date _____ **License No** _____

SCHEMATIC DESIGN

ISSUE / REVISION

Mark Date **Description**

NOT FOR CONSTRUCTION

Drawing 2021 Copyright Meyer, Scherer & Rockcastle, Ltd.

SUSTAINABILITY METRICS

G001

Drawing 2021 Copyright Meyer, Scherer & Rockcastle, Ltd. 5/24/2021 6:45:36 PM C:\Users\mscCommunity06 - Sustainability Resources\27 - MSR Co-when Sustainability Metrics\1 - 2021-06-24 Sustainability Metrics Dwg Set Template\Images\G-Sheet for 2021 template.rvt

MATERIAL SOURCING AND HUMAN HEALTH

MSR Design is a signatory to the AIA Materials Pledge, committing to material selections that support Human Health, Climate Health, Ecosystem Health, Social Health & Equity, and Circular Economy. The following materials specifically address health and sustainability criteria.

MSR requires listing to the right at a minimum 5 architectural materials & 5 interior finishes to be deeply investigated based on the below criteria from the AIA 2050 Materials Pledge.		HUMAN HEALTH	No Added Performance Finish	Declared Label Red List Free	CLIMATE HEALTH	Carbon Neutral	Transparency Documentation	ECOSYSTEM HEALTH	Made within 500mi	Biobased Material	SOCIAL HEALTH	JUST Label Manufacturer	B-Corp Manufacturer	CICULAR ECONOMY	Reclamation Program	Salvaged Material
CPT-1	Carpet Tile		•				•									
CPT-2	Carpet Tile		•				•									
FILM	Insulation		•	•			•									
GBD-1	Gypsum Board									•					•	
INSUL-1	Insulation		•	•			•									
INSUL-2	Insulation						•								•	
PBD-1	Wood Composite Board						•									
PT-2A	Paint		•							•	•		•			
PT-3A	Paint		•							•	•		•			
WD-1	Wood														•	•

Materials selection comment

CPT-1	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, Eiusmod tempor incididunt ut labore et dolore magna aliqua. Sit amet porttitor eget dolor morbi. Risus feugiat in ante metus dictum at tempor commodo. Tincidunt lobortis feugiat vivamus at.
CPT-2	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
FILM	Insulation	
GBD-1	Gypsum Board	
INSUL-1	Insulation	
INSUL-2	Insulation	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In ornare quam viverra orci.
PBD-1	Wood Composite Board	
PT-2A	Paint	
PT-3A	Paint	Lorem ipsum dolor sit amet, consectetur adipiscing elit
WD-1	Wood	

TRANSFORMING THE MATERIALS INDUSTRY

How many manufacturers were contacted to request product transparency documentation?
###

Non-Toxic Interior Environments
What number of products used on this project are Red List Free?
###

How does this project contribute to a healthier, more sustainable building product industry?
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

EMBODIED CARBON PER SQUARE FOOT: HIGH-VOLUME INTERIOR MATERIALS

Comparison of specified manufactor / product to the embodied carbon baseline (lb CO2e/sf) for wall, floor and ceiling surfaces, using the EC3 tool.

DEFINITIONS

ASE (ANNUAL SUNLIGHT EXPOSURE): Percentage of floor area receiving direct sunlight, which can indicate visual discomfort (glare). 10% or less is often preferred.

EUI (ENERGY USE INTENSITY): A building's annual energy use per unit area. A lower EUI indicates a more energy efficient building.

GWP (GLOBAL WARMING POTENTIAL) : A measure of the impact of emissions resulting from manufacturing, transportation, and other activities

LPD (LIGHTING POWER DENSITY): A measure of the lighting watts per square foot. The lower the number, the less electricity is needed to operate the building's lighting.

R-VALUE: The capacity of a material to resist heat flow. Higher R-value indicates more heat resistance.

sDA (SPATIAL DAYLIGHT AUTONOMY): A measure of how much daylight a space received over an annual basis on a scale of 0 - 100%.
75%+ is bright enough to work without electric lighting in most instances.
55 - 74% will occasionally be acceptable for working without electric lighting.

SHGC (SOLAR HEAT GAIN COEFFICIENT): The amount of solar radiation admitted through a window and released as heat to the interior. The higher the number, the more heat will be transmitted.

U-FACTOR: The rate at which an assembly conducts heat. Lower U-factor indicates better heat resistance (inverse of R-value).

VLT (VISIBLE LIGHT TRANSMITTANCE): The amount of the visible spectrum of sunlight transmitted through the glazing. The higher the number, the more light will enter the space.

DESIGN FOR ENERGY

Project Information
Climate zone **?**
Primary building use **?**
Post occupancy energy performance monitoring? **?**

Lighting Power Density (LPD)
Baseline LPD **NA** kbtu/sf
Project LPD **NA** kbtu/sf
LPD Reduction % **NA** kbtu/sf

DESIGN FOR RESOURCES

Adaptive Reuse
Does the project incorporate existing structure? **Y/N**
Does the project incorporate existing envelope? **Y/N**

Material Optimization and Disassembly Strategies
Brief list of material optimization strategies here

Material Reuse & Salvaged Materials
Embodied carbon saved through material reuse? **Y/N**
% reduction in embodied carbon from material reuse **xx**%

DESIGN FOR WATER

Water Reuse
Is greywater reused on site? **?**

Low Flow Fixtures
Do your fixtures meet LEED V4 for low flow rate? **?**

Water Use
Baseline potable water use **xx,xxx** gal/yr
Project potable water use **xx,xxx** gal/yr
Potable water use reduction % **xx**%

DESIGN FOR WELLNESS

Natural Ventilation
% regularly occupied floor area within 30' of operable windows **xx**%

Occupancy Satisfaction
Will a post occupancy evaluation be conducted? **Y/N**

Biophilia
% of the square footage with interior plantings **xx**%

Views
% of regularly occupied floor area with direct views outdoors **xx**%

Daylight
% of regularly occupied floor area with adequate daylighting (spatial daylight autonomy) **xx**%

DESIGN FOR EQUITABLE COMMUNITIES

Engagement Metrics
What was the level of community engagement? **x (0-5)**
Was a community-based knowledge broker engaged? **Y/N**
Was the knowledge broker compensated? **Y/N**
Did you follow up with the community group? **Y/N**

Community Engagement Strategy *What engagement strategies did the design team use?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Comfort/Wellness Spaces
Does the project include spaces that support retreat and privacy for diverse health and wellness needs? **Y/N**

Binary and Non-Binary Restrooms
Does the project include both binary gender and gender-inclusive restrooms? **Y/N**

Variety of Ways to Interface with the Space *How does the project support diverse physical use patterns, beyond ADA requirements?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Examples; ergonomic needs, circulation, visibility, adjustable height surfaces

DESIGN FOR ECOLOGY

Site Metrics
Percent of site pre-project supporting vegetation **##**%
Percent of site designed to support vegetation **##**%
Percent of landscaped areas covered by native or climate appropriate plants **##**%

Site Features *How does this project promote biodiversity and support native species?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

DESIGN FOR ECONOMY

Efficiency Metric
How many square feet per occupant? **xx** sf/Occupant

Efficiency Strategies *How was the program right-sized; does it leverage adjacencies; does it reduce the total quantity of materials?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

DESIGN FOR INTEGRATION

Project Summary Statement *Describe how performance strategies are integrated within the project's overall design and performance goals.*
[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

DESIGN FOR DISCOVERY

Experiential Performance Statement *How did this project make high performance experiential and serve as an educational opportunity?*
[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

DESIGN FOR CHANGE

Resiliency Strategy *What are the project's resiliency and passive survivability strategies?*
[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

MSR Design Note: The performance measures recorded on this drawing represent the designed performance. This information is intended to provide our client and other parties with useful information. Actual performance may vary due to many factors. Please contact the design team with questions.

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612.375.0336

Project No: 2021000

2021 template
Enter address here

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Minnesota.

Architect Seal

Signature _____

Print Name _____

Date _____ **License No** _____

SCHEMATIC DESIGN

ISSUE / REVISION

Mark	Date	Description

Drawing 2021 Copyright Meyer, Scherer & Rockcastle, Ltd.

NOT FOR CONSTRUCTION

SUSTAINABILITY METRICS

G001.2

Drawing 2021 Copyright Meyer, Scherer & Rockcastle, Ltd. 8/24/2021 11:45:38 PM C:\Users\mcrosby\AppData\Local\Temp\acpub - Sustainability Resources\57 - MSR LG-wide Sustainability Metrics\ - 2021-08-24 Sustainability Metrics Dwg Set Template\Images\G-Sheet for

MATERIAL SOURCING AND HUMAN HEALTH

MSR Design is a signatory to the AIA Materials Pledge, committing to material selections that support Human Health, Climate Health, Ecosystem Health, Social Health & Equity, and Circular Economy. The following materials specifically address health and sustainability criteria.

SUSTAINABLE MATERIALS schedule and SUSTAINABLE MATERIALS COMMENTS schedule

MSR requires listing to the right at a minimum 5 architectural materials & 5 interior finishes to be tracked and scored on the below criteria from the AIA 2850 Materials Pledge.

- *Please feel free to add materials that significantly impact human health, mobility & other health goals, and/or meet MSR's library entry requirements.*
- This will help educate the Owner about what we are specifying and keeping even when costs become an issue.
- When specifying, we are required to name products, but we do not have manufacturer's MSR's Sustainable Products & Contacts. This can be found in the Resource Library section of our database of products.
- Within the material ID tag, check the applicable category boxes as why this material better
- Specifying and comment on the specific aspect of this product that is desirable to maintain on the project

		HUMAN HEALTH				CLIMATE HEALTH				ECOSYSTEM HEALTH			SOCIAL HEALTH			CIRCULAR ECONOMY		
		No Added Performance Filler	Declared and Red List Free	Low Emitting	Transparent	Carbon Neutral	Transparent Documentation	Third Party Certified	Material Health Declared	Made within 100mi	Bio Based Material	Biophilic	JUST Labor Manufacturer	B-Corp Manufacturer	Reclamation Program	Salvaged Material
CPT-1	Carpet Tile		●				●									
CPT-2	Carpet Tile		●				●									
FILM	Insulation		●	●				●								
GBD-1	Gypsum Board										●				●	
INSUL-1	Insulation		●	●			●									
INSUL-2	Insulation						●								●	
PBD-1	Wood Composite Board						●									
PT-2A	Paint		●							●	●		●			
PT-3A	Paint		●							●	●		●			
WD-1	Wood														●	●

Materials selection comment

CPT-1	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, Eiusmod tempor incididunt ut labore et dolore magna aliqua. Sit amet porttitor eget dolor morbi. Risus feugiat in ante metus dictum at tempor commodo. Tincidunt lobortis feugiat vivamus at.
CPT-2	Carpet Tile	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
FILM	Insulation	
GBD-1	Gypsum Board	
INSUL-1	Insulation	
INSUL-2	Insulation	Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In ornare quam viverra orci.
PBD-1	Wood Composite Board	
PT-2A	Paint	
PT-3A	Paint	Lorem ipsum dolor sit amet, consectetur adipiscing elit
WD-1	Wood	

TRANSFORMING THE MATERIALS INDUSTRY

How many manufacturers were contacted to request product transparency documentation?
###

How does this project contribute to a healthier, more sustainable building product industry?
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Non-Toxic Interior Environments
What number of products used on this project are Red List Free?
###

EMBODIED CARBON PER SQUARE FOOT: HIGH-VOLUME INTERIOR MATERIALS

Comparison of specified manufactor / product to the embodied carbon baseline (lb CO2e/sf) for wall, floor and ceiling surfaces, using the EC3 tool.

DEFINITIONS

ASE (ANNUAL SUNLIGHT EXPOSURE): Percentage of floor area receiving direct sunlight, which can indicate visual discomfort (glare). 10% or less is often preferred.

EUI (ENERGY USE INTENSITY): A building's annual energy use per unit area. A lower EUI indicates a more energy efficient building.

GWP (GLOBAL WARMING POTENTIAL) : A measure of the impact of emissions resulting from manufacturing, transportation, and other activities

LPD (LIGHTING POWER DENSITY): A measure of the lighting watts per square foot. The lower the number, the less electricity is needed to operate the building's lighting.

R-VALUE: The capacity of a material to resist heat flow. Higher R-value indicates more heat resistance.

sDA (SPATIAL DAYLIGHT AUTONOMY): A measure of how much daylight a space received over an annual basis on a scale of 0 - 100%.
75%+ is bright enough to work without electric lighting in most instances.
55 - 74% will occasionally be acceptable for working without electric lighting.

SHGC (SOLAR HEAT GAIN COEFFICIENT): The amount of solar radiation admitted through a window and released as heat to the interior. The higher the number, the more heat will be transmitted.

U-FACTOR: The rate at which an assembly conducts heat. Lower U-factor indicates better heat resistance (inverse of R-value).

VLT (VISIBLE LIGHT TRANSMITTANCE): The amount of the visible spectrum of sunlight transmitted through the glazing. The higher the number, the more light will enter the space.

DESIGN FOR ENERGY

Project Information
Climate zone **?**
Primary building use **?**
Post occupancy energy performance monitoring? **?**

Lighting Power Density (LPD)
Baseline LPD **NA** kbtu/sf
Project LPD **NA** kbtu/sf
LPD Reduction % **NA** kbtu/sf

NOT USED FOR INTERIORS ONLY PROJECTS

Operating Energy (EUI)
Baseline EUI **xx** kbtu/sf
2030 Challenge target EUI **xx** kbtu/sf
Project EDI (energy demand intensity) **xx** kbtu/sf
Project EPI (energy production intensity) **xx** kbtu/sf
Project EUI (net energy use intensity) **xx** kbtu/sf
Project net energy use reduction % **xx**%

DESIGN FOR RESOURCES

Adaptive Reuse
Does the project incorporate existing structure? **Y/N**
Does the project incorporate existing envelope? **Y/N**

Material Optimization and Disassembly Strategies
Brief list of material optimization strategies here

Material Reuse & Salvaged Materials
Embodied carbon saved through material reuse? **Y/N**
% reduction in embodied carbon from material reuse **xx**%

NOT USED FOR INTERIORS ONLY PROJECTS

Embodied Carbon
Baseline building embodied carbon/sf **xx** metric ton CO2
Project building embodied carbon/sf **xx** lbs CO2/sf
Project building embodied carbon reduction % **xx**%

DESIGN FOR WATER

Water Reuse
Is greywater reused on site? **?**

Low Flow Fixtures
Do your fixtures meet LEED V4 for low flow rate? **?**

Water Use
Baseline potable water use **xx,xxx** gal/yr
Project potable water use **xx,xxx** gal/yr
Potable water use reduction % **xx**%

DESIGN FOR WELLNESS

Natural Ventilation
% regularly occupied floor area within 30' of operable windows **xx**%

Occupancy Satisfaction
Will a post occupancy evaluation be conducted? **Y/N**

Biophilia
% of the square footage with interior plantings **xx**%

Views
% of regularly occupied floor area with direct views outdoors **xx**%

Daylight
% of regularly occupied floor area with adequate daylighting (spatial daylight autonomy) **xx**%

DESIGN FOR EQUITABLE COMMUNITIES

Engagement Metrics
What was the level of community engagement? **x (0-5)**
Was a community-based knowledge broker engaged? **Y/N**
Was the knowledge broker compensated? **Y/N**
Did you follow up with the community group? **Y/N**

Community Engagement Strategy *What engagement strategies did the design team use?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Comfort/Wellness Spaces
Does the project include spaces that support retreat and privacy for diverse health and wellness needs? **Y/N**

Binary and Non-Binary Restrooms
Does the project include both binary gender and gender-inclusive restrooms? **Y/N**

Variety of Ways to Interface with the Space *How does the project support diverse physical use patterns, beyond ADA requirements?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

Examples; ergonomic needs, circulation, visibility, adjustable height surfaces

DESIGN FOR ECOLOGY

Site Metrics
Percent of site pre-project supporting vegetation **##**%
Percent of site designed to support vegetation **##**%
Percent of landscaped areas covered by native or climate appropriate plants **##**%

Percent of site supporting vegetation becomes your total landscaped area.

Site Features *How does this project promote biodiversity and support native species?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

DESIGN FOR ECONOMY

Efficiency Metric
How many square feet per occupant? **xx** sf/Occupant

Efficiency Strategies *How was the program right-sized; does it leverage adjacencies; does it reduce the total quantity of materials?*
[Replace this text with brief narrative, 50 words. Use sentence case, not all-caps.]

DESIGN FOR INTEGRATION

Project Summary Statement *Describe how performance strategies are integrated within the project's overall design and performance goals.*
[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

DESIGN FOR DISCOVERY

Experiential Performance Statement *How did this project make high performance experiential and serve as an educational opportunity?*
[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

DESIGN FOR CHANGE

Resiliency Strategy *What are the project's resiliency and passive survivability strategies?*
[Replace this text with brief narrative, 100 words. Use sentence case, not all-caps.]

- The Chart may need to be adjusted to show a meaningful relationship. *The chart below is scaled of the actual bars to the left in order to fit in this area. Use actual height if possible. Scale if data doesn't fit within space*

Optional project image, illustration or drawing such as:
- Diagram
- Daylighting plans
- Other drawing that was produced to illustrate a key sustainable concept on this project

MSR Design Note: The performance measures recorded on this drawing represent the designed performance. This information is intended to provide our client and other parties with useful information. Actual performance may vary due to many factors. Please contact the design team with questions.

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612.375.0336

Project No: 2021000

2021 template
Enter address here

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the Laws of the State of Minnesota.

Architect Seal

Signature _____

Print Name _____

Date _____ **License No** _____

SCHEMATIC DESIGN

ISSUE / REVISION

Mark	Date	Description

Drawing 2021 Copyright Meyer, Scherer & Rockcastle, Ltd.

NOT FOR CONSTRUCTION

SUSTAINABILITY METRICS

G001.3

Drawing 2021 Copyright Meyer, Scherer & Rockcastle, Ltd. 5/24/2021 1:47:19 PM C:\Users\jhanson\Documents\R22_Sustainability Resources\01 - MSR Carbon Sustainability Metrics - 2021-06-24 Sustainability Metrics_Dwg Set_Template\mwgpm22.rvt