





mM EDUCATION SESSION #4

Radical Collaboration for Radical Change



Eana Bacchiocchi

AIA



Mike Johnson



Melissa Baker USGBC

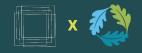


Rodolfo Perez

Moderator



Annie Bevan mindful MATERIALS



Thank you to our Sponsors!



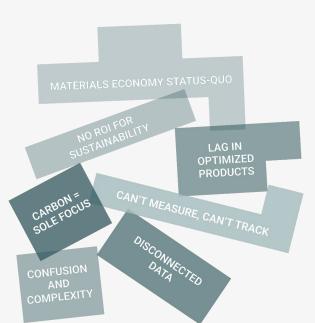
Imagine a world where....

It's easy to identify and select better materials in workflow.

We can quantify holistic impacts of products in projects to support ESG reporting.

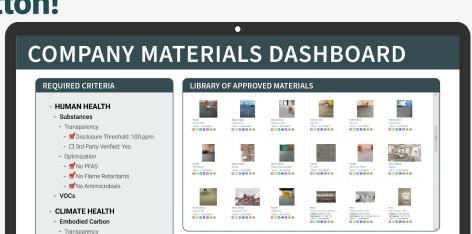
We can Valuate Buildings & Analyze Risk leveraging impact reductions

Manufacturers see a clear ROI for their sustainability investment









PROJECT TRACKING & ANALYTICS

100 UNIVERSITY WAY

Location: Boston, MA

Start Date: January 2024

Completion: July 2028

RESIDENTIAL HALL

Location: Cambridge, MA

PROJECT TARGETS

PROJECT TARGETS

HUMAN HEALTH:

HUMAN HEALTH:

CLIMATE HEALTH:

SOCIAL HEALTH & EQUITY:

ECOSYSTEM HEALTH:

- Optimization

Transparency

- Supply Chain

Community

- MCLF Baseline Level: Achievable

- Diverse Business Enterprise

SOCIAL HEALTH & EQUITY

Company Workplace







The Eas(ier) Button we are working towards:

- + Access product sustainability data in common framework in workflow
- + Overlay your materials requirements
- + Manage your materials library
- + Track materials used on projects
- + Analytics + Reporting on impacts
- +Unlock quantifiable ESG metrics to Valuate & Analyze Risk
- + Manufacturers can track ROI
- + No more disparate spreadsheet requests



A Materials Foundation: A Common Materials Language

The Common Materials Framework act.

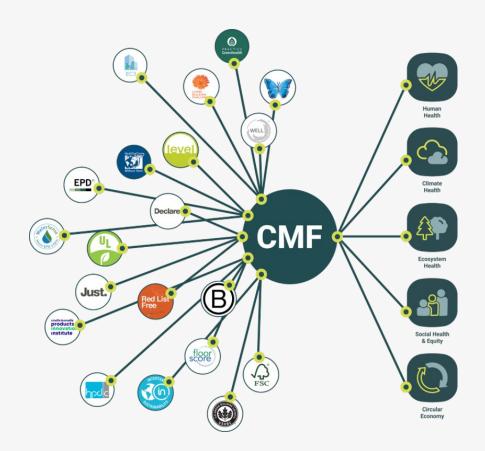


The Framework

The CMF analyzes and contextualizes over 150 of the most common building product and material certifications and disclosures.

The framework gives structure to over 650 data 'factors' identified within these certifications & programs, organizing them into 5 buckets of holistic sustainability.

This is the common language our industry has needed to drive accountability and momentum.







































































AvalonBay

An unprecedented opportunity.











































































- + Industry Wide Communication & Awareness Resource
- + Detailed Overview of our shared Vision of Future, State of the State of the industry, Summary of Forum/Industry Efforts, Forthcoming Solutions, and Opportunity for Action
- + Milestone Marker to ensure Forums don't get too far ahead of industry



Industry-Wide Alignment













PRESSRELEASE · Nov 21, 2023

The Building Industry's Long-Awaited Signal

Leading Sustainability Organizations Unite: AIA, ILFI, IWBI, USGBC, and mM Align Around Common Materials Framework

In an unprecedented collaboration of leading organizations dedicated to sustainable building practices and impact reduction in the built environment, the American Institute of Architects (AIA), the International Living Future Institute (ILFI), the International WELL Building Institute (IWBI), the U.S. Green Building Council (USGBC), and mindful MATERIALS (mM) have joined forces to align around the Common Materials Framework, which establishes for the first time a common language for holistic material sustainability in the building industry.







mM EDUCATION SESSION #4

Radical Collaboration for Radical Change



Eana Bacchiocchi



Mike Johnson



Melissa Baker USGBC



Rodolfo Perez

Moderator



Annie Bevan mindful MATERIALS



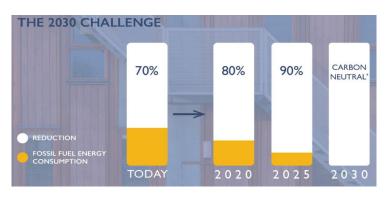


AIA Materials Pledge concept

<u>Step 1:</u>

Common Aspirational Definitions

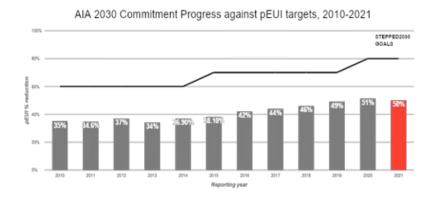
 Define holistically sustainable building materials



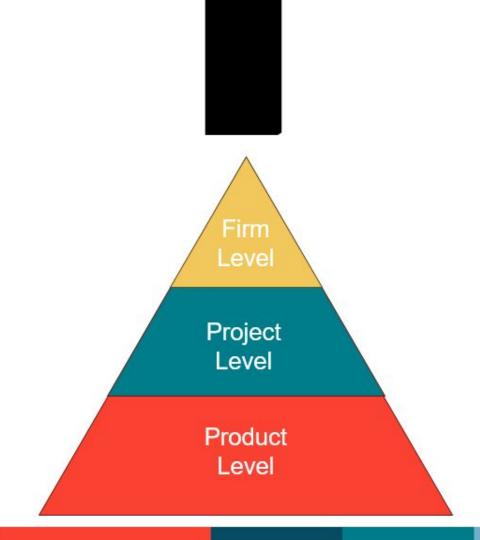
<u>Step 2:</u>

Metrics and reporting system

 Define the data points to measure improvement











Voluntary: Project-level reporting

Optional questions about specific questions - "CHOOSE YOUR OWN ADVENTURE"

Part A:

Select project(s) Choose one

or more projects.

Part B:

Answer general project

questions

Part C:

Select priority product

types

Choose

product types.

Part D:

Select

pledge

impact categories

Choose one

or more

pledge

impact

categories to

report on.

Part E:

Answer

product type

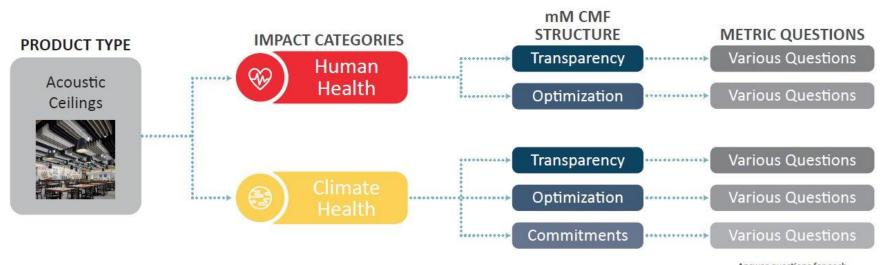
impact

questions





Product-level reporting

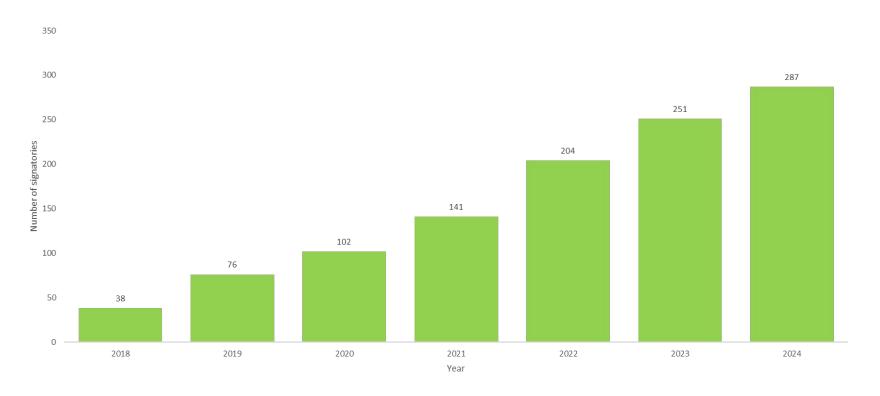


Answer questions for each product type category (not for individual products)





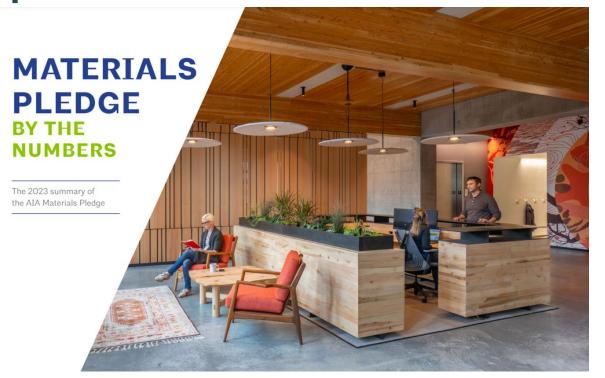
Materials Pledge signatory growth







Introducing the Materials Pledge inaugural progress report



Scan the QR code below to view the full report \



AIA A&D Materials Pledge: 2023 At a Glance

92

Reporting signatories

136

Reported projects

>500k

Reported gross square feet

61%

of reporting firms have Sustainability Action Plans (SAP) with materials

Human health & climate health

were the most reported impact categories

Carpeting, resilient flooring, and acoustical ceilings

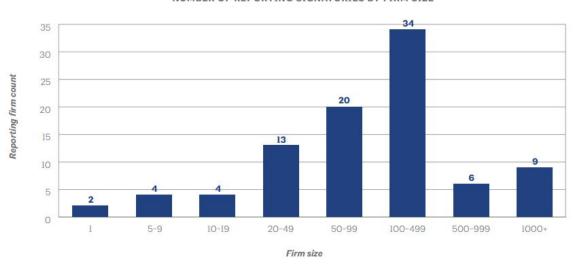
were the most reported product types

79%

Of reporting projects were in pursuit of building certification



NUMBER OF REPORTING SIGNATORIES BY FIRM SIZE

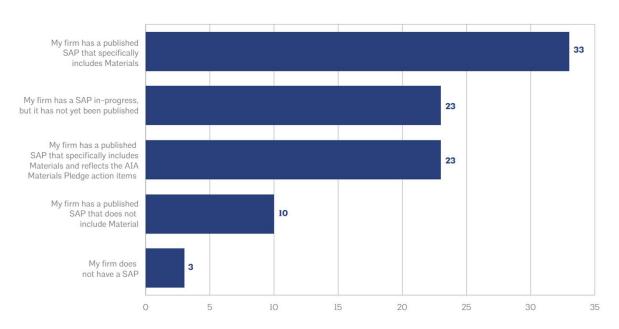


Reporting signatories were primarily large firms (50+) - making up **75% of reporting firms**.





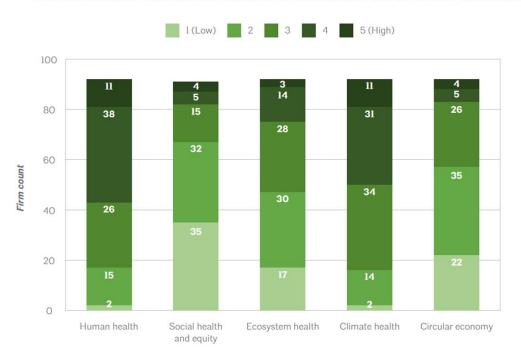
FIRMS AND SUSTAINABILITY ACTION PLANS (SAP)



61% of reporting firms have a published Sustainability Action Plan with materials



FIRM LEADERSHIP KNOWLEDGE RANKING BY MATERIALS PLEDGE IMPACT CATEGORIES



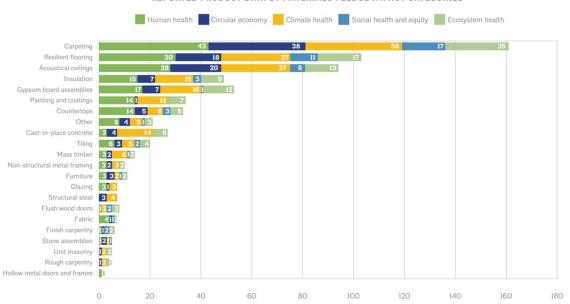
Self-reported firm leadership knowledge varies, with the strongest knowledge being Human health and Climate health.

These trends are likely reflected across sustainability teams and project architect staff as well.









Carpeting, resilient flooring, and acoustical ceilings are the most reported product types

Human health and Climate health lead in most reported impact categories





What's next for the AIA Materials Pledge?

- Materials Pledge Reporting Year (RY24) will kick off February 1 and close
 May 31st
 - Firm-level questions will continue to be <u>required</u> and project-level and product-level <u>strongly encouraged</u>
- Upcoming resources
 - Sample materials tracking spreadsheet based on MP reporting metrics
 - Further guidance on reporting product types and impact categories
 - Later in 2025, an updated Sustainability Action Plan resource to support firms creating a Materials Action Plan







mM EDUCATION SESSION #4

Radical Collaboration for Radical Change



Eana Bacchiocchi

AIA



Mike Johnson



Melissa Baker USGBC



Rodolfo Perez

Moderator



Annie Bevan mindful MATERIALS



LIVING FUTURE®





















Our Mission

The International Living

Future Institute believes in

providing a compelling

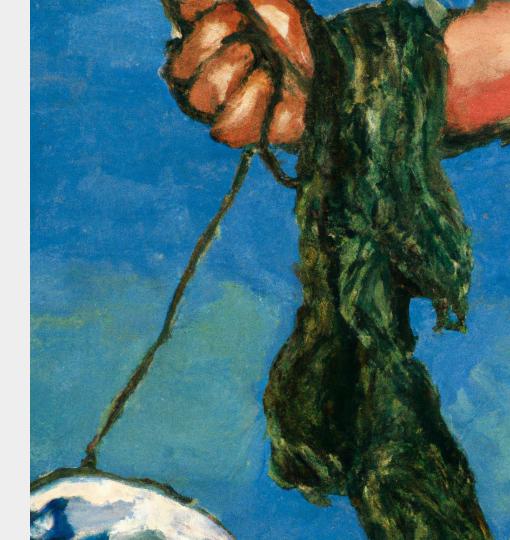
vision for the future that is

socially just, culturally rich,

and ecologically restorative

Everything Is Interconnected

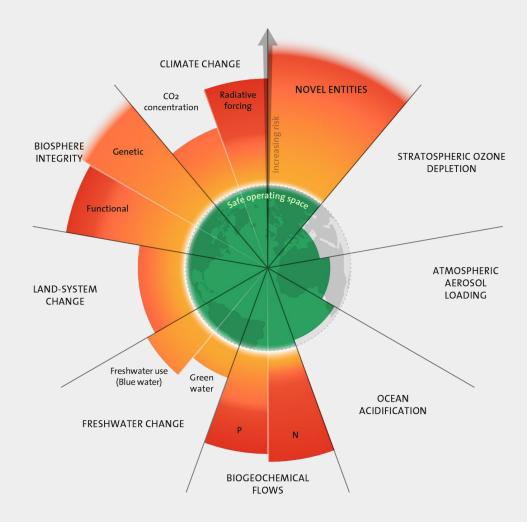
"As soon as we take one thing by itself, we find it hitched to everything else in the universe." - John Muir



9 Planetary Boundaries

- 1. Climate Change
- 2. **Novel Entities**
- 3. Stratosphere Ozone Depletion
- 4. Atmospheric Aerosol Loading
- 5. Ocean Acidification
- 6. **Biogeochemical Flows**
- 7. Freshwater Change
- 8. Land-System Change
- 9. Biosphere Integrity

Credit: Azote for Stockholm Resilience Centre, Stockholm University





years.



species.



responses.



buckets.



Collaborating and Innovating!

10+/- years of ILFI Materials Programs

Annual LBC Red List Updates

Radical Ecosystem Collaboration

December 04 - Materials Advocacy Forum

May 06 - 08 - Living Future Portland Accelerating Regenerative Action Regenerative Materials: Now!

New Declare & Living Product Challenge



Product Name Manufacturer

Final Assembly: First City, State, Country: Second City, State, Country; Third City, State, Country Life Expectancy: 50 Years Embodied Carbon: # kg CO,-eg = Declared Unit: # m2 End of Life Options: Recyclable (95%), Landfill (5%), Take Back Program (Program Name/Location)

Ingredients:

Your First Component: Sustainably Sourced Ingredient; LBC Red List Ingredient'; Your Second Component: LBC Watch List Priority for Inclusion; Non-Toxic Ingredient; Undisclosed (<0.1%)2

LBC Temp Exception RL-009 Formaldehyde ²LBC Temp Exception RL-004var.a Proprietary Ingredients

Living Building Challenge Criteria: Compliant

I-13 Red List:

☐ LBC Red List Free

% Disclosed: 99.9% at 100ppm

■ LBC Red List Approved

VOC Content: # q/L

☐ Declared

I-10 Interior Performance: CDPH Standard Method v1.2-2017 I-14 Responsible Sourcing: Product Available with FSC Chain of Custody

XXX-XXXX EXP. 01 OCT 2021 Original Issue Date: 20XX



Living Product Challenge 2.0

Humanscale*

Float® Base

Manufacturing Locations Piscataway, New Jersey, USA Nogales, Sonora, Mexico



Full Water Energy Health Materials Equity

Certified

Life Expectancy:

End of Life Options Take Back Program (BEAM, Global), Salvageable/ Reusable in Its Entirety. Recyclable (99%).

Landfill (1%) **Functional Unit**: One square meter of workspace for ten years.

Climate Impact 110% **Net Positive** cradle-to-gate footprint CO,-eq **Energy Impact**



110% cradle-to-gate footprint

Waste Impact

Net Positive 90.6% diverted from land! global landfill footprint

Declare. LBC I-13 Red List:

Net Positive

LBC Red List Free ☐ LBC Red List Approved

Living Building Challenge Criteria: Compliant LBC 1-10 Interior Performance: CDPH Standard Method v1.2-2017 LBC I-14 Responsible Sourcing: Not Applicable

95% Assessed

Verified By: SCS Global Services A Just[™] Organization

HSC-LP004 EXP. 06/15/2024

Equity Unveiled: Pursuing Just 3.0 for Building Industry Progress

Registration Information: Registering for the session holds your seat in the class until 5 minutes prior to the scheduled start time. At that time your seat in the session can...

- O Nov 15, 2024 9:00 AM to 10:00 AM
- 201A (2nd Floor)
- ?? Tools and Innovation



Griso Barrios International Living Future Institute



Katie Cooper HMTX Industries, LLC



Cari Williams

DPR Construction



Allison Wilson Ayers Saint Gross

Whole Life Carbon Accounting: Current Abilities and Future Progress

Registration Information: Registering for the session holds your seat in the class until 5 minutes prior to the scheduled start time. At that time your seat in the session can...

- Nov 15, 2024 10:15 AM to 11:15 AM
- @ 201A (2nd Floor)
- 88 Tools and Innovation



Jacqueline Hart International Living Future Institute



Efrie Escott Schneider Electric



Matt Van Duinen WAP Sustainability Consulting



Tolga Tutar Skanska









mM EDUCATION SESSION #4

Radical Collaboration for Radical Change



Eana Bacchiocchi

AIA



Mike Johnson



Melissa Baker USGBC



Rodolfo Perez

Moderator



Annie Bevan mindful MATERIALS



How does WELL collaborate?

Rodolfo Perez



Putting people first

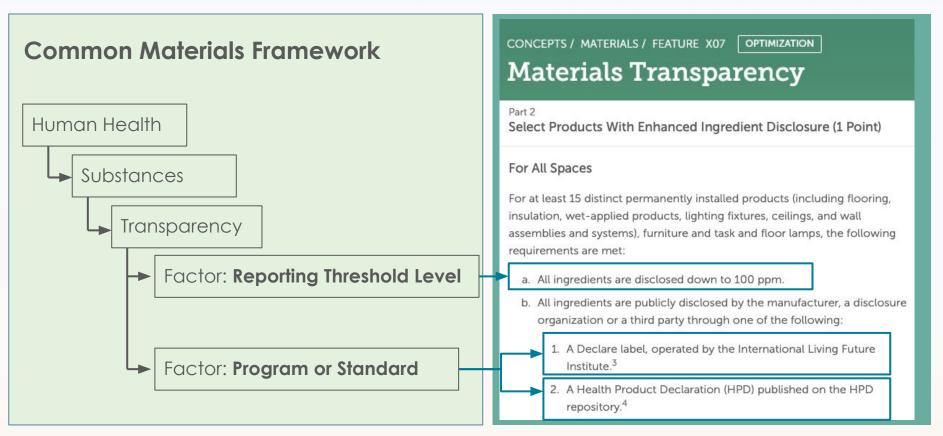
The WELL Building Standard focuses on ten concepts to advance health-focused, integrated and supportive communities.



Our promises

- Not to reinvent the wheel
- Mapping existing WELL requirements to the CMF
- Develop new WELL strategies along with CMF mapping
- Identify gaps & opportunities

Mapping WELL requirements



How are we faring so far?

Part 1
Select Products With Disclosed Ingredients (1 Point)

For All Spaces

For at least 25 distinct, permanently installed products (including flooring, insulation, wet-applied products, lighting fixtures, ceilings, and wall assemblies and systems), furniture and task and floor lamps, ingredients are disclosed by the manufacturer, a disclosure organization or a third party through one of the following:

- a. A Declare label, operated by the International Living Future ${\rm Institute.}^3$
- b. A Health Product Declaration (HPD) published in the HPD Public Repository, operated by the Health Product Declaration Collaborative.⁴

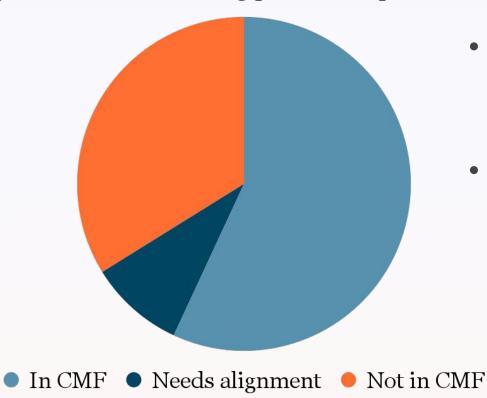
	A C		D	E	
5	WELL v2 Feature / Part	The following product(s) are subject to the WELL requirement	WELL Requirement	Equivalent / Aligned/ None	
43			a. Ingredients are disclosed through a Declare label.	Equivalent	
44			 b. Ingredients are disclosed through a Health Product Declaration (HPD) published in the HPD Public Repository. 	Equivalent	
45			c. Products are Cradle-to-Cradle Certified™ product, or have a C2C Material Health Certificate.	Equivalent	
46			d. Is certified under the UL Product Lens Certification	Equivalent	
47	X07.1 / 1 Points Select Products	Permanently installed products, furniture and	e. Ingredients are disclosed through a Global Green Tag's Product Health Declaration (PHD)	None	
48	with Disclosed Ingredients	task and floor lamps	f. Products achieve 4 points or more in credits 7.5.1.1, 7.5.2.2, or Option 1 in credit 7.5.3 of BIFMA e3-2019 standard	Aligned	

What did we learn?

WELL has	and CMF can help finding products in of these				
12 Building materials selection Strategies	11 (92%)				
19 Product type-specific lists of requirements	17 (89%)				
65 Requirements for products (often interchangeable)	33 (57%)				

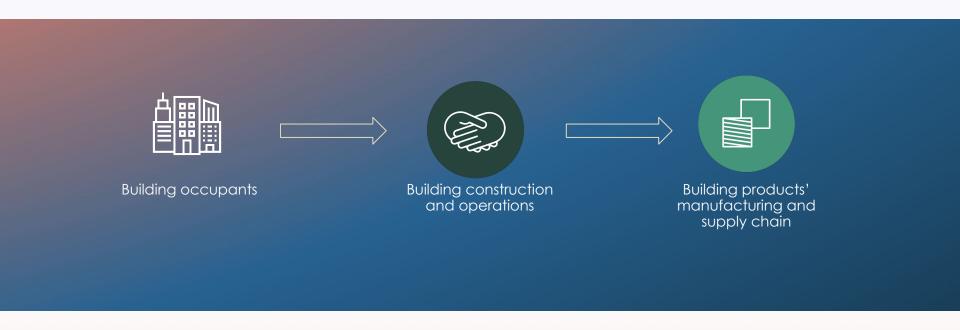
Copyright© 2024 by International WELL Building Institute PBC. All rights reserve

Map of 65 WELL building product requirements

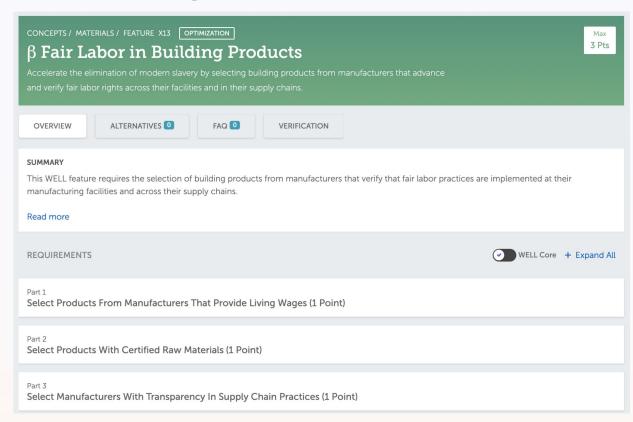


- Needs alignment: requiring more specific data points.
- Not in CMF (yet \(\superset\)):
 - Asbestos
 - International programs

Expanding 'Materials Health' in WELL



New Strategies...



... means more mapping

Keeping our work towards

- Standardize language
- Mapping WELL requirements
- Increase the adoption of healthier materials
- Recognize and celebrate change
- Collaborate, collaborate and collaborate

We are MANAGE L. L.

The International WELL Building Institute (IWBI) is leading the global movement to transform our buildings and communities in ways that help people thrive. Achievement of WELL Certification, WELL Rating, WELL Score or any similar designation from IWBI does not guarantee that a space will be free from pathogens, nor does it guarantee the health of an individual. Many factors play a role in an individual's health and safety. IWBI is not in any way rendering business, financial, investment, medical, legal or other professional advice or services and any guidance or strategies provided or recommended by IWBI is not a substitute for any such services; and IWBI shall not be responsible for the use of, content within or any action taken or inaction occurring in reliance on this resource or any WELL program. International WELL Building Institute, IWBI, the WELL Building Standard, WELL v2, WELL Certified, WELL AP, WELL EP, WELL Score, The WELL Conference, We Are WELL, the WELL Community Standard, WELL Health-Safety Rated, WELL Performance Rated, WELL Equity Rated, WELL Equity, WELL Residence, Works with WELL, WELL and others, and their related logos are trademarks or certification marks of International WELL Building Institute pbc in the United States and other countries.







mM EDUCATION SESSION #4

Radical Collaboration for Radical Change



Eana Bacchiocchi

AIA



Mike Johnson



Melissa Baker USGBC



Rodolfo Perez

Moderator



Annie Bevan mindful MATERIALS



Building Products in LEED v5

Greenbuild November 14, 2024

Wes Sullens | USGBC

LEED v4/v4.1 Highlights Product-related credits

- The EPD credit is now the most popular Materials & Resources credit in the new construction rating system
 - Over 80% of all certified v4/v4.1 projects have earned at least 1 point in the EPD credit
- More than 70% of v4/v4.1 projects:
 - · Earn at least 1 point in the Material Ingredients credit
 - Earn at least 1 point in the Low-Emitting Materials credit
- Nearly 50% of v4/v4.1 projects earn at least 1 point for Sourcing of Raw Materials
 - Includes recycled content, sustainable wood, biobased materials, extended producer responsibility, reuse







To support and promote low-embodied carbon, material health, and circular economy principles across the entire lifecycle.

HIGHLIGHTS

- Prioritize embodied carbon reductions of materials
- Reduce, reuse, and prevent waste in design, construction and building operations
- Optimize building materials across multiple attributes
- 4 Align with industry momentum to speed market transformation

Notable Changes to Materials & Resources Credits 2nd Public Comment Draft

13 points in v4 \rightarrow 18 points in v5 (Building Design & Construction rating system) 13 points in v4 \rightarrow 26 points in v5 (Interior Design & Construction rating system)

Low-Emitting Materials credit is now located in M&R category

Assess Embodied Carbon prerequisite & Reduce Embodied Carbon credits

Building & Materials Reuse stand-alone credits

Material Ingredients
Environmental Product Declarations
Sourcing of Raw Materials

Building Product
Disclosure & Optimization credit

BD+C Scorecard

Materials & Resources			18		
	Prereq	Planning for Zero Waste Operations	Require		
	Prereq	Assess and Quantify Embodied Carbon	Require		
	Credit	Building and Materials Reuse	3		
	Credit	Reduce Embodied Carbon	6		
	Credit	Low-Emitting Materials	2		
	Credit	Building Product Disclosure and Optimization	5		
	Credit	Construction and Demolition Waste Diversion	2		



1	Materia	als & Resources	26
	Prereq	Planning for Zero Waste Operations	Requir
	Prereq	Assess and Quantify Embodied Carbon	Requir
	Credit	Interior Materials Reuse	4
	Credit	Reduce Embodied Carbon	4
	Credit	Low Emitting Materials	4
	Credit	Building Product Disclosure and Optimization	10
	Credit	Construction and Demolition Waste Diversion	4

LEED v5 BD+C and ID+C MR Credits Addressing Embodied Carbon

Assess and Quantify Embodied Carbon (Prerequisite)

- Quantify A1-A3
 embodied carbon
 emissions for
 structure,
 enclosure, and
 hardscape
 materials
- Identify top 3 sources of embodied carbon

Reduce Embodied Carbon (1-6 points)

- Option 1: Whole Building LCA
- Option 2: EPD Analysis: Project-Average Approach
- Option 3: EPD Analysis by Materials
- Option 4: Track
 Carbon Emissions
 from Construction
 Activities

Building & Material Reuse (1-3 points)

- · Building reuse
- · Material reuse
- Targets specific materials for recovery and preservation:
 - Carpet
 - Ceilings
 - Furniture
 - · Interior walls

Building Product Disclosure and Optimization (1-5 pts.)

- Multi-attribute assessment of products
- Option 1: Number of Manufacturers
- Option 2: Product Categories
- Rewards products for disclosure and reduced embodied carbon

Construction & Demolition Waste Diversion (1-2 pts.)

- Rewards higher quality diversion and more accurate reporting
- Encourages offsite salvage/reuse
- Encourages third party verification of recycling rates

LEED v5 BD+C and ID+C MR Credits Addressing Embodied Carbon

Assess and Quantify Embodied Carbon (Prerequisite)

- Quantify A1-A3
 embodied carbon
 emissions for
 structure,
 enclosure, and
 hardscape
 materials
- Identify top 3 sources of embodied carbon

Reduce Embodied Carbon (1-6 points)

- Option 1: Whole Building LCA
- Option 2: EPD
 Analysis: Project Average Approach
- Option 3: EPD Analysis by Materials
- Option 4: Track
 Carbon Emissions
 from Construction
 Activities

Building & Material Reuse (1-3 points)

- Building reuse
- Material reuse
- Targets specific materials for recovery and preservation:
 - Carpet
 - Ceilings
 - Furniture
 - Interior walls

Building Product Disclosure and Optimization (1-5 pts.)

- Multi-attribute assessment of products
- Option 1: Number of Manufacturers
- Option 2: Product Categories
- Rewards products for disclosure and reduced embodied carbon

Construction & Demolition Waste Diversion (1-2 pts.)

- Rewards higher quality diversion and more accurate reporting
- Encourages offsite salvage/reuse
- Encourages third party verification of recycling rates

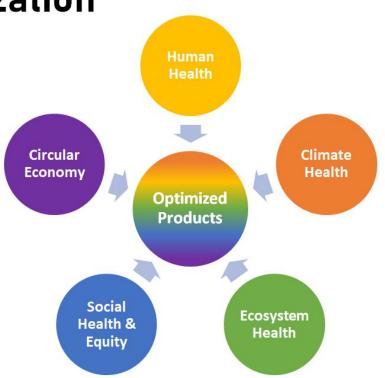
Structure & Enclosure Materials

Finish Materials



MR Credit: Building Product Disclosure and Optimization

- Combined credit rewards for product disclosure and optimization across five criteria areas, aligning with industry momentum
- Three achievement levels for products per criteria area based on disclosure, verification, and optimization
- Provides consistency with product documentation from LEED v4 & v4.1
- A single calculator for LEM and BPDO to simplify documentation





LEED v5 provides a framework for evaluating products and assigning them scores:

- Level 1
 - A product in this level achieves a first step towards sustainability.
 Widespread achievement of these practices drive market transformation towards sustainability outcomes.
- Level 2
 - This level represents a leadership position in the marketplace. Products at this level are optimized and demonstrate a level of sustainability that peers aspire to achieve.
- Level 3 (Reserved)
 - Products that earn this level are elite and represent the forefront of sustainability.

Optimized Product Valuation table

Due to feedback from our stakeholders, this table was moved to a separate resource document for second public comment draft.

This allows the table to be updated over time through the LEED development addenda process.

Find this table in the "Resources and tips" section of BPDO credit in the online credit library www.usgbc.org/leed/v5

	Criteria Areas						
Eligible Product Documentation	Climate Health	Human Health	Ecosystem Health	Social Health & Equity	Circular Economy	Option 1: Three Impact Areas Achieved?	Option 2: LEED Mult- Attribute Score (max. = 5)
Aluminum Stewardship Initiative - Chain of Custody	-	-	-	1	-		1
ANSI/BIFMA e3 / level		1					1
Biobased (½ x verified biobased content %)	2	-	-	-	%		up to 1
Concrete Sustainability Council Certification	-	-		1			1
Cradle to Cradle: Bronze (Version 4.1)	1	1	1	1	-	Yes	4
Cradle to Cradle: Silver or better (Version 4.1)	2	2	2	1	1	Yes	5
Cradle to Cradle: Material Health Cert. Bronze	-	1	1		-		2
Cradle to Cradle: Material Health Cert. Silver or better		2	1	-			4
Declare	2	1					1
Declare: third party verified		2	-				2
EPD, Industrywide or Product-Specific Type III	1	~	1		170	-	1
EPD, Optimized (15% better or more)	2		1	-			3
Fair Stone Standard		.	-//	1	(4)		1
Global Green TAG PhD	-/	2		-	S200	-	2
Global GreenTag Certification – Bronze Level	1	-		1	-		1
Green Seal GS-11 Certified	-	2	1	-			3
GreenCircle Closed-Loop certified	1		1	. *	2	. 1	4
HPD: pre-checked for LEED		1	-		-		1
HPD: third party verified	20	2	(2)	-	-		2
HPD: Optimized with verification	343	2	1	•	•		3
Living Product Challenge - Full Certification	2	2	2	1	1	Yes	5
Materials reuse	2	-	1	-	2	Yes	5
Recycled content (½ x pre-consumer % + 1 x post-consumer %)			-	-	%		up to 1
ResponsibleSteel Certification	-	-	•	1	140		1
Wood: Source disclosure		-	1	-	2		1
Wood: Responsibly Sourced (legal and verified)		-	2	1		-	3
USGBC Approved Extended Producer Responsibility program	-		100		1		1
Other USGBC Approved Program					TBD		



Two ways to earn points:

- Option 1: Number of Manufacturers
 - Select products from a variety of unique product manufacturers from any product category
 - Products must demonstrate multi-attributes in at least three criteria areas
- Option 2: Product Categories
 - Select products within defined product categories
 - Product scores become multipliers within each product category

Option 2 Product Categories:

- Paints and coatings
- Adhesives and sealants
- Flooring
- Walls
- Ceilings
- Insulation
- Furniture
- Composite Wood
- Plumbing fixtures (LEM n/a)



Q+A



Thank you!

Thank you to our Education Session sponsors:

