

# The Green Horizon

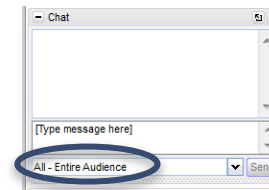
Sustainability Continues to  
Evolve

Tim Petersen, LEED AP

# Welcome!

- 3 DHI CEP pts. available for each 1 hr. webinar.
- A recording of today's webinar will be available on DHInteractiv for members
  - Handouts and additional information available
  - Notified via email when recording is available
  - Go to **DHInteractive**
  - Click on **Membership** on top left
  - Click on **Members Only**
- 1 hr. presentation, Q & A at the end
  - Submit questions via Chat/Question box

- All attendees muted



# Agenda

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New credits in the following categories

- Material & Resources

- Indoor Environmental Quality

- Regional Priority

**Where we are at today**

Review of new and developing environmental standards

- LEEDv4 Changes

Other green building programs

# Major Shift In LEED Credit Structure

## ■ LEED 2009 focused on

- Materials and Resources – FSC, RC, NAUF

## ■ LEED v4 will focus on

- Life Cycle Assessment approach to products
- Product transparency – Disclosure
- Product performance levels - VOC

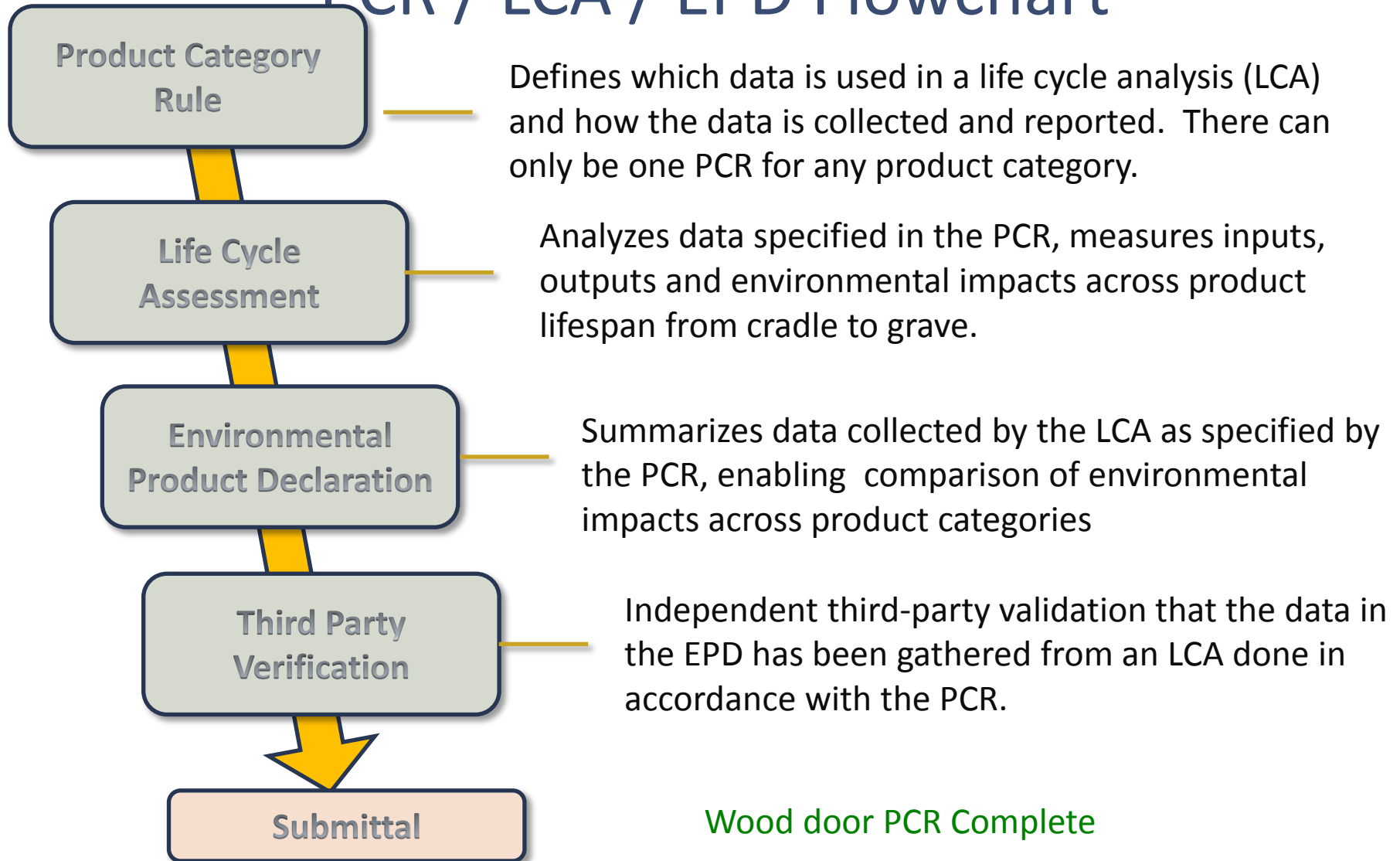
# Impact of LEEDv4 on the Openings Industry

- Requires the industry create:
  - Product Category Rules (PCR)
- Requires manufacturers develop:
  - Product Life Cycle Assessments (LCA)
- Requires manufacturers develop
  - Environmental Product Declarations (EPD)
- Requires manufacturers develop
  - Health Product Declarations (HPD)

# LEED v4 - New & Revised Credits

- LEED v4 replaces LEED 2009: June 1, 2015
- LEED 2009 Project Registrations – October 31, 2016
  - Supports LEED v4 standard development delays
- LEED v4 Material & Resource credits are now optional path for LEED v2009 MR credits
- Some v4 MR requirements are not yet attainable
- Multiple certifications and standards are still under development

# PCR / LCA / EPD Flowchart





PCR	VERSION ADOPTION	VALIDITY PERIOD
	MAR. 2015	FEB. 2020

## Interior Architectural Wood Door Leaves

(UNCPC 31600 and/or CSI MasterFormat Division 081400, 081500, 081600)

The product group includes interior flush door leaves compliant with the ANSI/WDMA I.S. 1A Interior Architectural Wood Flush Doors and interior wood stile and rail door leaves compliant with ANSI/WDMA I.S. 6A Interior Architectural Stile and Rails Doors, for use in commercial buildings.

### REFERENCED PCR:

UN CPC 31, NAICS 321 North American Structural and Architectural Wood Products, 2013:05, Version 1.1, FPinnovations





# Definition of a Wood Door

- Interior Architectural Wood Door Leaves
- **Scope of Validity of these PCR**
- Wood door leaves are removable panels that are applied in purpose to allow ingress, egress, or decorative closure of, or, through an opening in a wall. The door leaf can swing on hinges, slide or spin on hardware, or be stationary inside an opening. This product group includes door leaves that are built to Architectural Wood Door Standards as identified by ANSI/WDMA I.S. 1A and 6A and AWI/AWMAC/WI Architectural Woodwork Standards. The components used to manufacture the door leaves are specified within aforementioned standards. Due to applicable building codes for fire rating, sound transmission, architectural design, or other specified duty requirements, materials used in finished assembled door leaves include, but are not limited to door leaves made with either wood-based or non-wood-based materials. These PCR exclude door leaves primarily intended for single-family residential application, exterior door systems, and doors made primarily from metal.
- This product group consists of the door leaves only, but may include factory-applied astragals, glazing, louvers, moldings, beads, finishes, and blocking, made from wood, wood composite or other material. It does not include the doorframe, hinges or operating hardware.

# Life Cycle Assessment

- Cradle to gate - An assessment of a partial product life cycle from manufacture ('cradle') to the factory gate, i.e., before it is transported to the user or consumer. The use and disposal phases of the product are usually omitted.
- Cradle to grave - Cradle to grave cycles or assessments is an assessment that tracks the life of a product from the point of creation until the disposal of the product takes place.
- Cradle to cradle - A design protocol that advocates the elimination of waste by recycling a material or product into a new or similar product at the end of its intended life, rather than disposing of it.

# Environmental Product Declaration - EPD

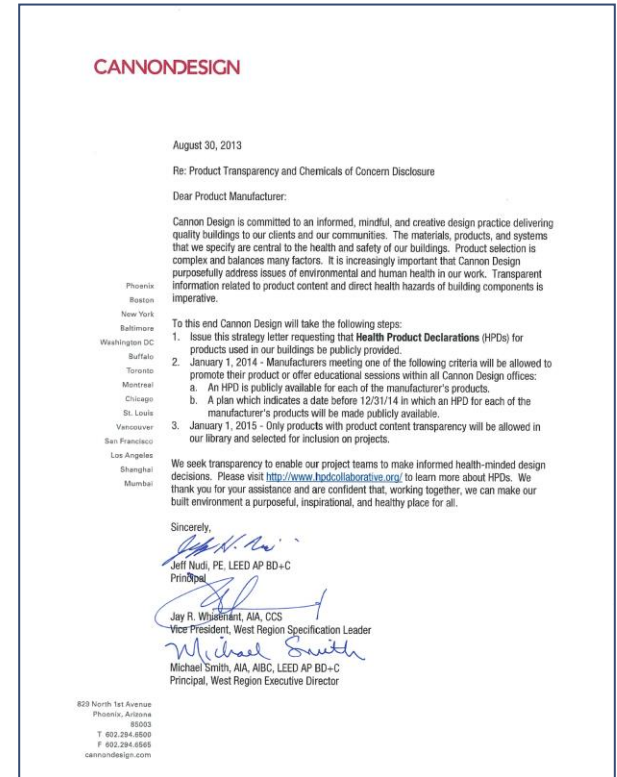
- An EPD® (Environmental Product Declaration) is an independently verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products.

Having an EPD® for a product does not imply that the declared product is environmentally superior to alternatives — it is simply a transparent declaration of the life-cycle environmental impact.

# Health Product Declaration (HPD)

## Health Product Declaration Collaborative™

- A voluntary standard that specifies how product ingredients should be listed
- Includes reference lists to help determine health hazards associated with product ingredients
- Specifications may request product HPDs for full disclosures of chemical ingredients
- Some architectural firms are requesting them now and/or requesting a commitment to produce them



# Health Product Declarations

- Version 2.0 enacted Sep 19, 2015
- The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator, and when available, full GreenScreen assessments.

# Materials & Resources – New Credits, Approach

## Credit Option categories based on “Disclosure and Optimization”

- **Disclosure** reports impacts:

- Environmental
- Social
- Hazards

“Transparency”  
“Disclosure”  
“Performance”

- **Optimization** targets:

- Product impacts below industry average
- Environmentally preferred products
- Eliminating hazardous chemicals

# MR Credit 2: Building Product Disclosure and Optimization – Environmental Product Declarations

- Environmental Product Declaration (EPD)
  - Comprehensive, commonly-formatted report which documents how a product affects the environment throughout its life cycle.
- Encourage products that have environmentally, economically and socially preferable life-cycle impacts
- Third-party certification required

EPDs are developed after a product life cycle (LCA) assessment is completed, based on Product Category Rules for a given product type (PCRs still in development for many product types)

# MR Credit 2: Building Product Disclosure and Optimization – Environmental Product Declarations

- Option 1 (Disclosure): At least 20 products sourced from 5 different manufacturers must have –
  - Product specific Life Cycle Assessment (.25 product)
  - Industry-wide (generic) EPD (.5 product)
  - Product specific EPD (1 product)
  
- Option 2 (Optimization): At least 50% of products, by cost...
  - Third-party certified to be with lower than industry average impacts in at least 3 impact categories (100%)



# Material & Resources – New Credits

Optional credit pathways targeting Disclosure and Optimization

## Option 1: Disclosure

Multiple alternate pathways → 1 credit

## Option 2: Optimization

Multiple alternate pathways ↗ 2 possible credits

1 credit

### Key “DHI” MR Credits; Building Product Disclosure & Optimization

- Credit 2: Environmental Product Declarations
- Credit 3: Sourcing of Raw Materials
- Credit 4: Material Ingredients
- IEQ Credit 2: Low Emitting Materials

# MR Credit 3: Building Product Disclosure and Optimization – Sourcing of Raw Materials

Material extraction, sourcing and manufacturing, including suppliers, must meet and report voluntary responsible sourcing criteria

- Option 1 (Disclosure): At least 20 products from 5 different manufacturers must have –
  - Self-declared corporate sustainability report (.5 product)
  - Third-party certified corporate sustainability report (1 product)
- Option 2 (Optimization): At least 25% of material –
  - Extended producer responsibility – RC or take back (50% of cost)
  - Bio-based materials – Sust. Agricultural Std. (100%)
  - Wood products – FSC certified (100%)
  - Material reuse (100%)
  - Recycled content (100%)

# MR Credit 4: Building Product Disclosure and Optimization – Material Ingredients

Encourage product/material use supported by LCA data for low environmental impacts and reduce harmful substances

- Option 1 (Disclosure): Use at least 20 product from 5 manufacturers showing chemical inventory – .01%, 1000 ppm
  - Manufacturer's inventory report by CASRN
    - Proprietary information must meet GreenScreen v1.2
  - Health Product Declaration (HPD) full disclosure of known hazards
  - Cradle to Cradle LCA v2 Basic or v3 Bronze level
- Option 2 (Optimization): 25% of products by cost must document material ingredients
  - GreenScreen Benchmark 1 hazards, or full GS Assessment
  - Cradle to Cradle Certified Silver, Gold, Platinum
  - No ingredients on REACH Authorization or Candidate list

**Option 3:**  
MFG Supply Chain  
Optimization

# Indoor Environmental Quality Credit 2: Low-Emitting Materials

Credit moves from prescriptive based:

*No added urea-formaldehyde*

To CARB performance based

*Ultra-low emitting formaldehyde (ULEF)*

*or No Added Formaldehyde (NAF)*

Separate from  
CARB Phase 2

*Composite Wood Evaluation.* Composite wood, as defined by the California Air Resources Board, Airborne Toxic Measure to Reduce Formaldehyde Emissions from Composite Wood Products Regulation, must be documented to have low formaldehyde emissions that meet the California Air Resources Board ATCM for formaldehyde requirements for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins (NAF).

# Regional Priority Credits

Apply to Materials and Resources Credits (MR 2-4 credits)

- Products extracted manufactured purchased within 100 miles of project are valued at 200% of base contributing cost
- Different Regional Priority credits are weighted for regional differences



# Other Green Building Initiatives

Also adopting “LEED” requirements

- International Green Construction Code
- Green Building Initiative - Green Globes
- Living Building Challenge LBC
- Collaborative for High Performance Schools CHPS
- National Association of Home Builders NAHB
- Sustainable Agricultural Network SAN

# Environmental take-away

*Watch for these terms and call your manufacturer*

## ■ Health Product Declaration (HPD)

A voluntary standard that specifies how product ingredients should be listed

## ■ Product Category Rule (PCR)

Defines which data is used in a life cycle analysis (LCA) and how the data is collected and reported. There can only be one PCR for any product category.

## • Life Cycle Assessment (LCA)

Analyzes data specified in the PCR, measures inputs, outputs and environmental impacts across product lifespan from cradle to grave.

## • Environmental Product Declaration (EPD)

Summarizes data collected by the LCA as specified by the PCR, enabling comparison of environmental impacts across product category

# THANKS FOR ATTENDING!



- Recording will be available by the end of the week at DHInteractive
- Handouts are available now at DHInteractive
- DHI.org/education to see list of upcoming webinars
  - You must sign-up for each session individually





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