Selecting Building Materials to Avoid Forced Labor

Design Process Case Studies

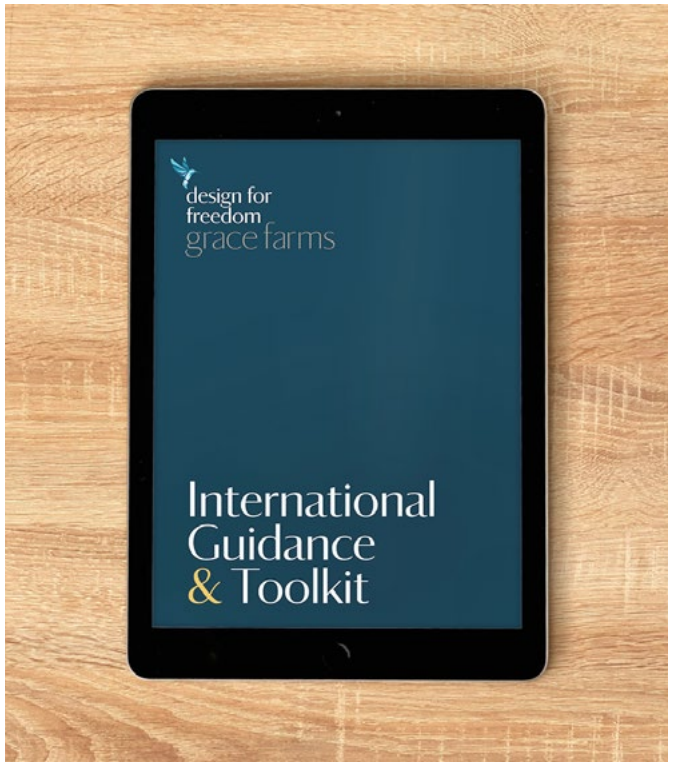
Joon Ta, Simona Fischer, and Veronica Karr

MSRDesign

As a signatory of the AIA Materials Pledge and a member of the mindful MATERIALS Common Materials Framework (CMF) working group, MSR Design is dedicated to advancing sustainable and ethical practices in the built environment. The AIA Materials Pledge and CMF both emphasize evaluation in five impact categories (human health, ecosystem health, climate health, social health, and circular economy) to guide responsible specification of building materials.

The AIA Materials Pledge asks signatories to advance social health and equity by prioritizing products from manufacturers that uphold human rights across their operations and supply chains and create positive outcomes for workers and the communities in which they operate.

A leading industry resource for architects and designers, Grace Farms' Design for Freedom Toolkit addresses forced labor in the building materials supply chain. By translating complex labor risks into clear, actionable guidance, it elevates industry understanding and supports more ethical, transparent material decisions.



Missoula Public Library | photo by MSR Design

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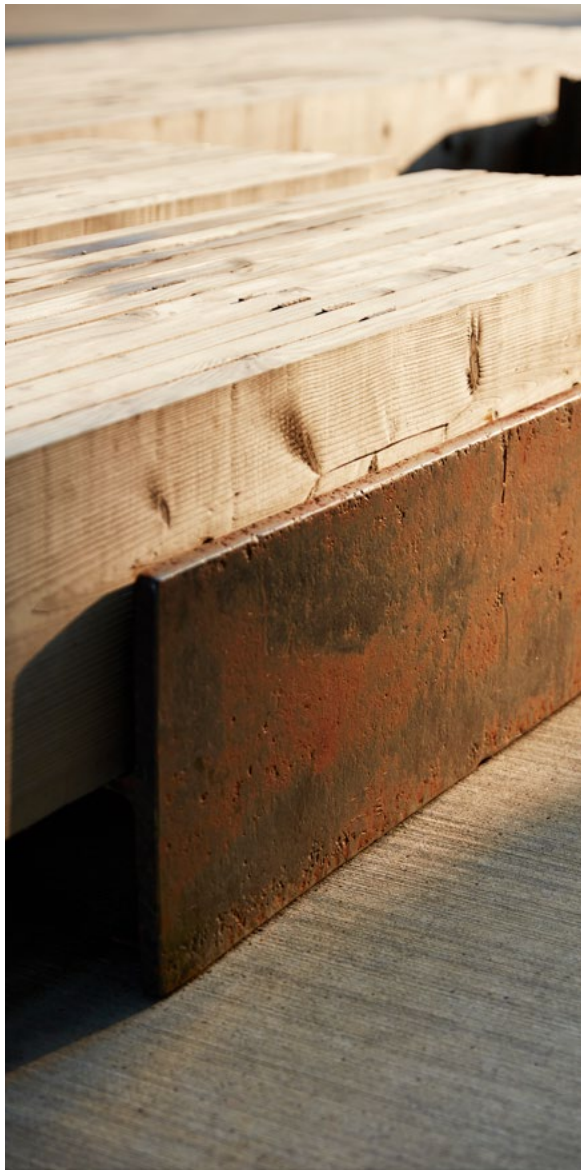
Overview

Forced labor remains a hidden but widespread issue in global construction supply chains. An estimated 28 million people are trapped in forced labor worldwide, 17 million of whom are exploited in the private sector, including industries tied to building materials such as brick, timber, steel, and stone (ILO, Walk Free and IOM, 2022). Growing awareness of these realities has led to the emergence of organizations dedicated to tracking and reporting modern slavery, the creation of the Design for Freedom Toolkit, and a heightened urgency to address and avoid forced labor when specifying materials. This movement presents a significant opportunity to drive meaningful change by purchasing from manufacturers and suppliers committed to ethical practices. Yet, how can architects and designers accurately assess forced labor risk in an industry that often resists transparency?

The authors use three case studies to develop and test a new forced labor mitigation workflow, a process for designers to facilitate materials evaluation and product comparison in the design and specification process. Information gathering and interpretation are streamlined by focusing on a set of priority questions, such as requesting an environmental product declaration (EPD) and identifying the country of origin for raw materials. When direct disclosure is limited, trusted third-party certifications such as Cradle to Cradle, Living Product Challenge, Forest Stewardship Council (FSC), and others are found to provide useful indicators of lower forced labor risk.

Overall, the case studies reinforce the importance of pushing the building industry to prioritize transparent information regarding material supply chains; engaging clients in evolving their materials standards based on research findings; and embedding streamlined evaluation workflows into standard practice to increase designers' experience with responsible material selection.



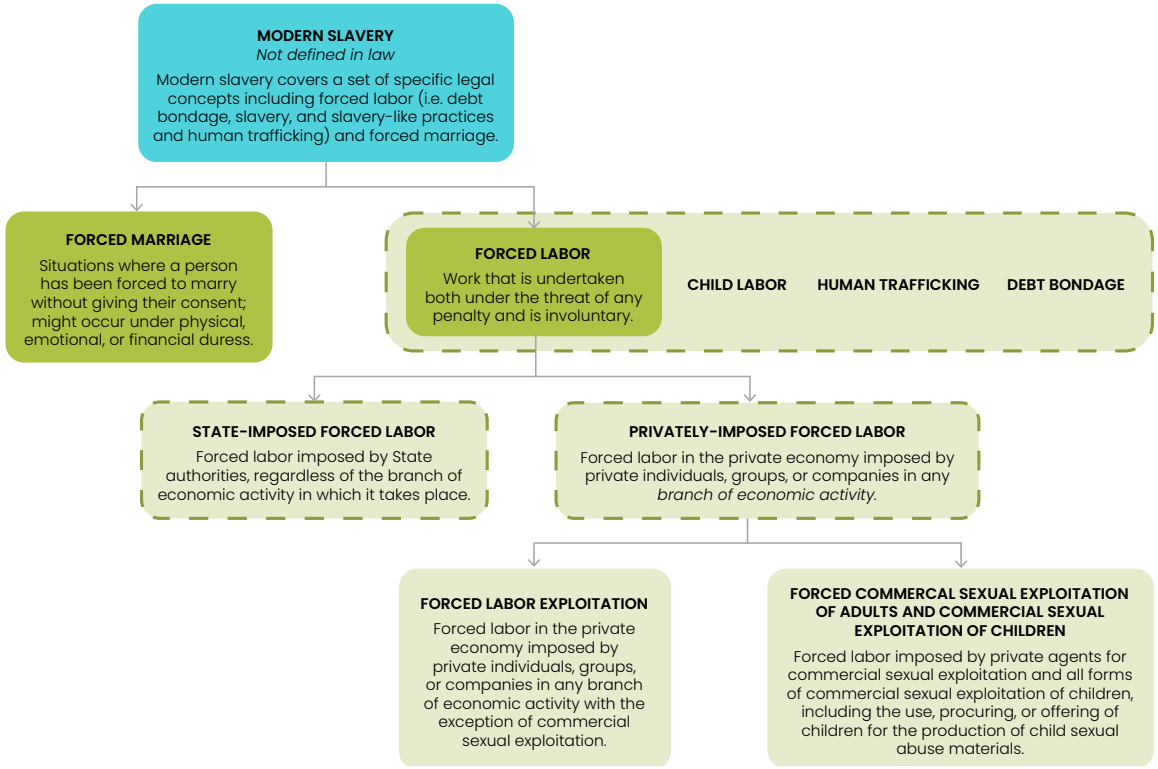
Mill 19 | photo by Corey Gaffer Photography

Forced Labor in Building Material Supply Chains

The new case studies in this report build upon original work developed in the report "Forced Labor in the Building Material Supply Chain: Developing a Mitigation Framework" (Ta and BWBR, 2024), led by Joon Ta in collaboration with BWBR and the University of Minnesota Master of Science in Architecture: Applied Research in Practice (MSARP) program. Grounded in work by the International Labour Organization (ILO) and the Design for Freedom initiative, this research advances industry awareness and action toward eliminating forced labor in building materials supply chains.

Modern slavery has no single legal definition, but it is commonly used to describe severe exploitation, including forced labor and forced marriage, as defined by the ILO (ILO, 2014; ILO, 2022). Forced labor can involve coercive practices such as withholding wages, threats of violence, debt bondage, and other forms of exploitation that restrict a person's freedom to leave or refuse work (ILO Convention No. 29, 1930; ILO Protocol of 2014). Despite perceptions that slavery is a historic issue, it persists globally. Between 2016 and 2021, the number of people subjected to forced labor rose from 24.9 to 27.6 million, with COVID-19 likely worsening these conditions (ILO, Walk Free & IOM, Global Estimates of Modern Slavery, 2022).

To support informed material selection, the Design for Freedom Toolkit identifies high-risk materials, sourcing regions, and common building-product applications (Grace Farms Foundation, Design for Freedom International Guidance & Toolkit, 2022/2024). This work informed an interactive mapping tool to help designers identify high-risk supply chain areas visually (Ta, 2024).



Modern slavery definition diagram (BWBR and Ta, 2024), adapted from "Global Estimates of Modern Slavery: Forced Labour and Forced Marriage" (ILO, 2022).

The research identified key barriers to transparency and accountability, including unreliable audit methods; suppliers avoiding responsibility through outsourcing to temporary or contract labor with minimal legal protection; minimal enforcement of disclosure laws; and international frameworks for due diligence that fail to hold companies accountable for actual human-rights abuses (Brudney, 2023; Parella, 2019).

The Forced Labor Mitigation Framework (FLMF) includes four key steps (Ta and BWBR, 2024):

1. Identify high-risk materials using the interactive mapping tool.
2. Gather publicly available information from manufacturer websites and reports.
3. Request non-transparent information through targeted inquiry, using templates adapted from the Design for Freedom toolkit.
4. Pursue further education and reference third-party certifications such as Cradle to Cradle and the Living Product Challenge to support decision-making.

Forced labor in building material supply chains is a complex and systemic issue that cannot be addressed through a single tool, certification, or disclosure. Meaningful progress requires continued inquiry, greater transparency, and informed collaboration with manufacturers to improve data quality, strengthen accountability, and raise industry standards over time.

STATE-IMPOSED FORCED LABOR

- Abuse of conscription
- Obligation to perform work beyond normal civic obligations
- Abuse of the obligation to participate in minor communal services
- Compulsory prison labor exacted from prisoners in remand, prisoners in administrative detention, or persons under certain circumstances
- Forced recruitment of children by government or militia groups
- Compulsory labor for the purpose of economic development
- Development work
- Prison labor

PRIVATELY-IMPOSED FORCED LABOR

- Physical violence
- Sexual violence
- Threats of violence
- Threats against family
- Locked in work or living quarters
- Kept drunk/drugged
- Punished through deprivation of food, sleep, etc.
- Punished through fine/financial penalty
- Threats of legal action
- Withheld passport or other documents
- Had to repay debt
- Withheld wages
- Too far from home and nowhere to go
- Other penalty
- Labor inappropriate for age

Categories of forced labor from "Forced Labor in the Building Material Supply Chain: Developing a Mitigation Framework" (BWBR and Ta, 2024), adapted from "Global Estimates of Modern Slavery: Forced Labour and Forced Marriage" (ILO, 2022).

Selecting Materials to Avoid Forced Labor

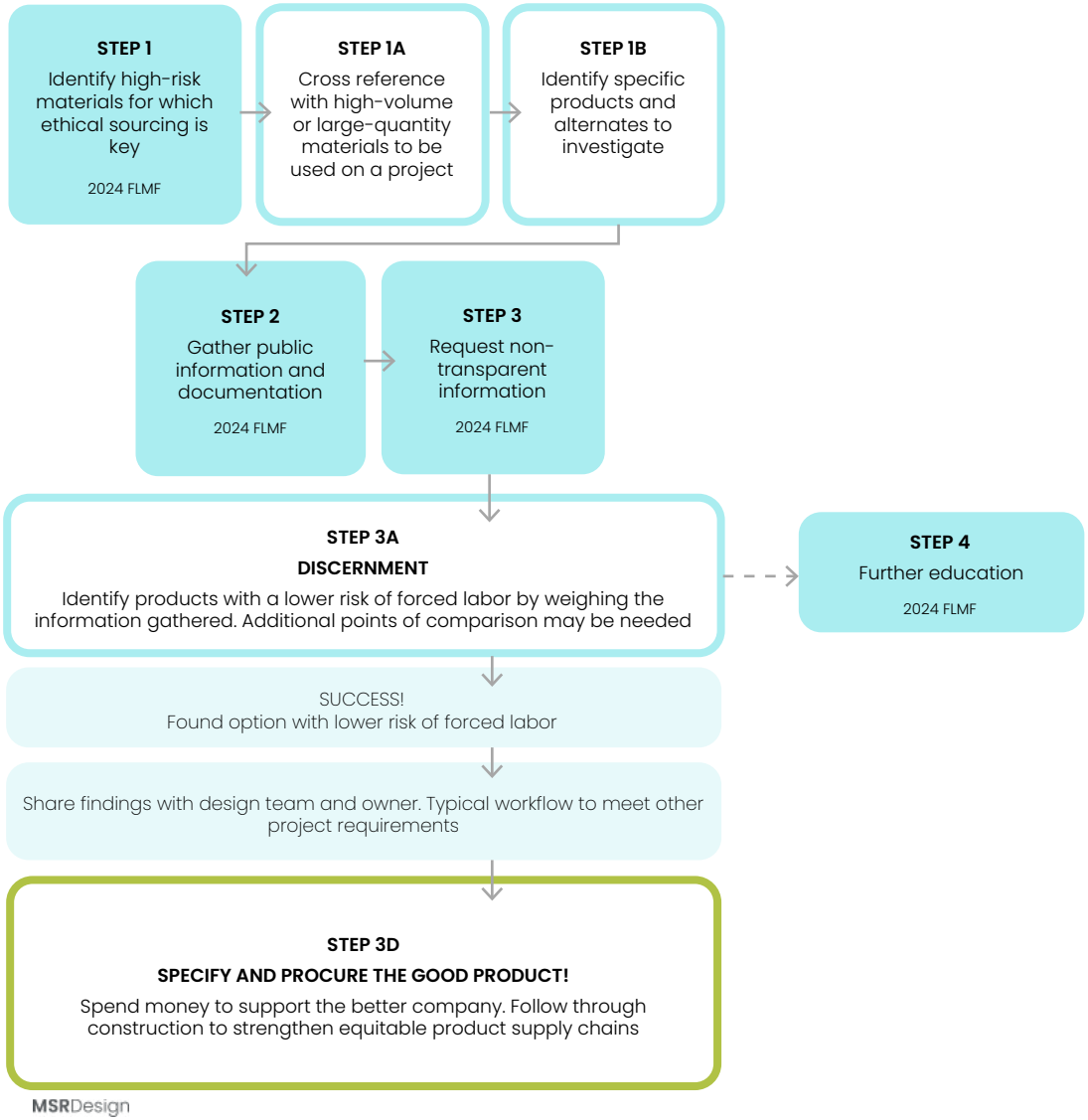
The authors of this report asked: *How can the Forced Labor Mitigation Framework be applied in design practice to find clear evidence of lower forced labor risk? How can this evidence support ethical decision-making?*

To test the workflow, the team designed and conducted case studies in three different, frequently used, commercial product categories to successfully identify manufacturers in each category with a lower risk of forced labor: Solar photovoltaic (PV) panels, acoustic panels, and interior paint.

These case studies illustrate the challenges and complexities inherent in product comparison efforts. Examples from research findings are included to demonstrate how the forced labor mitigation workflow steps and outcomes played out in practice.

Setting boundaries of investigation

Identifying products is standard design process, but time expands when comparing many alternates. This must be accounted for in the research timeline.



Ideal research workflow: Preliminary diagram of a workflow adapting the Forced Labor Mitigation Framework to the design process | illustration by MSR Design

Despite advanced search tools, gathering relevant, trustworthy, publicly available information on labor practices remains a challenge.

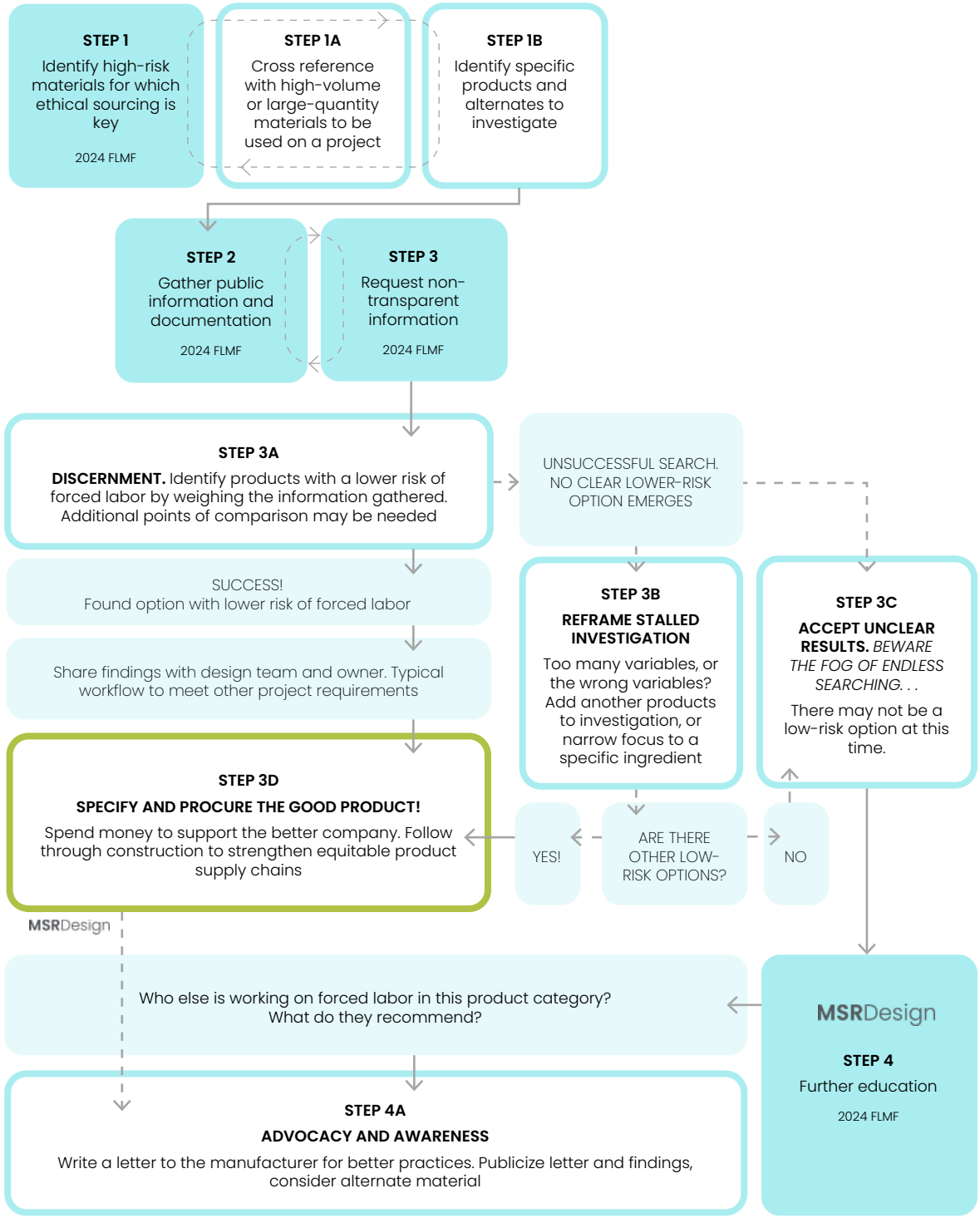
Navigating complex findings

Supply chains are complex and information is often murky. The team must find a way to use the data to differentiate manufacturers with a lower risk. The team asked: When do we know we have succeeded? Inquiries and metrics required restructuring to yield comparable data points. However, too many variables or the wrong variables can lead to a glut of unprocessable data that feels like progress, but yields no answers. Sometimes the results remain unclear despite diligent investigation and a lot of data. It becomes important to know when to stop seeking and acknowledge that clear discernment is not possible at this time.

If a lower-risk option is clearly identifiable, that is is an ideal outcome of the research process -- but to have an impact, the better product must then be specified, purchased, and installed.

Advocacy and awareness

When the data does not yield an obvious recommendation, advocacy is critical. The team used Design for Freedom Toolkit communication templates to reach out to manufacturers in the case studies.



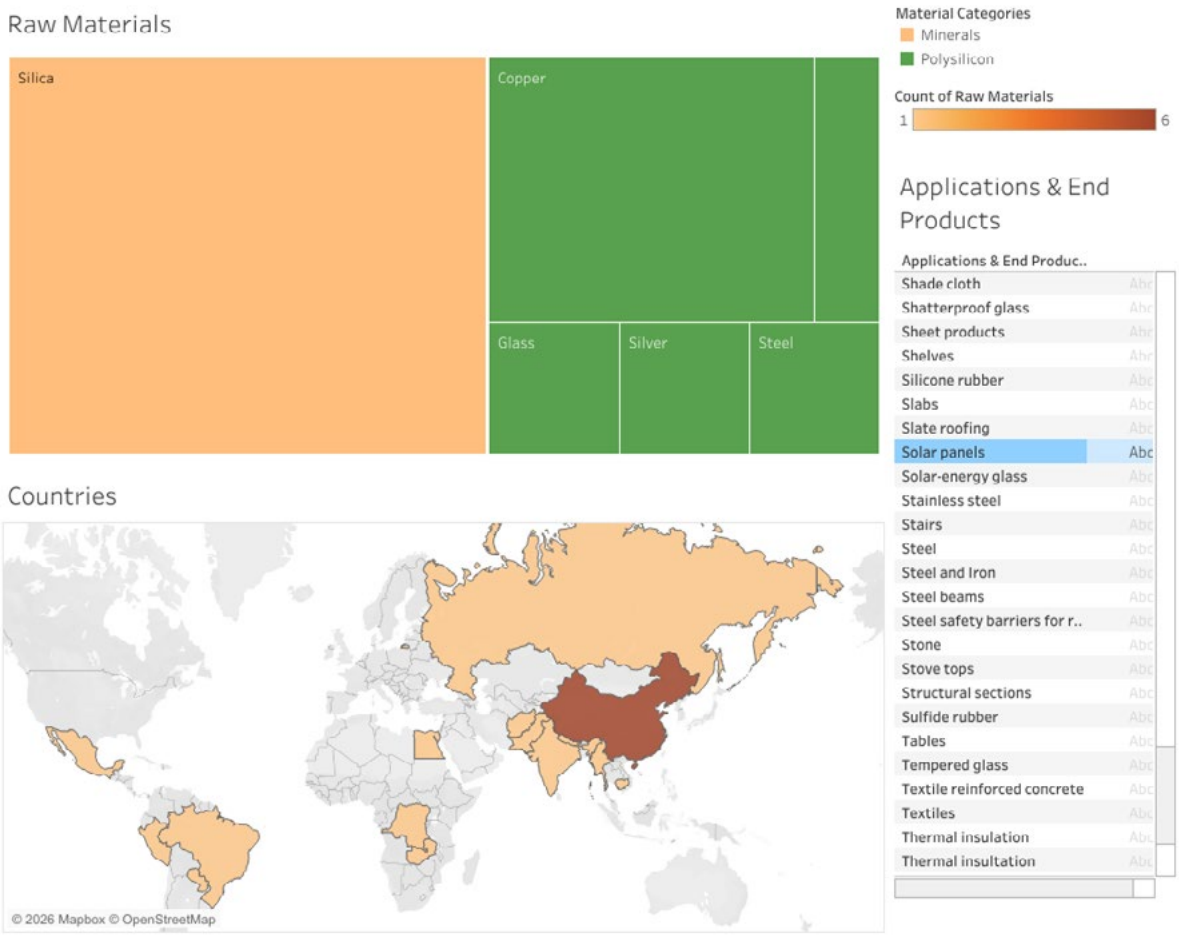
Realistic workflow: A nuanced diagram of integrating research with the design process to support ethically-grounded building materials selection. | Illustration by MSR Design

Case Study: Solar Photovoltaic (PV) Panels

The first case study examines solar PV panel selection for a new construction project. Using step 1 of the FLM Workflow process, the Tableau interactive tool identifies polysilicon and silica, two major materials used in PV panels, as high risk due to their sourcing locations in China. Approximately 70% of global polysilicon capacity and 95–98% of wafer manufacturing occurs in China, with 35–40% of solar-grade polysilicon produced in Xinjiang, where forced-labor risks are well-documented (IEA, 2022; U.S. DOE, 2022; BHRRC, 2025).

The team investigated 17 manufacturers that supply solar PV panels to the United States. Data was tracked in a tool that included the following fields, as illustrated on page 10:

- Company information, including headquarters location (though this later proved not to be a differentiating factor).
- Product type: Primarily silicon PV, with one thin-film PV producer included for reference.



Screenshot of material risk search | source Tableau interactive_tool

Company	HQ Location	Type of PV	Code of Conduct Mentioning Forced Labor	Modern Slavery Statement	EPD	Notes	Reply Status	Forced Labor Evaluation
SunPower	France	Silicon	Yes	Yes	Yes	Place of production: Prolongación Lazaro Cardenas, Agustín Sanguines 3101, Huertas de La Progreso, 21188 Mexicali, B.C **Mexico**	Sufficient info was available online	Low Risk
REC Group	Norway	Silicon	Yes	Yes	Yes	Place of production: **Singapore**	Sufficient info was available online	Low Risk
Qcells	USA	Silicon	Yes	Yes	No	Contacted for EPDs.	Replied	Risk Unknown / Info Missing
Heliene	Canada	Silicon	Yes	Yes	No	Contacted for EPDs.	No reply	Risk Unknown / Info Missing
Silfab Solar	Canada	Silicon	Yes	Yes	No	Contacted for EPDs.	No reply	Risk Unknown / Info Missing
Crossroads Solar	USA	Silicon	No	No	No	"Our goal is to produce perfect solar modules with people who have made mistakes, and in the process revolutionize the way we think about crime and punishment and US manufacturing capabilities." No transparency documentation on website.	No reply	Risk Unknown / Info Missing
Solar4America	USA	Silicon	No	No	No	Contacted for EPDs. No transparency documentation on website.	Did not contact	Risk Unknown / Info Missing
Sinotec	USA	Silicon	No	No	No	No transparency documentation on website.	Did not contact	Risk Unknown / Info Missing
Sirius PV	Turkey	Silicon	No	No	No	Website cannot load.	Did not contact	Risk Unknown / Info Missing
SunSpark/SolarMax	USA	Silicon	No	No	No	No transparency documentation on website.	Did not contact	Risk Unknown / Info Missing
Mission Solar	USA	Silicon	No	No	No	"Our policies and procedures relating to the Uyghur Forced Labor Prevention Act (UFLPA) are unwavering: forced labor is strictly prohibited in our supply chain and we will not enter into vendor agreements with manufacturers, suppliers or vendors that use or are suspected of using forced labor." Mission Solar Energy is a subsidiary of OCI Holdings with locations in **Vietnam, Malaysia, Philippines, Japan, Korea.** No transparency documentation on website.	Did not contact	Risk Unknown / Info Missing
Auxin Solar	USA	Silicon	No	No	No	A lot of negative reviews on Google. No transparency documentation on website.	Did not contact	Risk Unknown / Info Missing
First Solar	USA	CdTe thin-film	Yes	Yes	Yes	Follows UN Global Compact principles. Claims to source raw materials from across the US and supply chains in the US (an American value chain). **BUT** the Sustainability Report mentions manufacturing facilities in **Vietnam and Malaysia which are known locations of shell companies that source from China according to U.S. Department of Commerce.**	Sufficient info was available online	Suspect High Risk
JinkoSolar	China	Silicon	Yes	Yes	Yes	Website claims to source raw materials from the US, non-dependent on China. Manufacturing facilities in the US, Malaysia, Vietnam, and India. BUT EPDs list their manufacturing plants in Shangrao, Jiangxi Province, and Haining, Zhejiang Province.	Sufficient info was available online	High Risk
LG	South Korea	Silicon	N/A	N/A	N/A	Contacted. Quick response saying they were discontinued before the Uyghur Forced Labor Prevention Act (the "Act") took effect, so no legal concerns.	Replied	High Risk
Canadian Solar	Canada	Silicon	Yes	Yes	Yes	Site Plants: **• Changshu, China • Dafeng, China • Suqian, China**	Sufficient info was available online	High Risk

Snip of research tracking tool for solar PV panels

- Status of available documentation: Presence of a code of conduct that mentions forced labor, modern slavery statements, and Environmental Product Declaration (EPDs) that include manufacturing site locations.
- Notes explaining findings regarding sourcing and manufacturing locations, and comments on the quality of information.
- Reply status.
- Forced labor evaluation, the discernment step in the workflow outlined above.

Not all codes of conduct explicitly address forced labor, so the presence of a code of conduct alone was not enough to make an evaluation. The Code needed to be reviewed for specific language addressing forced labor. EPDs were the most reliable source for identifying manufacturing locations, though European EPDs provided more location-specific information than EPDs created by U.S. companies.

Manufacturer responsiveness was tracked when additional information was required. The following categorizations emerged based on the data the team was able to collect:

1. Low Risk of forced labor: Products with full transparency and manufacturing sites outside of China, a high-risk country for sourcing solar panels' raw materials.
2. Some Risk: Unknown/Information Missing regarding forced labor: Incomplete information or lack of response.
3. High Risk/Suspect High Risk: Manufacturing in China or a listed sourcing location in Vietnam or Malaysia, which the U.S. Department of Commerce has identified as intermediaries for Chinese solar-panel production (U.S. Department of Commerce, 2023), combined with insufficient information to prove that the risk was being mitigated.

Inconsistent information was a challenge. Some manufacturers marketed products as U.S.-made on their websites, but disclosed non-U.S. manufacturing locations in EPDs. Some appeared to list lower-risk countries to obscure ties to higher-risk regions. Despite these issues, the process proved more transparent than expected. Three European manufacturers that met low-risk criteria were included as the basis of design in the project specifications and cost estimate.

Photo by Berke Bayur Anadolu Agency

Lessons from PV panel investigation

- Modern slavery statements and codes of conduct are not sufficient on their own; EPDs are part of the minimum requirement for assessing risk.
- Inconsistent information: Manufacturer websites often lack accuracy; cross-checking with EPDs is essential.
- Avoiding high-risk regions: Solar PV products manufactured in China, even outside officially identified high-risk regions, are considered high risk due to systemic concerns.
- Supplier partnerships: Collaborating with local suppliers who represent low-risk manufacturers helped close the loop from evaluation to specification.

In this instance it was possible to identify three European manufacturers that met low-risk criteria. These products were included in the DD cost estimate of an ongoing project.

Mill 19 | photo by Corey Gaffer Photography

Case Study: Acoustic Panels

The second case study examines acoustic panels, a product category commonly specified across project typologies. Using the Tableau map, the team identified textiles as the primary high-risk raw material associated with acoustic panels. Acoustic panels typically consist of an acoustic core paired with an acoustically transparent textile finish. The team evaluated three acoustic panel manufacturers, each with a textile option:

1. A standard option often specified by acoustic consultants and widely available on acoustic panels, with virgin polyester.
2. Another standard option with a recycled polyester textile.
3. An option with a biobased textile.

Image credit: Kay Chernush for the U.S. State Department, sourced from EndSlaveryNow.org

The review found limited transparency related to fiberglass acoustic cores. None of the manufacturers evaluated provided publicly available codes of conduct, modern slavery statements, EPDs, or Health Product Declarations (HPDs). While labor risks associated with fiberglass manufacturing were outside the scope of this study, the lack of disclosure highlights broader transparency gaps and suggests a need for further inquiry.

Textile finishes demonstrated higher levels of disclosure. Carnegie Xorel Biobased stood out due to Cradle to Cradle Certified® Social Fairness Gold and Living Product Challenge certifications, along with available EPDs, supporting its classification as a low-risk option.

Further research revealed that high-risk factors were predominantly tied to natural fibers such as cotton and jute, which are often sourced from regions with documented labor abuses; however, these fibers are rarely specified in commercial projects. Nonetheless, this finding signals a critical need to monitor the biobased materials industry as it expands in response to other global health and embodied concerns, to ensure that the use of forced labor does not grow along with it.

The findings for acoustic panels were largely inconclusive. Case study 2 was an example of path 3(c) from the new research workflow: a clear determination could not be made. While the textile category in the mapping tool indicated the possibility of high-risk materials, those fibers were not relevant to typical commercial specifications.

This prompted a shift to explore other high-risk elements in acoustic products, such as PET felt panels. Over the past five years, PET felt panels have grown in popularity, with numerous options entering the market. Many claim to use recycled content, but transparency around actual sourcing and recycled content remains unclear. Additional documentation and verification are needed to verify sustainability claims.

Missoula Public Library | photo by Lara Swimmer

Company	Product	Component	Ingredients (HPD)	HQ Location	Code of Conduct Mentioning Forced Labor	Modern Slavery Statement	Certifications	Material Health (HPD)	EPD	Reply Status	Notes	Forced Labor Evaluation
Conwed	Conwed Panels	Fiberglass core	Fiberglass core (53% recycled content) NAF & TK/AC cores available	USA	No	No	No	Low VOC adhesive	No	Did not contact		Risk Unknown / Info Missing
	Carnegie Bio-based Xorel	Fabric	POLYETHYLENE (BIO-BASED) [POLYETHYLENE LT-UNK]	USA	No	No	C2C Social Fairness Gold Living Product Challenge Equity Petal 4/4 Declare	Low VOC SCS INDOOR ADVANTAGE GOLD	Yes	Sufficient info was available online	Manufacturing in **Denmark and Belgium**, shipped to the United States for warehousing, use, and end-of-life	Low Risk
G&S Acoustics	Acousti-Panels (AP)	Fiberglass core	**GOLTERMAN & SABO AP PRODUCTS CUSTOM ARCHITECTURAL ACOUSTICAL PANELS** [FIBERGLASS LT-UNK POLYESTER FABRIC Not Screened BUTYLATED POLYOXYMETHYLENE UREA LT-UNK POLYVINYL ALCOHOL LT-UNK BUTYL ACRYLATE, METHYL METHACRYLATE, 2-HYDROXYETHYL ACRYLATE, ACRYLIC ACID POLYMER LT-UNK]	USA	No	No	No	Low VOC GreenGuard - Gold	No	Did not contact		Risk Unknown / Info Missing
	Designtex	Fabric	25% Polyester, 75% Postconsumer Polyester	USA	Yes (Steelcase Supplier Code of Conduct)	Yes (Steelcase)	Red List Free	Low VOC	No	Did not contact		Risk Unknown / Info Missing
KINETICS Noise Control	KINETICS® HardSide	Fiberglass core	**6 LB FIBERGLASS** [UNDISCLOSED LT-UNK] FR701 [FATTY ACIDS, CASTOR-OIL, CAUSTIC-OXIDIZED, DISTN. RESIDUES, ESTERS WITH 1,3-BUTANEDIOL NoGS ACETIC ACID, METHYL ESTER | PHY | MAM | SKI]	USA	No	No	No	No info on VOC	No	Did not contact	The core of this panel is a 6-7 PCF fiberglass board. The edges are chemically hardened for durability. Fabric facing, from the FR-701© collection from Guilford of Maine or factory-approved, customer-selected fabric, is stretched over the panel, wrapped and bonded around the edges for a crisp, finished look.	Risk Unknown / Info Missing
	duvaltex FR-701© collection from Guilford of Maine	Fabric	100% Post-consumer recycled polyester	Canada	No	No	No	No info on VOC	No	Did not contact		Risk Unknown / Info Missing
Kirei	PET 9/12/24MM PANELS	At least 60% post-consumer recycled PET bottles	EchoPanel® and Mura™ products are made from up to 60% post-consumer waste sourced from recycled PET bottles. **DOPE DYED RECYCLED PET FIBER** [**POLYETHYLENE TEREPHTHALATE (PET)** LT-P1 | **RES** N,N'-ETHYLENE DISTEARYLAMIDE LT-UNK] VIRGIN LOW MELT PET FIBER [**POLYETHYLENE TEREPHTHALATE (PET)** LT-P1 | **RES UNDISCLOSED** LT-UNK | **EYE TITANIUM DIOXIDE LT-1** | **CAN** | END STEARIC ACID LTP1 | END]	USA	Corporate Social Responsibility (CSR) mentioning forced labor	Yes (Woven Image)	Red List Free Declare	Low VOC	Yes	Contacted on website on country of origin for PET	Woven Image is the supplier of PET to Kirei. NANTONG, JIANGSU, P.R.**CHINA (HPD)** EchoPanel® boards and Mura™ rolls are **manufactured in Australia** by Woven Image's supplier. Plain EchoPanel® are sent for printing in **Australia**, while Mura™ rolls are sent by sea to **China for printing**	Risk Unknown / Info Missing
CSI Creative	Soundcore	60% recycled PET felt		USA	No	No	Red List Free Declare	No	No	Contacted	PET sourced from China	Risk Unknown / Info Missing
frasch	9mm PET Felt			USA	No	No		Yes	No	Contacted		Risk Unknown / Info Missing
Turf	3mm + 9mm	Up to 60% pre-consumer recycled PET	POLYETHYLENE TEREPHTHALATE **LT-P1** 12H-PHTHALOPERIN-12-ONE, 8,9,10,11-TETRACHLORO- **LT-P1** 9,10-ANTHRACENEDIONE, 1,1'-[(6-PHENYL-1,3,5-TRIAZINE-	USA	No	No	Red List Free Declare	Yes	Yes	Emailed asking about PET sourcing. **No reply.**	Turf Design, Inc. 41 Prairie Parkway, Gilberts IL 60136	Risk Unknown / Info Missing

Snip of tracking tool for acoustic panel textiles

Lessons from acoustic panel investigation

1. Certifications play a role: Cradle to Cradle and Living Product Challenge certifications remain reliable indicators for low-risk textile options. A number of other product type-specific certifications can be found through the Common Materials Framework and EcoLabel Index.
2. Lack of transparency is a barrier: Fiberglass cores lack transparency, highlighting the need to explore alternatives, such as bio-based options, such as eelgrass acoustic cores.
3. PET felt panels claim recycled content but lack sourcing information: The growing prevalence of PET felt panels warrants deeper research to validate claims of recycled content and ensure responsible sourcing.

The biobased option was specified based on documentation and certifications. Recycled polyester textiles were specified with advocacy to the manufacturers. Continued exploration is needed to understand the risks of the acoustic core materials and newer acoustic options.

Missoula Public Library | photo by Lara Swimmer

Case Study: Interior Paint

The final case study examines paint, a product category used in nearly all design projects. Using the Tableau map, the team identified two high-risk raw materials associated with paint: mica and silica. Mica is primarily used for color enhancement, while silica is a common filler present in most paint products.

The study evaluated six paint options representing a range of commonly specified and alternative products: two conventional acrylic paints; three mineral paints; and one mineral–acrylic hybrid option.

Mica is more common in cosmetics and automotive paint than in architectural paint, so it was not a differentiator in terms of assessing the risk of forced labor. Silica is used in almost all paint products across different industries, so the presence of silica cannot be used to assess a higher risk. As a result, third-party certifications emerged as the primary differentiator among paint products.

Two mineral silicate paint manufacturers stood out due to their Cradle to Cradle

A young boy sifting mica in Madagascar | photo by Christine Romo for NBC News

Certified Social Fairness Gold certifications, providing greater confidence in their supply chain oversight and labor practices. Based on available documentation, these products were identified as lower-risk.

Mineral paints demonstrated additional advantages beyond social risk considerations. Compared to conventional acrylic paints, parallel investigation reveals that mineral paints have lower embodied carbon, and if they are manufactured without acrylic, they avoid contributing to microplastic pollution. Their simpler formulations require fewer additives, eliminate preservatives common in acrylic paints, and low- or zero-VOC content.

Lessons from paint investigation

- Certifications play a role: Without sufficient ingredient-level transparency, certifications like Cradle to Cradle provide a reliable alternative for assessing product risk.
- Across multiple categories—carbon footprint, microplastic reduction, and material health—mineral paints consistently outperformed traditional acrylic paints.
- Client engagement is a key aspect of the process. Despite research findings, a change in paint specification can be a major shift, especially for clients with established facilities maintenance protocols. Patience, clear information, and evidence of performance are required to realize forced labor mitigation goals in the specifications.

Through client engagement and internal evaluation, mineral paint options progressed through specification review and were successfully incorporated into project work on multiple projects. Office mockups confirmed performance expectations, including durability and cleanability, supporting their viability as a standard alternative.

Test of mineral paint application | photo by MSR Design

Company	Product	Finish	Paint type	Ingredients (HPD)	TDS/MSDS	Contain Silica?	Contain Mica?	HQ Location	Code of Conduct Mentioning Forced Labor	Modern Slavery Statement	Certifications	Material Health (HPD)	EPD	Notes	Reply Status	Forced Labor Evaluation
Alkemis	Interior Mineral		Mineral	No HPD "using sustainable raw materials and clear quartz" (TDS)	TDS	Yes (to verify)	Ask rep under what circumstances this contains mica	USA	No	No	C2C Social Fairness Gold	Zero VOC	No EPD	Where mica + silica come from? Waiting to ask in Zoom meeting. To ask if there's local install.	Replied	Low Risk
Keim	Innostar		Mineral	No HPD	Emailed rep		Zoom call scheduled	Germany	Yes	No	C2C Social Fairness Gold	Zero VOC	Expired	No info on manufacturing location in EPD. Where mica + silica come from? Waiting to ask in Zoom meeting. To ask if there's local install.	Replied	Low Risk
Benjamin Moore	Eco Spec	Eggshell	Acrylic	**ECO SPEC WB EGGSHELL FINISH (N374)** [WATER BM-4, METHYL METHACRYLATE COPOLYMER WITH BUTYL ACRYLATE LT-UNK, **TITANIUM DIOXIDE LT-1**, NEPHELINE SYENITE LT-UNK, KAOLIN LT-UNK, **SILICA AMORPHOUS LT-P1**, CALCIUM CARBONATE BM-3, KAOLIN CALCINED LT-UNK, ALUMINA TRIHYDRATE BM-2, **SOLVENT-DEWAXED HEAVY PARAFFINIC PETROLEUM DISTILLATES LT-1**, ALCOHOLS C9-11 ETHOXYLATED LT-P1, POTASSIUM CARBONATE ANHYDROUS LT-P1, TRIDECYL ALCOHOL ETHOXYLATED PHOSPHATED AMMONIUM SALTS NoGS ALKENES C14-16 ALPHA- SULFONATED SODIUM SALTS LT-UNK, AQU POLYETHYLENE GLYCOL UNDECYL ETHER NoGS 1,1,1TRIS(HYDROXYMETHYL)PROPANE LT-UNK	TDS/MSDS doesn't list mica	Yes	Not listed in ingredient list	USA	No	Yes	Green Seal	Zero VOC and zero emissions Titanium dioxide **cancer & endocrine** hazard. SILICA AMORPHOUS **cancer** hazard. ALUMINA TRIHYDRATE **RESPIRATORY** hazard.	Yes but no info on manufacturing location	"In compliance with the regulations of Canada's new Forced and Child Labor in Supply Chains Act (the "Act"), which requires companies including Benjamin Moore to disclose any such efforts to prevent and mitigate forced and child labor in their supply chains." (from Modern Slavery Statement) "Benjamin Moore maintains a robust supplier auditing program focused on financial stability, supply risk, reputation, safety, quality, and corporate social responsibility." (from Corporate Responsibility 2023)	No reply. Called customer service.	Risk Unknown / Info Missing
Benjamin Moore		Matte	Acrylic	**ECO SPEC WB FLAT FINISH (N373)** [WATER BM-4 **TITANIUM DIOXIDE LT-1**, METHYL METHACRYLATE COPOLYMER WITH BUTYL ACRYLATE LT-UNK, NEPHELINE SYENITE LT-UNK, KAOLIN CALCINED LT-UNK, **SILICA AMORPHOUS BM-1**, DIATOMACEOUS EARTH **[WHICH CONTAINS LESS THAN 0.1% OF CRYSTALLINE SILICA]** LT-P1, **ALUMINA TRIHYDRATE BM-2**, ALCOHOLS C9-11 ETHOXYLATED LT-P1, POTASSIUM CARBONATE ANHYDROUS LT-P1	TDS/MSDS doesn't list mica	Yes	Not listed in ingredient list	USA	No	Yes	Green Seal	Zero VOC and zero emissions	Yes but no info on manufacturing location	The technical customer service rep couldn't provide additional information about mica, said to refer to TDS/SDS which we have and mica isn't listed. Said having no access to where silica is sourced from, but will ask and email.	No reply. Called customer service.	Risk Unknown / Info Missing
Benjamin Moore		Primer	Acrylic	**ECO SPEC WB PRIMER WHITE (N372)** [WATER BM-4, METHYL METHACRYLATE COPOLYMER WITH BUTYL ACRYLATE LT-UNK, NEPHELINE SYENITE LT-UNK, TITANIUM DIOXIDE LT-1, KAOLIN CALCINED LT-UNK, CALCIUM CARBONATE BM-3, DIATOMACEOUS EARTH **[WHICH CONTAINS LESS THAN 0.1% OF CRYSTALLINE SILICA]** LT-P1, ALCOHOLS C9-11 ETHOXYLATED LT-P1, SOLVENT-DEWAXED HEAVY PARAFFINIC PETROLEUM DISTILLATES LT-1, SILICA AMORPHOUS BM-1, ALUMINA TRIHYDRATE BM2	TDS/MSDS doesn't list mica	Yes	Not listed in ingredient list	USA	No	Yes	Green Seal	Zero VOC and zero emissions	Yes but no info on manufacturing location		No reply. Called customer service.	Risk Unknown / Info Missing
Benjamin Moore	Ultra Spec 500	Low Sheen Eggshell	Acrylic copolymer	**ULTRA SPEC 500 INTERIOR LOW SHEEN (N537)** [WATER NoGS, METHYL METHACRYLATE COPOLYMER WITH BUTYL ACRYLATE LT-UNK, TITANIUM DIOXIDE LT-1, NEPHELINE SYENITE LT-UNK, LIMESTONE CALCIUM CARBONATE LT-UNK, **SILICA AMORPHOUS LT-P1**, ALUMINA TRIHYDRATE BM-2, SOLVENT-DEWAXED HEAVY PARAFFINIC PETROLEUM DISTILLATES LT-1, MUL POLYETHYLENE GLYCOL LT-UNK ALKENES, C14-16 ALPHA-, SULFONATED, SODIUM SALTS LT-UNK	TDS/MSDS doesn't list mica	Yes	Not listed in ingredient list	USA	No	Yes	Declare Red List Free	Zero VOC	Yes with manufacturing location	Manufacturing Location: **Johnstown, NY; Newark, NJ; Pell City, AL** (from EPD) Customer service said not have access to find info on one small ingredient in one product because SW is too big, and don't know who to ask.	No reply. Called customer service.	Risk Unknown / Info Missing
Sherwin Williams	EcoSelect	Eggshell		No HPD	SDS	Yes	Info not available	USA	Yes	Yes	No	Zero VOC and zero emissions	No		No reply. Called customer service.	Risk Unknown / Info Missing

Snip of research tracking tool for interior paints

Discussion and Next Steps

Materials palette | photo by MSR Design

Fight for information and act on it

A key takeaway is that human rights transparency within material supply chains is still evolving. It is crucial to ask questions, emphasize transparency, and follow through on purchases from manufacturers with better supply chain transparency and practices. As more designers and owners purchase from better companies, more manufacturers will recognize that they need to improve their practices, collectively helping to raise industry standards.

Streamline the process of discernment

The Design for Freedom Toolkit provides information request templates that help to understand the issue of forced labor in building materials, but extensive manufacturer questionnaires can be challenging to implement in practice, and do not guarantee useful points of comparison.

The team found that focusing on 2–3 priority questions, such as requesting an EPD and identifying the country of origin for raw materials, streamlined information gathering and interpretation. Although looking for evidence of a modern slavery statement & forced labor statement was an interesting and sometimes revealing exercise, ultimately, looking up ingredients and sourcing provided more telling information. When direct disclosure was limited, third-party certifications such as Cradle to Cradle Social Fairness, Living Product Challenge, Forest Stewardship Council (FSC), or similar programs provided useful indicators of lower forced labor risk.

While differentiating products to identify lower-risk options remains time-intensive, several workflows proved efficient once established. Comparing EPD data with the Tableau map can take as little as 5 minutes. The team found that quite a bit of information was publicly available regarding ingredients due to ongoing, more mature transparency efforts in the impact categories of embodied carbon and human health..

Searching for publicly available information added minimal time to a project. If a team is looking up healthy materials or embodied carbon, it is not difficult to look for the manufacturing location and compare it to the Tableau mapping tool.

Engagement with manufacturers to obtain additional information is more time-consuming. The initial email is not difficult, but monitoring the back and forth and tracking can take some attention.

The case studies had a tendency toward endless expansion. To manage scope, it was helpful to think of each investigation as trending down one of the following paths:

- Success: It was possible to identify products with a lower risk.
- Reassessment needed: In some cases, data was inconclusive, requiring the inquiry to be reframed in the hope of achieving a successful comparison.
- Unclear results, despite reassessment: In cases where information was available but did not provide clear evidence to differentiate risks, it was not possible to reach a credible conclusion regarding options with a lower risk of forced labor.

One significant step, often understated, is the time required to identify viable product options and alternatives. This step involves compiling lists of manufacturers and products that could be substituted in the same application, which is critical to enabling meaningful comparisons.

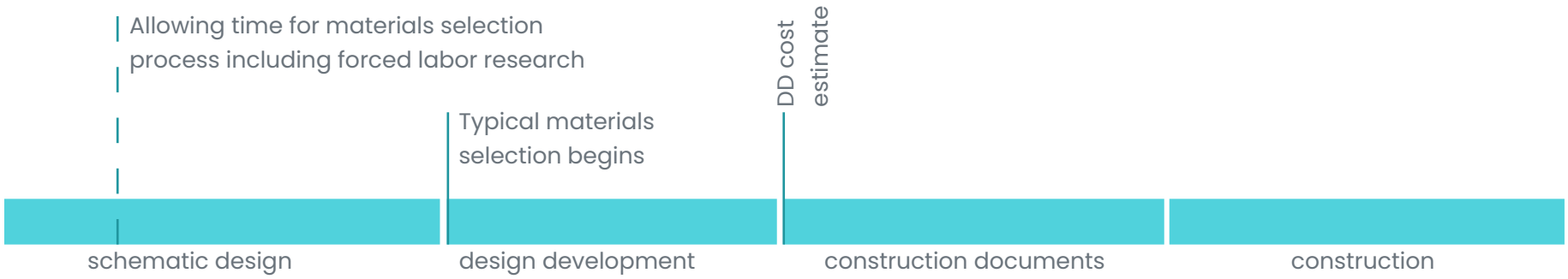
Sharing findings with the design team and project owners to secure buy-in is an essential step. This collaboration ensures that the identified lower-risk products align with project goals and client expectations.

Next steps

This work highlights the value of integrating forced labor awareness, research, documentation, and dialogue into standard design processes to more effectively address human rights and ethical considerations over time.

Broader ethical questions remain, such as the complexity of practices such as U.S. prison labor and its relationship to forced labor. This issue varies by state and context and warrants continued examination in a future study.

The integration of this workflow into existing and emerging product databases and tracking tools would streamline and reinforce information gathering and understanding of labor practices in building material supply chains.



Research timeline | illustration by MSR Design

References

Brudney, J. 2023. “Hiding in Plain Sight: An ILO Convention on Labor Standards in The Global Supply Chains.” Chicago Journal of International Law, 23(2), 272-341. https://cjil.uchicago.edu/sites/default/files/2023-02/23ChiJIntlL272.pdf

International Labour Organization (ILO), Walk Free, & International Organization for Migration (IOM). 2022. “Global estimates of modern slavery: forced labour and forced marriage.” https://www.ilo.org/publications/major-publications/global-estimates-modern-slavery-forced-labour-and-forced-marriage

International Organization for Standardization. 2017. “Sustainability in buildings and civil engineering works -- core rules for environmental product declarations of construction products and services.“ ISO Standard No. 21930:2017. https://www.iso.org/standard/61694.html

Parella, K. 2019. “Improving Human Rights Compliance in Supply Chains.” Notre Dame Law Review, 95(2), 727-794. https://scholarship.law.nd.edu/ndlr/vol95/iss2/5/

Ta, J. and BWBR. 2024. Forced Labor in the Building Material Supply Chain: Developing a Mitigation Framework. https://www.bwbr.com/wp-content/uploads/2024/06/2024_Forced-Labor-Mitigation-Framework_8x8-Booklet-6.06.24-Pages-V9-1.pdf

Ta, J. 2024. Forced Labor in The Building Materials Supply Chain interactive building materials supply chain mapping gool. https://public.tableau.com/app/profile/jennifer.ta2815/viz/ForcedLaborintheBuildingMaterialsSupplyChain/Dashboard1

Authors

Joon Ta LEED ID+C, WELL AP | MSR Design

Simona Fischer AIA, CPHC | MSR Design

Veronica Karr CID, IIDA | MSR Design

Contact

Please send comments and questions to generativeimpacts@msrdesign.com

MSRDesign