ENVIRONMENTAL DESIGN DEPARTMENT MATERIAL LIBRARY

Expanding the ENVD Materials Library to Enhance Research in Sustainable Design and Material Innovation

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Student Researchers:

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Ellis French
Kaija Galins
Katherine Ridgway
Chandrika Singh*
Zachery Steiner
Gabriel Watkins*

***Will be presenting today**

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We applied for funds to expand the **Materials Library** collections within ENVD to support the rapidly growing interest in sustainable material research and design. The grant primarily funded student wages. Students worked to grow the collection of sustainable materials, document and organize the materials, and to build an online database of materials in the collection.

Research Questions:

Bringing together Library and ENVD expertise allowed us to answer several research questions, with the ultimate goal of delivering an expanded collection that is cataloged, meets users' needs, and is incorporated into campus pedagogy.

- *What are the best methods for cataloging and organizing the collection? How can we make the collection browsable and discoverable through a student led process?*

- *What materials are needed for the expanded collection? How can we acquire new materials that meet student needs?*

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Project Goals and Objectives:

- **Expand Material Collections**: Curate, catalog, and acquire new materials, especially bio-based, low-carbon, green, and sustainable materials. The expanded collection will include physical samples of materials such as mycelium composites, hempcrete, bioplastics, and other cutting-edge sustainable materials.

- **Support Student Research**: Hire student assistants to curate, catalog, and maintain the growing material collection, providing valuable research experience in material science and collections management.

- **Create an Online Resource**: The project will build a searchable online database of the materials samples that will include photographs and materials information.

- **Facilitate Interdisciplinary Research**: The enhanced material collections will support interdisciplinary research across multiple disciplines. Faculty and students will benefit from having access to a diverse range of sustainable materials for experimentation, design projects, and innovative research.

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Leveraging Library Expertise:

This project leveraged the libraries' expertise in collection building, metadata, and database design *to guide and enable students to systematically catalog and expand the Materials Library's offerings.*

Library expertise supported students in:

- Curating the materials collection and adding new samples
- Selecting an online database platform
- Developing a metadata plan based on their needs
- Documenting and cataloging all materials in the library
- Launching an online database and website for the materials library

Broader Impacts:

We aim to significantly enhance CU Boulder's ability to contribute to ongoing research in sustainable design and materials. By expanding the Material Library collections and providing critical support for students and researchers, the University will foster innovation in ecological design practices.

Additionally, the interdisciplinary nature of the research will strengthen collaboration between departments and create a rich resource for future academic and professional projects.

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Process:

Assessment The assessment phase involves conducting a comprehensive inventory of all materials currently held in the library, evaluating their condition, relevance, and potential for instructional use. This initial evaluation identifies which materials should be prioritized for documentation, determines gaps in the collection, and establishes criteria for future acquisitions based on pedagogical needs and emerging design trends.

Documentation During documentation, each material sample is systematically photographed, measured, and catalogued with detailed information including its physical properties, sourcing information, environmental impact data, and potential applications in architectural design. This process also involves creating standardized records that capture both technical specifications and qualitative characteristics such as texture, visual qualities, and performance attributes that are critical for design decision-making.

Data Base The database development phase involves structuring and organizing all documented information into a searchable, user-friendly digital system that allows students and faculty to efficiently locate and compare materials based on multiple criteria. This system is designed to be scalable and adaptable, enabling ongoing updates as new materials are acquired and as additional research or testing provides deeper insights into material performance and sustainability metrics.

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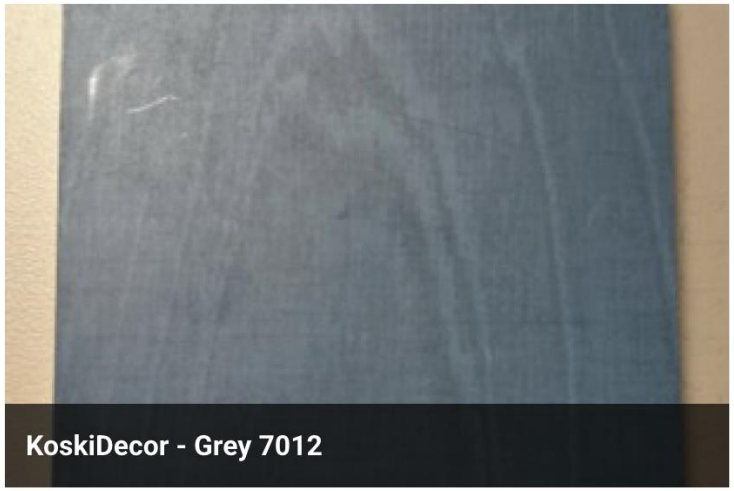
Environmental Design Material Library

The Material Library showcases student and faculty explorations in environmental materials, creating a centralized resource for research, teaching, and creative inquiry. At the heart of the library is a robust digital archive that highlights material-focused projects and makes them accessible to anyone interested in sustainable design and environmental innovation.

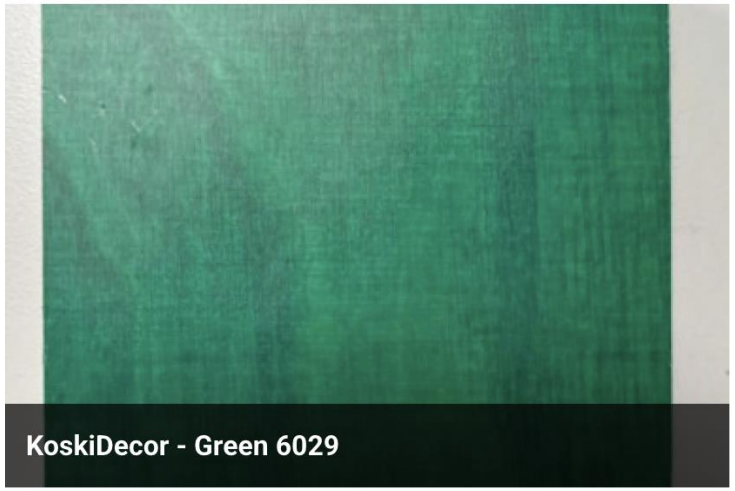
An open-access library at CU Boulder's Department of Environmental Design

Preview: The Database



KoskiDecor - Grey 7012

KOSKISEN. KoskiDecor. Grey 7012.Ideal for furniture and joinery. Environmentally friendly sourced wood, water based paint and finish.



KoskiDecor - Green 6029

KOSKISEN. KoskiDecor. Green 6029.Ideal for furniture and joinery. Environmentally friendly sourced wood, water based paint and finish.

KoskiDecor - Blue 5024

KOSKISEN. KoskiDecor. Blue 5024.Ideal for furniture and joinery. Environmentally friendly sourced wood, water based paint and finish.

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Environmental Design Material Library

The Digital Archive | People | Features

Meet the Team!

Faculty

Caitlin Charlet
Director, Associate Teaching Professor
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Caitlin Charlet serves as an Assistant Teaching Professor at the University of Colorado, Boulder, where she leads the Biomodernity Lab, advancing research in biogenic building materials and methodologies that prioritize local vernaculars and material assemblies. Her work resides at the confluence of community-centered, transformative design strategies, climate-responsive material science, and...

Sara Tabatabaie
Teaching Assistant Professor
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Sara Tabatabaie holds a PhD in Environmental Studies and is a Teaching Assistant Professor in the Environmental Design Department at the University of Colorado Boulder. Her research focuses on environmental health, urban greenness, environmental justice, and climate-responsive design. She explores the intersection of public health and the built environment, emphasizing sun safety, heat...

Alexander Watkins
Professor Art & Architecture, Librarian, Head of Collections Engagement Section
UNIVERSITY LIBRARIES

As the Art & Architecture Librarian, Alex Watkins works with students, faculty and researchers in the subject areas of Art & Art History, Cinema Studies, Critical Media Practices, and Anthropology.Alex is available to answer research questions as well as to provide in-depth research consultations in the areas of art, film and anthropology. He teaches sessions on research skills,...

Student

Tessa Boxer-macomber
Student Research Assistant
ENVIRONMENTAL DESIGN

Ellis French
Student Research Assistant
ENVIRONMENTAL DESIGN

Ellis French is a student pursuing a Bachelor of Environmental Design at the University of Colorado Boulder. They are an interdisciplinary creative working at the nexus of architecture and art to create the spaces of the future — informed by justice, ecological healing, and radical reimagining of the way we live. Through the design of spaces, graphics, experiences, and installations, their work...

Kalja Galins
Student Research Assistant
ENVIRONMENTAL DESIGN

Katherine Ridgway
Student Research Assistant
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Katherine Ridgway studies Urban Planning and Geography at the University of Colorado Boulder, where she explores how the places we live influence health outcomes and behavior. Ridgway's academic background in the built environment gives her a systems-level perspective on public health and an understanding of how design and policy shape the well-being of a population. Ridgway is especially drawn...

Zachary Steiner
Student Research Assistant
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Gabriel Watkins
Student Research Assistant
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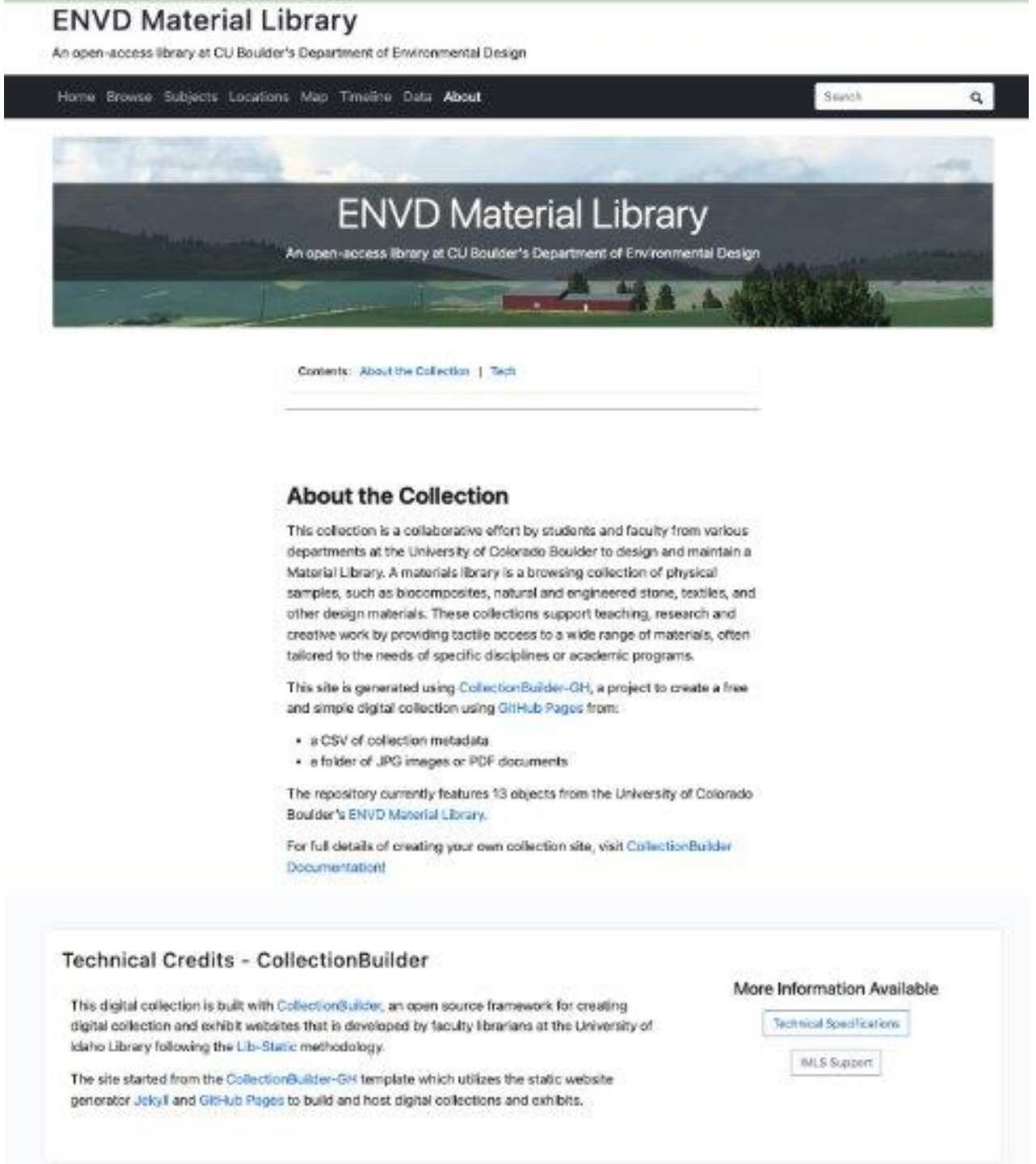
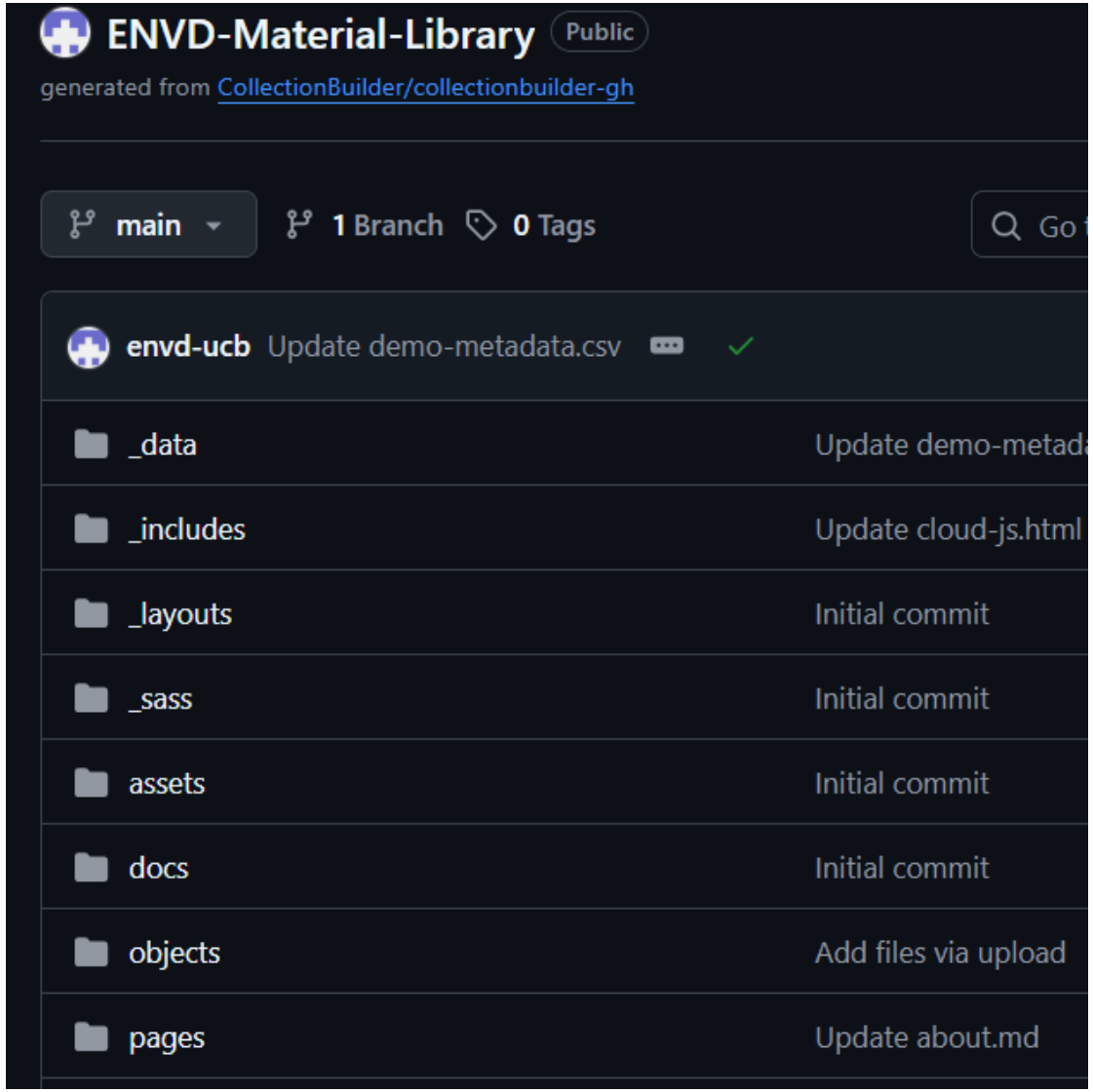
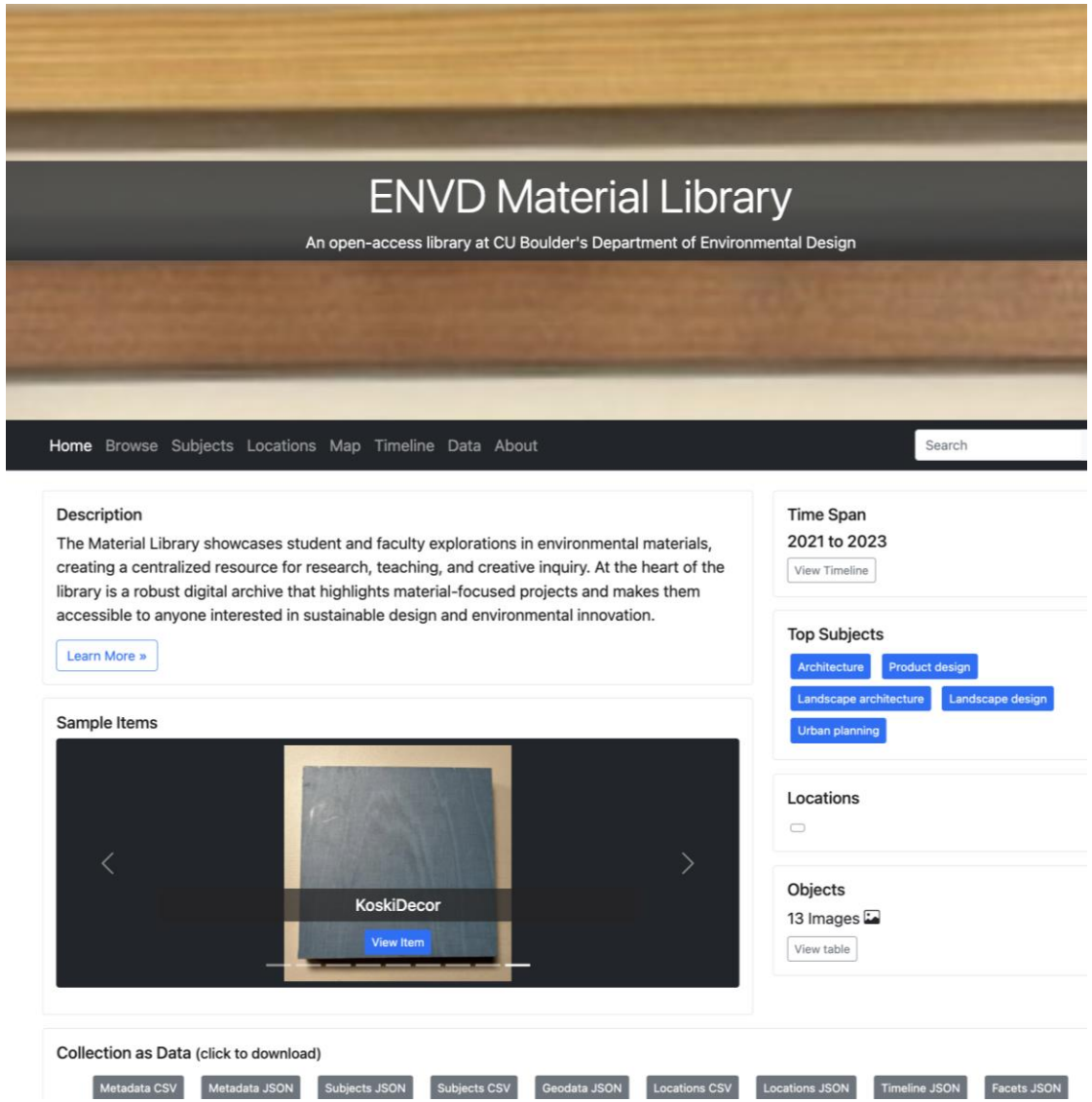



ENVD-Material-Library
Public
generated from CollectionBuilder/collectionbuilder-gh
main
1 Branch
0 Tags
envd-ucb Update demo-metadata.csv
_data
Update demo-metada
_includes
Update cloud-js.html
_layouts
Initial commit
_sass
Initial commit
assets
Initial commit
docs
Initial commit
objects
Add files via upload
pages
Update about.md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Home Browse Subjects Locations Map Timeline Data About
Search
Description
The Material Library showcases student and faculty explorations in environmental materials, creating a centralized resource for research, teaching, and creative inquiry. At the heart of the library is a robust digital archive that highlights material-focused projects and makes them accessible to anyone interested in sustainable design and environmental innovation.
Learn More »
Time Span
2021 to 2023
View Timeline
Top Subjects
Architecture
Product design
Landscape architecture
Landscape design
Urban planning
Sample Items
KoskiDecor
View Item
Locations
Objects
13 Images
View table
Collection as Data (click to download)
Metadata CSV
Metadata JSON
Subjects JSON
Subjects CSV
Geodata JSON
Locations CSV
Locations JSON
Timeline JSON
Facets JSON

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Home Browse Subjects Locations Map Timeline Data About Search

Collection Metadata

Download Data

The table below provides sorting and basic search of the collection contents. Use the "CSV" or "Excel" button below to download the filtered metadata you see on the page in your preferred format. Alternatively, click the "Download" button at the top right to view the full collection metadata in various export formats.

Excel CSV

Show 25 entries Search: veneer

Title	Date	Description	Subjects
WOODWORKS Channeled Ceilings and Walls - Maple	n/a	WOODWORKS Channeled Ceilings and Walls - Natural Variations Maple - 13mm profile with 3mm Groove - Real wood veneer on fire retardant medium density fiberboard - armstrong.com woodworks.	Architecture
WOODWORKS Channeled Ceilings and Walls - Dark Cherry	n/a	WOODWORKS Channeled Ceilings and Walls - Natural Variations Light Cherry - 5mm profile with 3mm Groove - Real wood veneer on fire retardant medium density fiberboard - armstrong.com woodworks.	Architecture
WOODWORKS Channeled Ceilings and Walls - Light	n/a	WOODWORKS Channeled Ceilings and Walls - Natural Variations Light Cherry - 25mm profile with 3mm Groove - Real wood veneer on fire retardant medium density fiberboard -	Architecture

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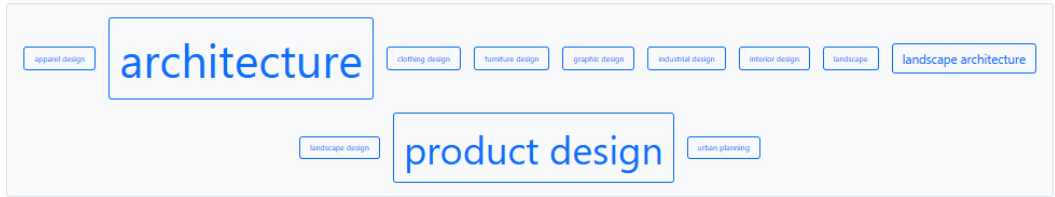
Browse Subjects

Use this word cloud visualization to browse terms and subjects. Word size is determined by frequency and all words link to a corresponding collection search.



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Home Browse Subjects Locations Map Timeline Data About

Search

Browse Items

koskisen Search Reset Sort by Title

13 of 1389 items

KoskiDecor

Creator: Koskisen

Product Design

JPEG

View Full Record

KoskiDecor

Creator: Koskisen

Product Design

JPEG

View Full Record

KoskiDecor

Creator: Koskisen

Product Design

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KoskiDecor

Creator: Koskisen

Product Design

JPEG

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Home Browse Subjects Locations Map Timeline Data About

Search

ENVD Material Library / Browse / KoskiDecor

IMAGE

KoskiDecor

Item Info

Click to view full screen

Download JPEG

Title:
KoskiDecor

Creator:
Koskisen

Description:
KOSKISEN. KoskiDecor. Green 6025.Ideal for furniture and joinery. Environmentally friendly sourced wood, water based paint and finish.

Subjects:
Product Design

Source:
https://koskisen.fi/en/

Source Identifier:
Wood

Type:
Plywood Panel

Format:
image/jpeg

« Previous Back to browse Next »

Next steps:

The next phase will focus on ***integrating the material library database with the studio curriculum, developing specific assignments and workshops that leverage the searchable platform to enhance student research and material selection processes.*** We will create guided exercises that teach students how to effectively query the database, compare material properties, and make informed design decisions based on performance criteria, sustainability metrics, and aesthetic qualities. Additionally, we will ***establish protocols for regular database maintenance and updates, including student involvement in documenting new material acquisitions through work-study positions or course-integrated projects, which will provide hands-on experience in material research while ensuring the library remains current and comprehensive.***

Beyond curricular integration, we plan to expand the database's functionality by incorporating advanced search filters, comparative analysis tools, and visualization features that allow users to explore relationships between materials based on multiple parameters simultaneously. We will also ***develop partnerships with material manufacturers, research institutions, and sustainable material innovators*** to continuously expand the collection with cutting-edge biogenic materials, recycled composites, and experimental substrates that push the boundaries of conventional architectural practice.

This expansion will position the material library as not only a teaching resource but also as a research hub that contributes to broader conversations about material innovation and environmental responsibility in architecture.

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Thank You