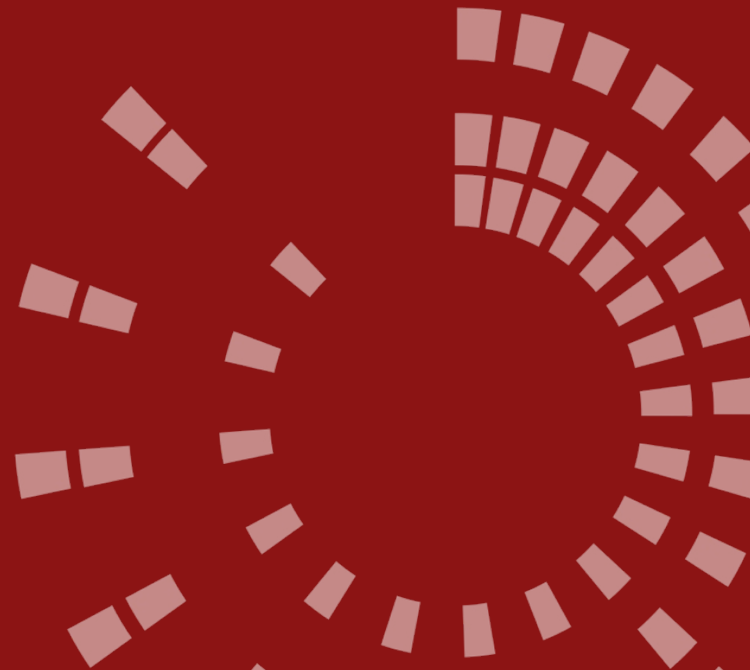
HighWire

Designing DataVis: A visual tool for engineers

Andrea Fallas, UX Architect

December 2017



The project

The process

HighWire

The project

What we did

HighWire

The project Client and context

Mc Graw Hill Education

ACCESS Engineering®

Authoritative content. Immediate solutions.

1600+

Books & resources

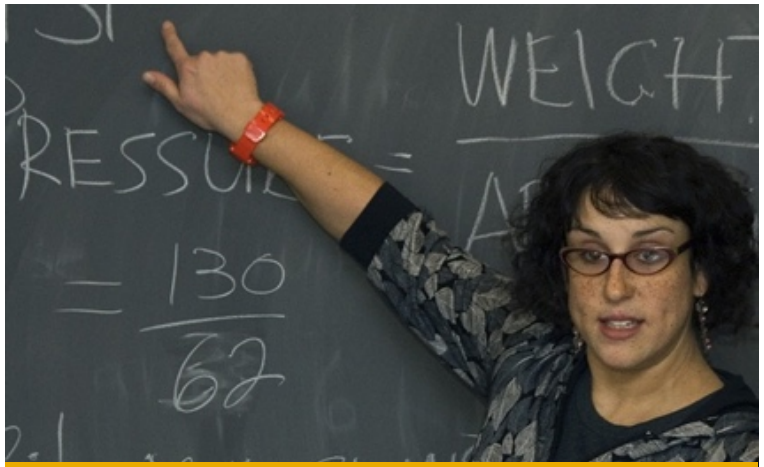
2012

200,000

Page views per month

The project Customer base

Students



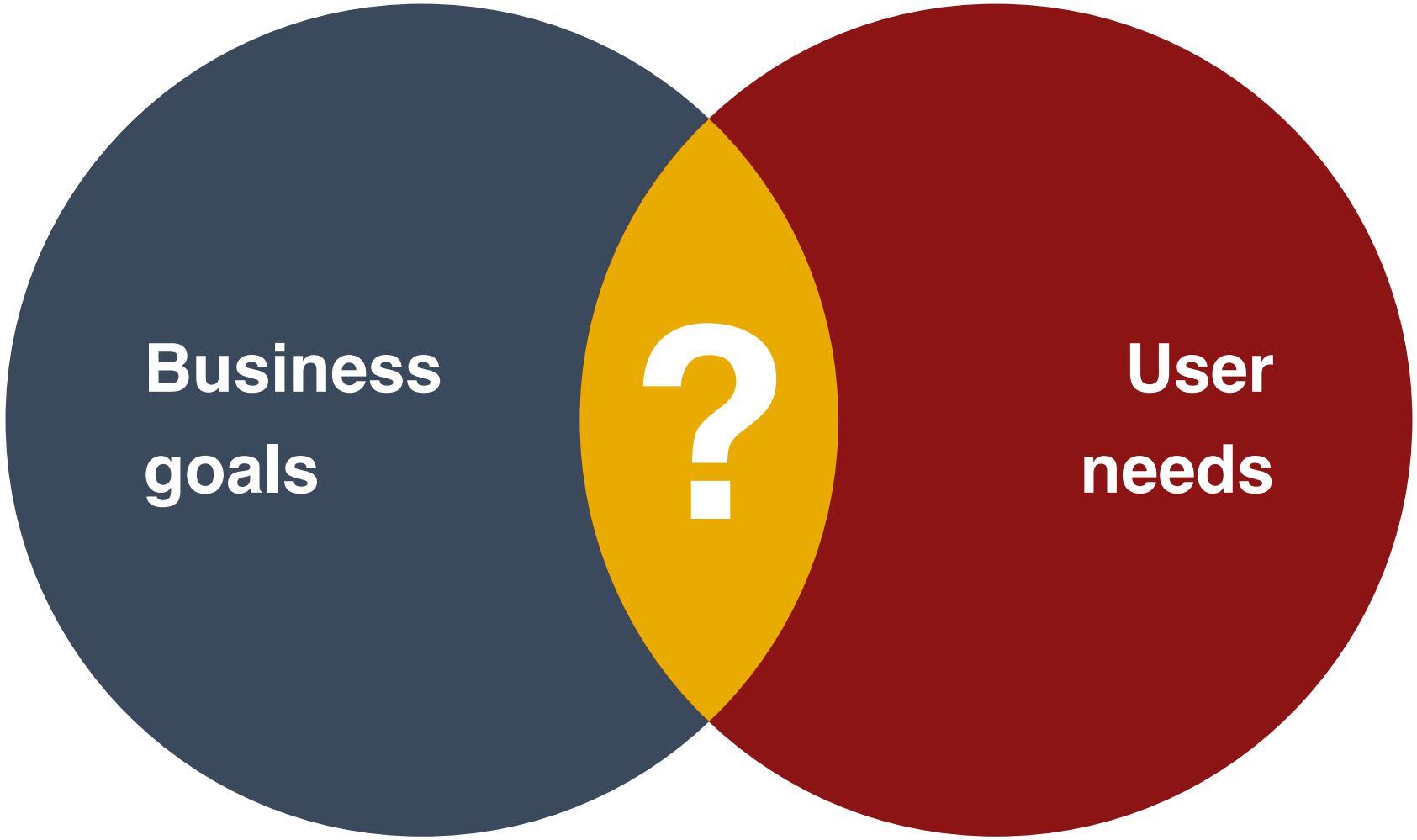
Faculty

Professionals

Libraries
Academic

Libraries
Corporate

The project Goals and needs



The project Initial insight

Librarians:

We want a material properties data search.

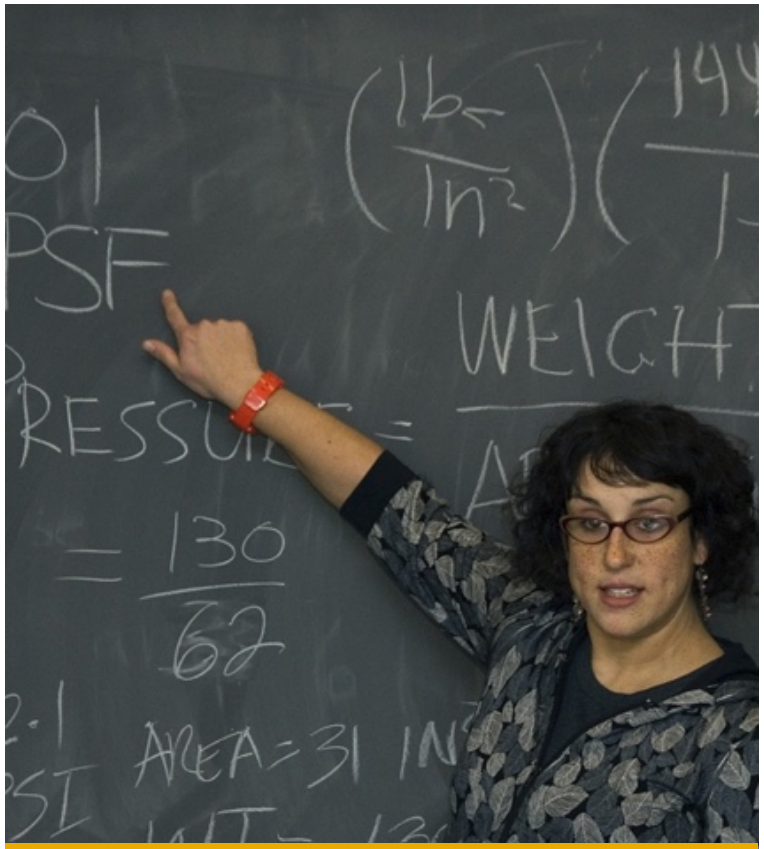
The project Further insight

Librarians:
We want a material properties data search.

Faculty:
We don’t need a data search
– most material properties data is freely available online.

The project User needs

Students



Faculty

Professionals

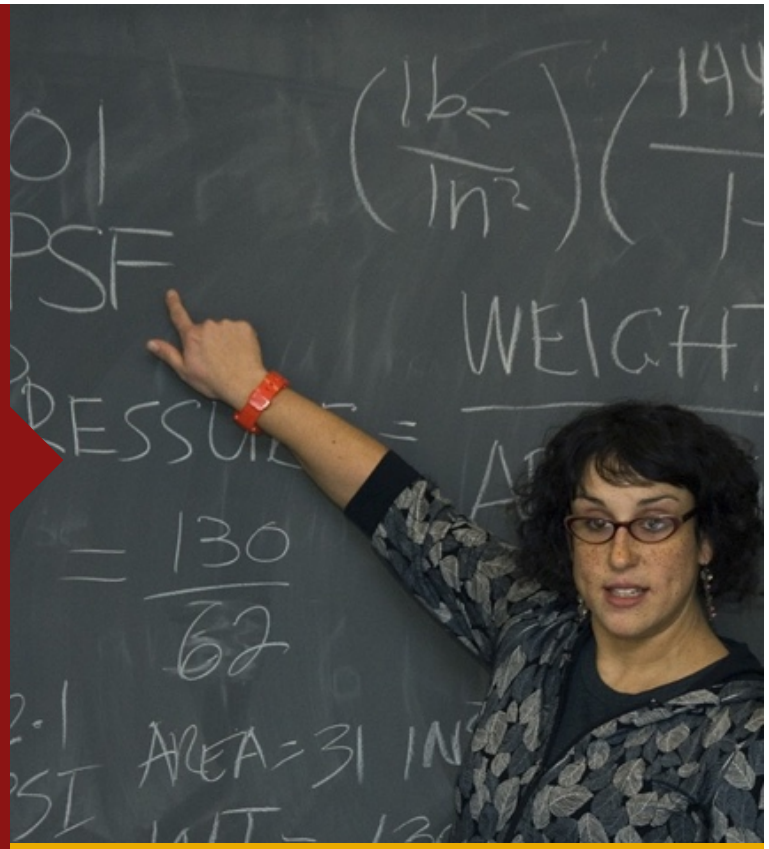
The project User needs

Students

I need to **explore materials and their properties** so I can understand the **meaning of material property data in context** of engineering design.

The project User needs

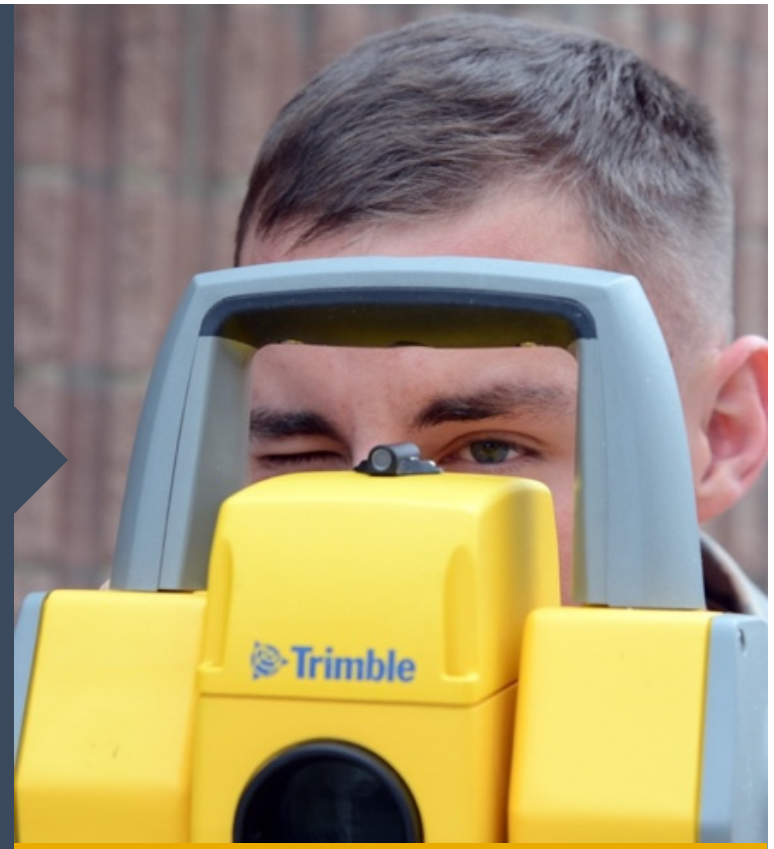
I need to **help students understand concepts and relationships** so they can become successful professionals.



Faculty

The project User needs

I need to **find appropriate materials** for my intended application.



Professionals

Designing an aeroplane

An example of using DataVis

HighWire

Materials need to be:

Lightweight

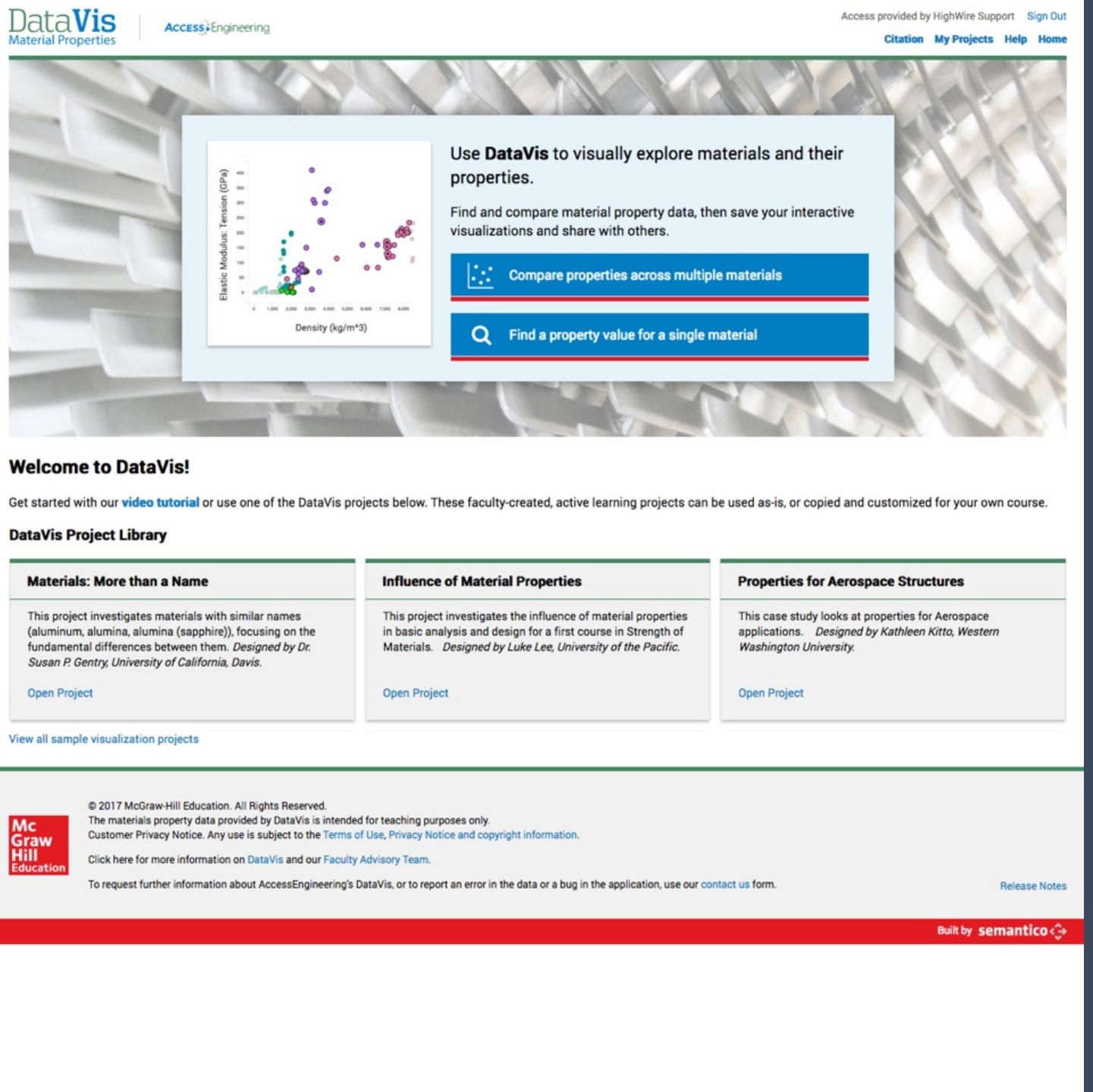
Strong

HighWire

Materials need to be:

Lightweight

Strong

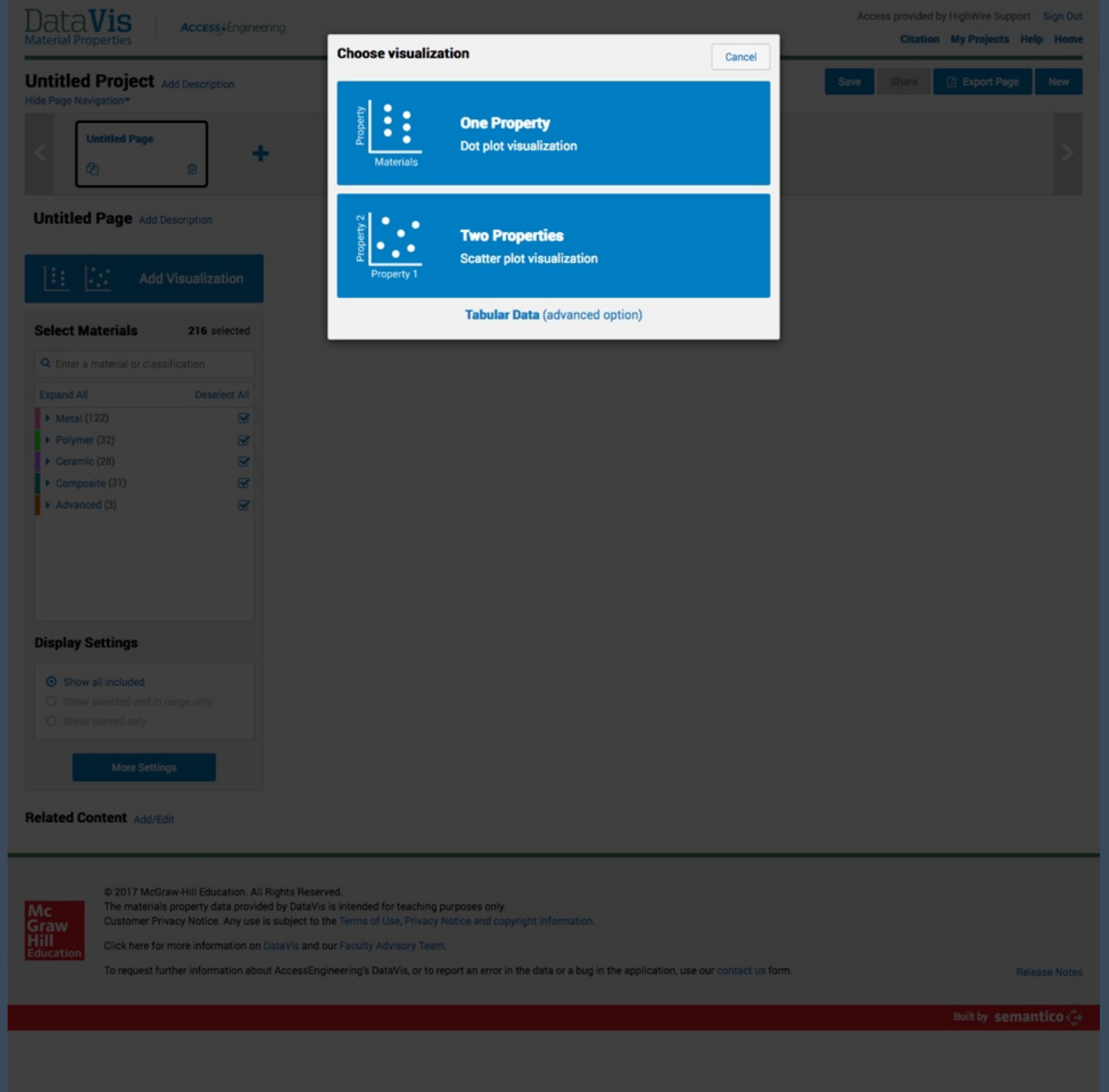


HighWire

Materials need to be:

Lightweight

Strong



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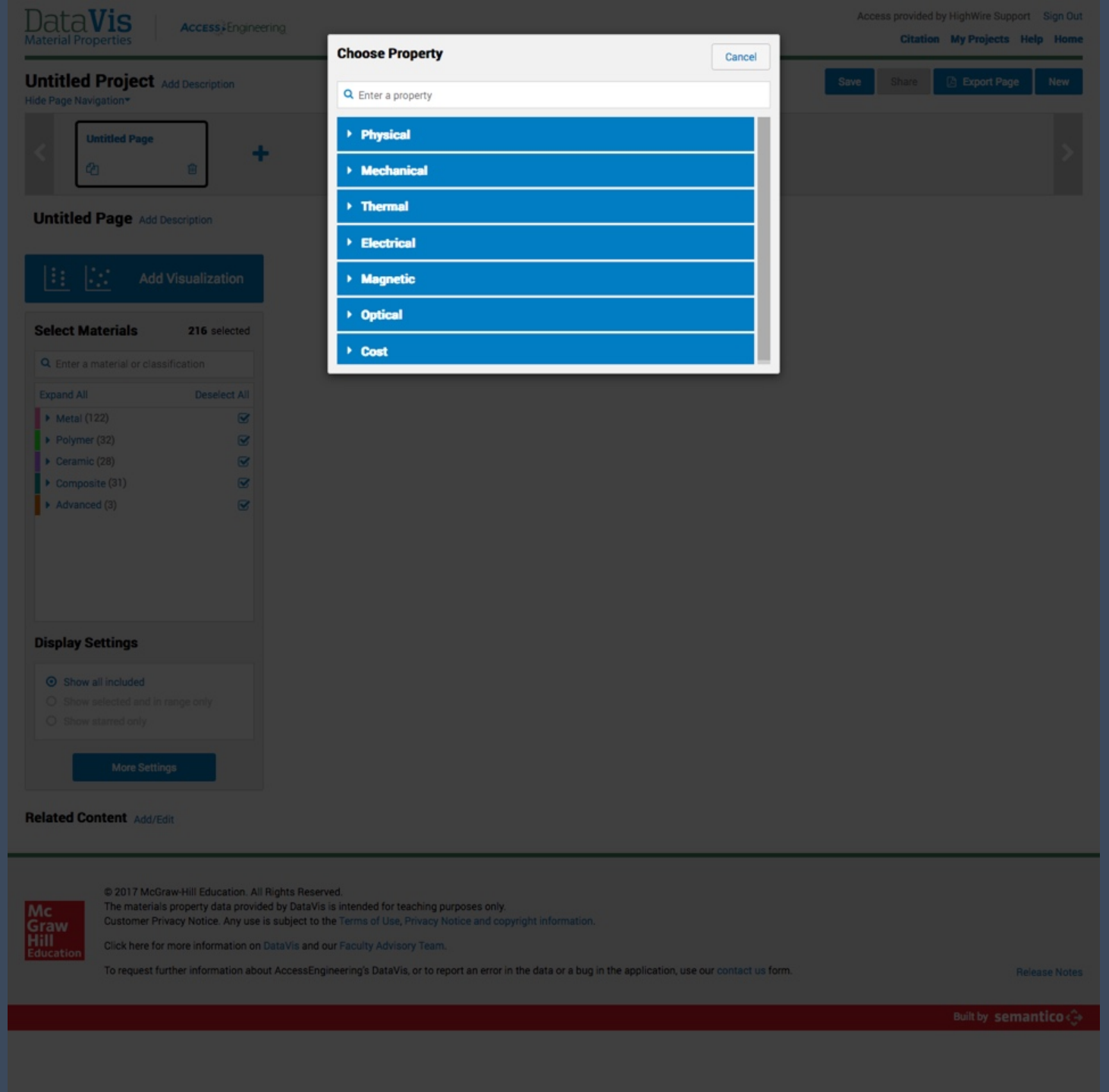

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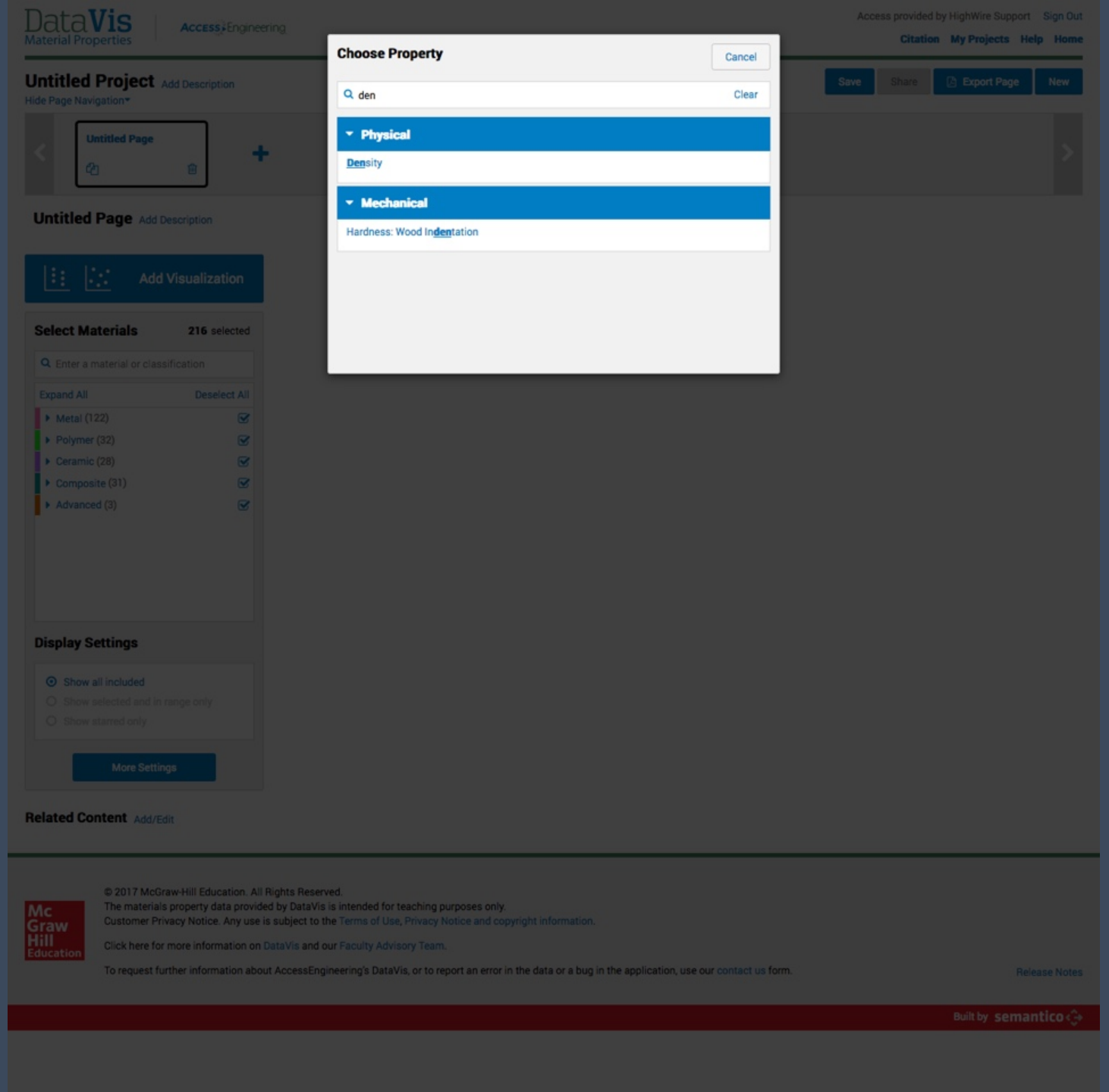

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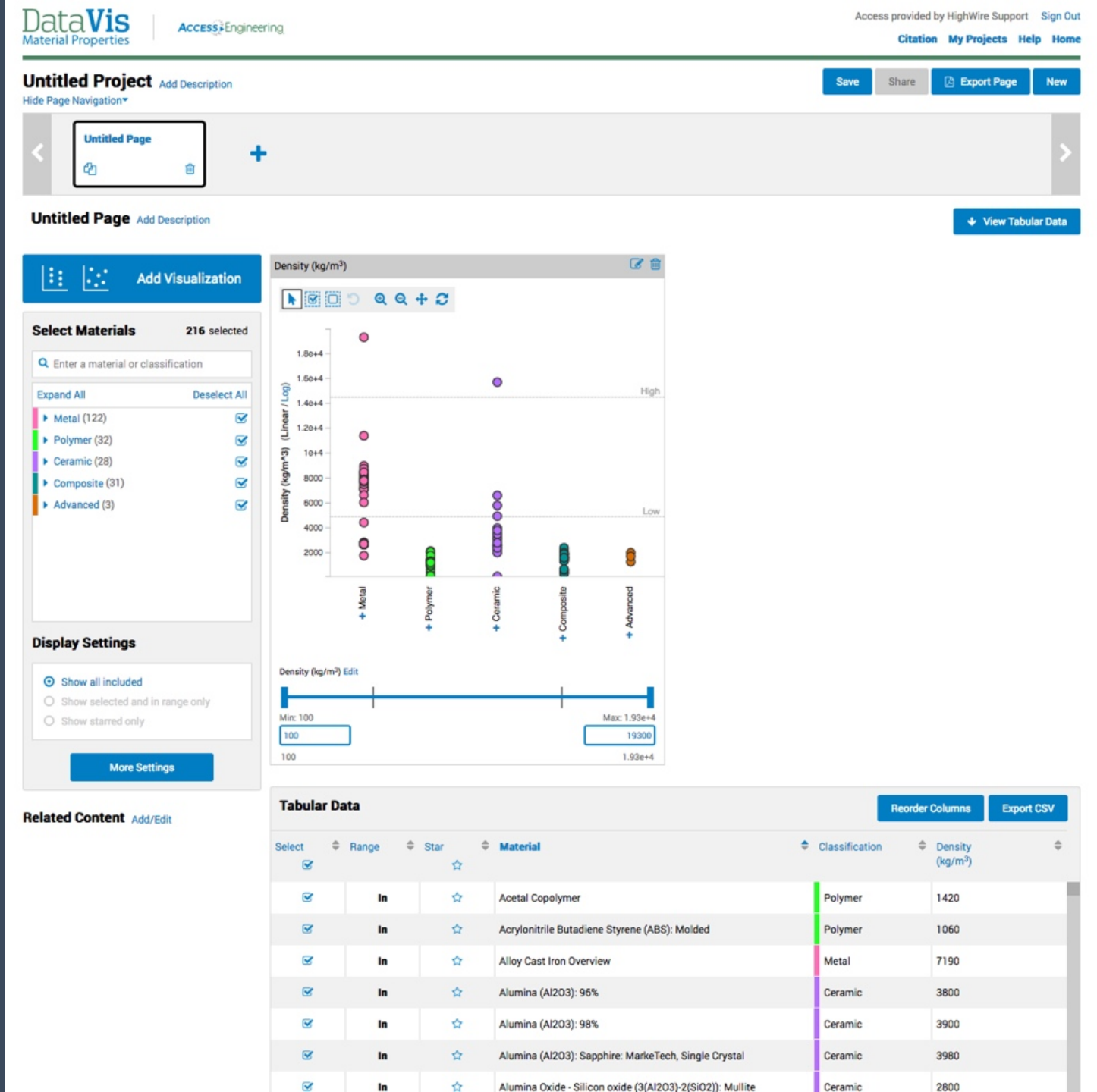

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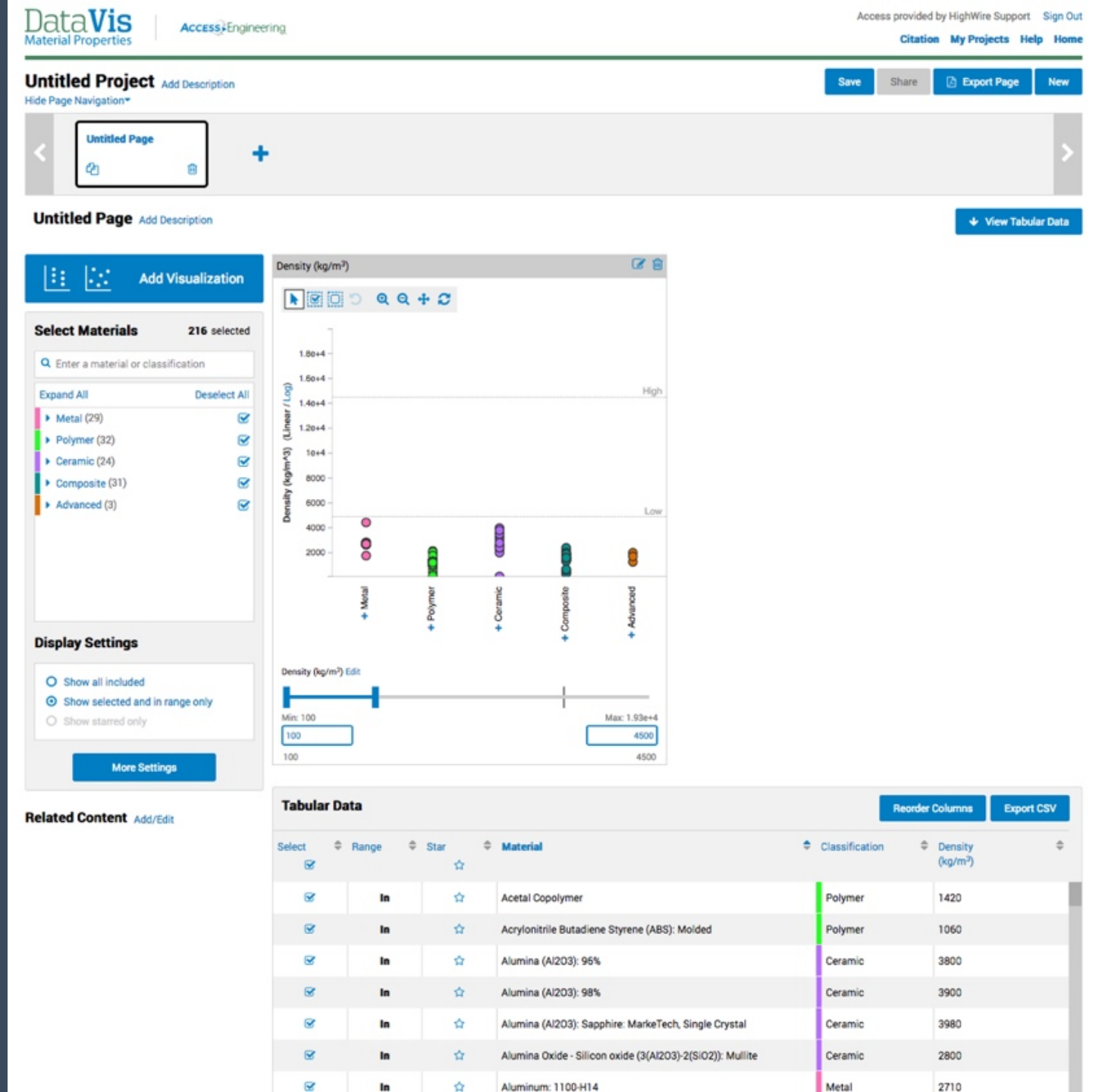

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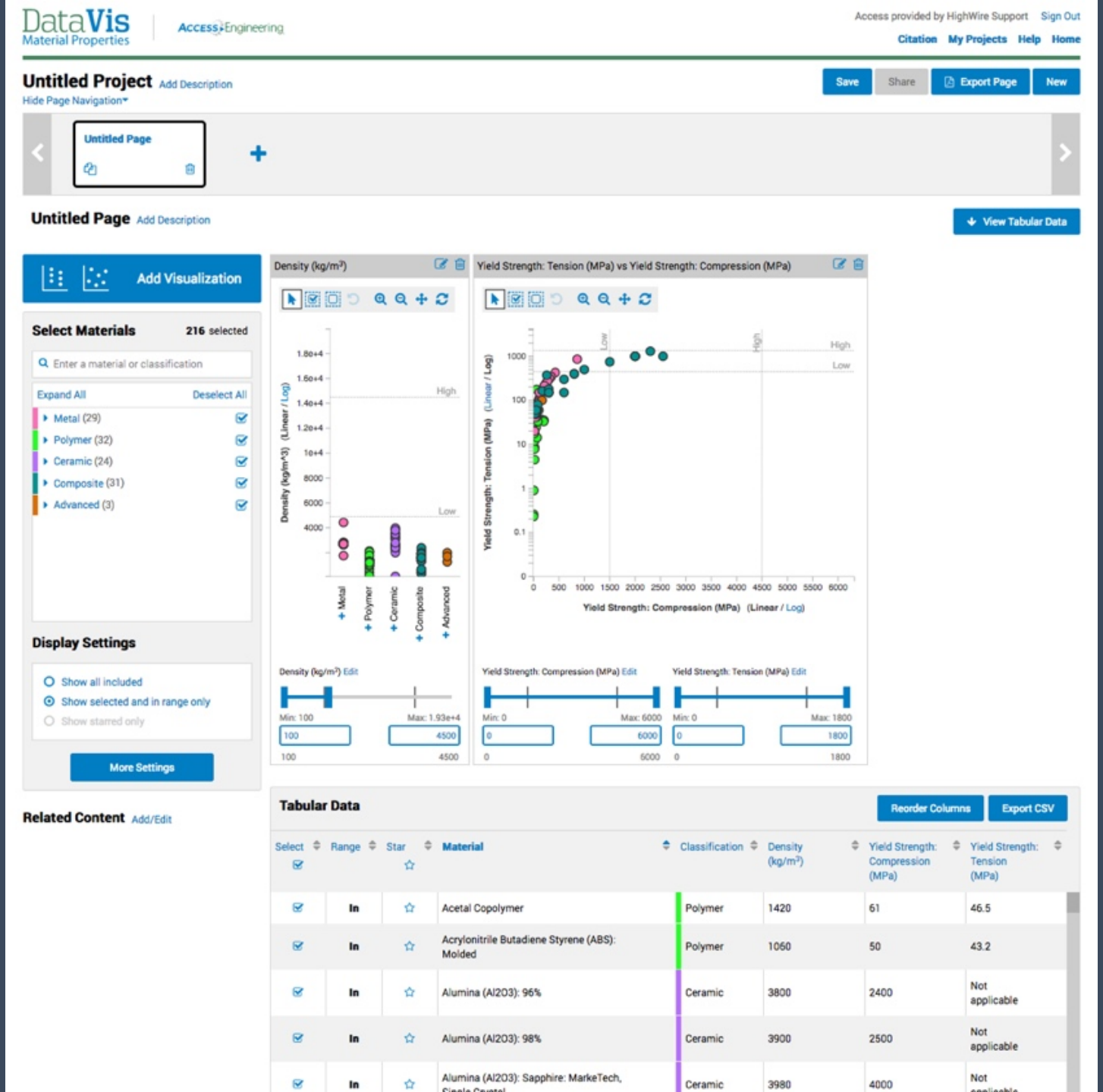

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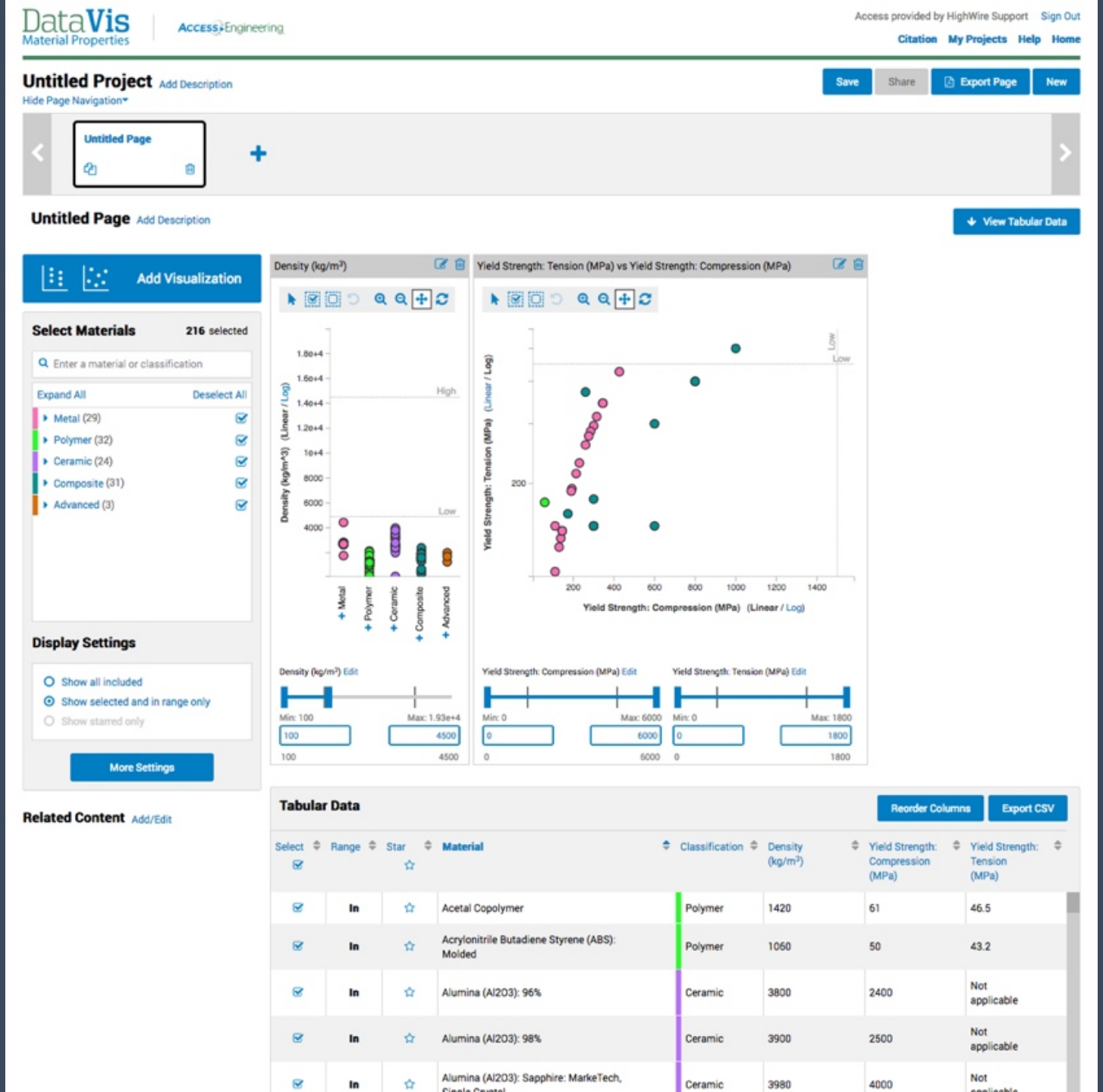

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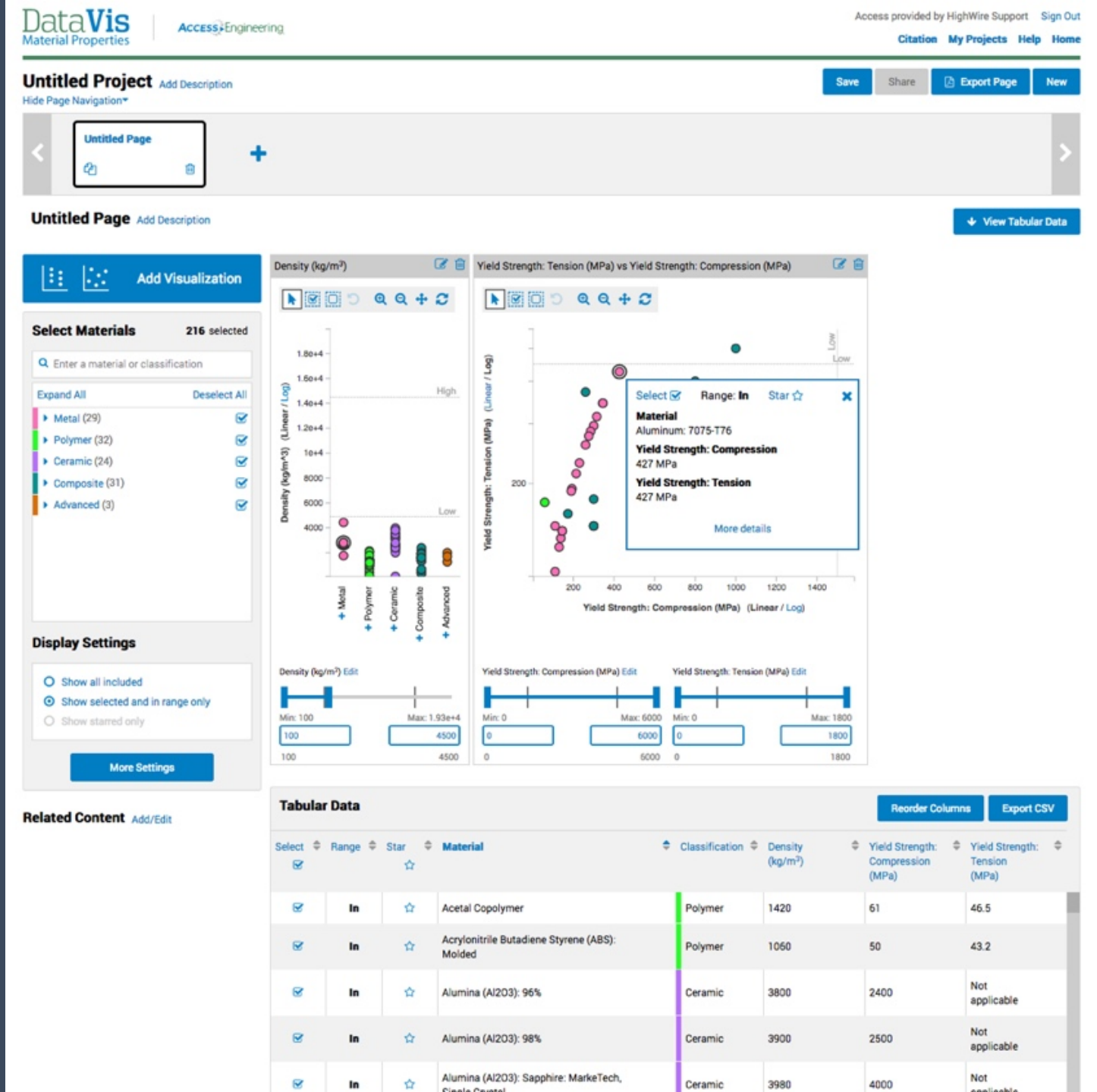

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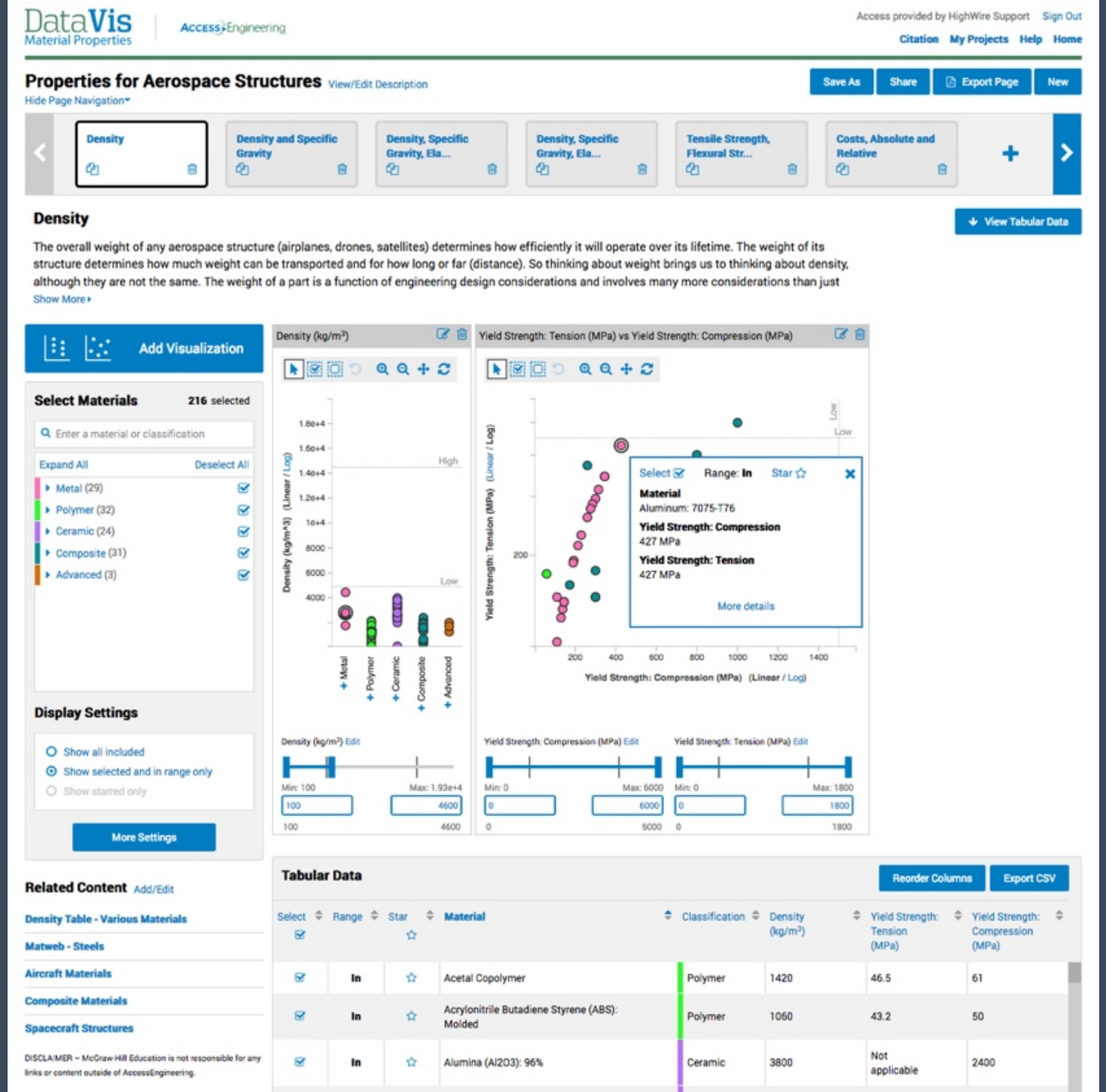


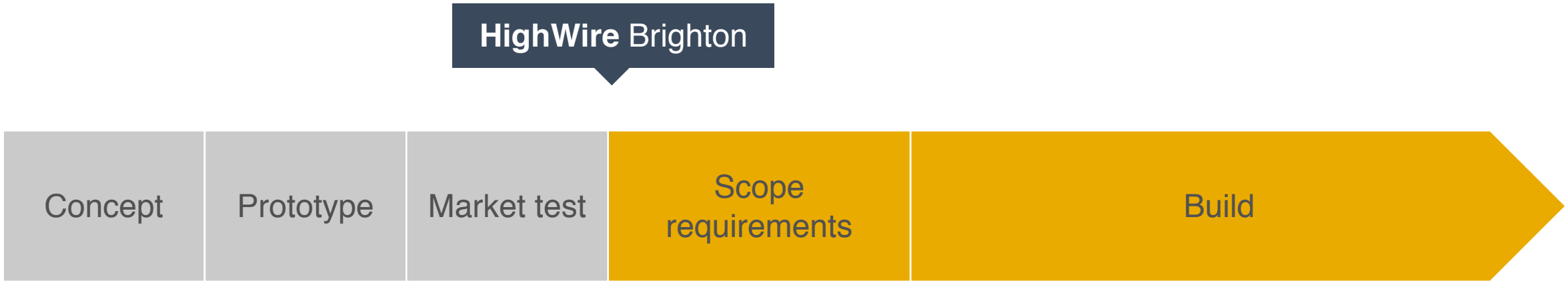
HighWire

The process

How we did it

HighWire

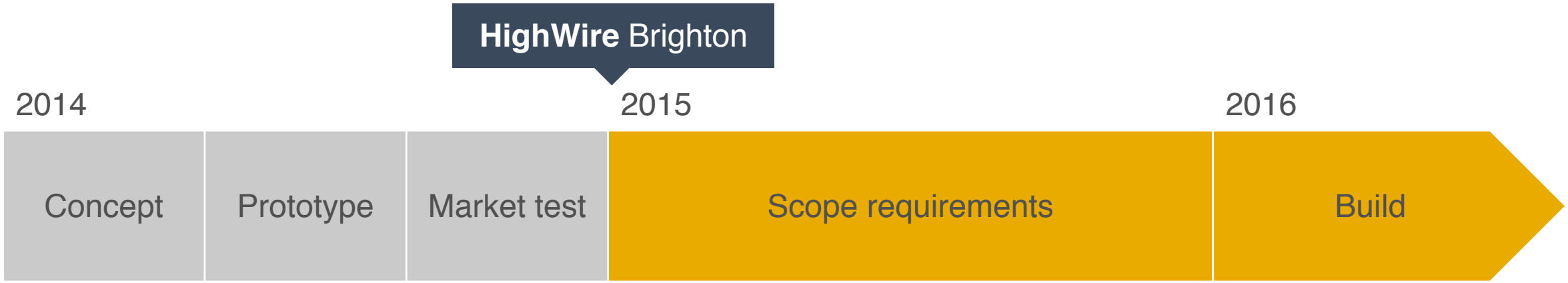
The process What we planned



Discovery & definition

Development & delivery

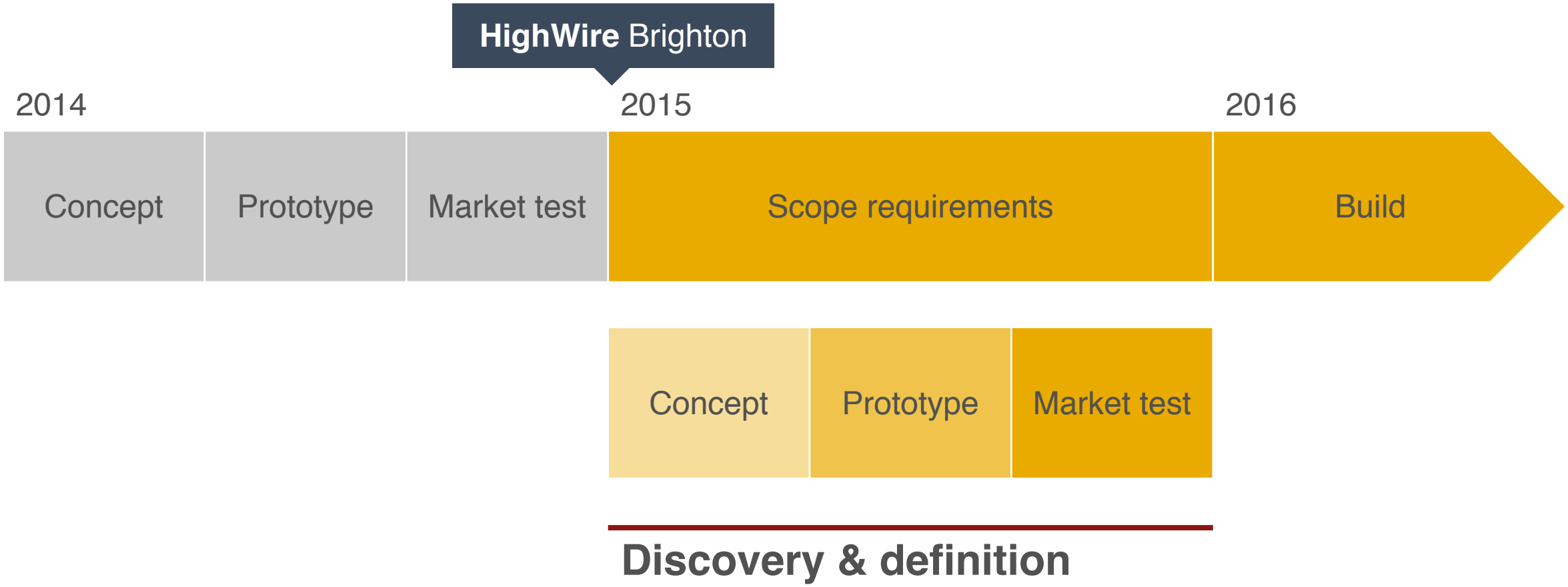
The process What we did



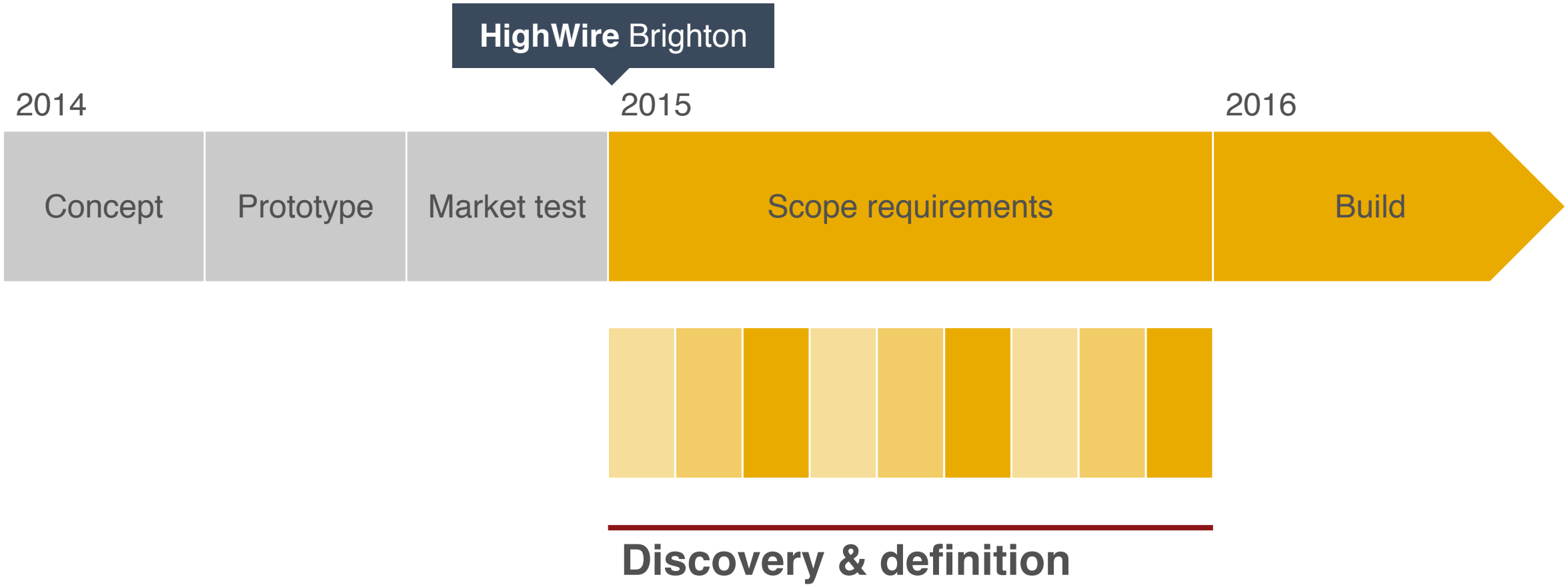
Discovery & definition

Development & delivery

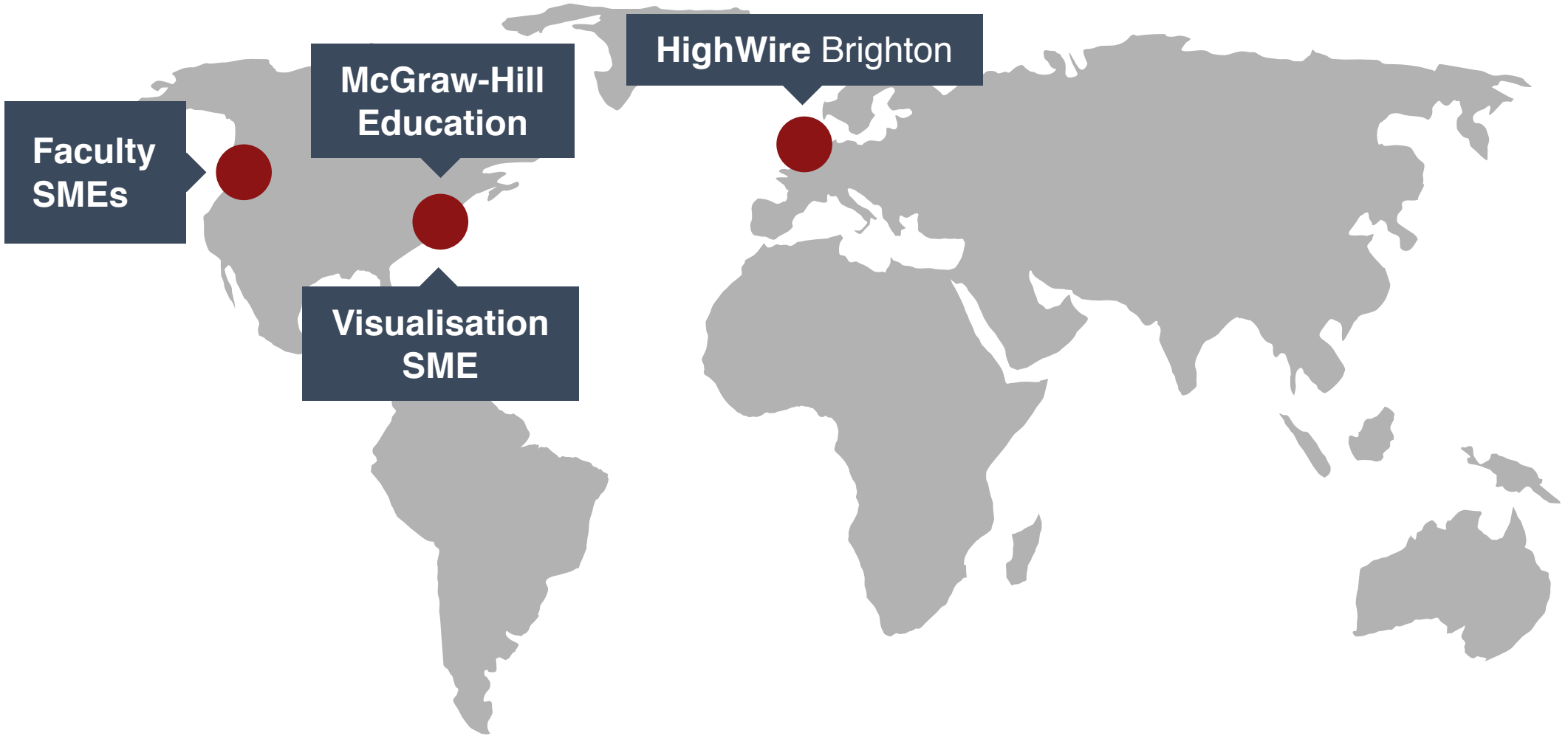
The process What we did



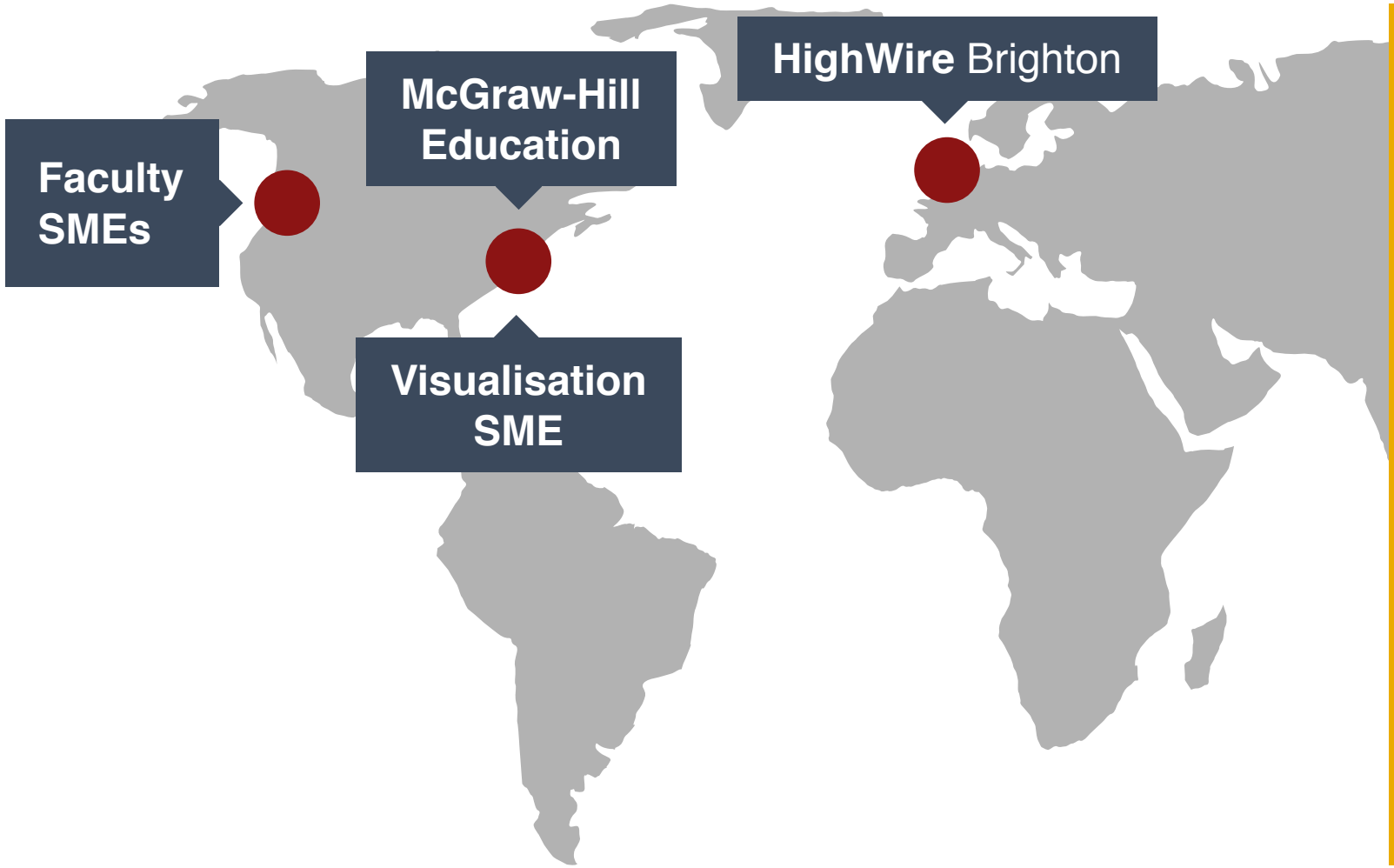
The process What we did



The process Who was involved



The process How we worked



Fostering collaboration across continents

- Real-time conversations
- Frequent demonstrations
- Agile methodology with quick cadence

The process Design challenges

Make complex features easy to use

- Support a range of subject matter expertise
- Support first-time, occasional and power users

Integrate DataVis into AccessEngineering

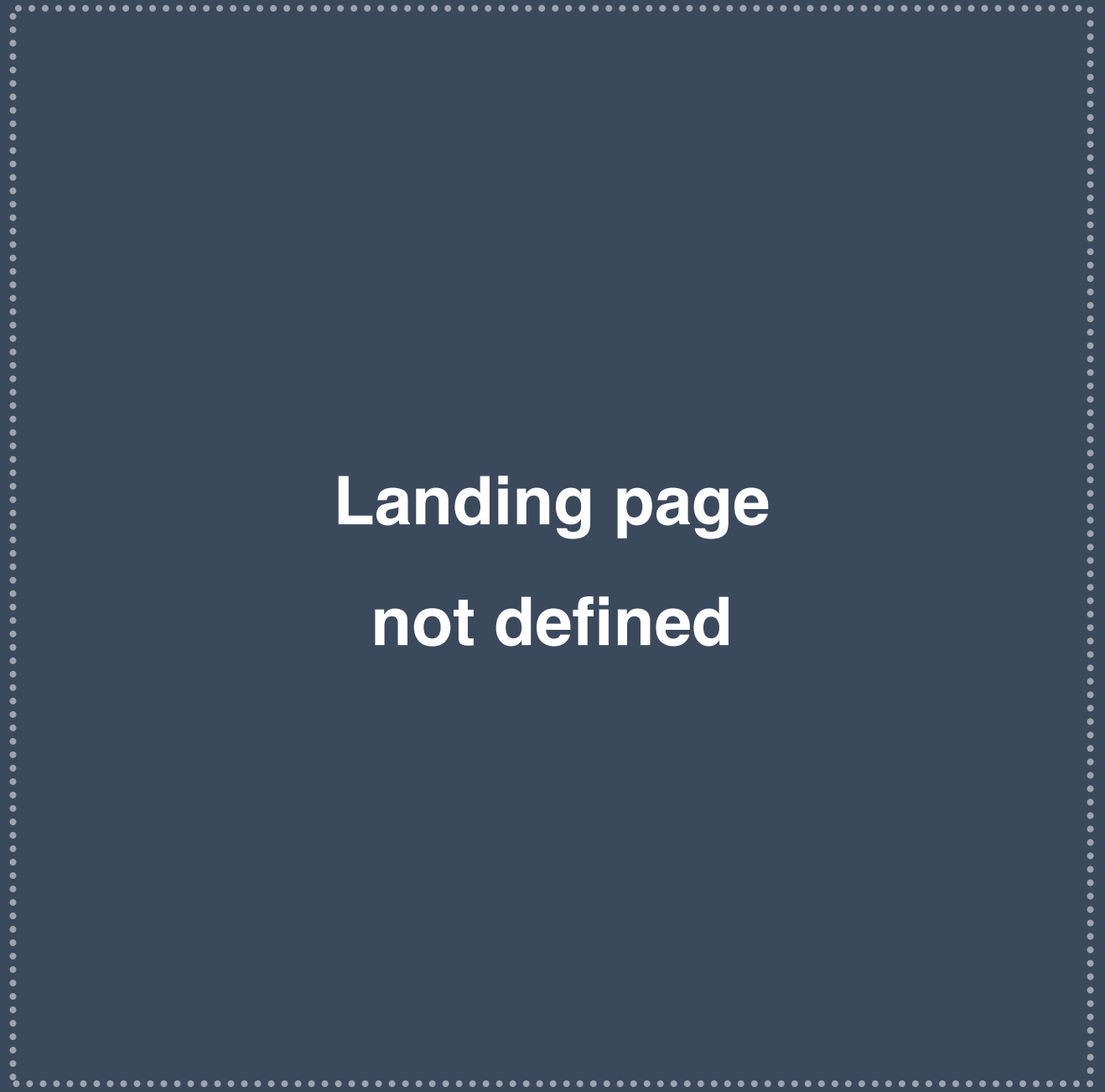
- Allow seamless access
- Maintain platform performance
- Develop distinct yet integrated brand / identity

Data-centric to user-centric

Landing page evolution

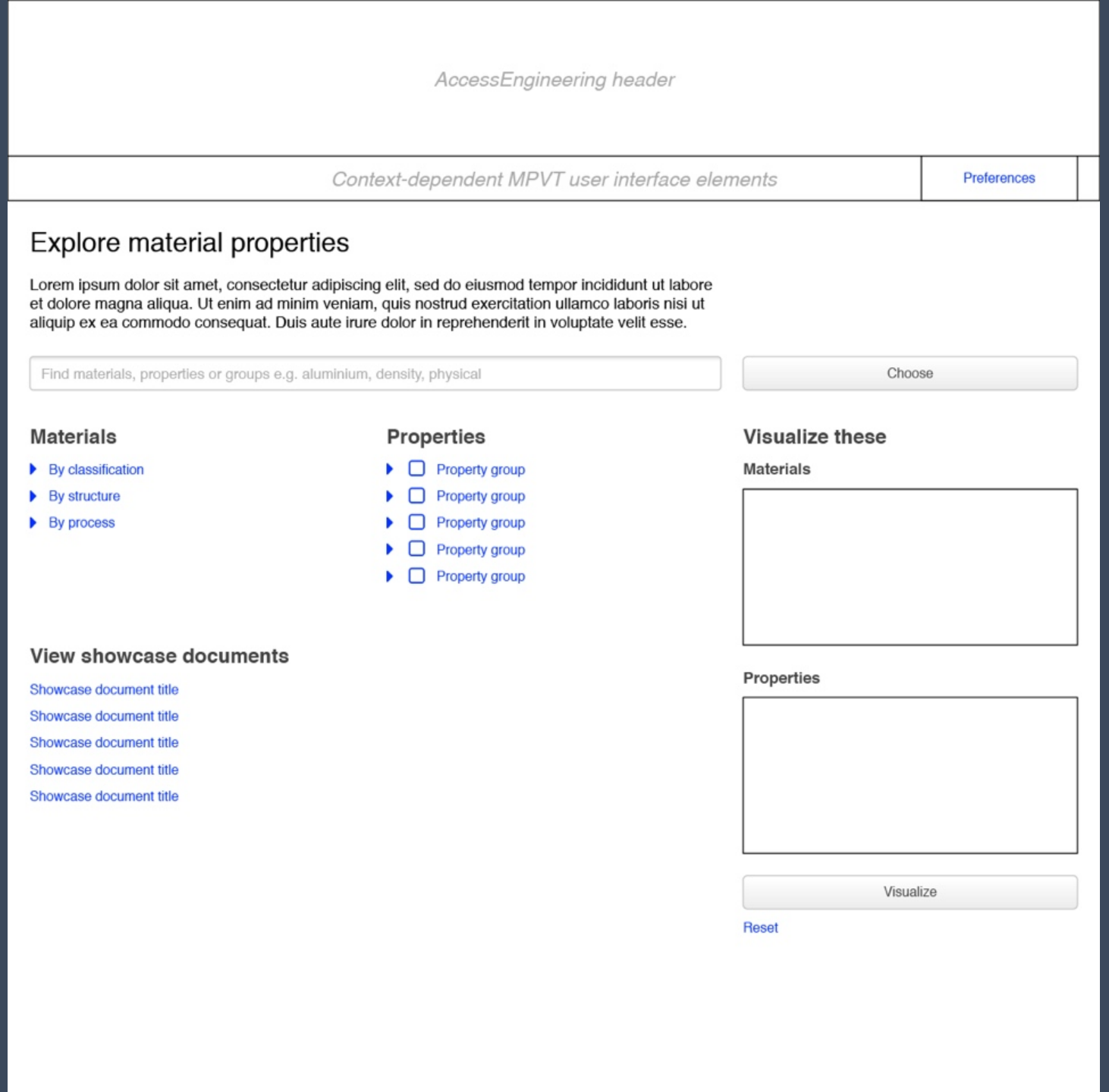
HighWire

Iteration 0



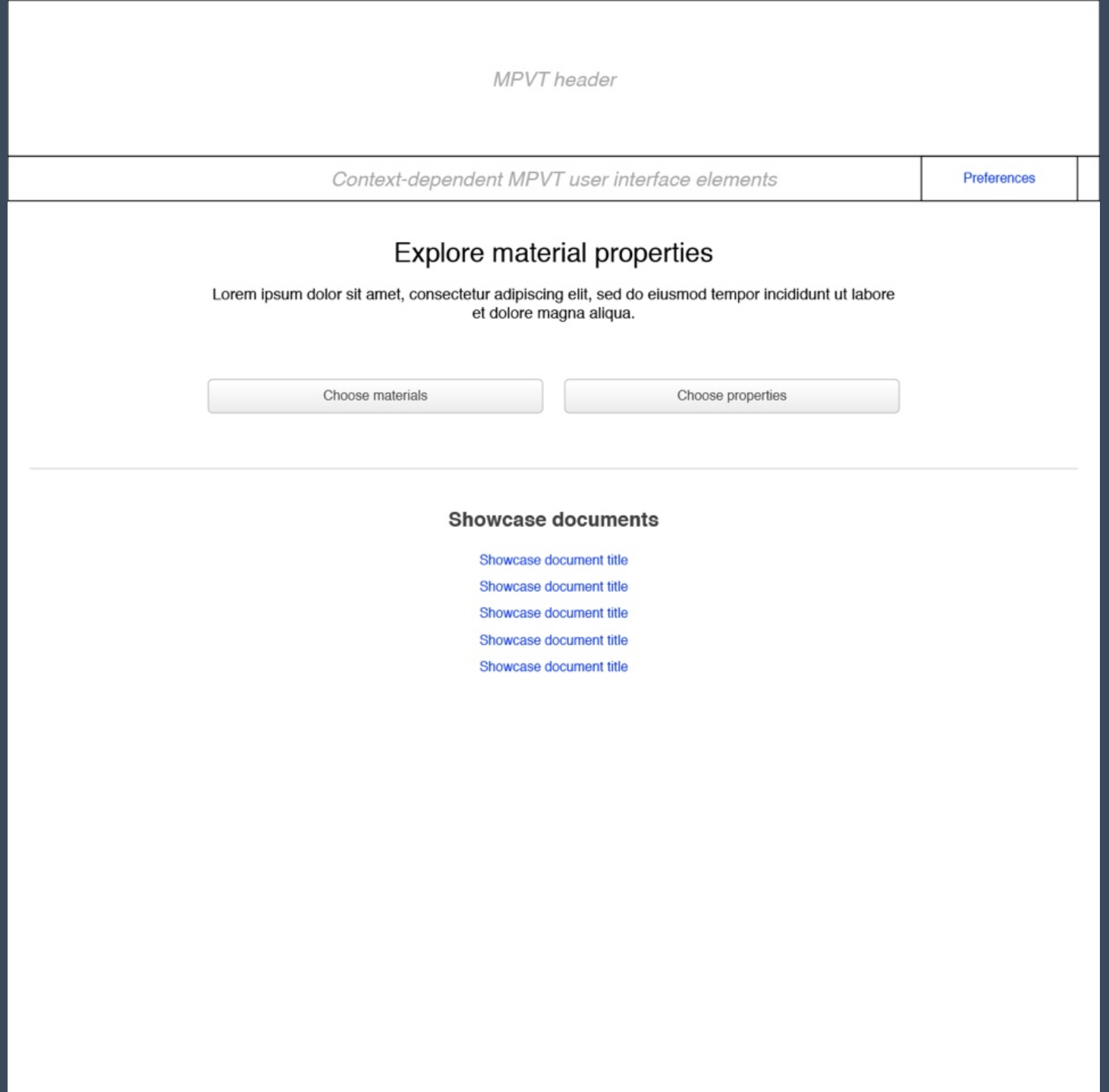
HighWire

Iteration 1



HighWire

Iteration 2



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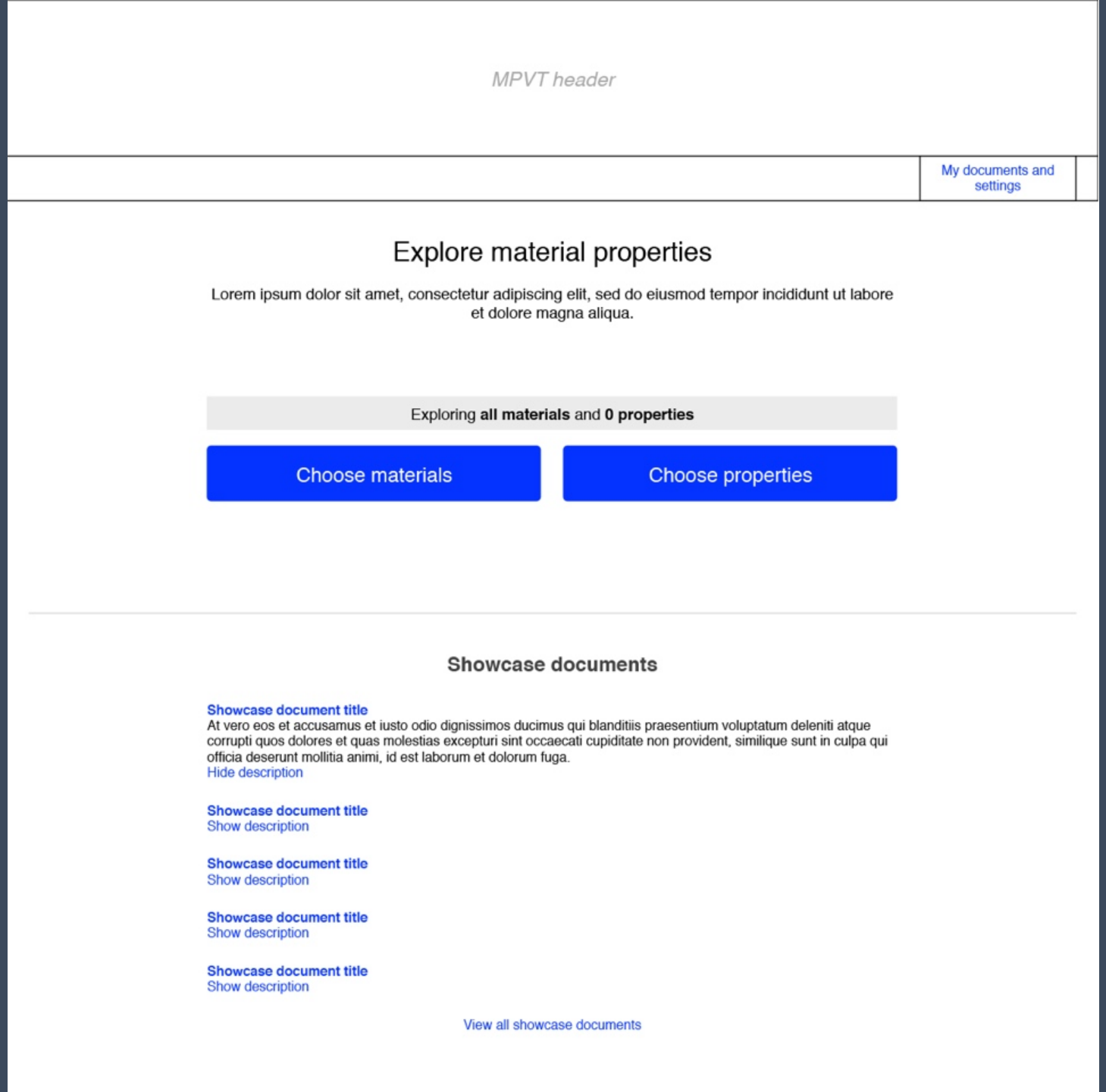
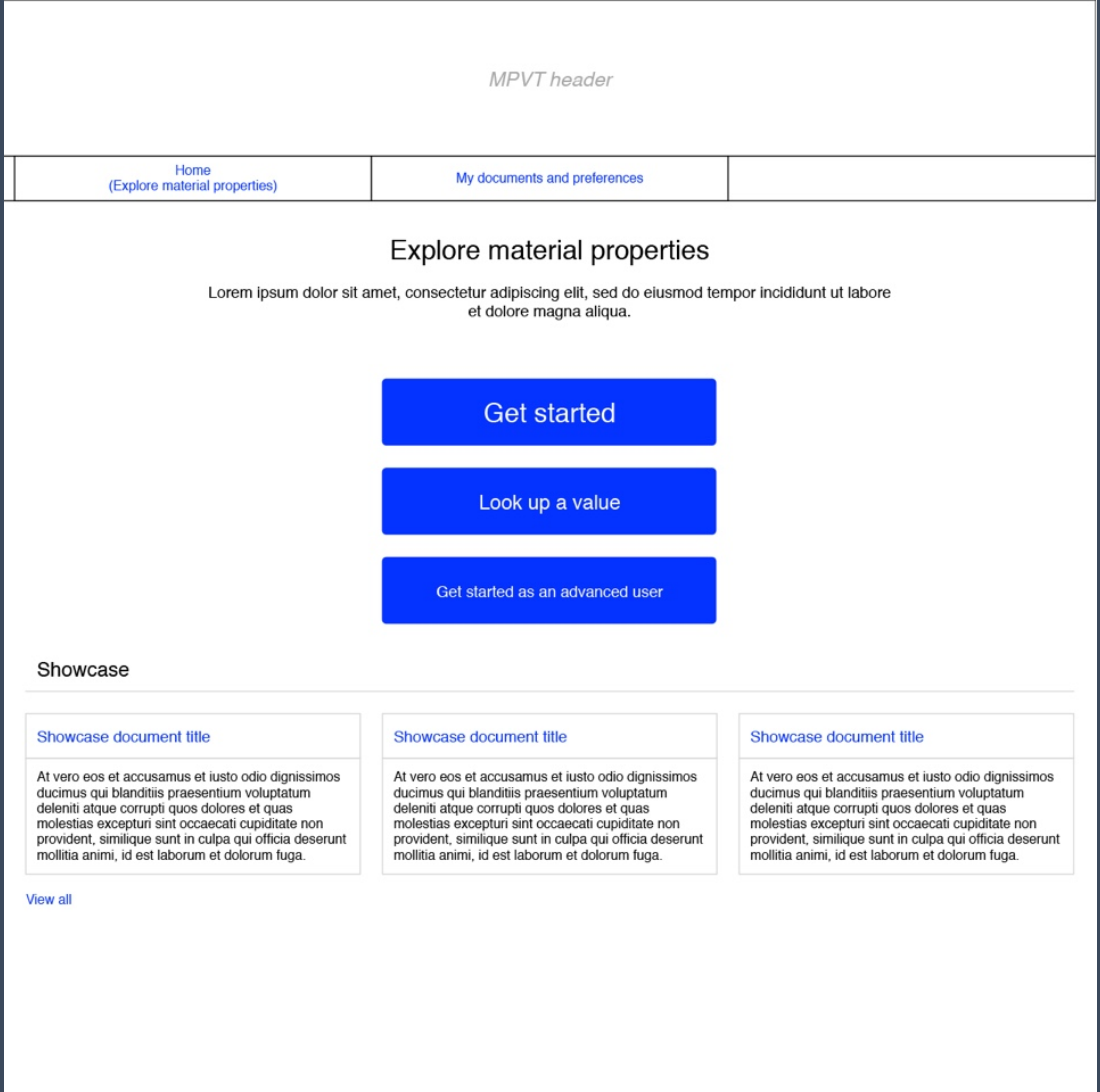


HighWire

Iteration 4


MPVT header
Home
(Explore material properties)
My documents and preferences
Explore material properties
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Get started
Look up a value
Get started as an advanced user
Showcase
Showcase document title
At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga.
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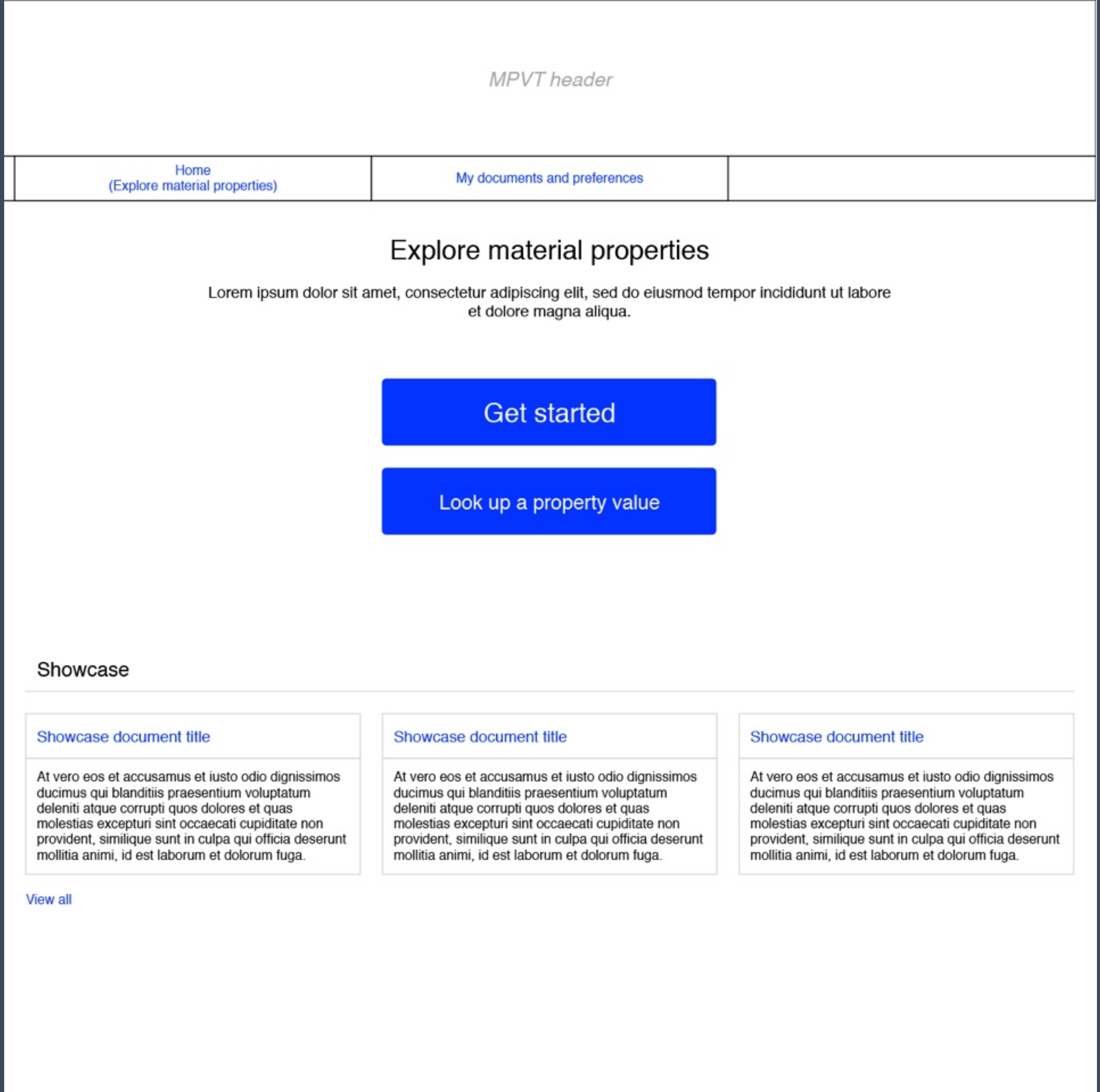
View all

Iteration 5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Home
(Explore material properties)
My documents and preferences
Explore material properties
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Get started
Look up a property value
Showcase
Showcase document title
At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga.
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View all

Iteration 6

MPVT header

Home	My documents and preferences	

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
Tools and a curated database of engineering materials and their properties.
Explore, compare, visualize, select, create.

Explore material properties

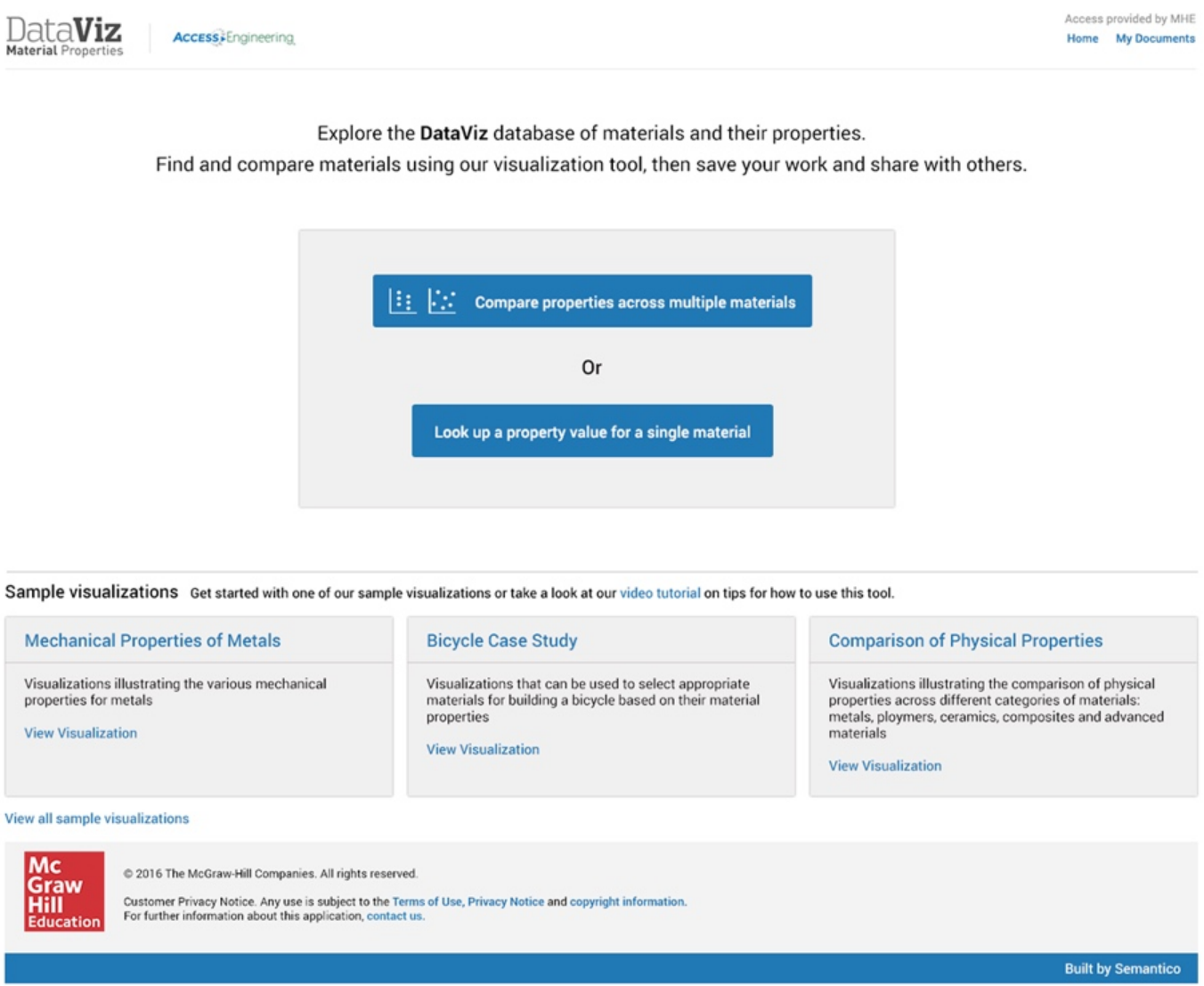
Look up a property value

Showcase

Showcase document title	Showcase document title	Showcase document title
At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga.	At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga.	At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga.

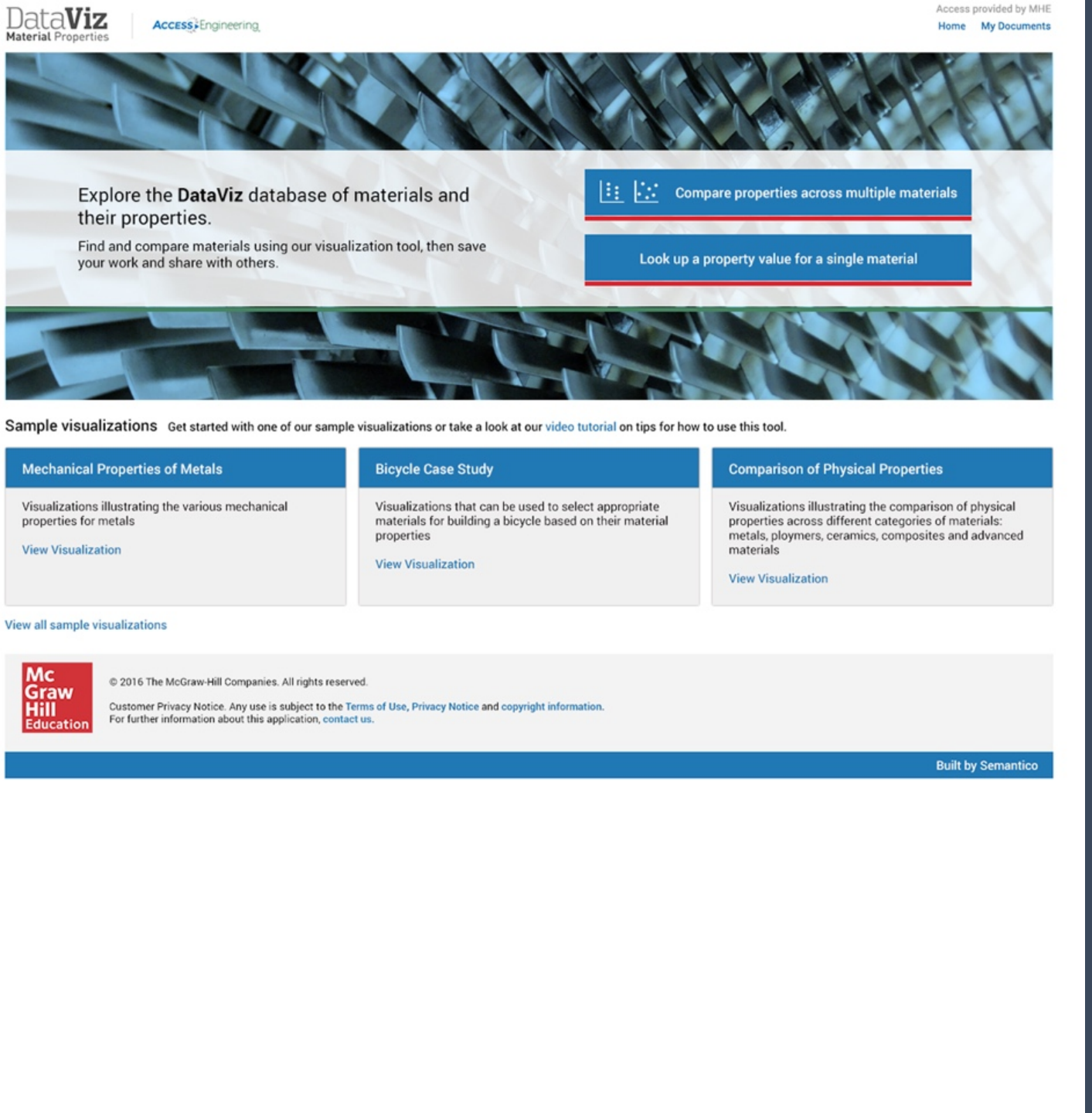
View all

Iteration 7



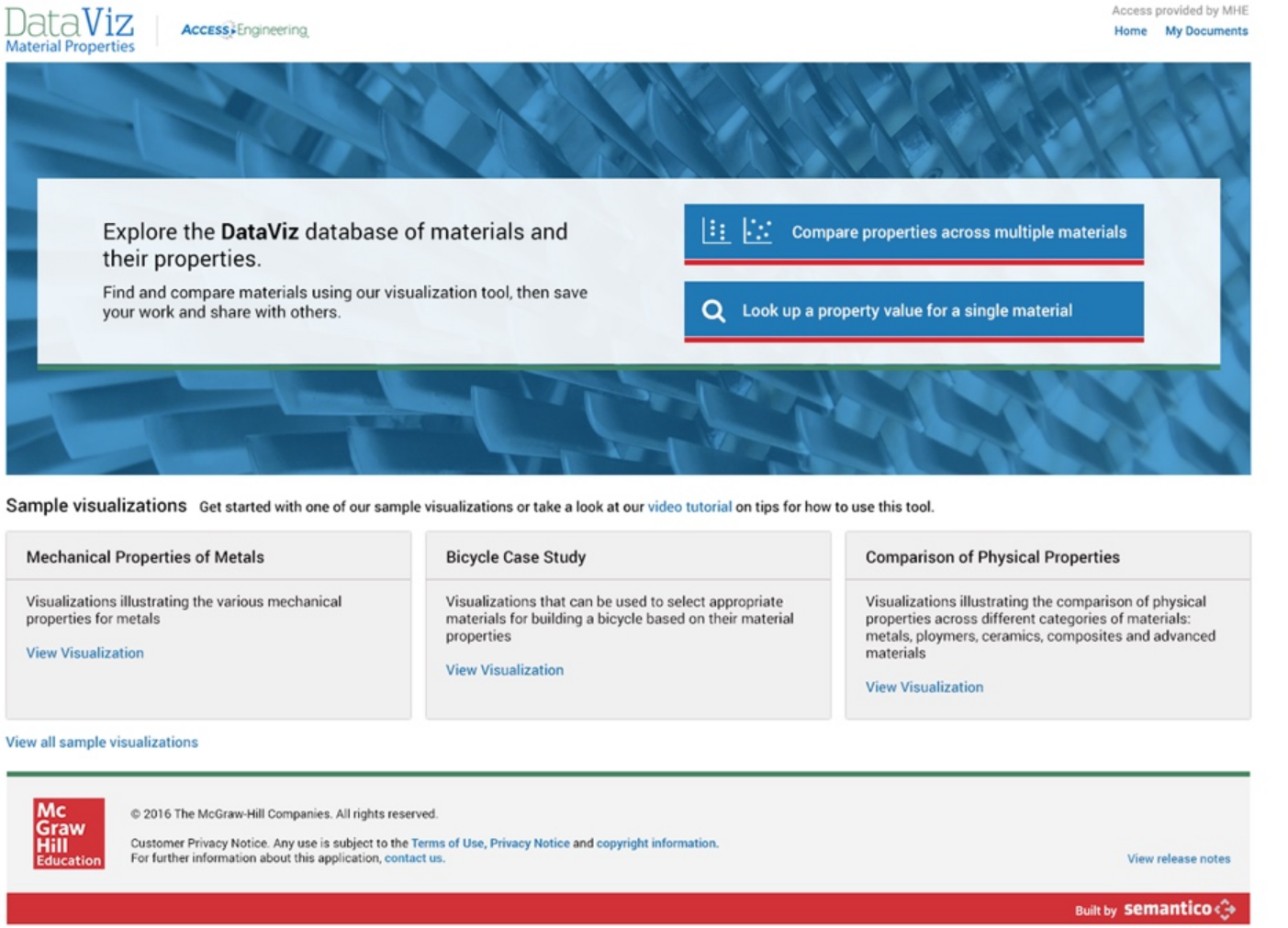
HighWire

Iteration 8



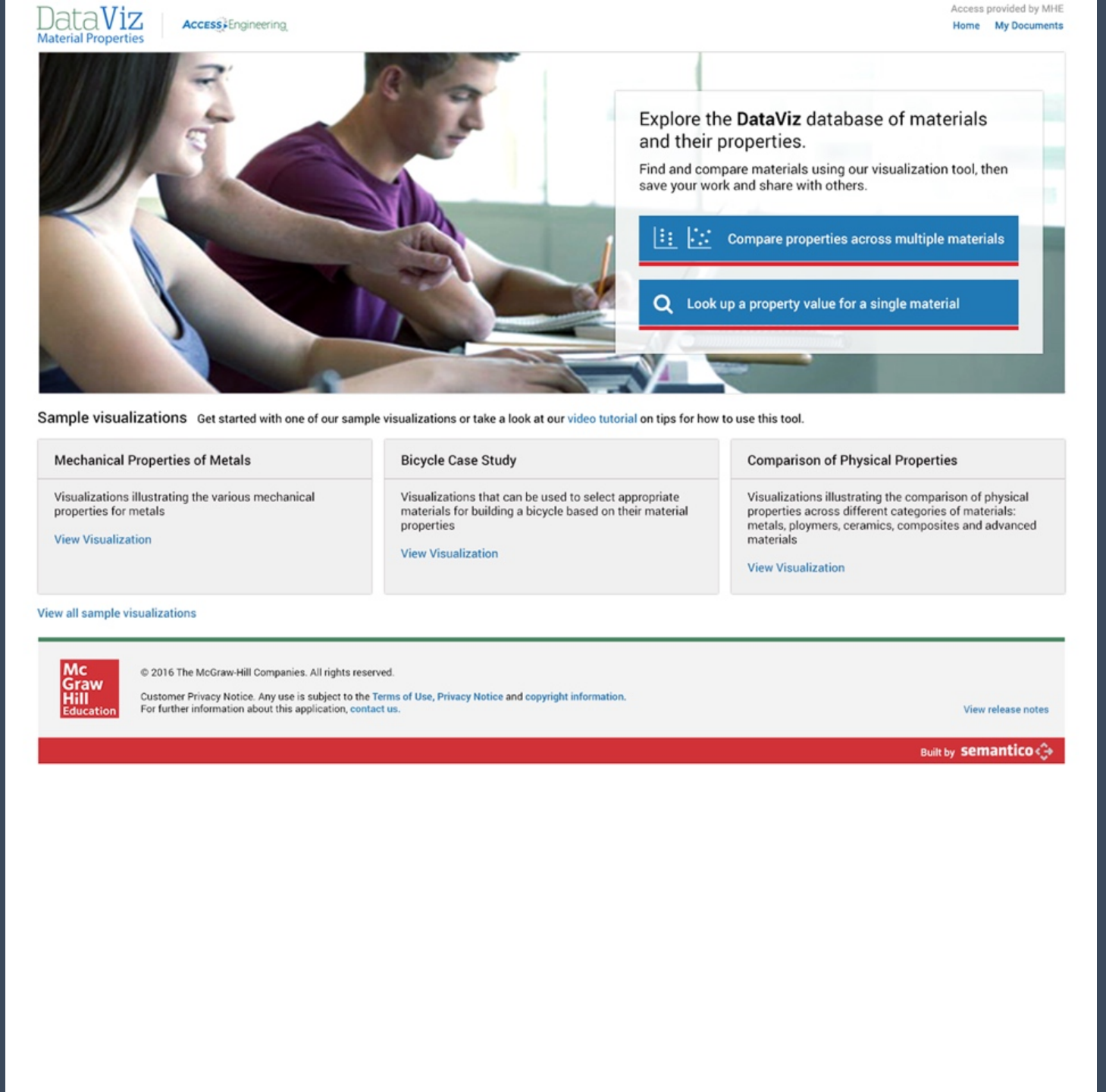
HighWire

Iteration 9



HighWire

Iteration 10



HighWire

Iteration 11

DataViz
Material Properties

ACCESS Engineering

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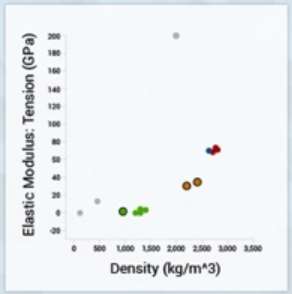


Explore the **DataViz** database of materials and their properties.

Find and compare materials using our visualization tool, then save your work and share with others.

Compare properties across multiple materials

Look up a property value for a single material

Sample visualizations Get started with one of our sample visualizations or take a look at our video tutorial on tips for how to use this tool.

Mechanical Properties of Metals

Visualizations illustrating the various mechanical properties for metals

View Visualization

Bicycle Case Study

Visualizations that can be used to select appropriate materials for building a bicycle based on their material properties

View Visualization

Comparison of Physical Properties

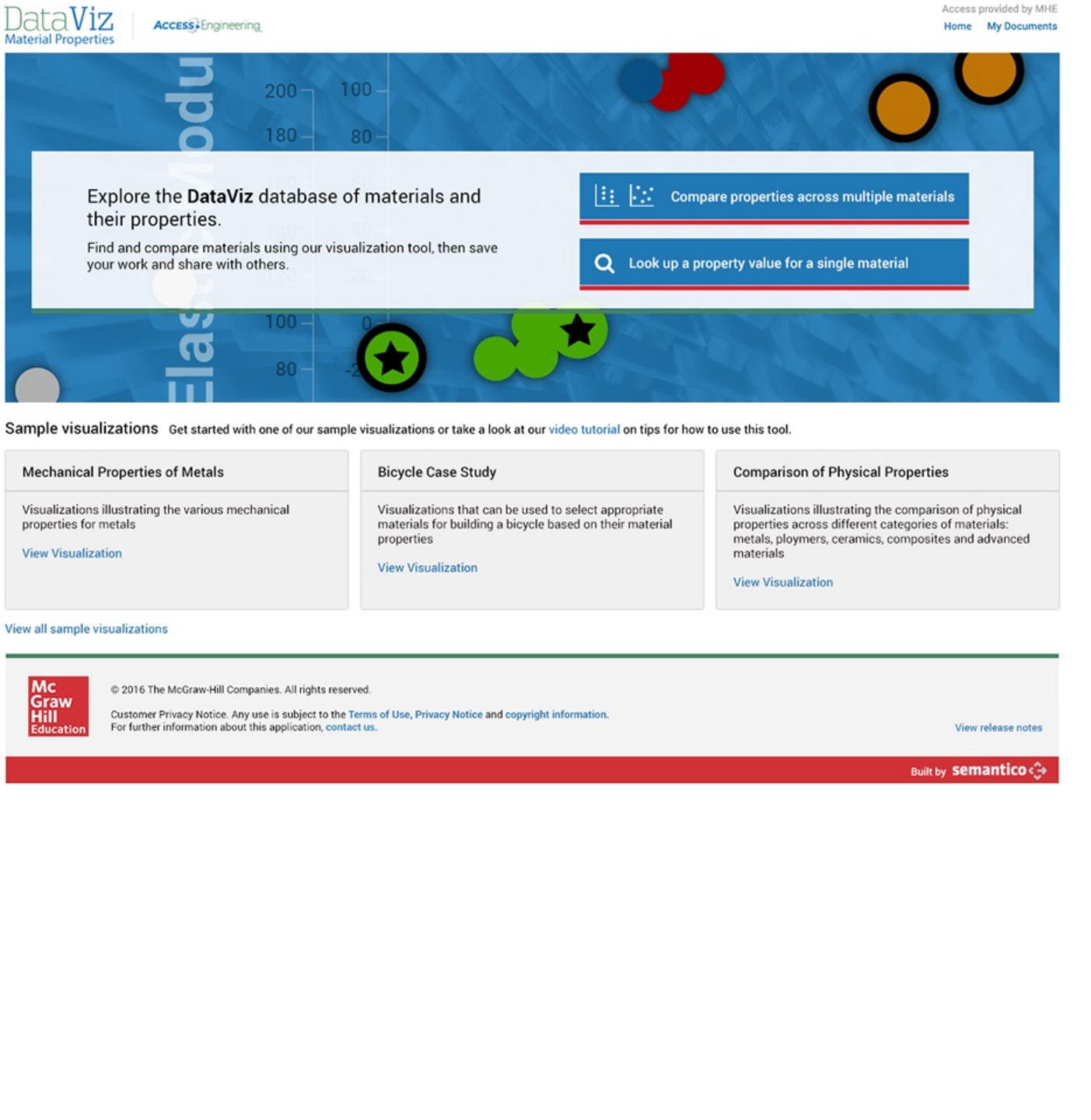
Visualizations illustrating the comparison of physical properties across different categories of materials: metals, ploymers, ceramics, composites and advanced materials

View Visualization

View all sample visualizations

HighWire

Iteration 12



HighWire

Iteration 13

DataViz
Material Properties

ACCESS Engineering

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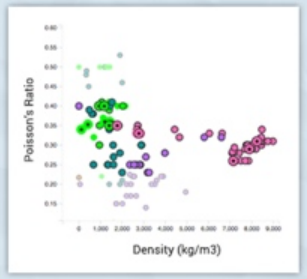

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HighWire

Iteration 14

DataViz
Material Properties

ACCESS Engineering

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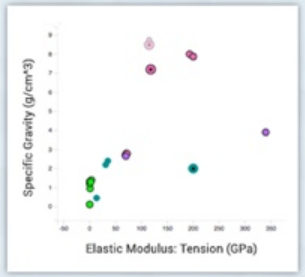

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View Visualization

View all sample visualizations

Iteration 15

DataVis
Material Properties

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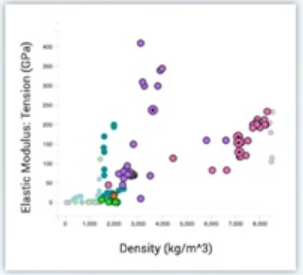

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View Visualization

View all sample visualizations

HighWire

Iteration 16

DataVis
Material Properties

ACCESS Engineering

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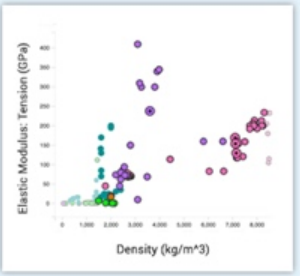

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Iteration 17

DataVis
Material Properties
ACCESS Engineering

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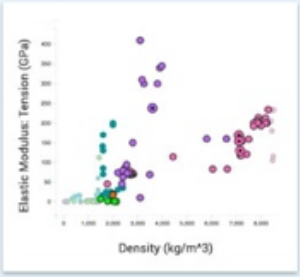

Use **DataVis** to visually explore materials and their properties.

Find and compare material property data, then save your interactive visualizations and share with others.

Compare properties across multiple materials

Find a property value for a single material

Welcome to DataVis!

Get started with our **video tutorial** or use one of the DataVis projects below. These faculty-created, active learning projects can be used as-is, or copied and customized for your own course.

DataVis Project Library

Materials: More than a Name

This project investigates materials with similar names (aluminum, alumina, alumina (sapphire)), focusing on the fundamental differences between them. *Designed by Dr. Susan P. Gentry, University of California, Davis.*

Open Project

Influence of Material Properties

This project investigates the influence of material properties in basic analysis and design for a first course in Strength of Materials. *Designed by Luke Lee, University of the Pacific.*

Open Project

Properties for Aerospace Structures

This case study looks at properties for Aerospace applications. *Designed by Kathleen Kitto, Western Washington University.*

Open Project

View all sample visualization projects

Mc Graw Hill Education

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To request further information about AccessEngineering's DataVis, or to report an error in the data or a bug in the application, use our contact us form.

Release Notes

Built by semantico

HighWire

Integrated identity

Seamless access

Key user tasks

Help for new users

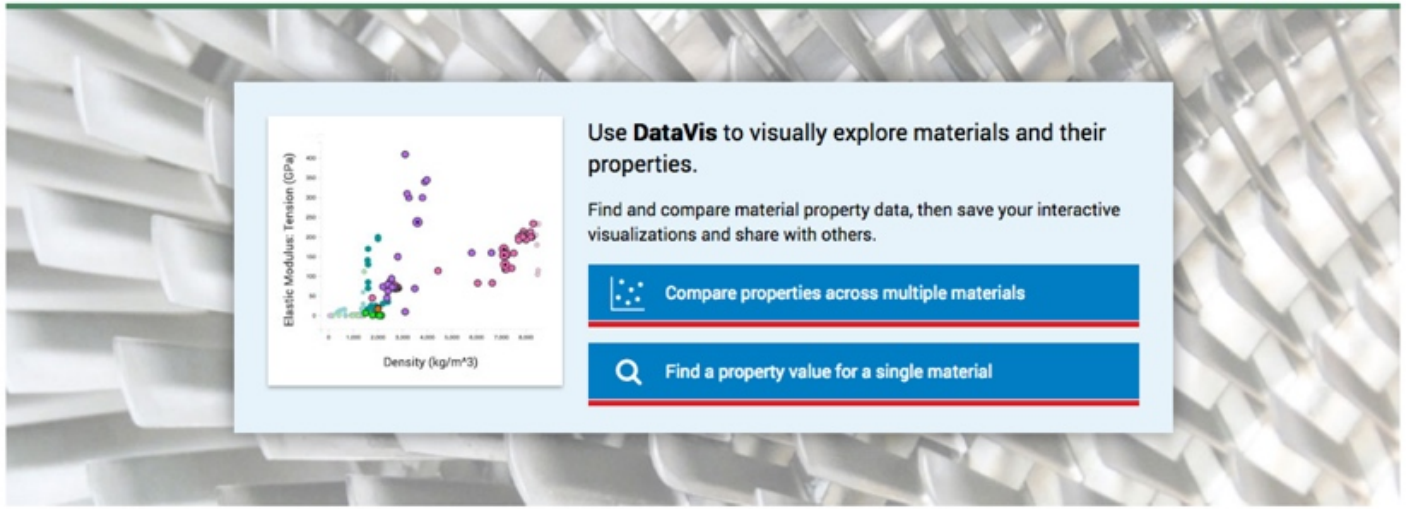
Example applications

DataVis
Material Properties

AccessEngineering

Access provided by HighWire Support Sign Out

Citation My Projects Help Home



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HighWire

Launched **on time** in July 2016

Received **positive feedback**

Won a **2017 PROSE award**

2012
AccessEngineering

2017
DataVis

"I like **how easy it is** to compare and contrast the properties"

"[DataVis] **helped me better understand** the differences in the materials"

bit.ly/mhedatavis

Thank you.

HighWire