Digital Construction

Driving Efficiency and Sustainability

A digital transformation journey for metal building envelopes

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Sr. Director of Strategic Accounts

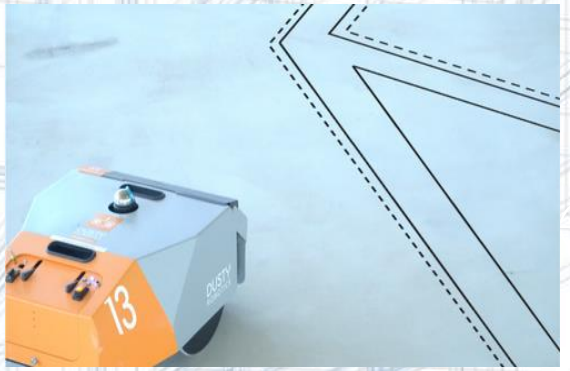
AWIP All Weather Insulated Panels

The Evolving Construction Landscape

Shifting demands: faster builds, higher performance, and energy efficiency

The challenge: integrating digital workflows into traditional construction

The opportunity: leveraging modern tools to meet new industry benchmarks



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Defining Digital Construction

Why?

Clash/collision detection

Identifies conflicts between MEP systems and avoids expensive problems on-site

Improved collaboration

Everyone accesses a centralized model

Accurate cost estimation

Detailed quantity takeoffs and budgeting

Streamlined scheduling

4D BIM includes time-related data, which helps with precise project planning

Reduced rework and change orders

Precise planning reduces rework

Lifecycle management

After construction, the model is used for maintenance, renovations, and operations

Defining Digital Construction

Why?

Dodge Data and Analytics and Deloitte Survey

Very Heavy Users

Expect to double their BIM implementation

Fewer Errors *34%*

Greater Cost Predictability *22%*

Better Understanding of Projects *21%*

Schedule Improvement 16%

Other benefits *7%*

Defining Digital Construction

Why?

Dodge Data and Analytics and Deloitte Survey

ROI

Very Heavy Users in the U.S.
Expect 5x – 10x cost savings

Globally, Very Heavy Users
Report as much as 25% ROI

Competitive Edge

Today: Providing BIM provides competitive edge
BIM is being specified and expected

Future: BIM will be the expected standard

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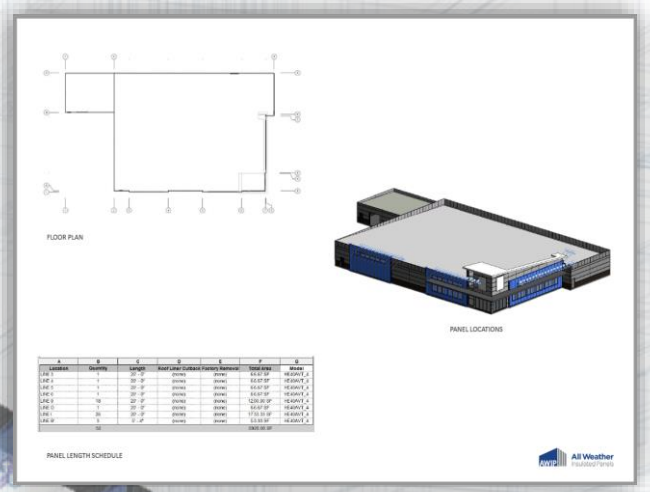
Defining Digital Construction

BIM (Building Information Modeling) as the foundation

Digital workflows: preconstruction to installation using a BIM implementation plan

Benefits: enhanced collaboration, precision, and reduced rework



Defining Digital Construction

BIM Defined:

Building Information Modeling (BIM) is a collaborative process that uses a single 3D structure to help architects, engineers and other construction professionals design, plan and manage a construction project throughout its lifecycle, as well as continuing maintenance and operation.

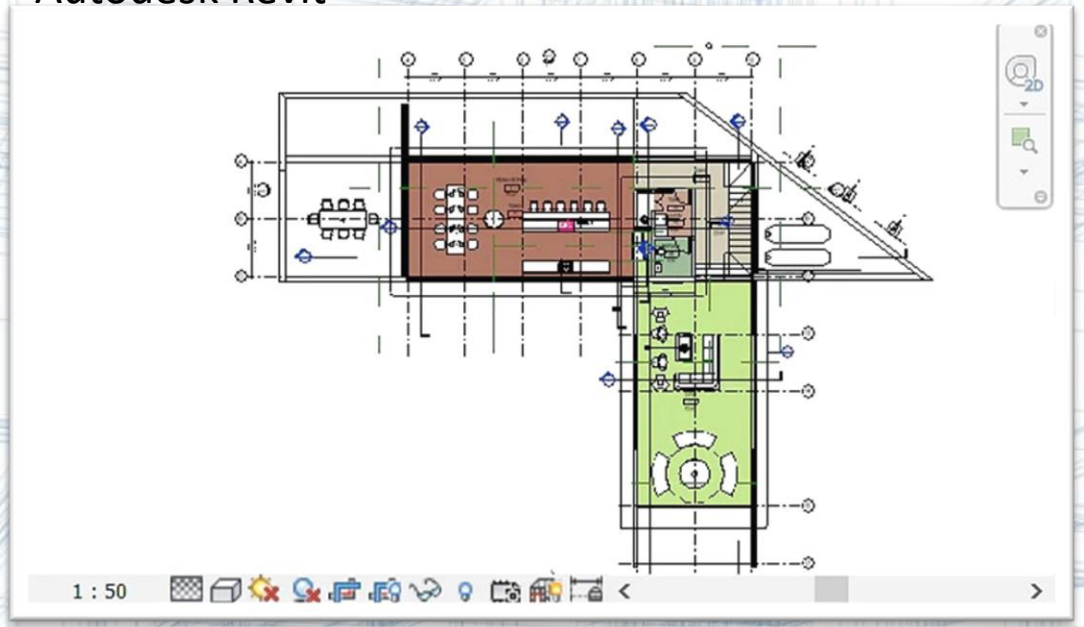
Defining Digital Construction

BIM Model

Single 3-dimensional, digital representation of a built asset.

The BIM model is essentially a digital twin of the built asset.

Autodesk Revit



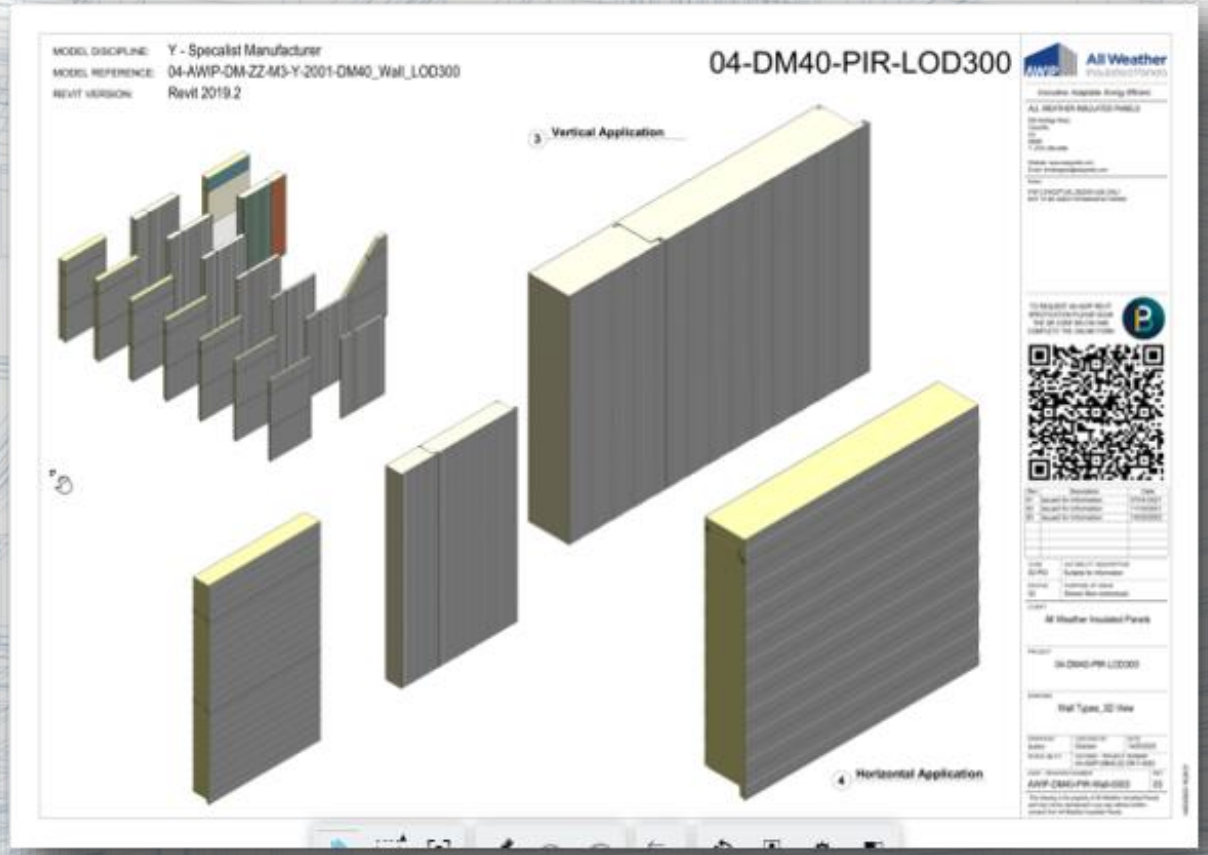
Defining Digital Construction

BIM Objects

Smart components that store data and collectively make up a model

Think of them like pieces of a 3D puzzle

Represent geometric shapes of parts, materials, structures and systems within a built asset



Level of Development

LOD 100—conceptual design:
Basic shape and size of elements without detailed information - overall design intent.

LOD 200—schematic design:
More refined, incorporating approximate quantities, sizes, shapes, and element locations.

LOD 300—detailed design:
Geometric information, specific sizes, shapes, and detailed object components.

LOD 350—construction documentation:
Detailed construction-level information used for construction documents and shop drawings.

LOD 400—fabrication and assembly:
Detailed, specific assemblies and connections, suitable for fabrication and assembly purposes.

LOD 500—as-built and facility management:
Reflecting real-world conditions for maintenance and facility management.

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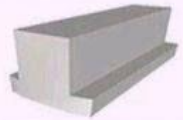
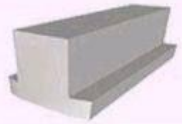
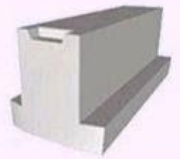
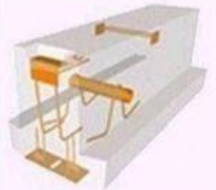
BIM LEVELS OF DEVELOPMENT (LODs)

STRUCTURE - 3D MODEL

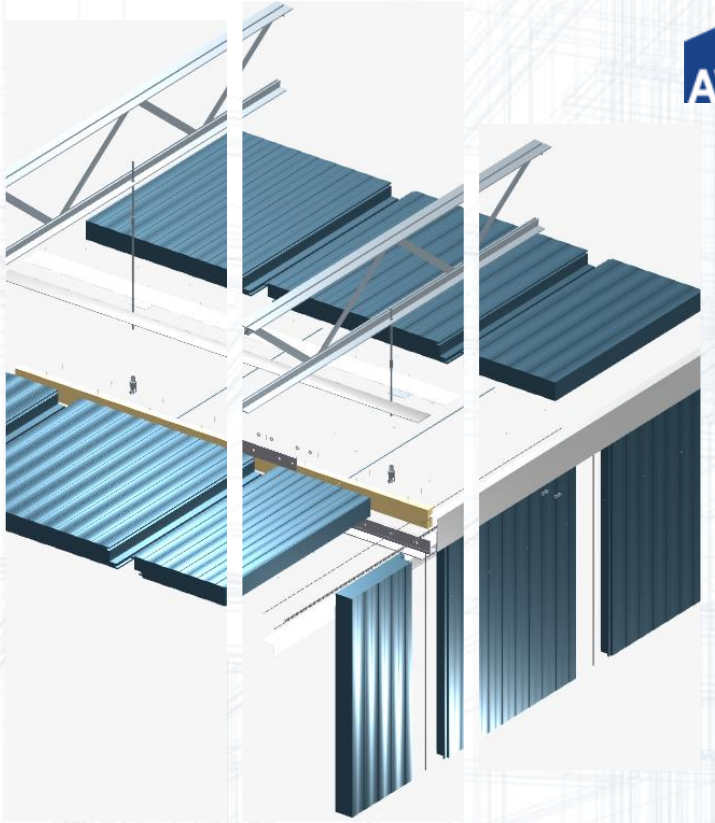
LOD 100 CONCEPTUAL DRAWING		• Rough area • Width • Height	
LOD 200 SCHEMATIC DESIGN		• Rough Area • Width • Height	• Location • Orientation • Grids
LOD 300 CONSTRUCTION DOCUMENT		• Precise dimensions • Area • Location	• Orientation • Grids, Sloping • MEP penetrations • Openings
LOD 400 FABRICATION MODEL		• Precise dimensions • Area • Location • Orientation	• Grids, Sloping • MEP penetration • Openings • Major elements, reinforcements
LOD 500 AS BUILT DRAWING		• Precise dimensions • Area • Location • Orientation	• Grids, Sloping • MEP penetration • Openings • All Reinforcements, elements & supports

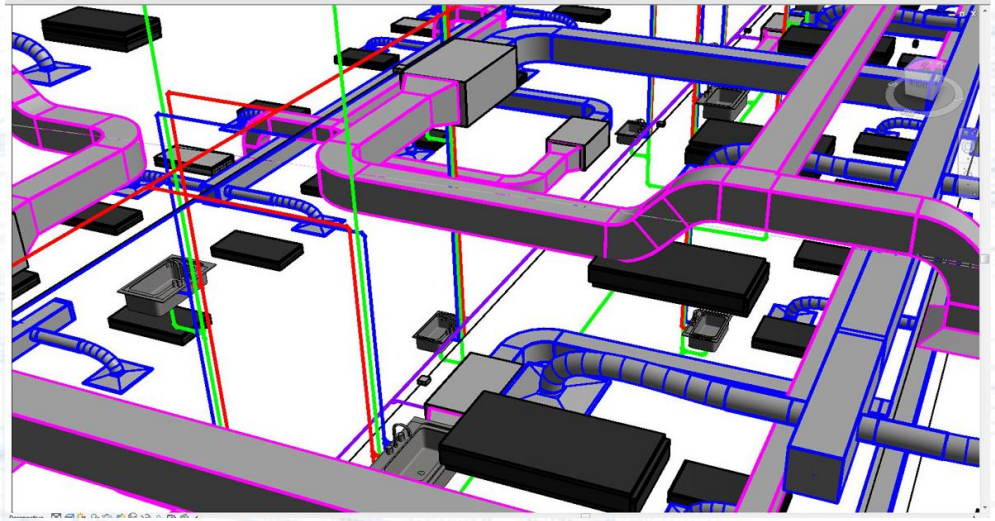
Defining Digital Construction

BIM Objects

AWIP BIM objects are primarily exterior building cladding and interior partitions/ceilings.

BIM objects provided by MEP trades help to identify and predict collisions prior to construction.

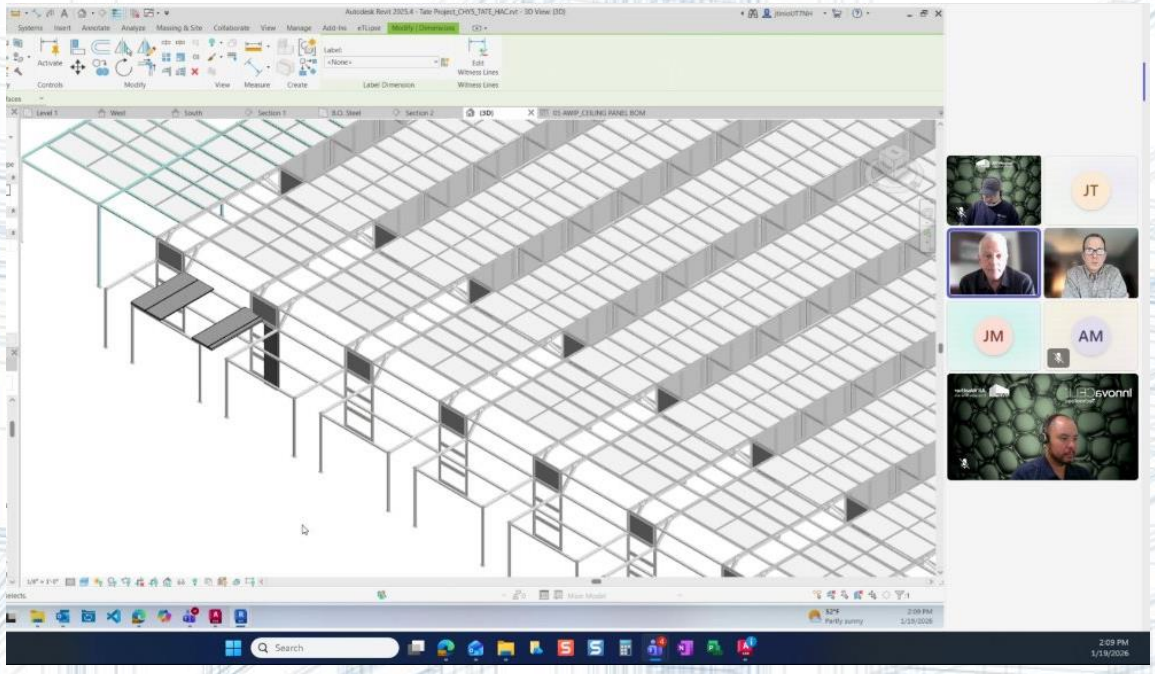


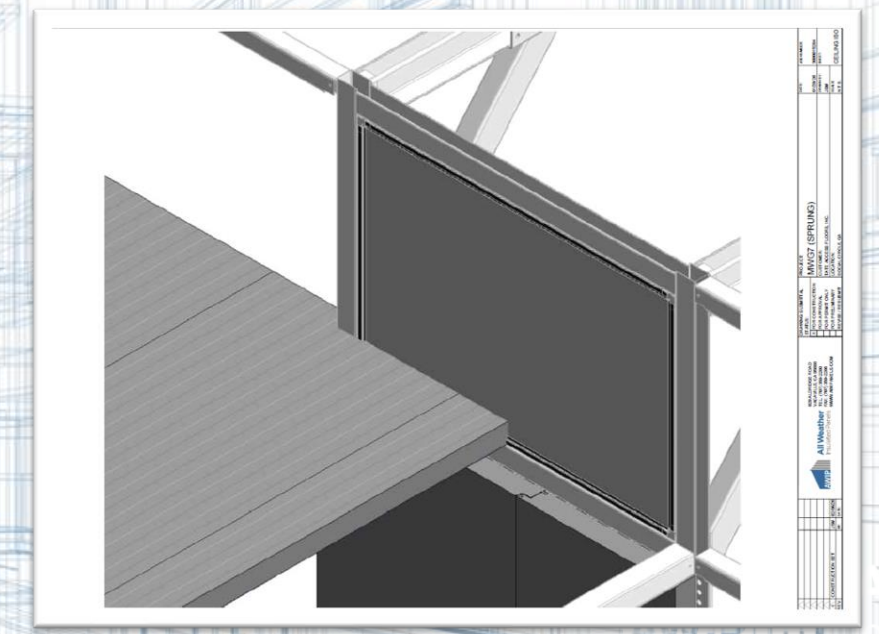


Case Study Snapshot

From BIM to Build – Data Center

- Importing AWIP BIM files into Revit
- Running clash checks and resolving issues virtually
- Delivering a refined model to the field
- Result: Reduced RFIs, rework, and smoother builds





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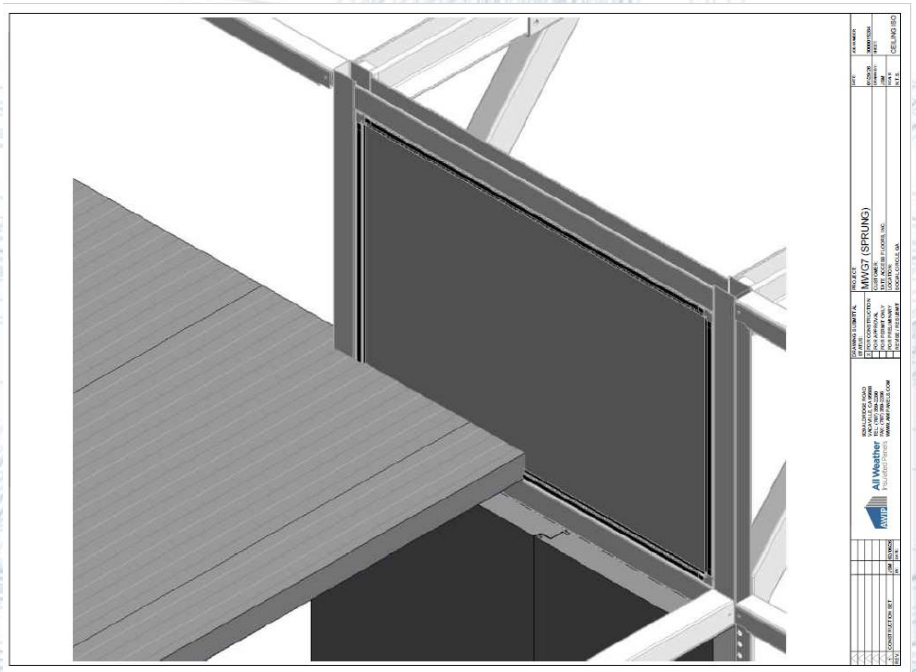

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AWIP Can Help Today

Empowering Digital Workflows

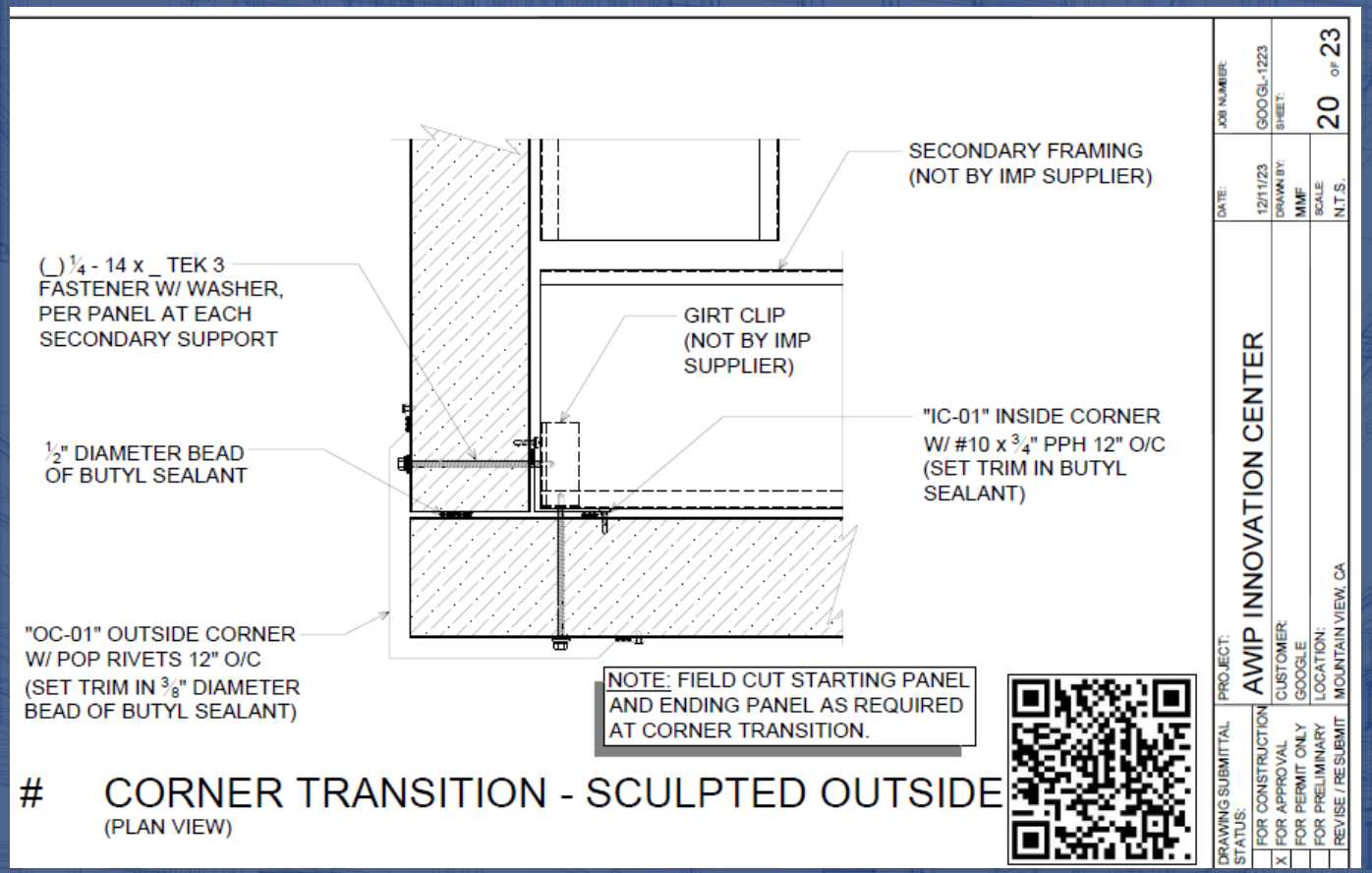
LOD 200/300+ BIM objects provided for easy model integration

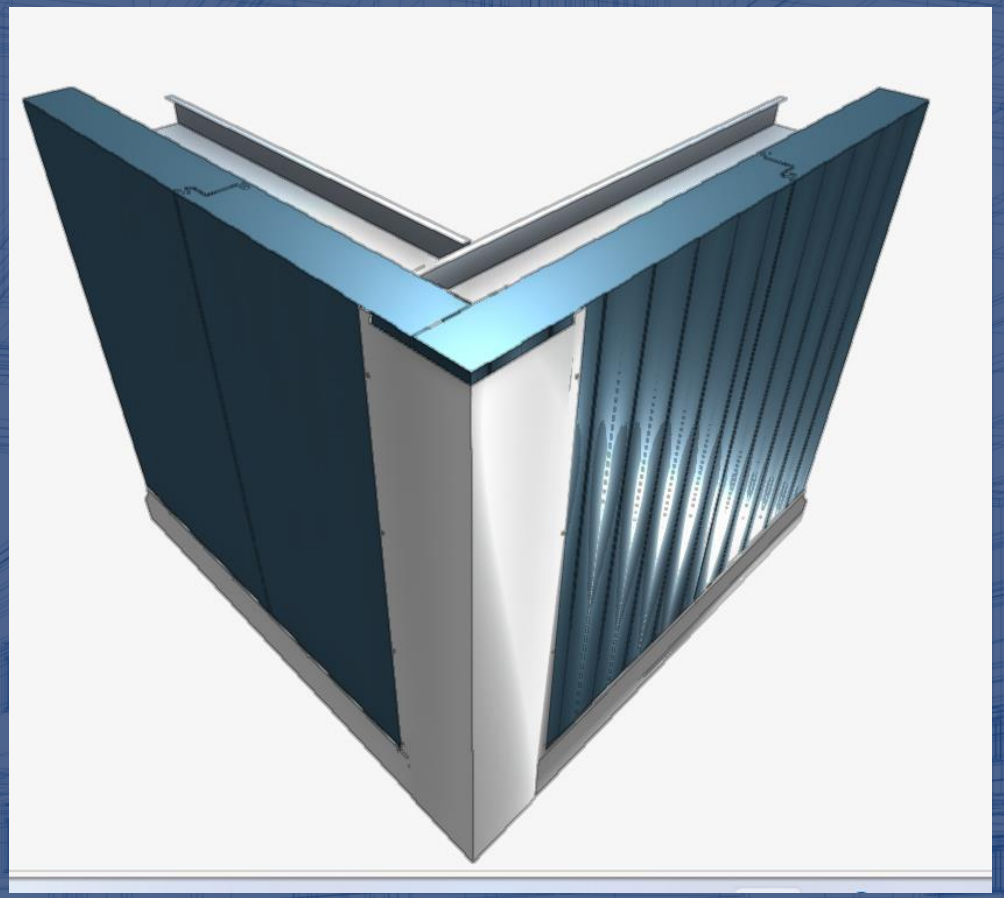
- LOD300 - clients can use on final models with true geometries for clash detection

Clash-free coordination and constructability reviews

Vision Packages for early stakeholder buy-in and faster approvals

Integrated 3D Details





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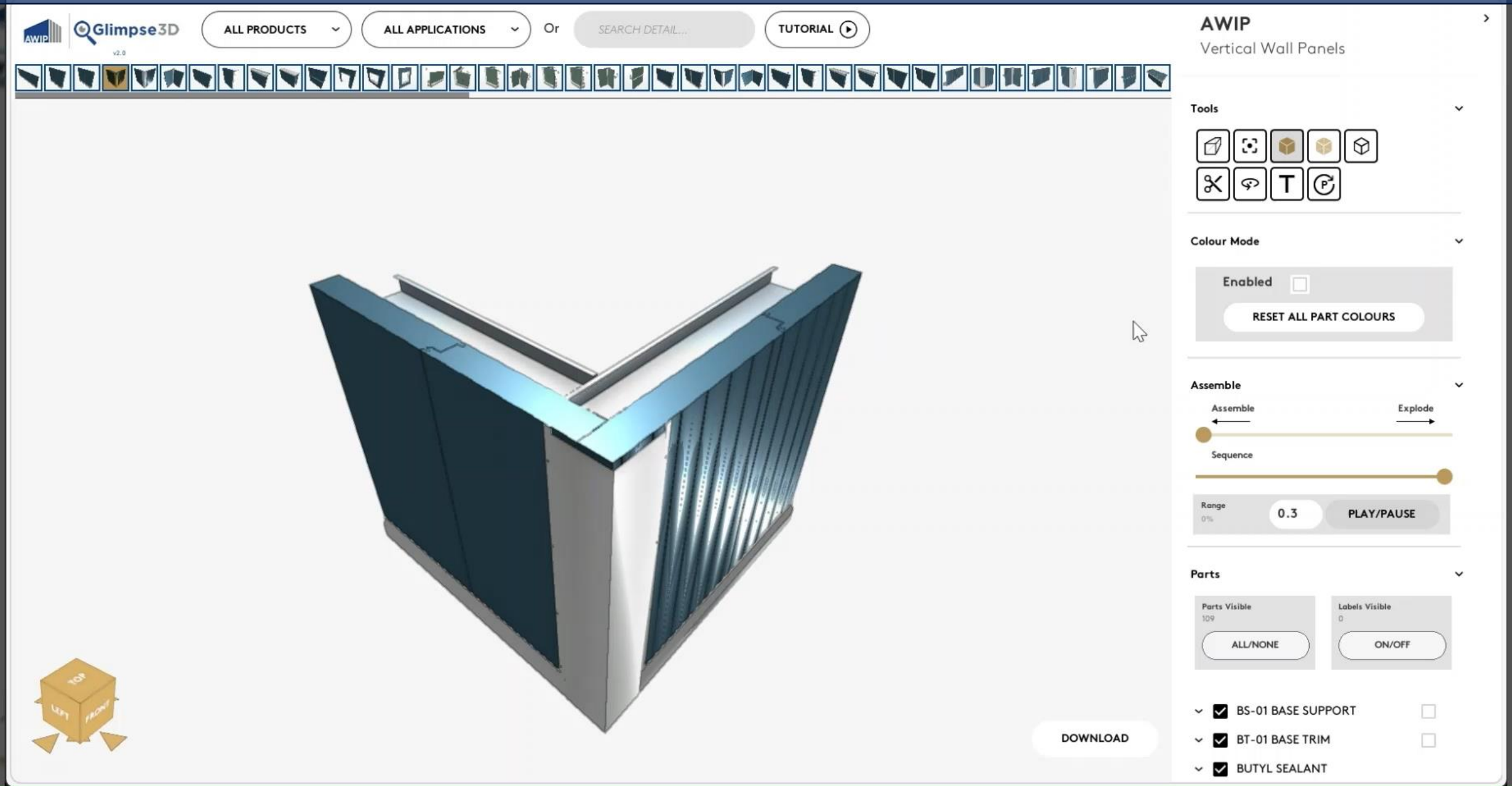
Integrated 3D Details



Vision Packages

We can help you sell your project

Standard Vision Package

- 2+ wall panel types, 2+ colors
- 1 roof panel type
- 2-3 perspectives per panel type and/or color combination
- Side-by-side panel type and/or color comparison

- 3-week lead time

All Weather Insulated Panels

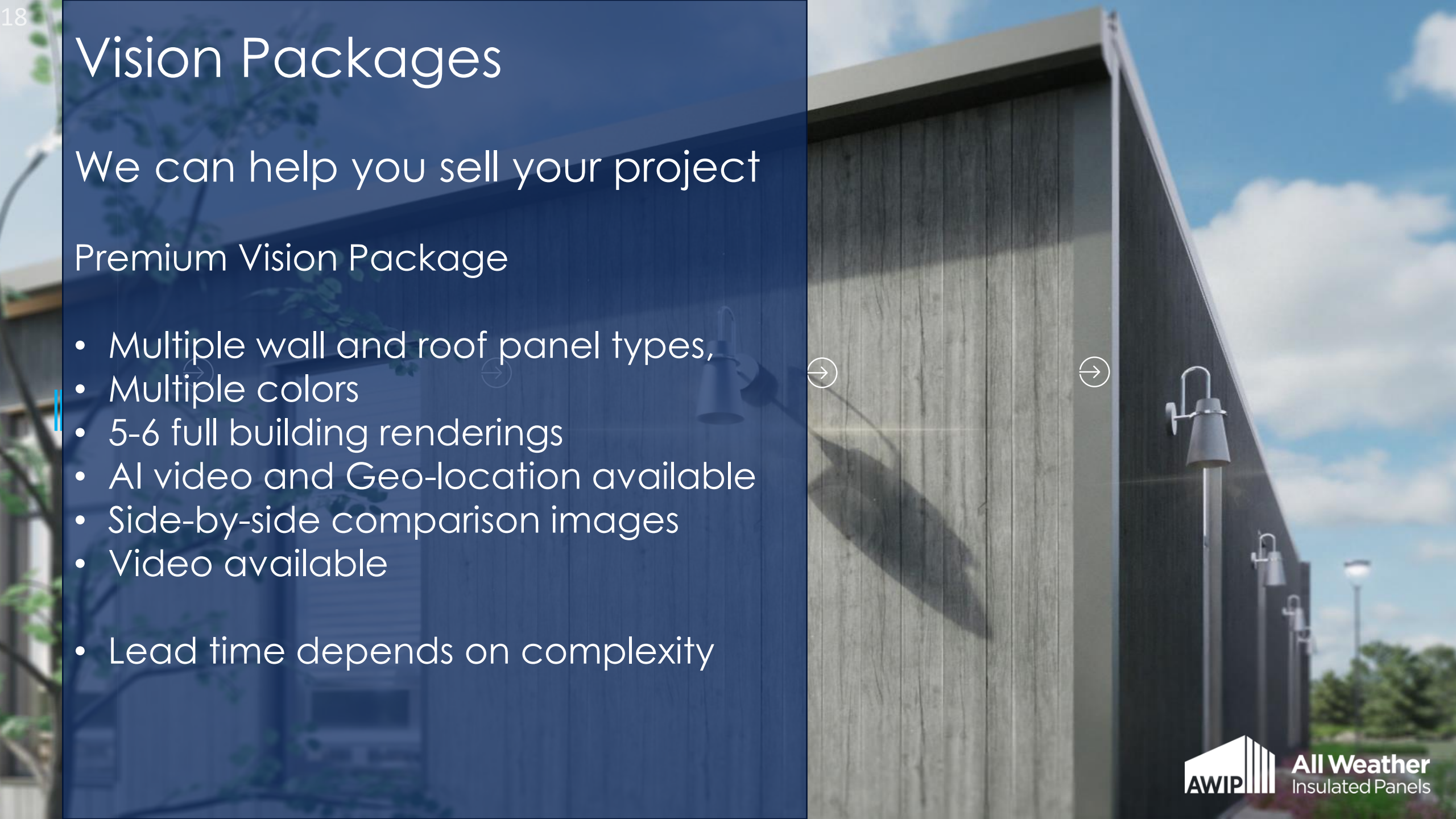
Vision Packages

We can help you sell your project

Premium Vision Package

- Multiple wall and roof panel types,
- Multiple colors
- 5-6 full building renderings
- AI video and Geo-location available
- Side-by-side comparison images
- Video available

- Lead time depends on complexity



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Sustainability

High-performance envelopes

- Aligned with LEED certification for green building standards
- Lower embodied carbon levels in production processes
- Precise BIM detail minimizes jobsite waste
- Supported by Environmental Product Declarations
- EPD and LEED data can be imbedded in BIM objects

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Questions?

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