Make It Real . . .

Utilizing Building Information Modeling and 3-D Virtual Reality Visualization to Improve and Enhance the School Design Experience
Introductions

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Objectives

How BIM and VR can improve the design process

Capabilities of VR technology in ed. planning

How VR can provide invaluable assistance

Experience VR tools in action
Challenges
Communicating to decision makers
Early budget/design reconciliation
Understanding client expectations
Client’s understanding of the design
Proactive engagement
Eras of Design

Designing with newfound 3D spatial awareness
Virtual Reality in the Classroom

Deepens the design discourse
Virtual Reality in the Classroom

Engage stakeholders more than in the past
Educator Engagement

Current modes to engage the Educator is limited

Floor Plans

Furniture Plans

Interior Elevations

Renderings
Human Computer Interaction

HCI enables users to achieve a goal easily and effectively

Exploration in ways which would be difficult

There is much more time for experimentation
Human Computer Interaction

Impart Knowledge & Information

Ideal Way Of Engaging

Design Process Incorporation

Explore Multiple Concepts
Retinal Experience

Physical & psychological impact of perception is very complex
Rendering or Real

Photorealistic renderings of spaces that don't even exist yet
Educator Engagement

Deeper Design Discourse

Broad Engagement

Explore
Complimentary Aid

Students respond to computer generated learning better than traditional methods.

Educators engage more within an immersive environment.
Complimentary Aid

Productivity Tool

Streamline Communication

Save Time

Better Decisions
Complimentary Aid

Newfound three dimensional spatial awareness

VR brings together parties in a new & exciting way

Experience can be incorporated into the process

Broadly engage stakeholders more than before
Facilities Engagement

Ability to change and grow depending upon decisions

Continues to increase one's understanding

Generate a greater understanding of them

Feedback transforms ability to create spaces
Impact vs Cost Graph for Project Progress:

- **Concept Design** to **Detailed Design**

1. **Ability to impact cost and functional abilities**
2. **Cost of design changes**
3. **Traditional design process**
4. **Designing with VR**
Empower The Educator On Demand

Change Finishes

Change Color Schemes

Move Furniture

Walk Through

Seeing The Changes
Implementation

Custom individual experience

Low cost

Mobile

No replacement for face time

Curriculum influence
Real World Scenarios

Pre Construction
Simulate Fire Drills
Active Shooter Training
Supervision & Sight Lines
Wayfinding
VR Fast Facts

Integral with BIM

High computing power

Touring is a two person operation

20 Minutes in the virtual world

Seated position on swivel chair
Various VR Methods & Software Exist

REVIT

Sketchup

Fuzor

Enscape

Lumion

Momento360
Caution

Detailed to derail
Some VR Benefits

Early decisions
Better budgets
More stakeholder buy-in
High level of design confidence
Encourages design commitment
## Future of VR in Planning & Design

- **Shift from getting to doing**
- **Pushed down to all disciplines**
- **Show me how to...**
- **Low cost....high impact**
- **Mobile platform to holodeck problem solving**
Why?

**BECAUSE** 2D PLANS ARE LIMITING
**WE USE VR TO** EXPAND CREATIVE OPPORTUNITY

**BECAUSE** HIGH LEVEL ENGAGEMENT IS SOMETIMES SCARCE
**WE USE VR TO** SOLICIT INSTANT FEEDBACK

**BECAUSE** PEOPLE OFTEN DEMAND INSTANT GRATIFICATION
**WE USE VR TO** CREATE A REAL IMMERSIVE ENVIRONMENT

**BECAUSE** PEOPLE NEED TO BE PART OF THE SOLUTION
**WE USE VR TO** EXPAND THE REACH OF THOSE NOT NORMALLY ENGAGED
QUESTIONS?