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Creating Project Winning Visualization with Iterative Luxology Rendering

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Luxology Rendering Inside MicroStation



Visualization Priorities

Quality

- Mirror project reality with photo-realistic views
- Improve stakeholder insight and secure buy-in
- Secure project funding for design alternatives



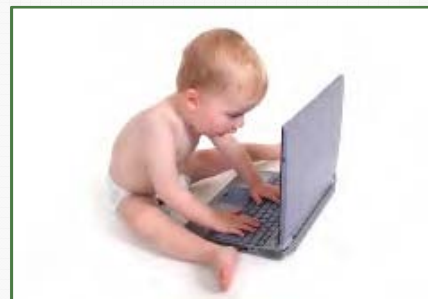
Performance

- Increase the team's throughput of work
- Leverage existing hardware investment
- Produce better images in less time



Ease of Use

- Simplify complex render settings
- Enable "point and shoot" render processing
- Reduce the time taken to master new software



Visualization Pressures



Time-to-Market

- Visualization is often produced at the 11th hour
- Slow performing hardware and software will not deliver
- Software complexity requires advanced skills to produce

Efficiency

- Productivity is slowed as the computer renders an image
- Not always possible take advantage of multi-core hardware
- Creating complex render settings is time consuming



Quality

- Imperfect designs impact project win-rate
- Unrealistic images compromise project realism
- Specialist software settings are difficult to master

Visualization Solution

SAVE TIME	Fully integrated Luxology Rendering Engine Predefined render settings simplify process All models render quickly for super fast results
REDUCE COSTS	Leverage up to 32 processor cores per machine No need for additional 3 rd party rendering application Better utilization of resources to improve productivity
IMPROVE QUALITY	Photo-realistic images and real-world lighting Better design with more design review iterations Realistic materials to mirror project reality

Without Fast High Quality Rendering...

- Too Slow...
 - Configure Scenes
 - Camera Setup
 - Process Images
- Quality Suffers...
 - Imperfect Design
 - Win Fewer Jobs
- Need...
 - Tools to help you compete and win



Fast High Quality Rendering Examples



Autodesk

Fast High Quality Rendering Examples

- Global Illumination
 - Bounced light
 - Why settle for less
 - Even exteriors
- Blazing fast
- Easy to use
 - Ambient Occlusion
- Use up to 32 cores
 - Linear speed up
 - Do more with more cores



With Fast High Quality Rendering in V8i...

- Super Fast
 - Push-Button Rendering
 - Leverage Multiple CPUs
- Top Quality
 - Improved Design Quality
 - Higher Project Win-Rate
- Higher Income
 - More Efficient Teams
 - Lower Operating Costs



Without New Lighting...

- Poor Quality...
 - Inconsistent Lighting
 - Flat-looking Externals
- Unconvincing...
 - Cartoon-like
 - Black shadows
- Need...
 - Visually Correct
 - Global Illumination
 - Environments



New Lighting Examples in V8i

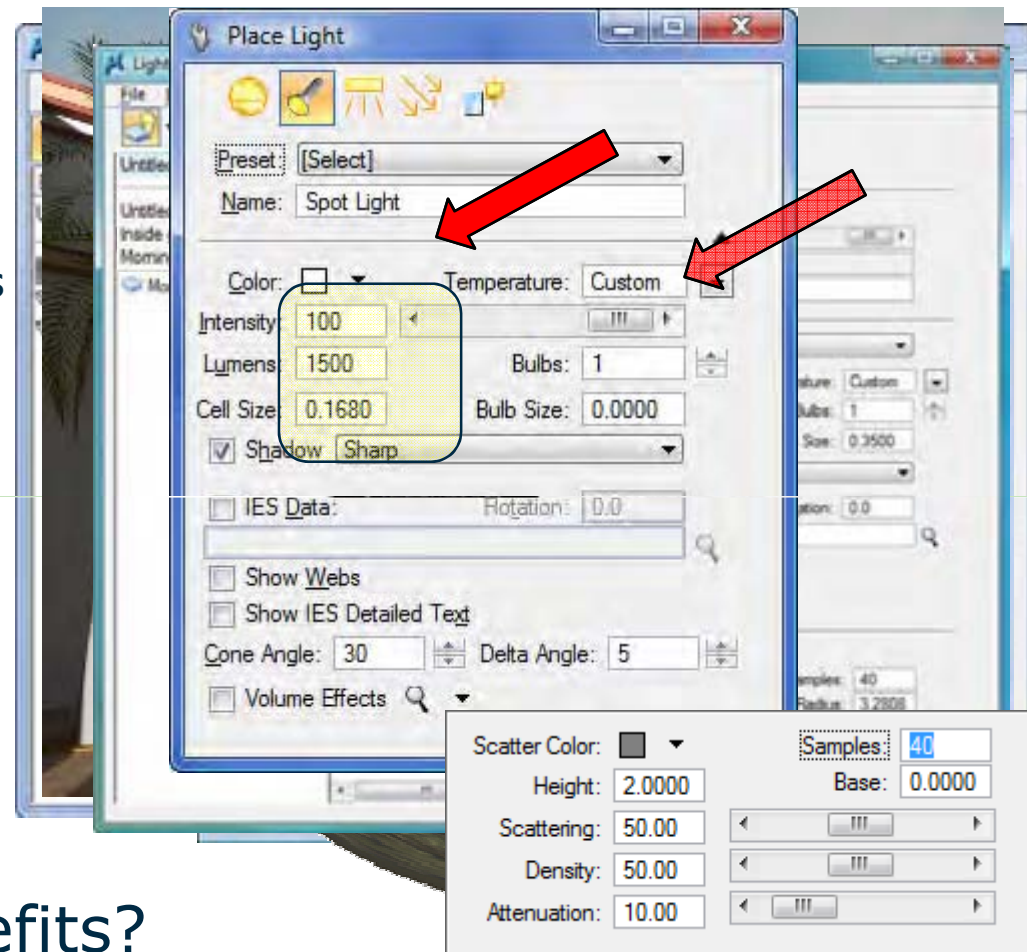
- High Dynamic Range Light Probes
- Physical & Gradient Skies



More New Lighting Examples in V8i

- What's new

- Spherical Environments
- Image Based Lighting
- Image based Sky
- Gradient Skies
- Physical Sky
- HDR Light Probes
- Handles
- Place Light
- Light Manager
 - Light Setups



- What are the benefits?

- Realistic environments without complicated setup
- Out of the box, Simplified lighting (no experience necessary)

New *Volume* Lighting Examples in V8i



With New Lighting in V8i...

- High Quality
 - Global Illumination
 - Consistent Lighting
 - Increased Depth
- Visually Reliable
 - Physically Correct
 - Undeniably Real
- Accurate
 - Light Conditions
 - Environments



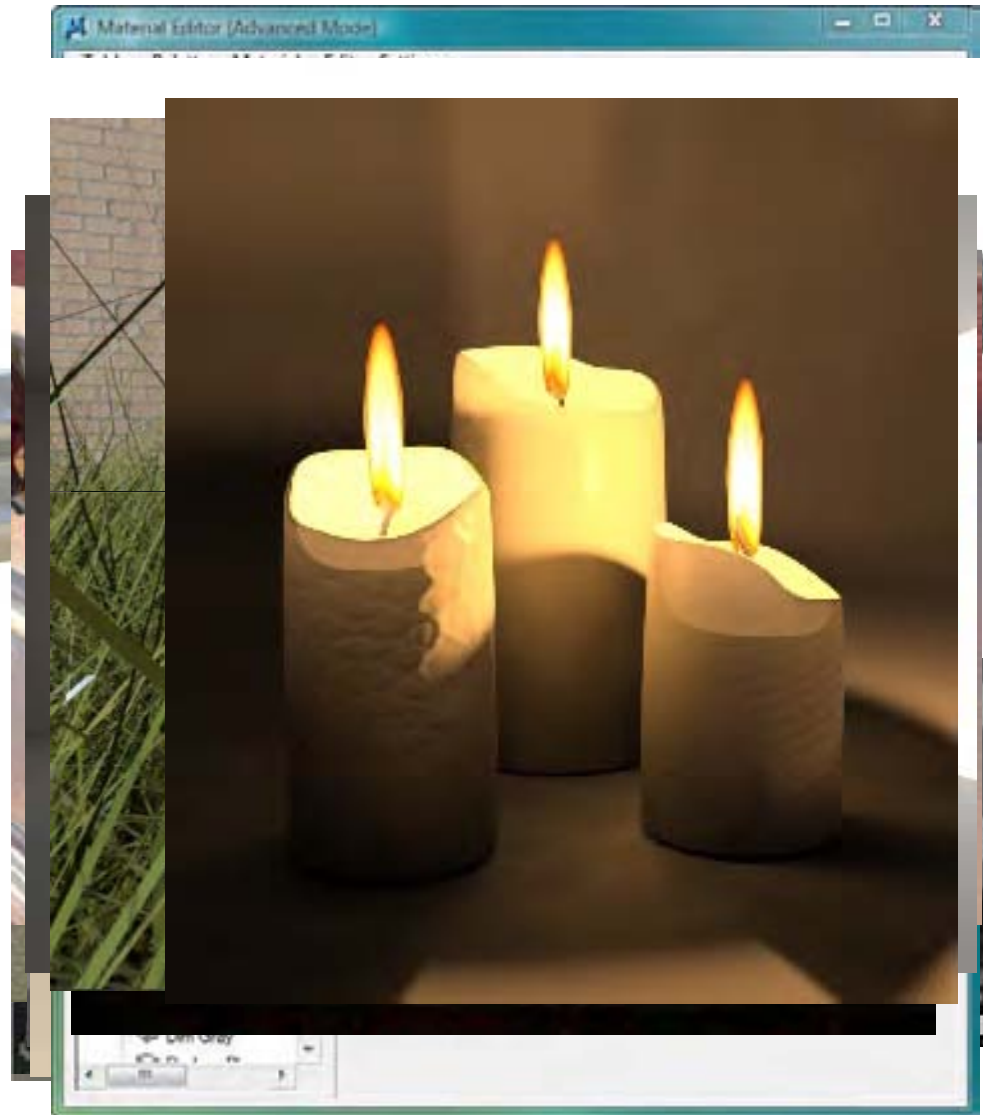
Without Realistic Materials...

- Poor Quality...
 - Materials Lack Depth
 - Objects Float
- Unconvincing...
 - Unsubtle
 - Unreal
- Need...
 - Added Depth
 - Added Reality



New Materials Examples in V8i

- What's new
 - Displacement mapping
 - Blurry reflections
 - Anisotropic materials
 - Opacity maps
 - Blurry refraction
 - Clearcoat – Paints
 - Clearcoat Maps
 - Luminous – Glow lights
 - Subsurface Scattering
 - Dispersion (Prismatic)
 - Fur
 - Bentley_materials.dgnlib
 - Entourage
 - LXP



With Realistic Materials in V8i...

- High Quality
 - Images Appear 3D
 - Materials Come Alive
- Totally Convincing
 - Subtle Materials
 - Reflect Reality
- Physically Correct
 - True Visual Depth



Without Simplified Camera Controls...

- Problem
 - Difficult to setup
 - Hard to manipulate
- Effect
 - Takes too much time
 - Hard to achieve good results
- Need
 - Ease of use
 - More capability



Camera Setup

- New Camera Graphics
 - Pan
 - Tilt
 - Roll
- Support for 3D Mice



- Focal Distance

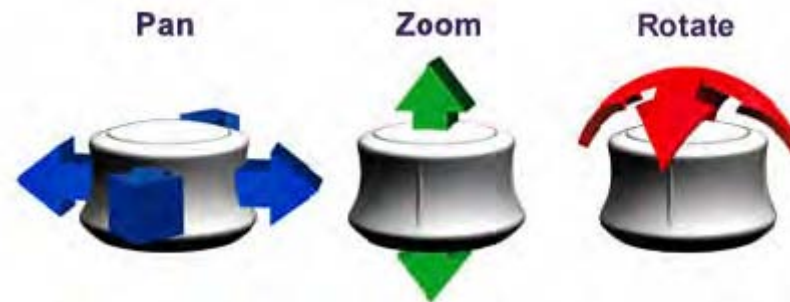


New Tool



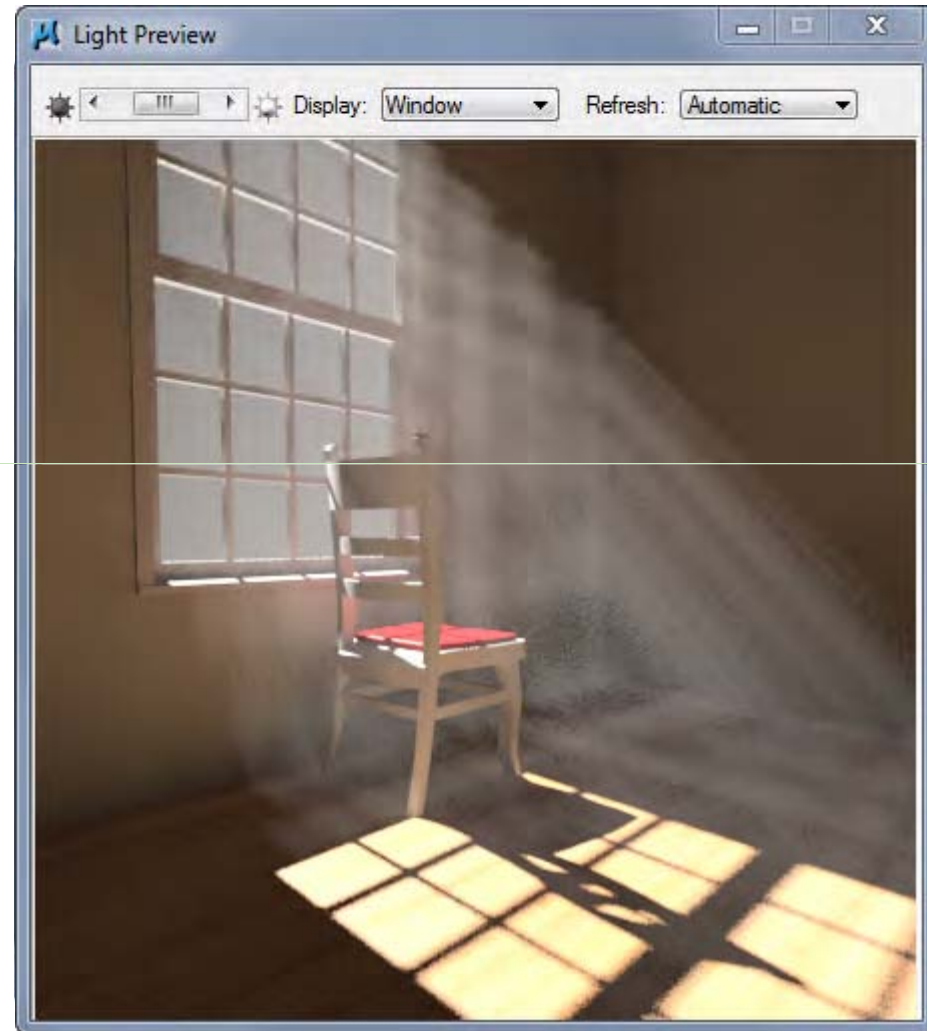
With Simplified Camera Controls...

- Saves time
 - Easier to manipulate
 - More intuitive
 - Easier to navigate
- Improve Quality
 - Design validation
 - Render depth of field effects
 - Better views



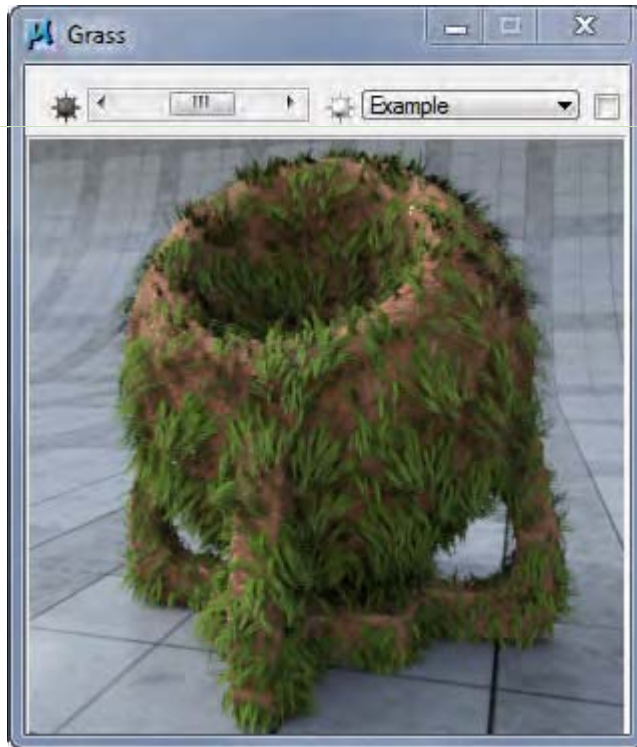
December

- Animation
 - Luxology Script
 - Reuse LXO
 - Motion Blur
- Light Manager
 - Light Previews
 - Light Maps
 - Spread Angle
 - Shadow Map
 - Shadow Color

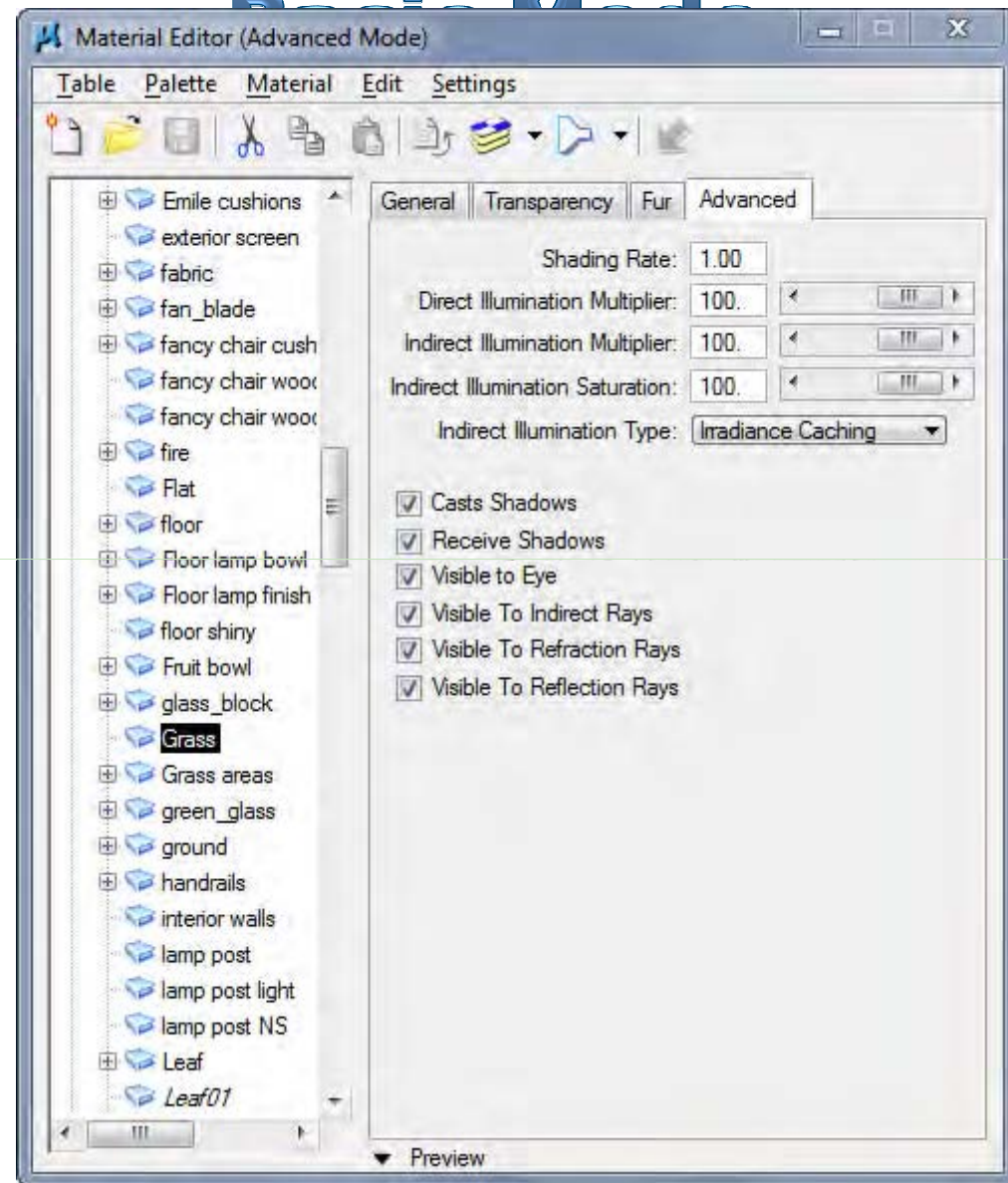


December

Materials Advanced

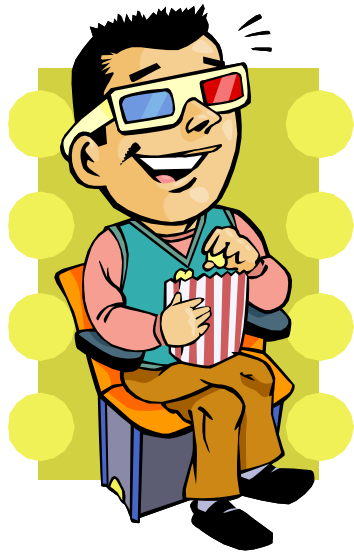


Advanced Mode



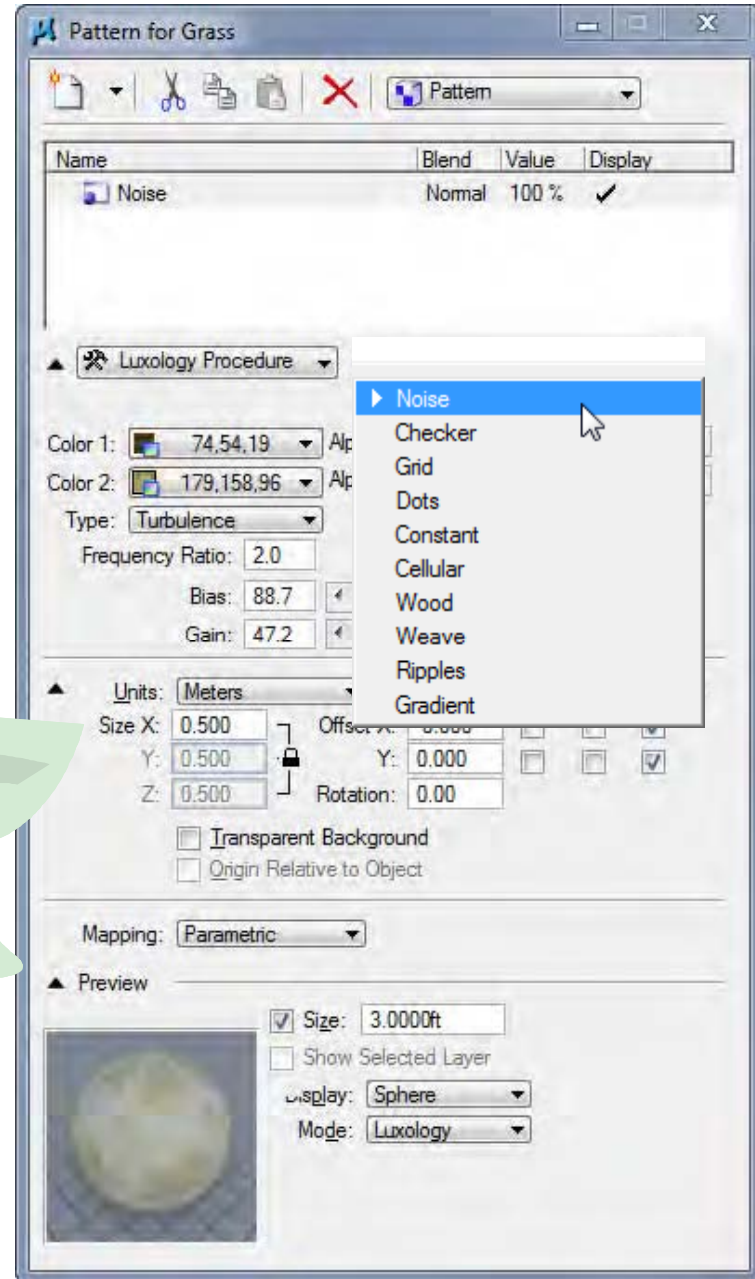
December Materials

Luxology Procedurals

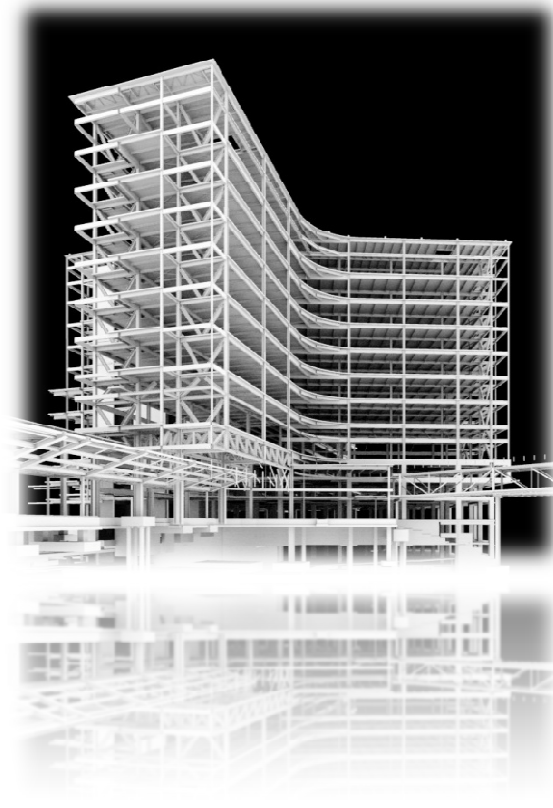


Large Image

Improved Stereo



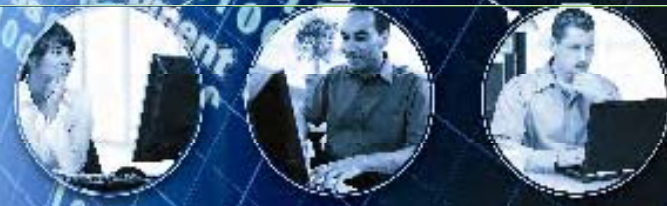
With MicroStation V8i...



...satisfy all render needs in one product

Invest for **success** by
designing all projects on a
proven software foundation
which delivers an integrated suite
of **intuitive, interactive,** and
highly **interoperable** capabilities
to the design desktop.

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