Rendering and Animation for Building Design with 3ds Max

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Agenda

- Setting up a 3ds Max Scene
- Exposure Control, Cameras and Lighting
- Global Illumination
- Still Image Renderings
- Keyframe Animations
- Video Post

Assumptions and Disclaimers

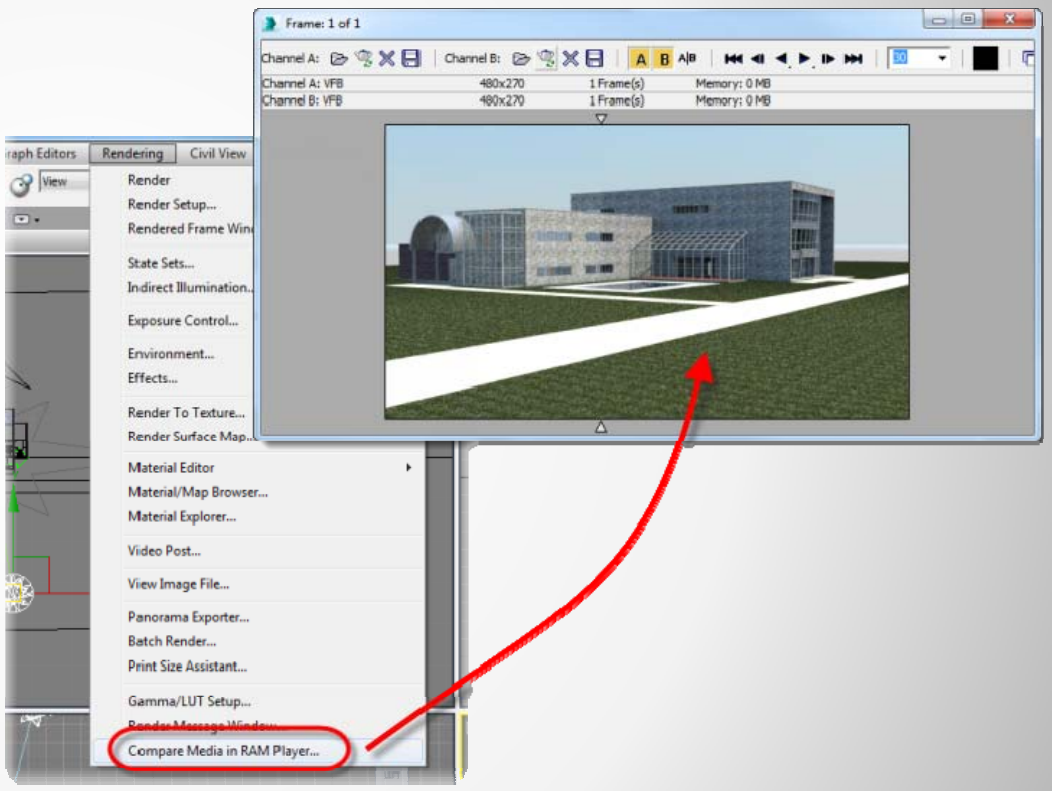
- This is *NOT* “3ds Max Fundamentals”
  - Assumption: Basic understanding of 3ds Max Interface
    - Command Panels
    - Viewport Control and Management
    - Basic Object Selection and Manipulation
  - We will not be covering Material creation and Editing
- Much of what I will say will be based on personal experience and may be counter to “conventional wisdom”
- I will actively avoid “rabbit holes”

My System Specifications

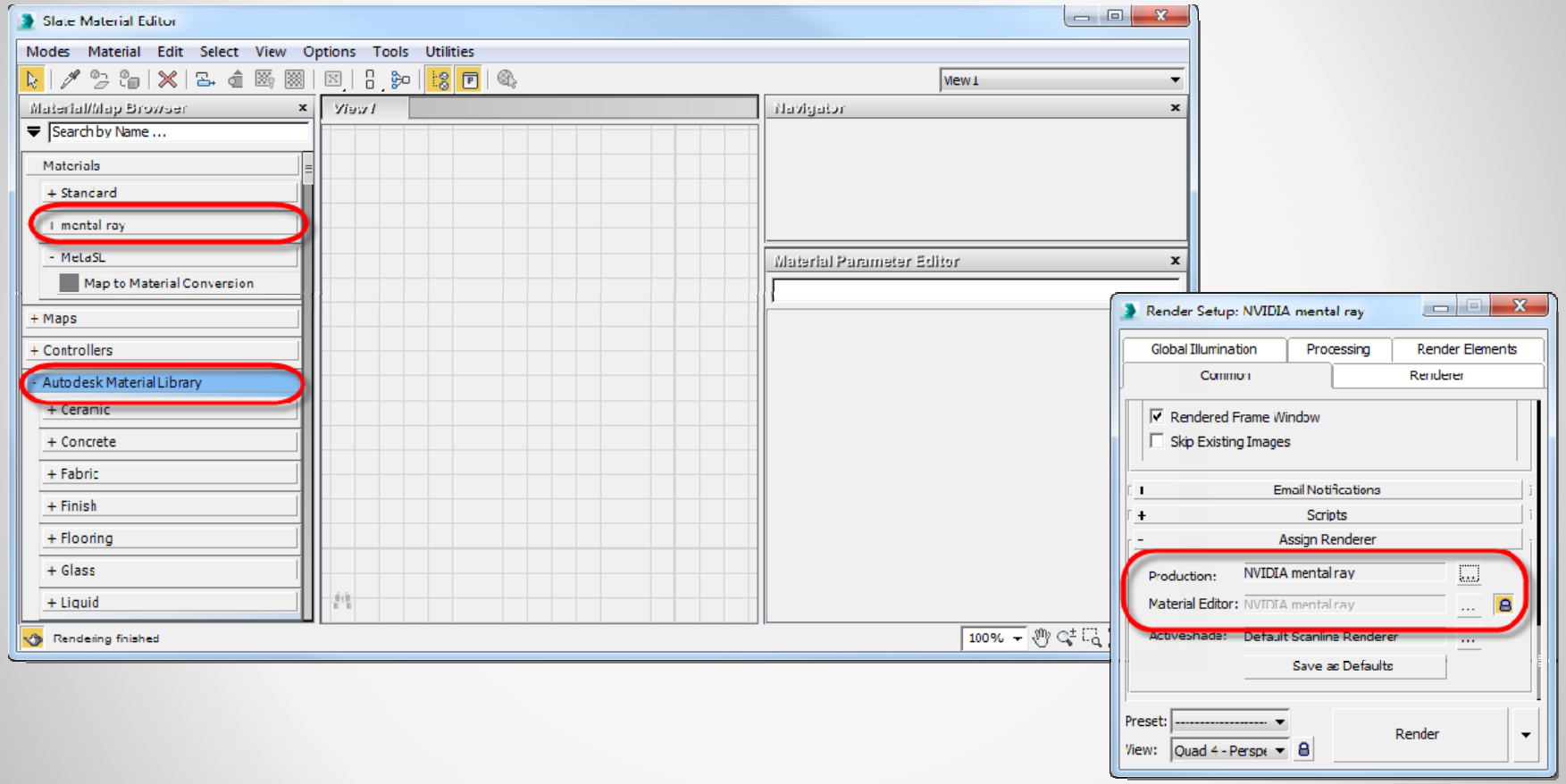
- Windows 7 Pro 64 bit
- Intel i7 2.4 GHz
- 16 GB RAM
- NVIDIA Quadro 4000M
  - 8.17.12.9679

Invaluable Tool: The RAM Player

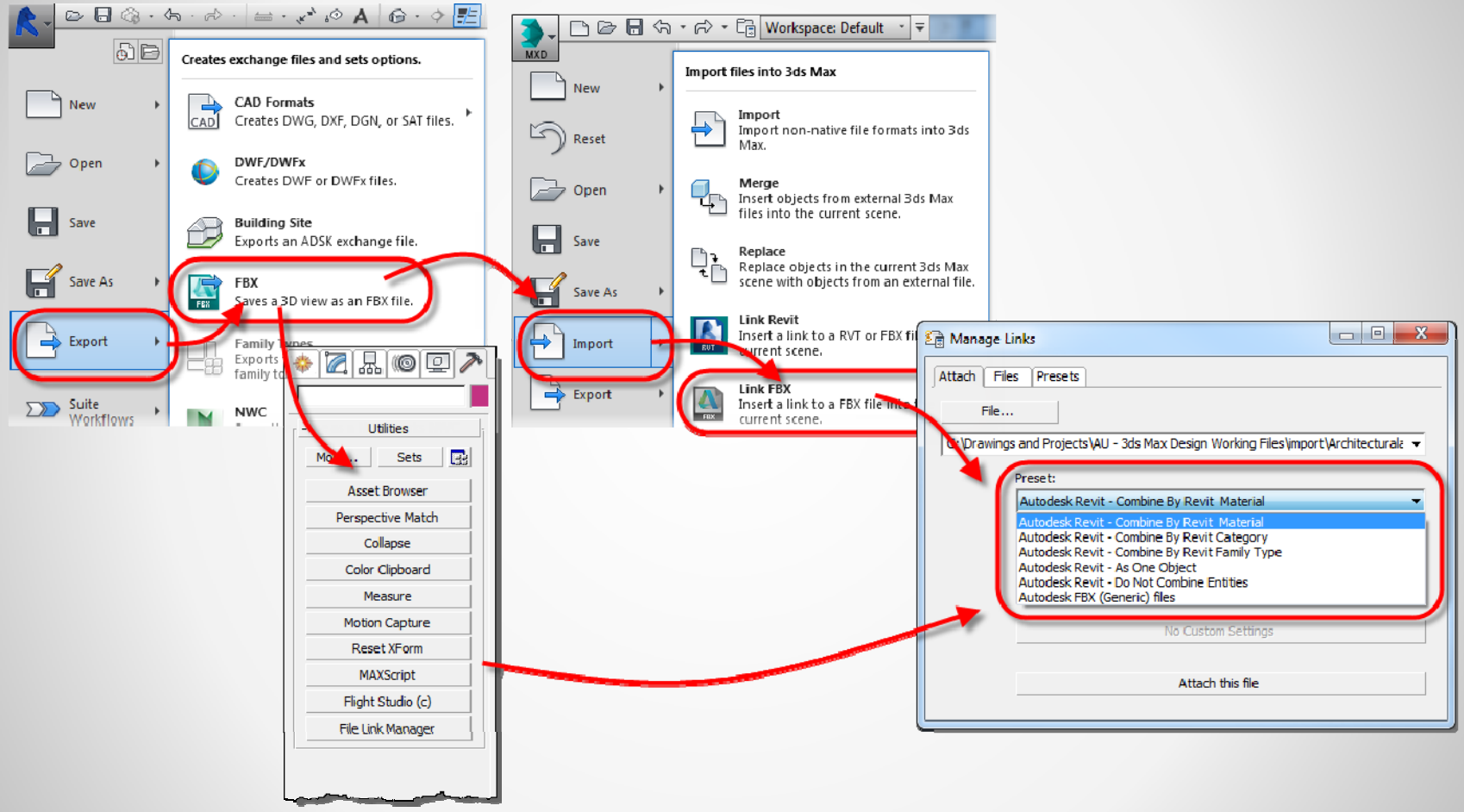
- Compare Rendered Images
- View Animation Sequences
- Save Animation Sequences to file



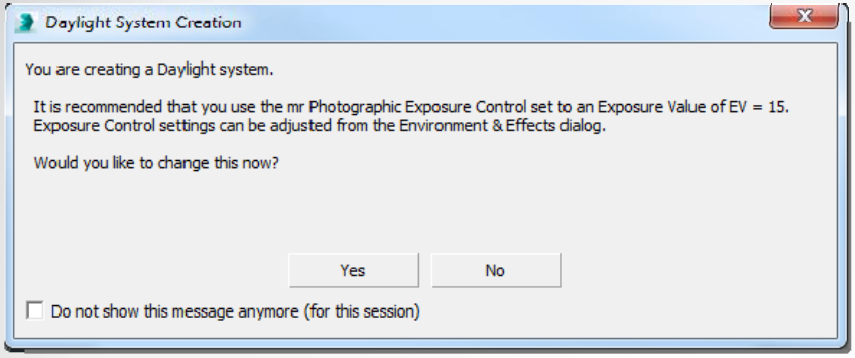
Scene Setup: Using the mental ray Rendering Engine

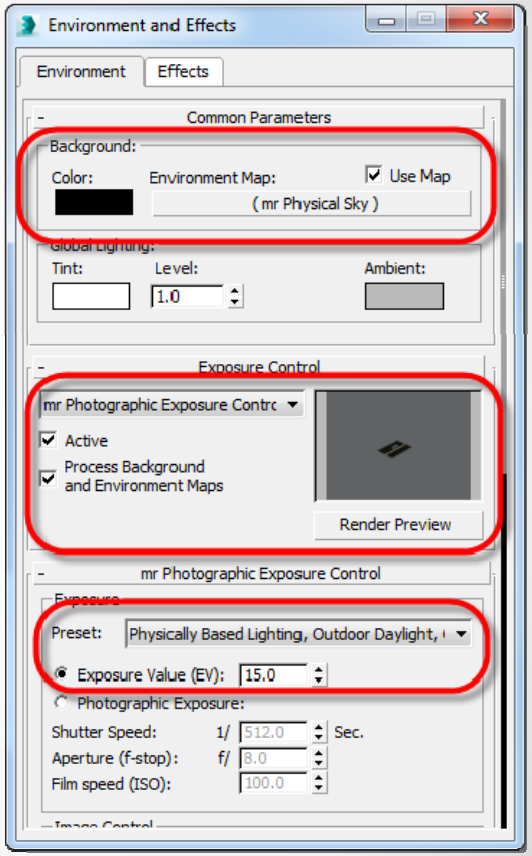


Scene Setup: Linking the Building Model



Exposure Control

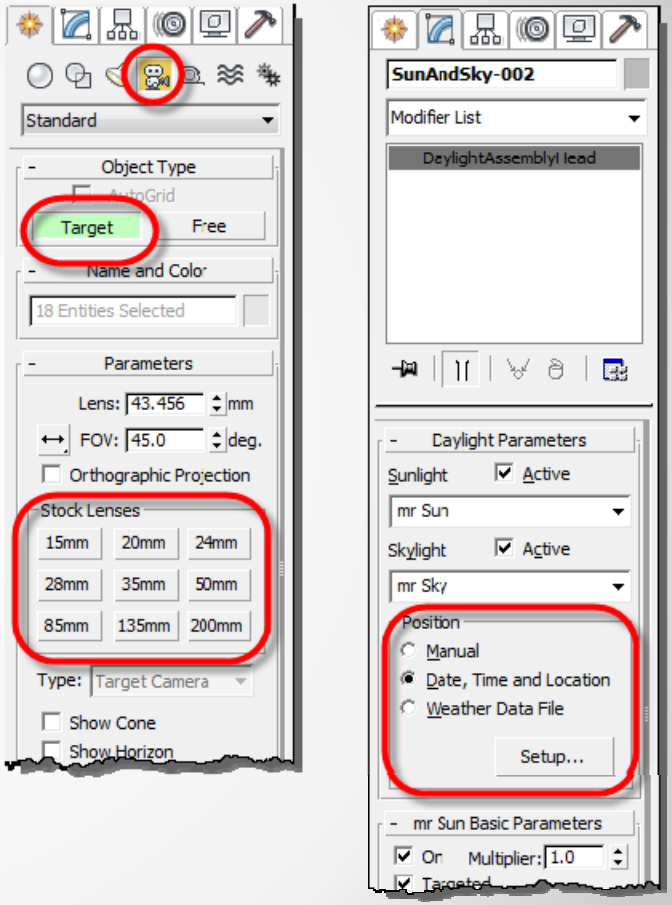




- Global Effects
- Use Exposure Values or Photographic Exposure Settings

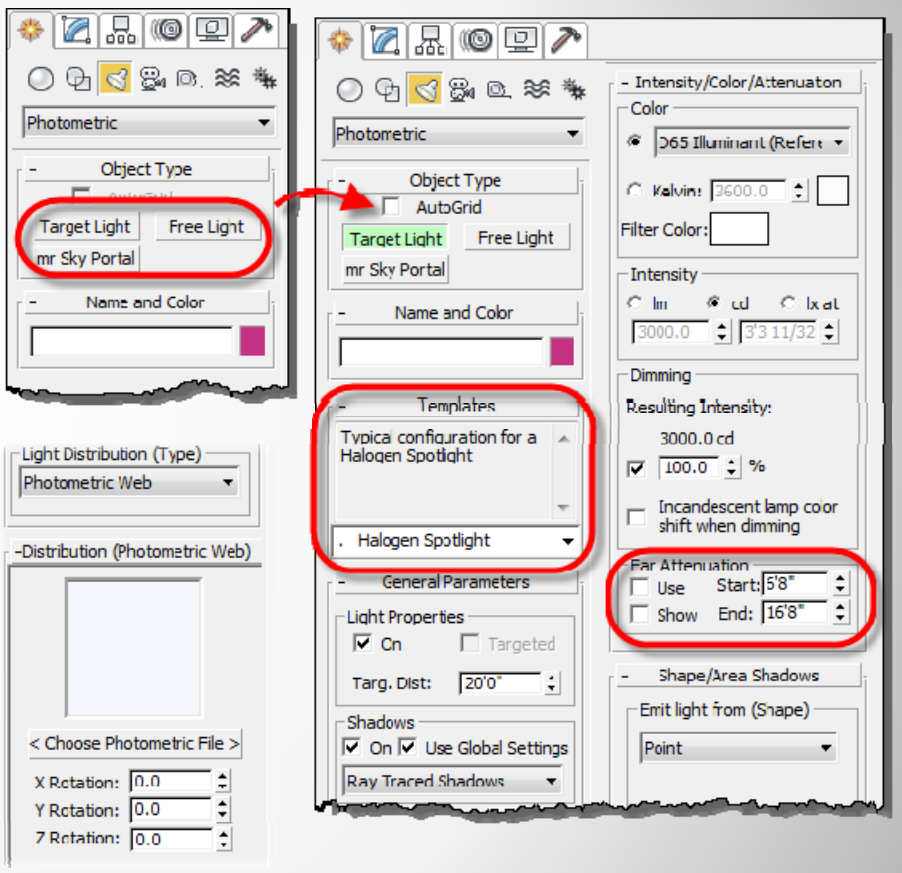
Cameras and Daylight Systems

- Cameras
  - Can be imported with FBX
  - Target vs. Free
- Daylight Systems
  - Sun Settings in Revit become Daylight Systems in 3ds Max
  - mr Sky



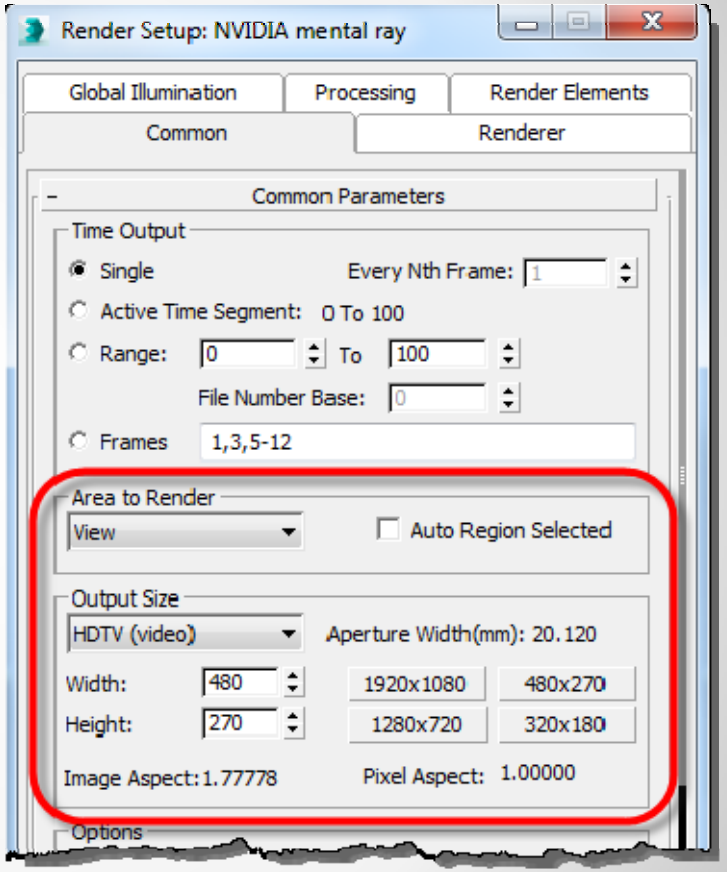
Photometric Lights

- Photometric Lights
  - Target
  - Free
  - mr Sky Portal
- Use templates and/or manufacturer's IES files



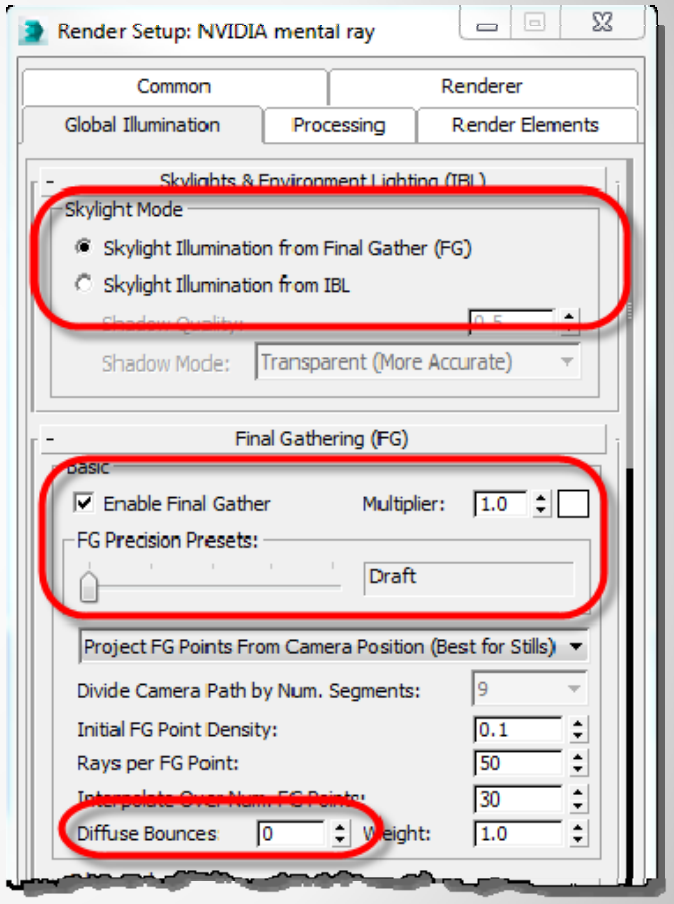
Iterative Rendering

- Render to small image size
- Use RAM Player to compare images



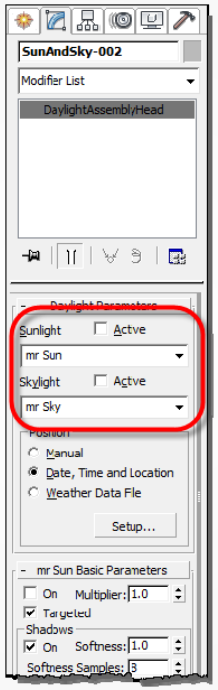
Exterior Daylight Still Images

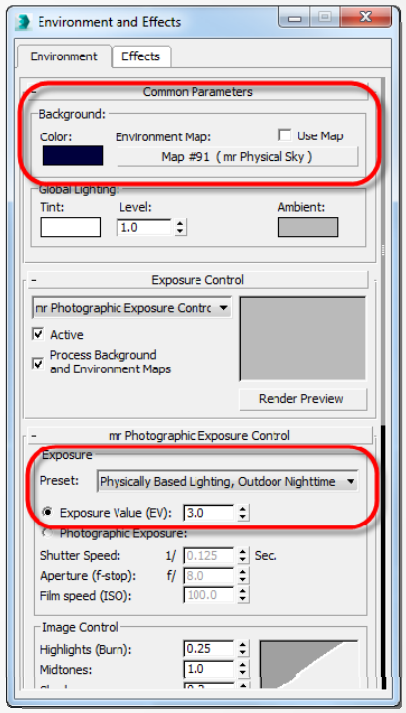
- Minimal, if any Global Illumination
  - Final Gather set to minimal values
  - No Photons
  - Render

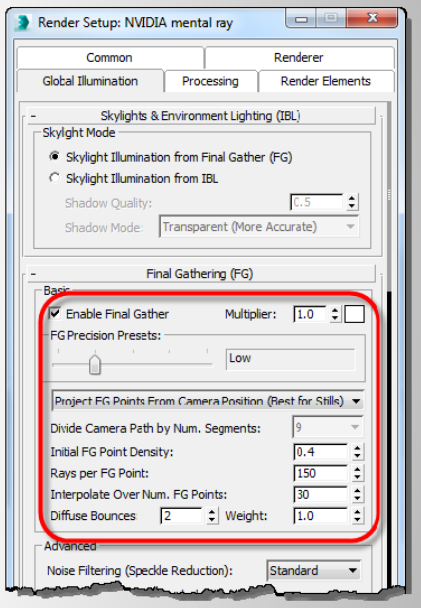


Exterior Nighttime Still Images

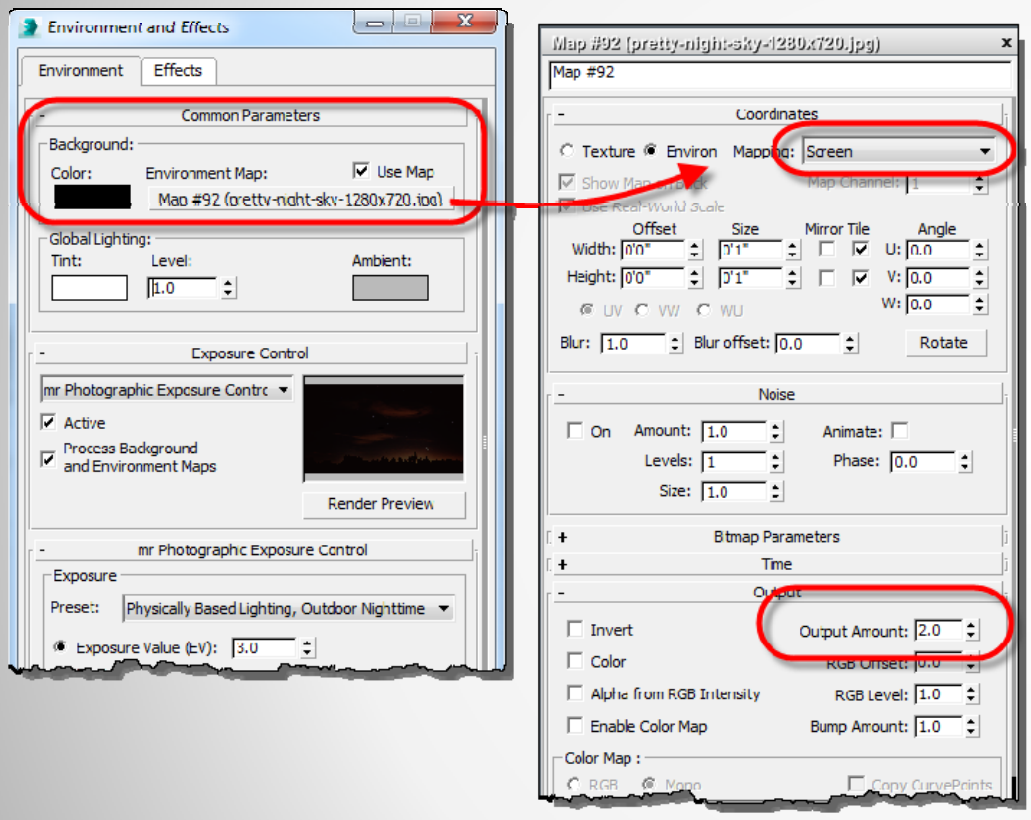
- Sun and Sky OFF
- Environment Map OFF or use a Background Image
- Exposure Value
- Final Gather ON

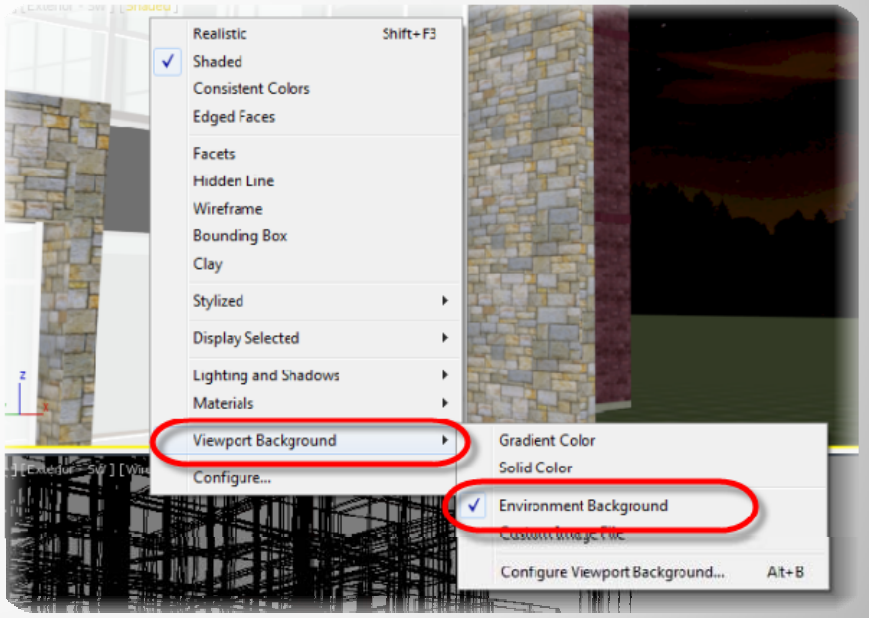




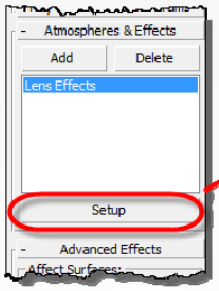


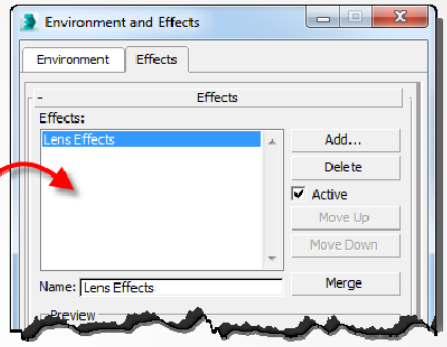
Using a Background Image

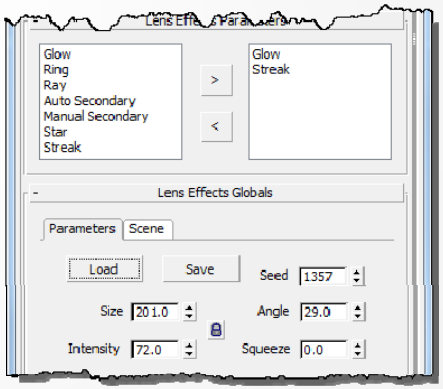


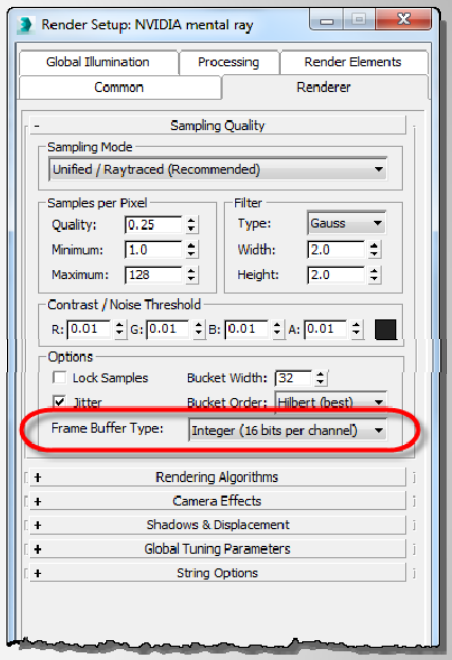


Exterior Nighttime Still Images – Lens Effects

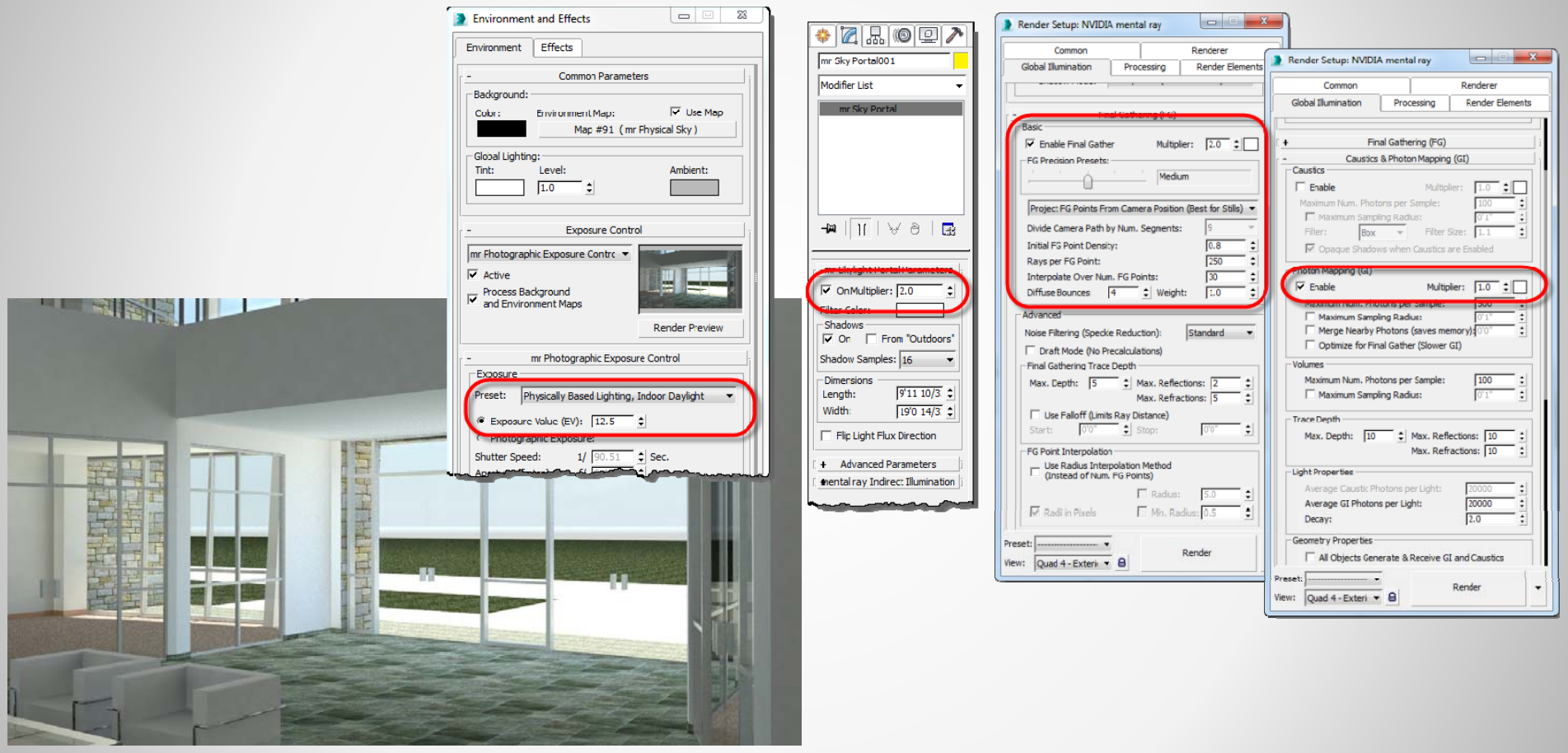








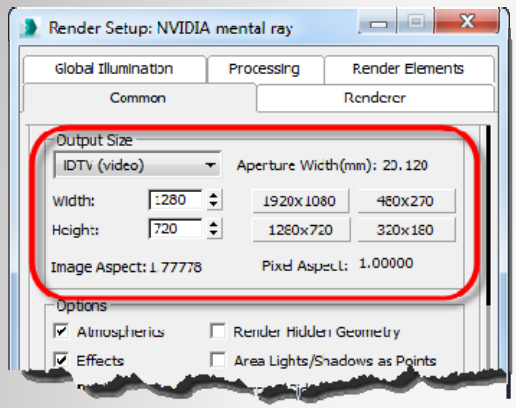
Interior Daylight Still Images – Global Illumination

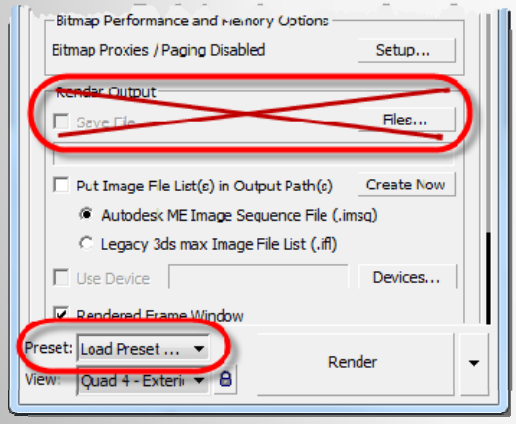


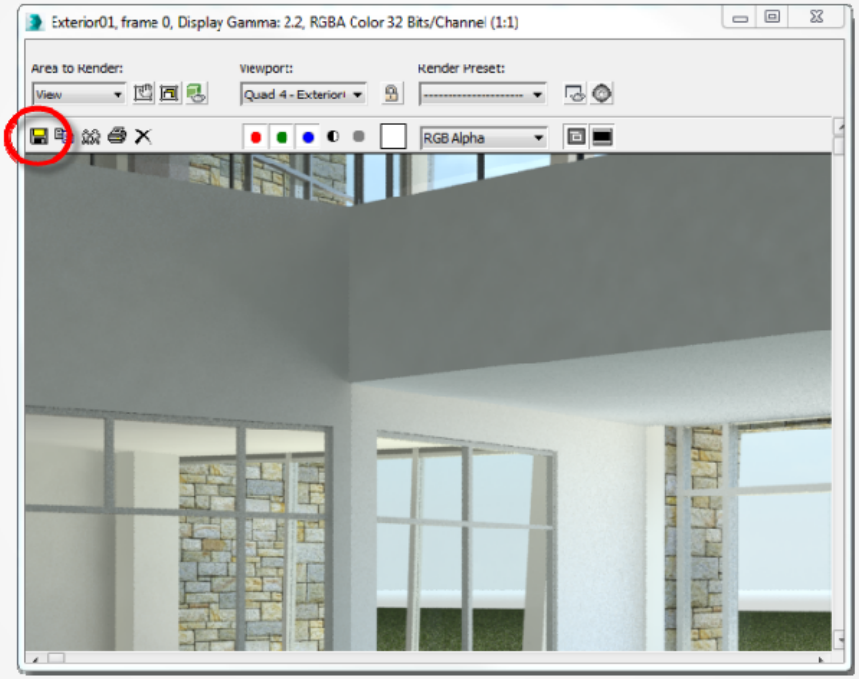
Interior Daylight Still Image Exposure and Global Illumination Settings

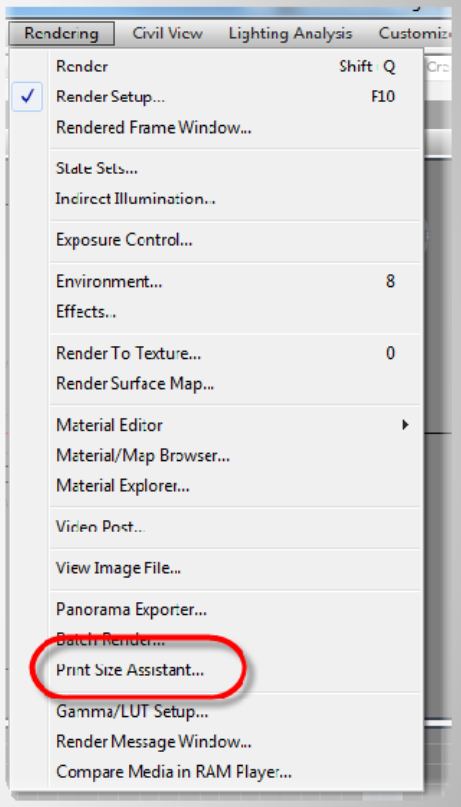
- Exposure
  - Minimal view to outside: 10.0
  - Significant outside view: 12.5
- mr Sky Portal
  - Use when significant lighting from outside is required
- Final Gather
  - Enabled
  - Bounces: 2-4
  - Quality: Low – Medium
  - Multiplier – Test for effectiveness
- Photons Enabled
  - Test for effectiveness
  - Can have significant impact on render time

Still Image Rendering Output





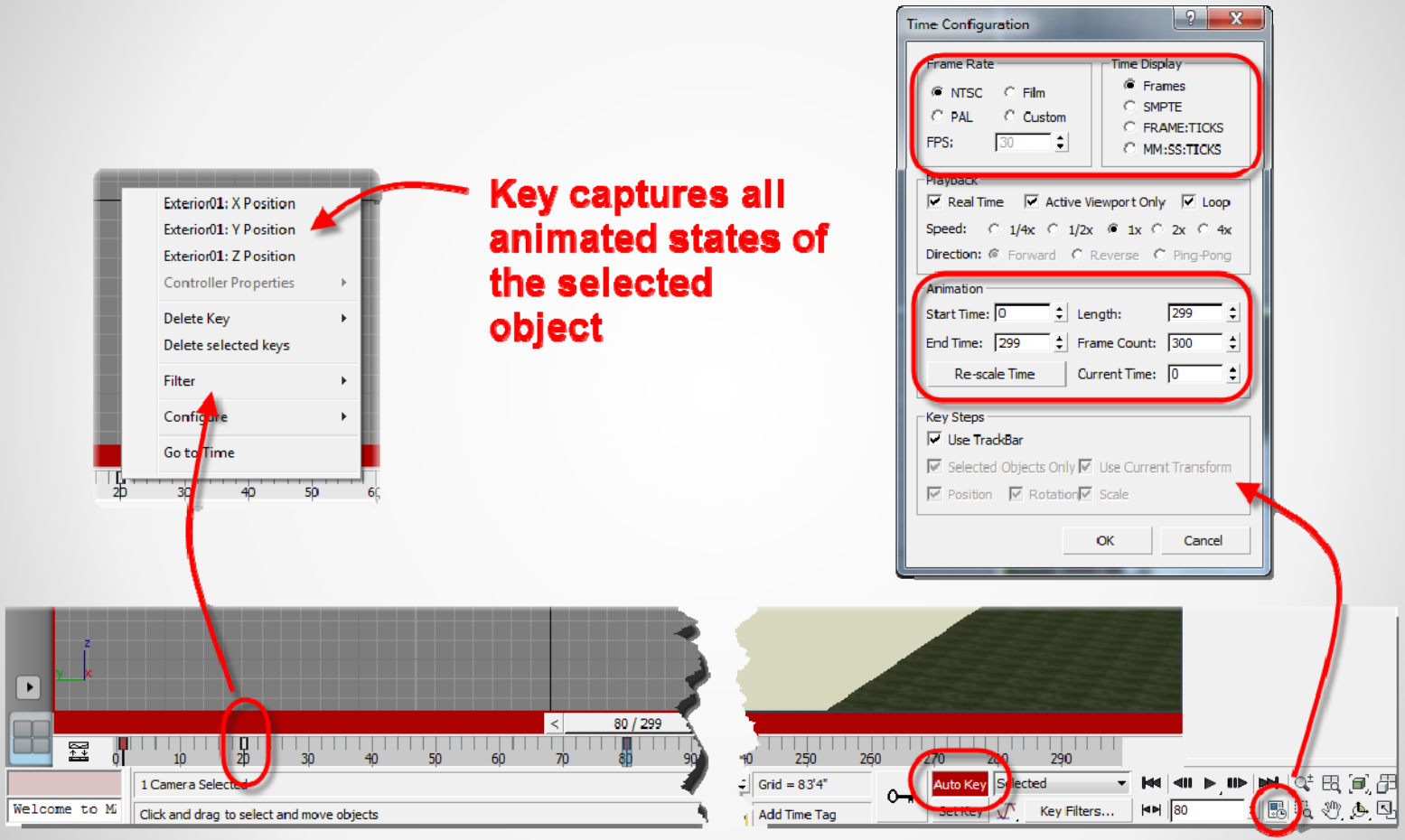




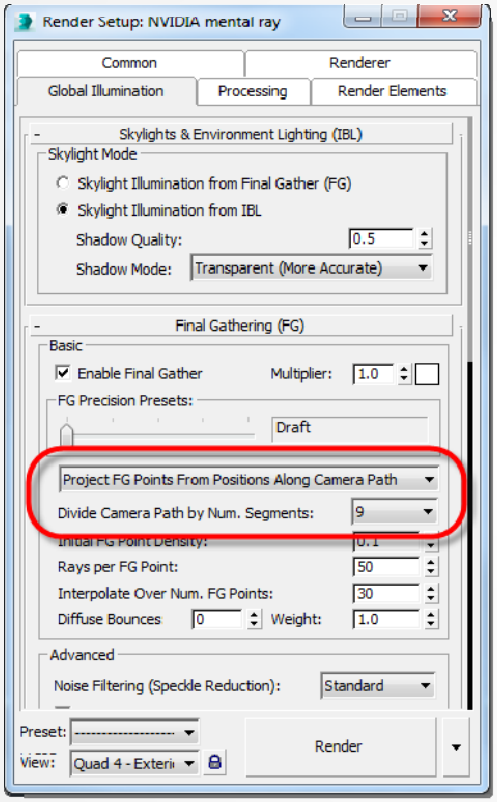
Animation – Key Points to Remember

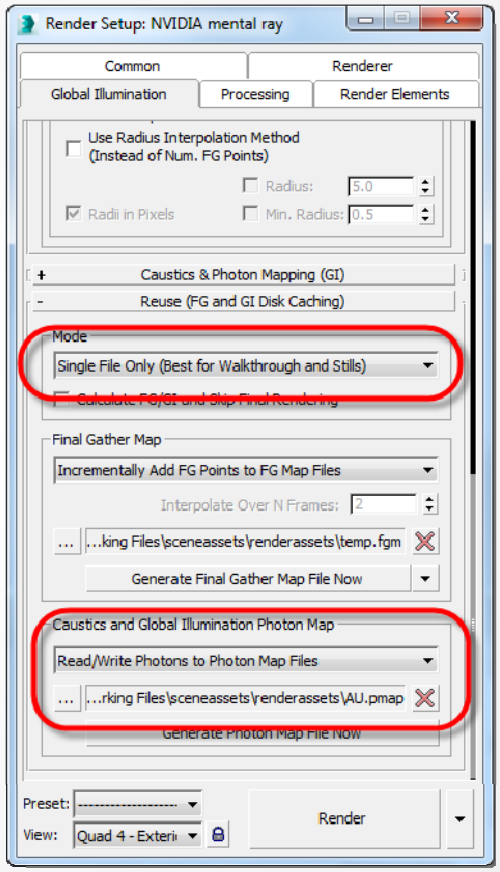
- Use Keyframe Animation – not Path Animation
- Render to individual image frames (JPG or PNG)
- Use RAM Player to view sequences and save to final animation
- Render short sequences – use Video Post to combine into more comprehensive renderings
- Re-Use Global Illumination
- Do you have a network of Rendering-Capable computers? Use it! (Render Farm)

Time Configuration and Auto-Key



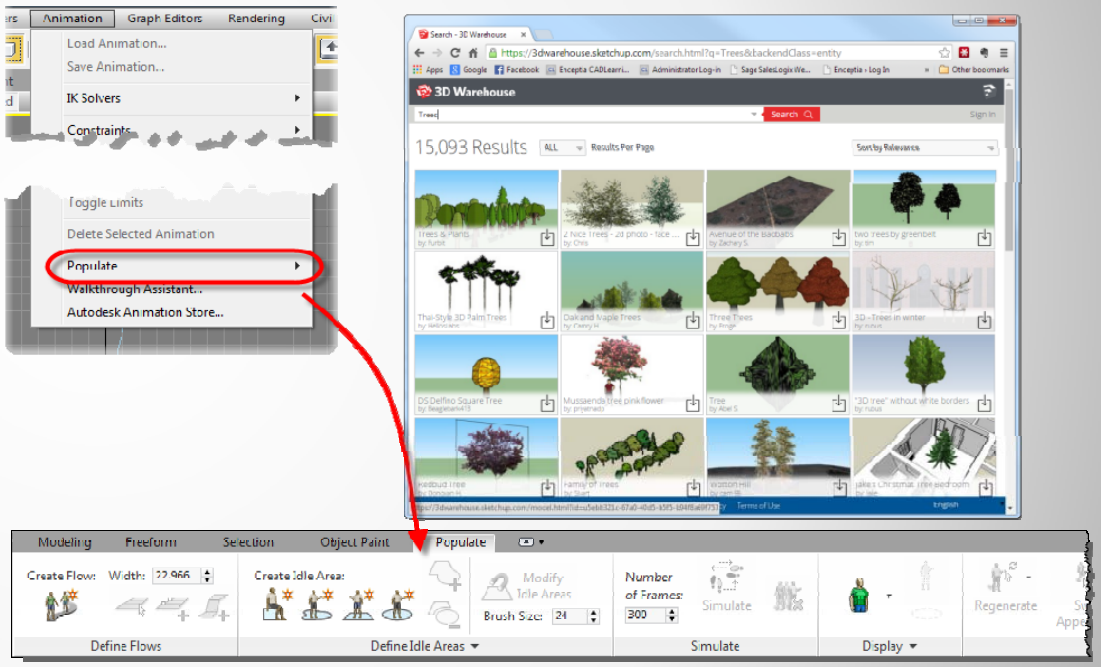
Global Illumination and Animations



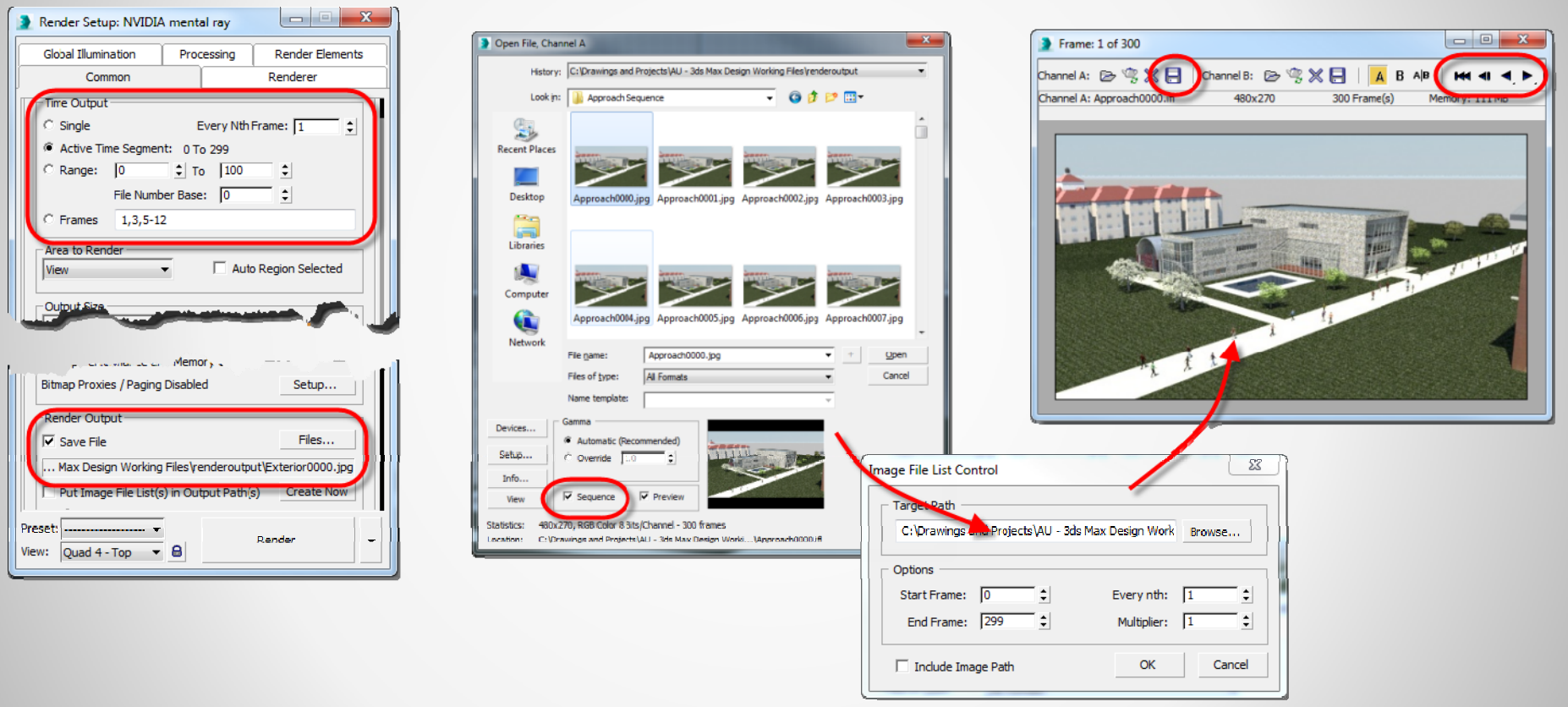


Final Touches - Entourage

- Populate
- Google 3d Warehouse
- CivilView
- ArchVision®



Animation Output – Image Files and RAM Player



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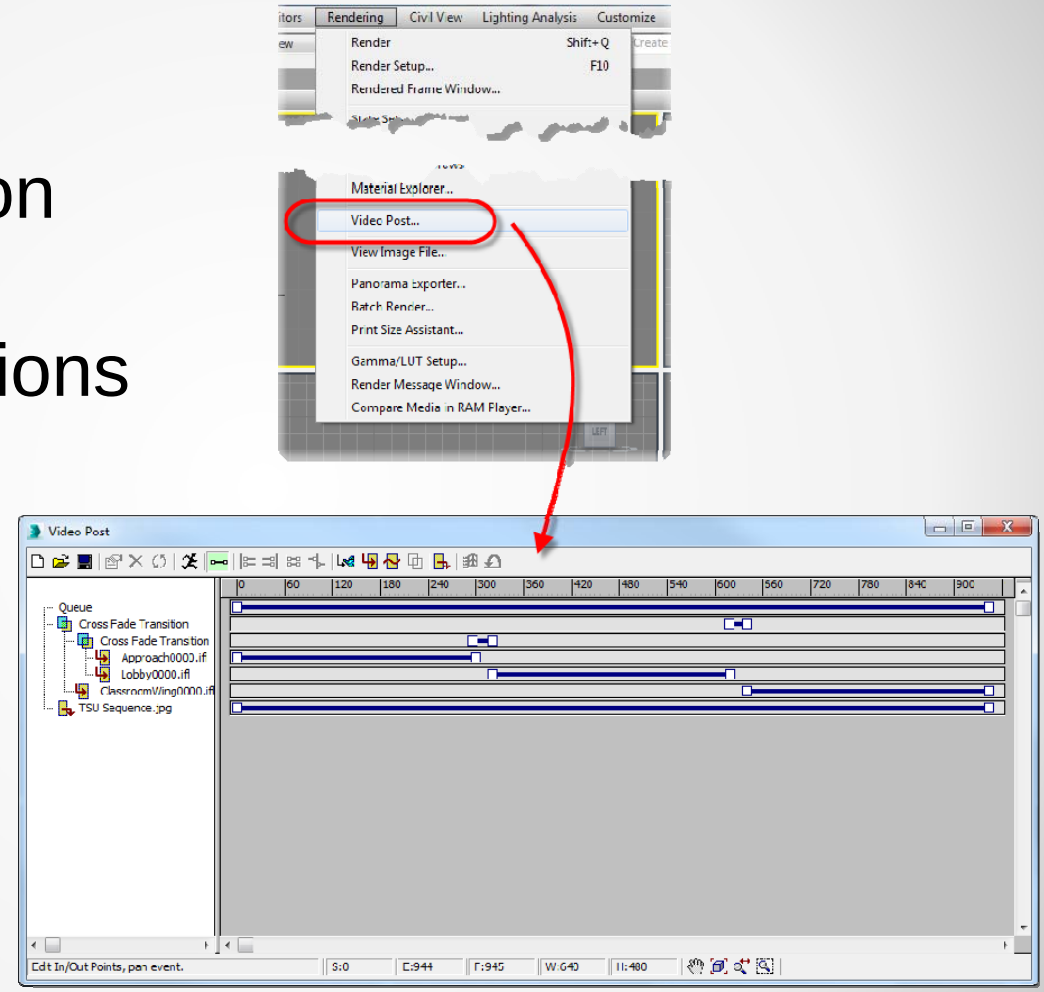
Video Post

- Combine Animation Sequences
- Crossfade Transitions



Summary

- Scene Setup
- Daylight Systems and Photometric Lighting
- Global Illumination
- Still Image Output
- Animated Sequences
- Video Post

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