AUTODESK **UNIVERSITY** 2015

AV9943-L

Mastering 3ds Max Basics, from Beginner to Final Render

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Learning Objectives

- Learn about user interface and workflow
- Learn about object creation and scene management
- Learn about cameras and animation
- Learn about lighting and rendering

Description

This class will walk you through the early steps of learning 3ds Max software from the ground up. We will explore the user interface and the workflows that best suit new users. We will address importing and file linking from external source files, cameras lighting, and rendering techniques aimed at the CAD and Rivet software users.

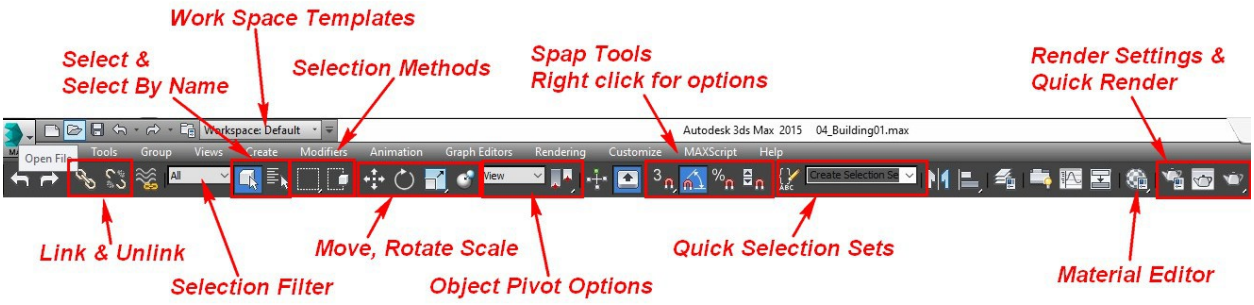
Your AU Experts

Paul Neale has been internationally known in the 3D animation industry for 2 decades. His extensive involvement as senior director of research and development and as art director of 3D has encompassed areas in TV series, feature films, special effects, and high-profile games. Paul specializes in character rigging and modeling, as well as in writing plug-ins and scripted tools for system, software, and production needs. Paul received the Masters Award for Contributions to CG Artistry from Autodesk, Inc. Paul has been a presenter for multiple SIGGRAPH master classes, and he presented a master class at Game Developers Conference (GDC). He has represented Autodesk as a regular guest speaker at trade shows and special events, and he presented master classes at 3 Autodesk Universities and the End User Event (EUE) in Holland. Paul also has written and developed training material for 3ds Max software manuals.

Learn about user interface and workflow

Main Tool Bar

The main tool bar is where you will find the most used base tools for working with objects, rendering and other tasks.



Command Panel

The command panel is broken into several taps each with their own sub panels.

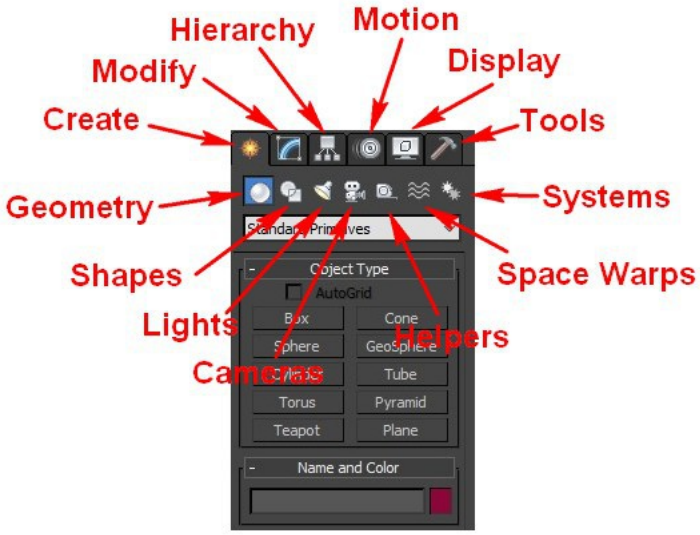
Use the Create panel for creating new objects and adding them to the scene.

The Create panel is broken into seven sub panels for the different types of objects that can be created. Each of those will have a drop down menu with groupings of tools.

Use the Modifier panel for modifying objects that are already in the scene by editing them directly or adding modifiers to them in the modifier stack.

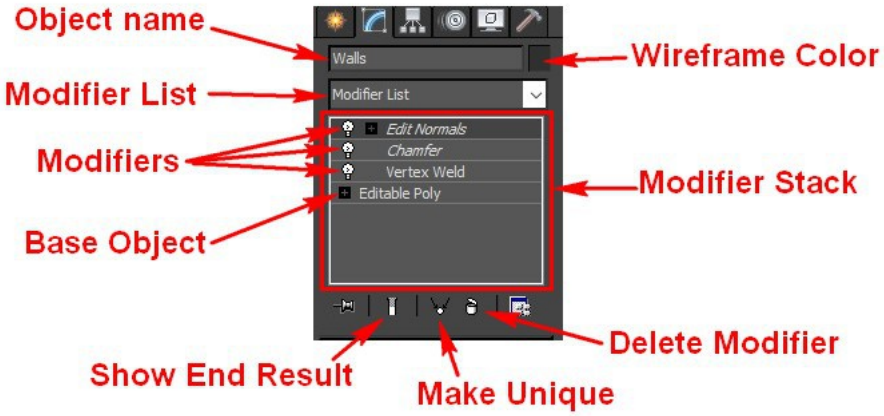
The Display panel contains the tools for managing what is seen in the viewports.

The rest of the panels are not needed as a beginner. x



Modifier Panel

The modifier panel allows for working with current objects in the scene by either modifier their base object directly or adding modifiers to the modifier stack working with their parametric parameters.

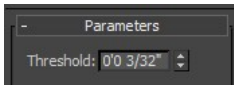


Modifiers can be stacked and reordered any way you like and can achieve infinite possible results.

The stack is executed from the bottom to the top.

Vertex Weld

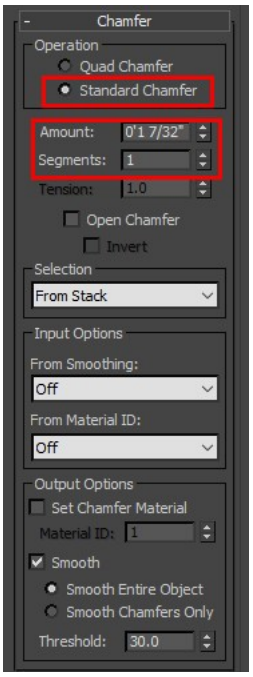
Vertex Weld modifier welds vertices in a model based on a distance threshold. The threshold should be set as low as possible to be able to weld only the vertices that are necessary.



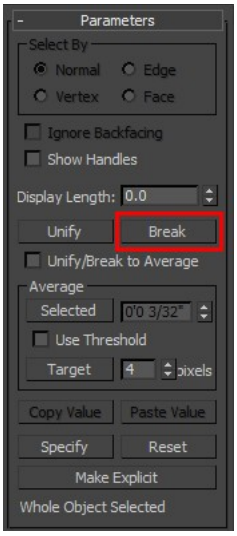
Often files when imported from other programs can end up with objects not welded correctly and this can cause rendering errors in the mesh.

Chamfer Modifier

Chamfer modifier can be used to add extra bevels on the edges of the model. This will help with producing rim lighting on the edges of the building.



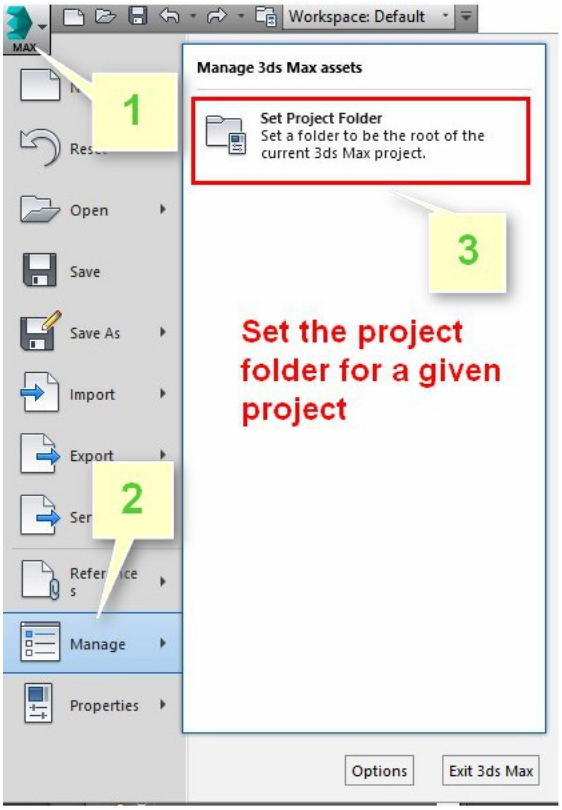
Amount controls the size of the chamfer, what we are looking for is a small bevel on the edges to pick up lighting.



Edit Normals

Edit normals modifier will need to be used to clean up the vertex normals of the mesh in some cases. Once again when meshes are imported from other applications the normals can be calculated incorrectly especially after making changes to the model as is the case with the Vertex Weld and Chamfer modifiers.

Choose the break option to ensure that all the normals are separated and hard edges will be respected.



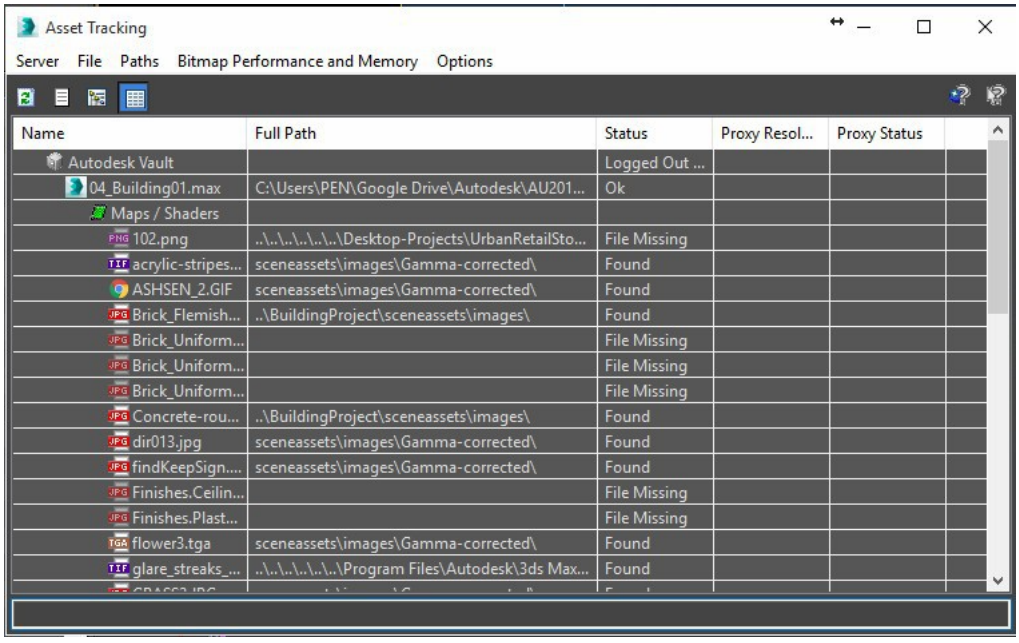
Set Project Folder

Before starting a new project set the project folder location. This will build a hierarchy of folders within the chosen folder that can be used for storing all of the assets for the project. File Open and other commands will respect the project location and open in the correct folder.

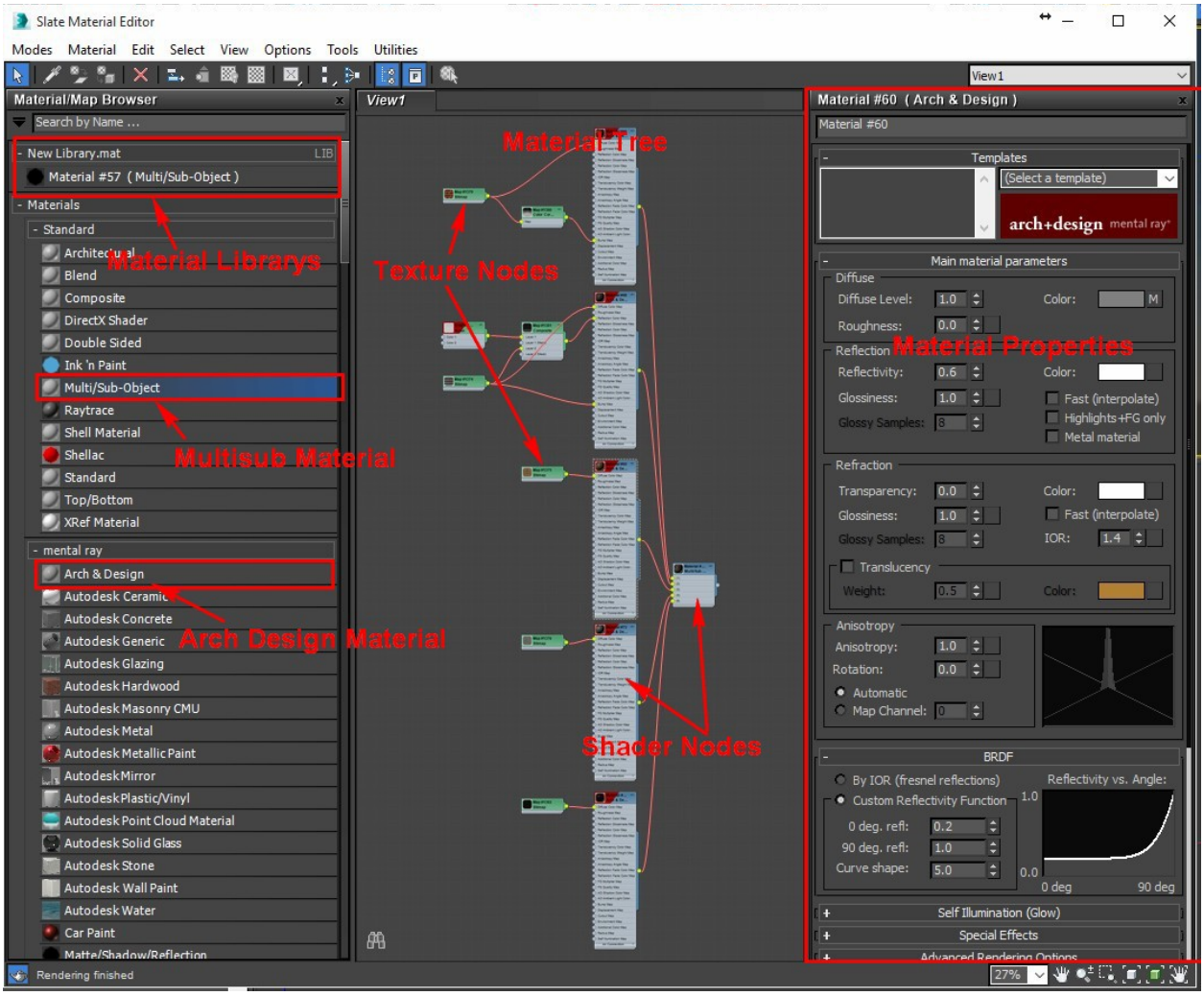
In the Preferences dialog of Max in the Files tab check no the options Convert Local File Paths to Relative. Bitmap images and other external file resources will not be saved with a path relative to the root project folder. This makes it easier to share or move projects as they are not tied to specific file paths.

Asset Tracker

Asset tracker is where internal and external assets can be managed for a loaded scene. File paths can be edited, set the absolute or relative and many other tasks can be performed.



Slate Material Editor



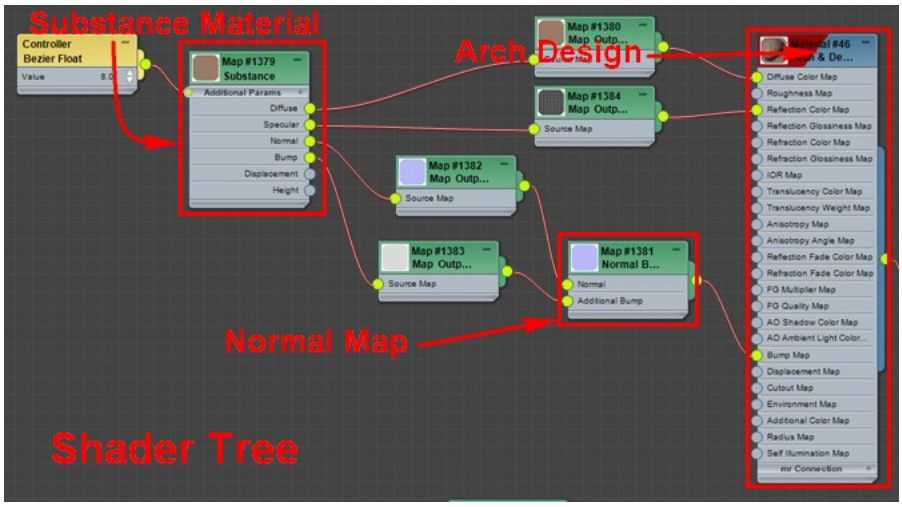
Material Editor is where Shaders and Textures are connected together to build materials.

Shaders can be described as the way in which light will interact with the surface of the object. Different shading results could be cloth, metal, glass and others.

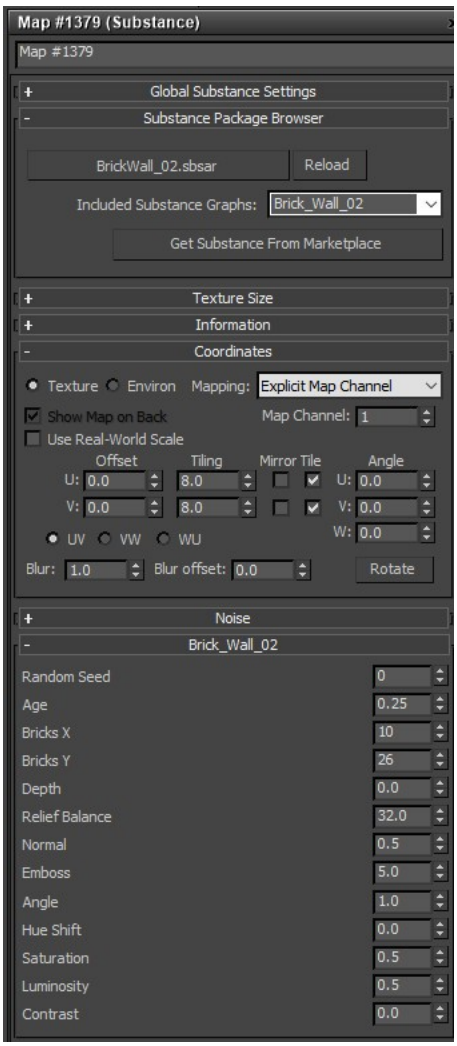
Textures are nodes that are used to control the surface colors, roughness, shininess and other properties.

Built together, Shaders and Textures create materials.

Substance Material
Substance material is a quick and easy way to build more complex shader trees.



Complex surfaces require more then just a diffuse map to make believable shaders. Surface properties like specular, bump and normal and other properties can be used to control how light interacts with the surface of the mesh.



Substance materials supply preset texture options that have been created with Substance Designer, a third partly application that can be used to build your own custom texture types. 3DS Max ships with many default Substance textures for use on your projects. You can also down load more prebuilt Substance textures from the Autodesk store.

In the shader tree shown four channels are being used from the Substance node, Diffuse, the color of the surface, Specular which is being

Arch & Design Shader
The Arch & Design Shader in Mental Ray is the default shader type that allows for all types of different materials to be created.

Presets can be selected that will change settings to help get you started in representing certain materials. With some of the presets textures will automatically be added as well to aid in the shaders solution.

Any settings that have been set by a preset can be changed if needed.

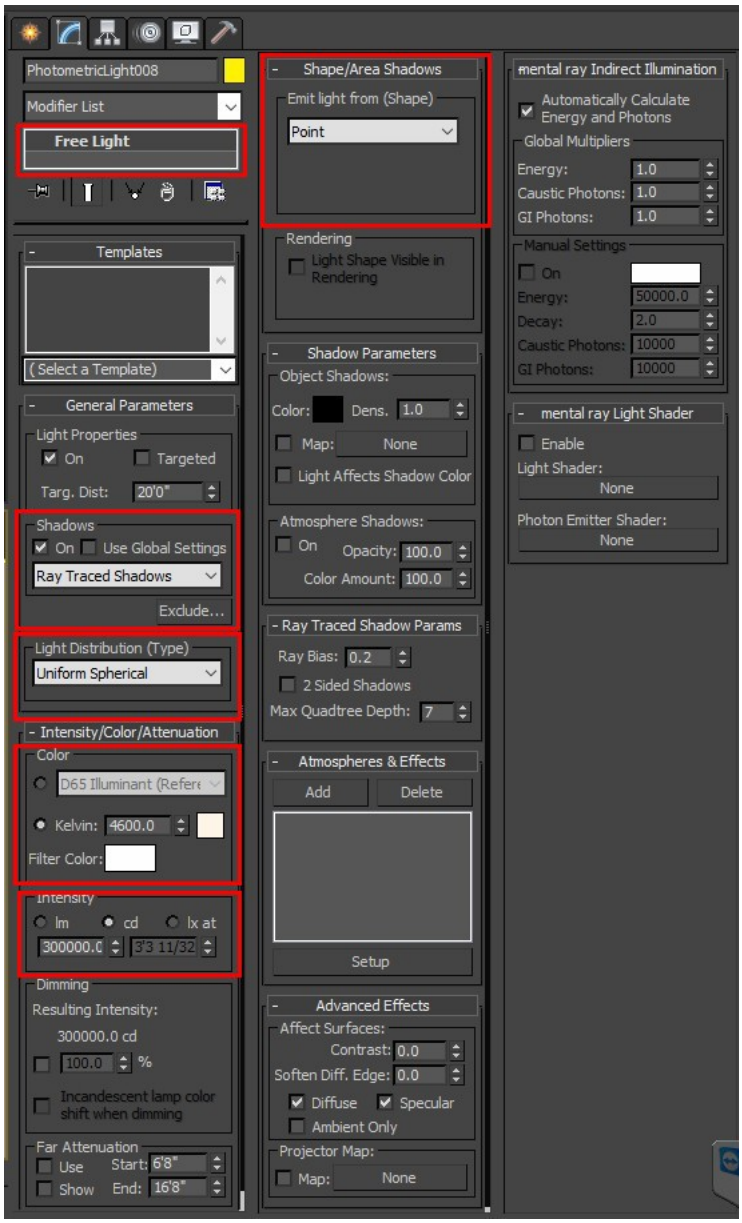
Photometric Lights

Photometric lights are the physically correct lighting solution for 3DS Max. We will use them to add accent lighting to the building. Lights should be set to Ray Traced Shadows so they are more accurate and will also respect alpha channels.

Light distribution will control the sort of light that is being used.

The color and intensity of lights can be controlled in several ways, more physically accurate if you know the type of light that should be used or values that can be entered.

The shape of a light can determine the area that a light is being emitted from. When using an area like a circle the shadows will also soften based on the size of the area.



Render Setup

Render Setup dialog is where we choose settings that will affect the end render solution. Mental Ray can be selected as the renderer so that we can take advantage of the advanced rendering abilities it provides over the default Scanline rendering solution.

Time ranges, Output sizes and other settings can be found in the Render Setup dialog.