Mastering Lumion 3D

Lumion uses real-time 3D technology to provide immediate visualizations and create images in a fraction of a second without the long hours of rendering. With an outstanding collection of high-quality plants, trees, cars, buildings, people, and materials, any complex and challenging task can be handled easily by Lumion.

This is a practical guide featuring time-saving techniques along with established production tips for efficiency and swiftness in producing professional architectural visualizations in Lumion. The initial chapters provide a solid foundation by covering the solutions for typical problems when modeling for Lumion and how to create realistic and proficient terrains. You will also learn the best techniques to create believable materials and populate the 3D world with Lumion’s models. Special chapters are reserved not only to improve the lighting and reflections in Lumion, but also to take the best from Lumion’s effects. Finally, you will create powerful animations to bring life to any walk-through visualizations and export them as a movie or still images.

Who this book is written for

This book is designed for all levels of Lumion users; from beginner to advanced, you will find useful insights and professional techniques to improve and develop your skills in order to fully control and master Lumion.

What you will learn from this book

- Import external 3D models and place Lumion’s native models
- Make height maps and detailed terrains
- Design complex animations using layers and curved paths
- Control Lumion’s effects to add a special touch
- Create and control believable materials
- Produce believable renders with real camera effects
- Organize your project with layers and manipulate the 3D models
- Solve common problems and develop a production workflow


Ciro Cardoso
In this package, you will find:

- The author biography
- A preview chapter from the book, Chapter 1 'Getting Ready for Lumion 3D'
- A synopsis of the book’s content
- More information on Mastering Lumion 3D

About the Author

Ciro Cardoso is a self-taught 3D artist and training author specialized in architectural visualization. He started off painting and drawing traditionally and then got into 3D graphics in 2000.

In 2005, he was running his own small multimedia business working on projects as diverse as graphic designing, CAD services, and architectural visualization projects. More recently, he started using Lumion and game engines for multimillion dollar projects in the United Kingdom, Portugal, the Netherlands, Angola, and Cape Verde. He is quite conversant with software in general, with extensive expertise in Maya, 3ds Max, AutoCAD, SketchUp, V-Ray, Corona, Photoshop, Lumion, Unreal 4, and Bentley MicroStation. He is also the author of Getting Started with Lumion and Lumion 3D Cookbook, both by Packt Publishing.

He now lives in London, working as an architectural visualizer, and does voluntary work teaching 3D. He can be reached through his website, http://www.cirocardoso.net.

Firstly, I would like to express my gratitude towards my family for making me a curious person. A big thanks goes to my wife for her support, love, and patience throughout the process of writing this book, even if that meant staying home during weekends. I believe that without her, this book would not have been possible.

I would like to express my thanks to the Packt Publishing team for the opportunity to author this book, and also for the effort and support to produce this book.
Mastering Lumion 3D

Welcome to Mastering Lumion 3D. Let me start by thanking you, the reader, for picking this book as a tool to help you throughout the process of using Lumion real-time technology.

Lumion can be an intuitive tool, but that doesn't mean we can automatically produce a better architectural visualization. The reason why I wrote this book was because, like you, the first time I picked up Lumion, I felt that there was something missing on my projects.

Mastering Lumion 3D covers the process of picking a 3D model, preparing it, and then start building layers on top of layers of detail, by using textures and optimized 3D models. However, we don't stop here, because several chapters are dedicated exclusively explaining how to use Lumion's effects and other special features to take your project to an expert level.

I wrote this book in a way that will hopefully cover all the questions you may have when starting the first steps with Lumion. On the other hand, if you are an intermediate or advanced user, you can find some unique techniques that will make you look to Lumion in another perspective. The journey to write this book was filled not only with my experience, but also from what I learned while working with other great professionals.

You may find it strange that there isn't any example to follow or project files to be used. The reason is because to fully understand and master Lumion, you have to apply all of these techniques on your own projects. Initially, this can be something daunting, but the book is prepared in such a way that you can gradually build your confidence and skills using Lumion.

And my final advice is not to be afraid to try and fail. Failing is an important part of the process to learn and deeply understand Lumion.

What This Book Covers

Chapter 1, Getting Ready for Lumion 3D, focuses on preparing a 3D model to be used in Lumion 3D. A special section is used to explain why materials are a key aspect to ensure a smooth and fluid workflow when importing 3D models into Lumion. Common problems and how to solve them will ensure you start with the right foot.

Chapter 2, Creating a Project in Lumion, puts the 3D model in standby while you prepare a scene in Lumion. This involves creating a project and tweaking the terrain to accommodate the 3D model. Layers and workflow optimization are covered to help you get useful and practical professional habits.
Chapter 3, *Importing 3D Models*, explains how to import an external 3D model and place it inside Lumion. A time-saving feature is explained to enable the reload of new geometry, avoiding importing the same 3D model multiple times.

Chapter 4, *Applying and Creating Materials*, focuses entirely on how to improve the 3D model's look using Lumion's realistic materials. There are at least three possibilities that are covered giving you the insight to choose the one that best suits the project.

Chapter 5, *Creating Your 3D World*, is one of the high points in the book because it is entirely dedicated to explain how to use Lumion's native 3D models and completely control them in order to start populating and creating a 3D environment.

Chapter 6, *Lighting in Lumion*, is a small yet powerful chapter to improve and optimize lighting in Lumion. Exterior lighting is usually covered by Lumion's Sun and Sky system. However, for interior scenes, lights need to be used. Global illumination is explained to create perfect interior scenes.

Chapter 7, *Creating Realistic Visualizations*, starts explaining how to use Lumion's effects in the Photo mode to produce believable visualizations by mimicking what is present in the real world.

Chapter 8, *Non-photorealistic Visualizations with Lumion*, explores an almost unknown side of Lumion's effects. This chapter explains how to produce conceptual and technical illustrations.

Chapter 9, *Animation Techniques*, brings life to a project by exploring the Lumion's animation system. Step-by-step examples are provided to master this difficult stage.

Chapter 10, *Creating Walk-through Visualizations*, is the final step where final techniques are explained to enhance the quality of an animation and a movie by using not only sound, but also realistic effects.
Getting Ready for Lumion 3D

Lumion 3D's main goal is to provide the best solution to produce believable 3D renders in the simplest way possible. Lumion had a modest start with the first version, but from the beginning, it was easy to see Lumion's potential. The final output is simply amazing when compared to the time it takes to create a movie and still image.

Lumion always aimed to bring the best real-time technology and at the same time provide intuitive and friendly software that empower anyone to transform a simple 3D model into a highly professional still image or beautiful architectural movie. The real-time technology used in Lumion 3D allows us to focus on the artistic side of the project instead of the technicalities and parameters.

Consequently, it doesn't matter what your professional background is; you can use Lumion 3D for your projects, and this book is aimed at helping both beginners and advanced users. However, you might wonder how a book can be useful and practical for two totally different types of users. For someone who is just starting out with Lumion, this book covers in depth the tools, techniques, workflow, and other elements that will enable you to become a Lumion master and produce an output similar to this:
On the other hand, if you are an advanced user, this book can help you explore in more depth how to use Lumion in ways you didn't think possible, helping you to see Lumion from a totally different perspective.

In this chapter, we will cover the following topics:

- Controlling the camera
- Lumion's hotkeys
- Using the **Settings** window
- Modeling for Lumion
- Additional models
- Importance of materials
- Solving common problems
- Exporting 3D models
- Using the COLLADA format
- Exporting animations

**Starting to work with Lumion**

Now, to get ready for Lumion 3D, what we need is a detailed 3D model. Lumion doesn't have any modeling tools; this means we have to pick a modeling package such as SketchUp, 3ds Max, Modo, or Blender, just to mention a few, and use a **computer-aided design (CAD)** plan as a reference to model the building. Modeling with one of these packages is out of the book's scope, but if you are modeling for the first time, you might want to explore SketchUp. SketchUp has a free version; it is a very easy application to learn. There are plenty of tutorials to help you start working with SketchUp, and Lumion imports SketchUp files directly, without the need to use any special format.

Assuming that we have a 3D model, our next step is to import this model into Lumion and start adding more content by adjusting the weather's elements, sculpting the terrain and then adding some camera effects, and finally, exporting this as an image or a movie. In simple terms, this is more or less the workflow to work with Lumion.

Nevertheless, before starting this process, we still need to be sure that the 3D model is ready to be imported inside Lumion. When you look at the topics mentioned in the beginning of this chapter, they might look simple, but we should fight the temptation to jump to the next chapter. This chapter is the cornerstone of the project we are going to develop in Lumion, and the topics mentioned can serve as a checklist that we can run quickly before importing our 3D model, making sure that we don't need to jump back and forth solving issues.
Let's start with a quick overview of some fundamental concepts that will help you work with Lumion and check whether your 3D model is working properly.

A quick overview

After launching Lumion for the first time, it will run a benchmark to check our system or workstation and see if there is any hardware component that we can upgrade in order to run Lumion more smoothly. The next screenshot shows an example of the final result and the components we might want to upgrade:

![Benchmark Result]

Although CPU Memory and CPU Score are essential, the most important piece of hardware is the graphics card. Which graphics card we use makes all the difference, and Lumion's official website has some useful information that can help us evaluate the vital role of this piece of hardware.

To find out what hardware will be best suited to work with Lumion 3D, check out the following link:

http://lumion3d.com/faq/#hardware
When the benchmark finishes execution, the next interface that appears is what we can call the main menu, although there isn't any official name. We call this area the main menu because here we find the most important settings to start working with Lumion. As you can see in the following screenshot, there are several tabs, and if we click on each one, we would find different areas that help us work with Lumion:

For now, we will stick with the **New** tab, because all the other tabs are sort of useless if we don't have any project of our own. We will look at a new project that is exactly what we can start in the **New** tab. For this, we can use one of the nine scenes shown in the preceding screenshot. However, which one should we select? All the nine scenes can be accomplished by tweaking the menus we find inside the **Build** mode (the **Build** mode is where we can build the project), and therefore, we can say that these nine scenes work as a shortcut or a preset to get a specific look and mood, although later, we can entirely change the look of the environment. Unfortunately, for now, we cannot save an environment created as a template, but nothing stops you from saving a scene and using it as a template. The only difference is that it will not appear in the **New** tab.

A good starting point is to use the **Grass** scene. The **Grass** scene is highlighted in the previous screenshot and is a good starting point because it is a simple scene with a flat terrain and good light. After selecting this scene, Lumion loads the scene and opens the **Build** mode.
Camera navigation in Lumion

Now that we are inside the Build mode, how can we control the camera? The Build mode has a very simple interface. Initially, we might feel lost with the lack of information in the interface. On the right-hand side, there is a set of buttons, and if we hover the mouse over the one with a question mark, some information appears that will help us. For now, the information we need is the one located in the top-right corner; this tells us how to navigate or control the camera in Lumion, as you can see in the following screenshot:

Here is a list of the keys and combinations to fully master the Lumion navigation system:

- **WSAD / arrow keys**: These are used to move the camera forward, backward, to the left, or to the right, respectively
- **Q and E**: These are used to move the camera up and down, respectively
- **Spacebar + WSAD / arrow keys**: These are used to slow down the camera
- **Shift + WSAD / arrow keys**: These are used to move the camera fast
- **Shift + Spacebar + WSAD / arrow keys**: These are used to move the camera very fast
- **Use the right mouse button and move the mouse to look around**
- **Use the middle mouse button and move the mouse to pan the camera**
- **Mouse wheel up/down**: This is used to zoom in and out the camera
- **Ctrl + H**: This is used to reset the camera pitch to horizontal viewpoint
- **O + the right mouse button**: This is used to orbit the camera
Now that we know what to use to control the camera, another question arises: how do we control the 3D models inside Lumion?

**Controlling 3D models**

Every time we place a 3D model inside Lumion, it is normal to accept some controls to tweak and adjust some basic parameters such as move, scale, and rotation. Now, it is a good time to introduce a concept that Lumion uses to control the 3D models in the scene.

**Handling the 3D models using Lumion**

Lumion makes a distinction between the 3D models we import and the native 3D models. This means we need to use two different Lumion menus to control each 3D model, as explained in the following screenshot:

![Diagram of Lumion menus](image)

The **Import** menu is where we can find the tools to import external 3D models, and the **Objects** menu is where we can find all the built-in 3D models of Lumion. There are two different menus, two different types of 3D models, and two different ways to select and control. This means that to control an imported 3D model, we need to have the **Import** menu selected; otherwise, we cannot find any tools to adjust the model. The same principle applies, for example, when we need to move a tree, and for this, we need to have the **Objects** menu selected. So, how can we import a 3D model?
Importing an external 3D model

Importing a 3D model is really easy and straightforward. What we need to do is click on the Import menu, which can be found on the left-hand side, and then click on the Add a new model button, as shown on the following screenshot:

This opens a Windows Explorer window where you can locate the folder that contains the 3D model and select it. After doing this, we need to give a name to the new 3D model and click on the Add to library button.

Now, we are back to the Build mode, and we are controlling a yellow boundary box that represents the 3D model we just imported. With the left mouse button, we can click to place the 3D model. This is how we import an external 3D model. If you have problems at this stage, have a look at the Common problems and solutions section at the end of this chapter.

Using Lumion's 3D models

Lumion has an extra distinction inside the Objects menu, and now, we are talking exclusively about Lumion's native 3D models. If you open the Objects menu, this is what you will find:
Getting Ready for Lumion 3D

The buttons highlighted show the eight categories of 3D models and other elements such as lights, smoke, and buildings. When we hover the mouse over the buttons, a small label appears identifying the category.

Let's try to add a 3D model to an empty scene. Something that will look really good in the scene is a tree, and to add one, we need to select the first button called **Nature**. So now, we have the **Nature** category activated; this means that we can control any 3D model that falls under this category. To add a 3D model and open the Nature Library, we need to click on the **Change object** button, as shown in the previous screenshot. Select a tree and now know we got back to the **Build** mode and controlled a yellow boundary box that represents the tree. Click with the left mouse button to place the tree somewhere in the scene, and click again next to the first tree to place a second tree.

However, now, we want to add a nice sports car. How can we do this? We will use the same principle we used for the tree, so we need to select the **Transport** button and click on the **Change object** button to open the **Transport** library. Inside this library, select the tab called **Sports Cars** and add a nice sports car to your scene.

At this point, you should have at least two trees and one car in your Grass scene, but how can we control the 3D models placed inside Lumion?

**Hotkeys to control the 3D models**

When we open the **Objects** menu or the **Import** menu on the left-hand side, a toolbar appears at the bottom of the screen, as you can see in the following screenshot:
If you followed the previous steps, your scene should look something like the one shown in the previous screenshot: two trees, one car, the Objects toolbar, and the Place object button activated. That is why we still control the yellow boundary box. We can deactivate the Place object button by selecting another tool, and for this, we can use the following keys:

- **M**: This is used to move the 3D model
- **L**: This is used to scale the 3D model
- **R**: This is used to rotate the 3D model

The previous screenshot helps you identify where you can find these tools, including a button that is really important; this allows you to delete 3D models. Let’s move the car, and for this, press the M key or select the **Move object** tool from the toolbar. Since we have the Transport category activated and we selected the move tool, we can control any object from this category. To control a 3D model, we need to start by clicking on the small white dot that appears on the car, as you can see in the following screenshot:

![Screenshot of 3D modeling tools](image)

With the left mouse button, click and drag the car to move the car to a different place, and a white line will appear showing the distance (in meters). The same principle applies to the other tools. To delete a 3D model, we just need to select the **Trash object** button and click on the small white dot to delete it.
Getting Ready for Lumion 3D

However, this fantastic scene could look much better if one of the trees was smaller than the other. It is really easy; we just need to press the L key and select and scale the tree. However, this is not working, why? Well, right from the beginning, we have a problem because even if you press the L key, the move tool is still activated. To solve this, we need to press and hold the L key and scale the tree and then click on the Size object button. However, even after doing this, we cannot select and scale the tree. The reason is because we need to select the Nature category first before doing anything else. This is a key aspect to work with Lumion; we always need to select the category first before applying any transformation to the 3D model.

Now that we have our amazing scene ready, there is something really important we need to do: save the project.

**Saving in Lumion**

To save any project, we need to select the Files menu, which we can find on the right-hand side, as you can see in the next screenshot:

![Files Menu](image)

When we open the Files menu, the Save scene tab is automatically opened. Here, we can save the project by giving it a name and description (optional). After that, we have to click on the Save button (if you are in a hurry, press F5 to quickly save it) to save the first version of our project, as shown in the following screenshot:
When you click on the **Save** button, Lumion will be able to tell that **Version 1** was saved. However, let's say that we totally forgot to save the project, and instead, we opened another project. Is everything lost? No, because Lumion has an autosave system to prevent any loss of work. So, if by mistake, we forget to save the project and we open another scene, Lumion creates an autosave file with the last version. In order to access this file, click on the **Files** button and select the **Load** scene tab on the left-hand side of the **Save** scene tab, as you can see here:
As a result of the Lumion's autosave feature, we can now select the autosaved file to restore the work we did in the previous project, but keep in mind that the autosaved file doesn't last forever and can be overwritten.

Before we finish this quick overview, let's have a look at an additional aspect that can help control and tweak Lumion's speed. For this, we need to open the Settings menu.

The Settings menu – how to use it

The Settings menu is where we can find some parameters and settings that help us tweak the way Lumion works. We can dramatically increase how fast Lumion works just by decreasing the quality of the editor, terrain, and trees. This will only affect the way Lumion presents the 3D models and environment in the Build mode.

There are two ways to open the Settings menu. If we are in the Build mode, on the right-hand side next to the Files button, we would find the Settings button, as you can see in the following screenshot:

![Settings button](image)

The second option is to click on the Files button and select the first tab called Home and then click on the Settings button. One way or another, we should get this menu:
As you can see, each setting has a number to help you follow along:

• **Button 1** limits all the texture sizes to 512 x 512 pixels and saves a bit of memory for huge scenes or low-end graphics cards.

• Use the **Toggle Tablet Input** button if you want to use a graphic table to work with Lumion. It is useful for sculpting the terrain.

• **Button 3** lets you invert the way the mouse works when we use it to look up and down.

• **Button 4** is another setting to improve Lumion's speed by removing or adding a level of detail to the terrain. The shortcut for this setting is *F7*.

• If button **5** is pressed, all trees and plants in the **Build** mode are rendered with full quality and detail. The shortcut for this setting is *F9*.

• **Button 6** mutes all the sounds in the **Build** mode.

• The **Editor Quality** button lets you define the quality of the 3D models, shadows, and materials on the **Build** mode, but this will not affect the output when the scene is rendered. The shortcuts for this setting are:
  - *F1* for low quality
  - *F2* for medium quality
  - *F3* for high quality
  - *F4* for very high quality

• The **Editor Resolution** button lets you control Lumion's resolution, and this setting has a big impact on the real-time performance. By reducing the resolution, you can get quicker updates on the **Build** mode.

• Finally, with button **9** you can define if you want to work with the metric or imperial system. By default, Lumion works with meters, so if your building was modeled using inches, this is the first place to check before importing the 3D model.

Here are a few more shortcuts to help you work with Lumion:

• **F5**: This is used as a quick save option

• **Home** and **F11**: Open the **Home** window and press the **F11** key to toggle between a fullscreen and normal window

Now that we finished with the quick overview, let's jump to another important section that will help us understand how to model using Lumion.
Modeling for Lumion

It is out of the scope of this book to teach you how to model using one of the many 3D modeling packages. However, modeling doesn't have to be difficult or only accessible to those who can afford expensive licenses, because we have SketchUp.

SketchUp is perfect for anyone because it doesn't require any technical background; it is easy to learn and use and is available for free. So, even if you don't have any experience, SketchUp can help you start making your own 3D models to be used in Lumion.

To download SketchUp, go to the following URL:
http://www.sketchup.com/products/sketchup-make

To learn SketchUp, go to the following URL:
http://www.sketchup.com/learn/videos?playlist=58

An additional reason to use SketchUp is because Lumion can import any SketchUp file directly, without having to use any special format. We will see this later, but for example, if we are modeling the building using 3ds Max or Maya, we have to export the file as a COLLADA or FBX file.

Now that we have everything we need, let's see some techniques and aspects that we need to keep in mind when modeling for Lumion.

Modeling for visualization

Modeling is a process that will differ from one person to another. The techniques, favorite tools, plugins, and also our experience will dictate how we approach a project from start to finish.

However, what does modeling for visualization mean? Modeling for visualization means that when we approach the project, we ask ourselves: am I going to see this detail? It is true that the greater the detail, the richer and more detailed the results will be. However, it is pointless to transcend certain limits because some of these details will not be caught by the camera angle, and we are wasting time on details that will never be seen.

As an example, the hinges on a door will look great on a close-up render, but at the same time, they would be useless if you are using a bird's-eye view render. So, it is better to start out with rough outlines of shapes that can be tweaked and fine-tuned as the modeling process advances. However, detail is important, as we will see in the following topic.
Improving the scene by adding detail

Lumion does an amazing job at giving the light, materials, and content we need to completely transform our ordinary 3D model into a professional architectural visualization. However, so far, Lumion cannot perform any miracles. It cannot pick a 3D model and make it amazingly gorgeous if there is a lack of detail.

It is this detail that will make our 3D model more believable, provide more visual information from light to dark, create contrast, and deliver an enhanced result. Simple things can make all the difference. So, how can we add this kind of detail?

After modeling the main structure of the building, we need to stop and ask ourselves: what detail can I add to make this living room more believable? Perhaps some electric plugs and switches, wood floor skirting, window frames, and the list goes on. These are small things, but if our project is about a living room, it makes more sense to add these small details. And there is something extra we could always do to further improve the look of our 3D model. Remember that the more detail and geometry we add, the more CPU and GPU power Lumion needs to render the scene. Always try to create a balance between geometry and performance.

Beveling edges

There are almost no sharp edges in real life, and even most man-made objects have a slight roundness. The problem with sharp edges is that you will obtain something flat and lifeless, and it will be harder to achieve a good level of realism.

Beveling edges is one of the most important aspects to improve the level of realism in any 3D model. Why? Beveling edges helps bring out the detail and really sells the realism of our model by allowing the edges to properly catch the highlights from the Lumion real-time lighting solution.

After going through this process, it is time to add some 3D models to the project, in particular, if you don't have Lumion's full version.

Using additional models

Lumion has several flavors that meet the needs of almost everyone. For commercial purposes, we have Lumion and Lumion Pro. Perhaps, the most noticeable difference is the amount of 3D models that are available with Lumion Pro. However, just because we have a Lumion version with less 3D models, that doesn't mean our project has to be empty and lack diversity.
Where can we find good 3D models? The following is a list of some places where you can find free and paid models:

- CreativeCrash: This is available at [http://www.creativecrash.com/marketplace/3d-models](http://www.creativecrash.com/marketplace/3d-models)
- 3D Cafe
- Archive 3D: This can be downloaded from [www.archive3d.net](http://www.archive3d.net)
- Mr. Cad: This can be obtained at [www.mr-cad.com](http://www.mr-cad.com)
- 3Delicious: This is available at [www.3delicious.net](http://www.3delicious.net)
- TurboSquid: This can be found at [www.turbosquid.com](http://www.turbosquid.com)
- Resources Blogscopia: This can be obtained at [www.resources.blogscopia.com](http://www.resources.blogscopia.com)
- SketchUp Warehouse: This can be downloaded from [http://sketchup.google.com/3dwarehouse/?hl=en](http://sketchup.google.com/3dwarehouse/?hl=en)

Now, we have everything we need to start working with Lumion. Our 3D model is ready with detail, including the beveled edges, and we have additional 3D models that can be imported as separate files in Lumion. However, what about the materials? How does Lumion work with materials?

**Importance of materials**

Lumion has more than 500 ready-to-use materials that are imported in a 3D model, and this takes away a heavy burden from us. Some of the materials available are grass, concrete, bricks, metals, wood, tiles, wallpaper, and some special materials such as the glass and invisible materials.

This doesn't mean we cannot use materials we created while modeling the building. In reality, the materials we used while modeling the 3D model are crucial in order to use the 3D model later in Lumion. Most of the 3D modeling packages will use a default material while we are modeling; for example, SketchUp uses the default material, and this means that by the end of the modeling process, the entire 3D model has the same material, as you can see in the following screenshot:
When we import a 3D model into Lumion, we need to use the **Edit Materials** button that can be found inside the **Import** menu, as shown here:

![Edit Materials Button](image)

The process to add a material is simple. We need to click on the **Edit Materials** button and then select the 3D model we want to change or add the materials to. When we hover the mouse over an imported 3D model, Lumion highlights the 3D model with a green color. Then, we need to click on the **Add Material** button that appears on the left-hand side and select a material from the 3D model.

We did this with the 3D model shown earlier, and this is what happened:

![3D Model with Materials](image)

As you can see in the previous screenshot, we selected the 3D model and added a material, but it is clear that something went wrong. Why?
Materials affecting the geometry in Lumion

Lumion has its own materials as mentioned earlier, but at the same time, it relies on the materials that are imported with the 3D model. As we only used one material for all the 3D models in the example, when the 3D model was imported, Lumion only saw one material, and this is all we could add.

The solution to this problem is to assign different materials to groups of geometry that will share the same material inside Lumion while we are modeling. Have a look at the following image:

We took the time to add individual materials to the main areas in our 3D model. When we import this 3D model, Lumion will see at least eight different materials. That is why materials are so important, because if they are not present in the 3D model, Lumion will only recognize one material. It is normal that for the first few times, you will have to go back and forth to add materials to the geometry that was left with the default material. That is why, it is a good habit to group the geometry that will share the same material.

However, how can we export the 3D model to start working with Lumion?

Exporting the 3D model

Now, we are ready to export the 3D model in a format that Lumion can import. Lumion supports the following 3D file formats:

- Autodesk RealDWG: *.dxf
• Autodesk RealDWG: *.dwg
• COLLADA: *.dae
• FBX: *.fbx
• 3ds Max: *.max
• 3ds: *.3ds
• Obj: *.obj
• SketchUp: *.skp

If you don't see your favorite application listed, it doesn't mean that Lumion is out of the equation. In most of the applications, it is possible to export the 3D model using the FBX file format. For example, Bentley Micro station lets you export the 3D model as a SketchUp file. This means that in some applications, we have to use SketchUp as the middle man to create a bridge between our favorite 3D modeling package and Lumion.

If you are using Revit, have a look at http://lumion3d.com/revit-to-lumion-bridge/, because the Lumion team developed a plugin for Revit.

You can visit http://lumion3d.com/archicad-to-lumion-bridge/ if you are using ArchiCAD.

Although we can use all the file formats mentioned in the previous list, the option we have is to use either SketchUp or a COLLADA file.

Using the COLLADA file format
First of all, what is COLLADA? COLLADA is a file format used to create a bridge between the different 3D tools, making easy-to-share 3D geometry, shaders, and effects between different applications.

The reason behind using the COLLADA file format instead of FBX, OBJ, MAX, and other formats is that it is a better option because it includes all the textures used, the geometry is better, and there is a low possibility of error. However, COLLADA is not available in all the applications, and in some cases, such as when we are using an older version of 3ds Max or Maya, we need to install a COLLADA plugin called OpenCOLLADA.

Download OpenCOLLADA from https://code.google.com/p/opencollada/downloads/list.
Exporting animations
There is a possibility to export simple animations from 3ds Max, but the animations we can import into Lumion are limited to move, rotate, and scale axes. In order to import these animations in Lumion we need to set the frame rate to 25 fps and export the animation as an FBX file.

However, even after doing all this for the 3D model, we might find some issues that can be easily solved. Let’s see what the most common problems are and how we can avoid them.

Common problems and solutions
We finished creating the 3D model. The materials are assigned, and we exported the file using the best solution available. Now, the file is ready to be imported in Lumion. On the left-hand side, we will select the Import menu and then click on the Add a new model button.

After naming the file and placing the 3D model in the scene, we cannot see anything the 3D model, and although we will repeat all the steps, we will still face the same situation: we simply cannot see the 3D model. Why?

I cannot see my 3D model
One reason this happens is because we modeled the building far away from the origin axis. To understand this, check out the next screenshot:

As you can see, the building is distant from the origin axis and might be one of the reasons why we cannot see the 3D model inside Lumion.
Solution
When we import the 3D model into Lumion, Lumion uses the origin axis as the point to place the 3D model. So, if the building is not close to this point, it is normal to see that when we place the 3D model in Lumion, the building is not at the point where we placed it. However, if we rotate the camera, we can see it. The solution to this issue is to move the 3D model close to the origin axis.

I still cannot see my 3D model
Well, there is another reason why we might not see the 3D model. Look at the next image:

It might be difficult to read the information on the image, but the height of this building is just 6,186 mm or 0.618 meters. So, unless this is a house for ants, there is something wrong with the scale of the building, and when we import the 3D model into Lumion, it is natural that we cannot see the building because it is so small.

Solution
Check the scale of the 3D model and scale it to a real-world size. However, there is another problem that might occur when importing the 3D model into Lumion.
Getting Ready for Lumion 3D

Missing faces
Sometimes, when we are importing the 3D model, something like this might happen:

![Missing face](image)

It is the case of the missing faces; this happens because when the building was modeled in the 3D modeling package, these faces were reversed. So, instead of the normal pointing toward the outside, they are pointing toward the interior, thus making the face invisible.

Solution
The solution depends on the 3D modeling package you used, but the idea is to find these faces and reverse them.

Summary
Here, we are at the end of this chapter, which will certainly prove helpful as you to start working in Lumion with the right foot. We had a quick overview of how Lumion works, how to control the camera, the 3D models, and how to save a project. After that, we checked out some important concepts to help us in modeling, keeping visualization in mind. Then, we explored why materials are so important and how they contribute to a smooth workflow. We also saw how to export the 3D model, and you learned about some common problems and their solutions.

In the next chapter, we will start laying the foundation to create a project in Lumion by creating a scene using one of the nine presets and sculpting the terrain to accommodate the building.
Where to buy this book

You can buy Mastering Lumion 3D from the Packt Publishing website.

Alternatively, you can buy the book from Amazon, BN.com, Computer Manuals and most internet book retailers.

Click here for ordering and shipping details.