



# **Fuzor**

**Version 1.0**

## **USER GUIDE**

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# Chapter 1

## Fuzor at a Glance

### Fuzor Overview

Fuzor is a real-time building simulator which generates interactive emulations of your building information models as they are developed in Autodesk Revit. Its purpose is to provide designers and architects with a powerful palette of analysis and visualization tools by extending the functionality of Autodesk Revit without interrupting your production workflow. Fuzor is fully integrated into Revit, which means that all of your models' characteristics are translated into an interactive environment without the need for importing and exporting files.

### How to use this Guide

Chapter 3, “Essentials” is a great way to familiarize yourself with the fundamentals of Fuzor. Here, you will learn how to position your view and optimize your workflow. Throughout the guide, you will encounter “**Icons**” . The bold text in parenthesis represents the command name, and the graphic is intended to help you familiarize yourself with the user interface quickly by association. The following page contains an overview of these symbols and their associated commands. Also, be sure to look for *tips* in italics, and important side **notes** in bold text. In some cases, a section of this guide may contain a number of commands which are all accessible through a common menu item. In such cases, look for the large icon to the left of the blue [subject title](#).

### User Interface

Fuzor has two sets of menus. The in Revit menu, and in Fuzor menu. The in Revit menu will be the home to all controls that will synchronize Revit and Fuzor. The Fuzor menu will provide the user with navigation, scene controls, and screen capture and cinematic controls.

- To access the Fuzor menu in Revit: Go to the Ribbon (toolbar) tab named “Kalloc Fuzor Tech”
  - *These icons will have a gray background.*
- To access the menu in Fuzor: Select a menu icon (top to bottom) to view additional commands (left to right).
  - *These icons will have a black background*

## Fuzor Icons

### Screenshot Controls



Screenshot



HD Screenshot



Adjustments



Cinematic



Export Path

### Scene Controls



Weather



Time of Day



HDR



Ground Plane



Measure Tool

### Navigation Controls



Revit



Free Move



Auto Rotate



Avatar



Drop Avatar

“Navigation Controls”  Toggles the Navigation Controls Sub Menu.

“Revit”		Enable the default Revit controls to navigate the Fuzor world
“Free Move”		Enable the default Navis controls to navigate the Fuzor world
“Auto Rotate”		Sets the Fuzor camera to rotate around the scene
“Avatar”		Allows the user to use an in world Avatar to navigate their scene
“Drop Avatar”		Drops an Avatar into the scene and changes the controls to Avatar

“Scene Controls”  Toggles the Scene Controls Sub Menu.

“Weather”		Users control the weather from sunny skies to thunderclouds and rain
“Time Of Day”		Users can change the time of day that will cycle through a 24 hour day
“HDR”		Toggle HDR ( High Dynamic Range ) on/off in the Fuzor world
“Ground Plane”		Users can place a ground plane in the Fuzor world
“Measure Tool”		Provides various methods for the users to take measurements in the Fuzor world

“Screen Shot Controls”  Toggles the Screen Shot Sub Menu.

“Screen Shot”		Takes a screen shot from the current camera
“HD Screen Shot”		Allows the user to select the quality of the screen shot that is taken
“Adjustments”		Users will be able to play with DOF ( Depth of Field ) settings
“Cinematic”		Opens the cinematic environment
“Set Export Path”		Users are able to set the save location for their screen shots

## Fuzor Feature Controls

### “Auto Rotate” UI Controls

Rotate Direction		Controls the direction and speed of the rotation. Middle position stops the rotation
Horizontal Rotate		Rotates the camera on a horizontal axis to the scene
Vertical Rotate		Rotates the camera on a vertical axis to the scene

### “Avatar Controls” UI Controls

Toggle Gender		Toggles the Avatar gender between male and female
Child		Changes the Avatar to a child
Handy cap		Places the Avatar in the wheelchair ( disabled when child avatar is active )

### “Weather” Slider UI Controls

Sunny		When the slider is at this point the weather is at its sunniest
Thunderclouds		When the slider is at this point the weather is at its stormiest

### “Time of Day” Slider UI Controls

Noon		When the slider is at this point the time of day is noon
Midnight		When the slider is at this point it is midnight
Stop		This will stop the time of day animation cycle
Play		This will loop the time of day from the position of the slider
Speed X2		Increases the speed of the animation by 2
Speed X4		Increases the speed of the animation by 4

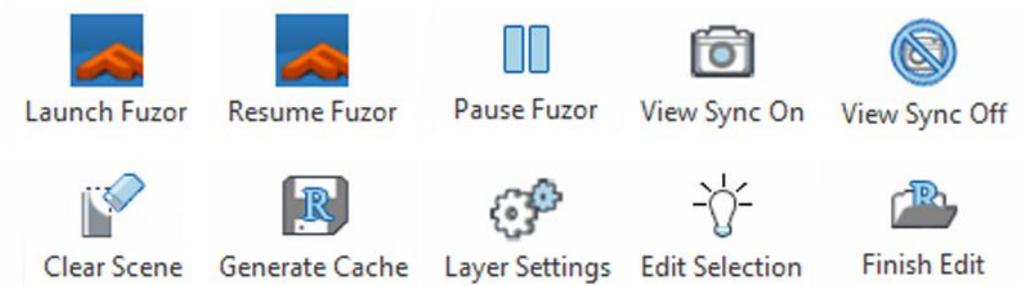
### “HDR” UI Controls

HDR On		Turns HDR on
HDR Off		Turns HRD off

### “Measure Tools” UI Controls

Measure		This will measure between the two placed points
Perimeter Measure		This will measure between multiple placed points ( More than two )
Area Measure		Place the four points to get the area measurement
Perpendicular Measure		This will measure the distance between the clicked point and the perpendicular object
Cancel		Closes the current Measure tool

## Revit Icons



"Launch Fuzor"	 Launch Fuzor	Launches the Fuzor application and starts the Fuzor Synchronization process
"Pause Fuzor"	 Pause Fuzor	Pauses the Fuzor Synchronization process
"Resume Fuzor"	 Resume Fuzor	Resumes a paused Synchronization
"Clear Scene"	 Clear Scene	Clears all information out of the Fuzor scene
"Generate Cache"	 Generate Cache	Creates a Cache file from the synchronized scene
"View Sync On"	 View Sync On	Syncs Fuzor's and Revit's cameras, now both camera share information
"View Sync Off"	 View Sync Off	Turns the Fuzor and Revit camera sync off
"Layer Settings"	 Layer Settings	Allows linked project layers to be loaded and unloaded
"Edit Selection"	 Edit Selection	Syncs the selected object in Fuzor back to Revit and enables editing
"Finish Edit"	 Finish Edit	Returns Fuzor's camera to its previous position prior to the edit selection

# Chapter 2

## Essentials

*This section will get you going with Fuzor so that you can incorporate building simulation technology into your Revit workflow. For information about changing specific parameters within the environment, please refer to Chapter 4, “Advanced Features.”*

### Syncing Fuzor and Revit

**Note:** All of the controls you will need to initially synchronize your project with Fuzor are available within the Revit ribbon (Revit’s user interface) under the tab “Kalloc Fuzor Tech.”

Once your Revit file is open navigate to the “Kalloc Fuzor Tech” tab and click  “Launch Fuzor”. This will start the synchronization process, passing all Revit’s scene information into Fuzor. Users will be able to watch the synchronization progress in the lower left corner of Fuzor’s window. Once the initial synchronization is complete a second synchronization will start. The second synchronization is passing all of the material information into Fuzor. During the second synchronization you are able to navigate your project.

### Using View Sync

Once your BIM model has fully synchronized you can activate Fuzor's “View Sync”  option. This will allow you to use all of Fuzor’s power to increase your work flow. Camera sync will sync Revit and Fuzor's cameras together. Now what you see in Revit will be displayed in Fuzor.

With View Sync enabled users will also be able to use Fuzor's “Edit Selection”  options. “Edit Selection” will sync back to Revit the object that is selected in Fuzor. Once users are done editing the object they can click on “Finish Edit”  . “Finish Edit” will set the users camera back to its last synced position and layer.

### Clearing a Fuzor Scene

Once a Fuzor scene is loaded you can use the “Clear Scene”  function to remove all geometry and information from Fuzor. After a clear scene you can start with a fresh synchronization of the same project or a new one.

## Generating and Loading a Cache File

Cache files are a convenient way to save out your Fuzor scenes. Cache files will hold all of your projects information, allowing you to reload the project into Fuzor without having to do a Revit to Fuzor synchronization. However, cache files **WILL NOT** synchronize back up with your Revit files. If you would like to make changes to your scene file through Fuzor you will have to do a Revit to Fuzor synchronization. Cache files are a fast and easy way to load your work into Fuzor and show off your project.

To create a cache file, synchronize your current Revit project with Fuzor. When the synchronization is complete click the “Generate Cache”  button in the “Kalloc Fuzor Tech” tab in Revit. A navigation window will open allowing the user to select the desired save location, the default location is the users Documents/Fuzor/Downloads.

Loading a cache file is as simple as dragging your saved cache file into an empty Fuzor world. This action will clear out any information that is in the current Fuzor scene, and start the loading process for the cache file. A cache file cannot be linked back to a Revit scene. There is no connection between a saved cache file and a Revit file. Saved cache files are can only be loaded into a Fuzor scene.

## Using Edit Selection

The real power of Fuzor can be seen when users take advantage of the “Edit Selection”  feature. When Fuzor and Revit’s cameras are synced, selecting an object in Fuzor then clicking “Edit Selection” in the “Kalloc Fuzor Tech” tab will select the object in Revit. It will also open up the objects

# Chapter 3

## Glossary

<b>BIM:</b>	Building Information Modeling, an approach used in building design which utilizes user data to facilitate manual drafting.
<b>Building Simulation:</b>	An interactive analysis and visualization tool designed to extend the functionality of Autodesk Revit during the schematic design and design development phases of construction.
<b>Collaboration:</b>	Linking multiple Revit files with shared coordinates together into a single host file for the purpose of dividing workloads and maximizing computer performance. This may or may not indicate that work sets are in use.
<b>Family:</b>	A subcategory of .RVT files which can be imported to and modified in a host file.
<b>Parameter:</b>	A user controlled variable which will influence the performance of model elements either independently or in relation to other elements.
<b>Ribbon:</b>	An intelligent user interface featuring a toolbar which updates in response to user behaviors.
<b>Sync:</b>	Synchronize (abbreviation).
<b>User Interface:</b>	A set of intuitive controls intended to simplify complex tasks with buttons, sliders, and parameter values.
<b>Walkthrough:</b>	A presentation deliverable for showcasing architectural concepts in video format.
<b>Work set:</b>	A Revit file which has been processed to allow multiple users to work on a single project simultaneously. This is a separate process from collaboration.