

# AR Home Builder - User Guide

---

## Introduction

Welcome to AR Home Builder version 1.0! This user guide explains how to download and operate the app after installing it on your device.

## Table of Contents

<a href="#">Introduction</a>	<a href="#">1</a>
<a href="#">Table of Contents</a>	<a href="#">1</a>
<a href="#">User Requirements:</a>	<a href="#">2</a>
<a href="#">Installing the App</a>	<a href="#">2</a>
<a href="#">Where to Download:</a>	<a href="#">2</a>
<a href="#">Installing The App:</a>	<a href="#">2</a>
<a href="#">First Time Use</a>	<a href="#">4</a>
<a href="#">Feature Rundown - The Basics</a>	<a href="#">4</a>
<a href="#">Standard View:</a>	<a href="#">4</a>
<a href="#">Placing an Object:</a>	<a href="#">5</a>
<a href="#">Editing Placed Objects:</a>	<a href="#">6</a>
<a href="#">Interacting with Objects:</a>	<a href="#">8</a>
<a href="#">Moving An Object</a>	<a href="#">8</a>
<a href="#">Resizing An Object</a>	<a href="#">8</a>
<a href="#">Rotating An Object</a>	<a href="#">8</a>
<a href="#">Removing An Object</a>	<a href="#">9</a>
<a href="#">Other Functions (Tab Bar)</a>	<a href="#">9</a>
<a href="#">Color Selector:</a>	<a href="#">9</a>
<a href="#">"More Options" Button</a>	<a href="#">10</a>
<a href="#">Screenshot Button</a>	<a href="#">10</a>

## User Requirements:

- An iOS device (iPhone or iPad) running 18.0 or newer
- A Mac computer that can run Xcode (preferably on Xcode 16.2 or newer)
- Have both devices physically connected or on the same local network

## Installing the App

### Where to Download:

You can find a link to the project files on [compsci04](#). From there, you can find the download link on this project's website.

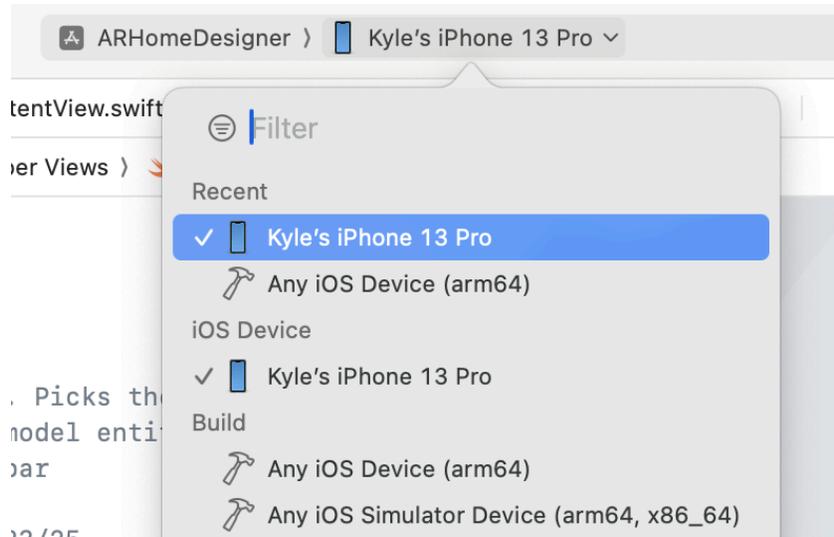
After downloading the .zip file, uncompress it and find the Xcode project file: "/ARHomeDesigner/ARHomeDesigner.xcodeproj/". The file should open in Xcode and display the contents of the app.

### Installing The App:

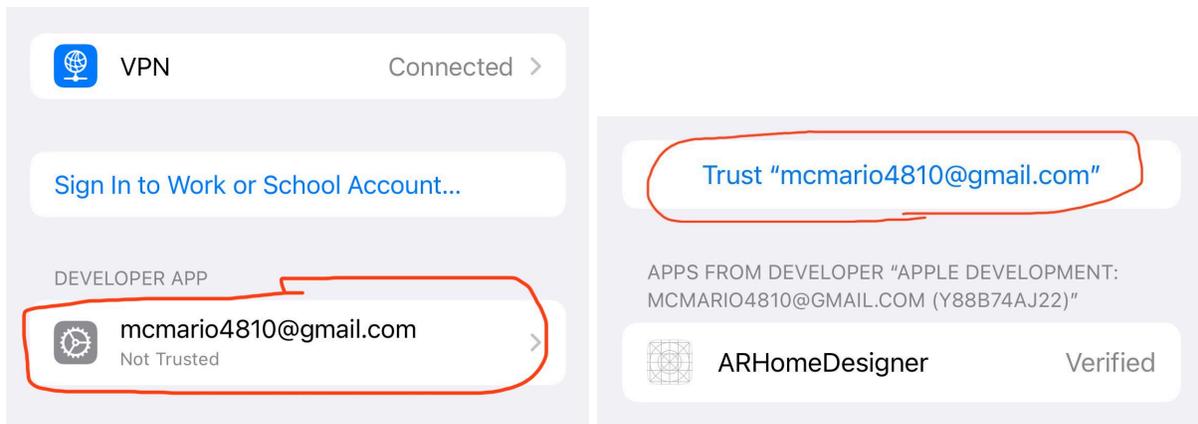
Before running anything on Xcode, if you've never built and run apps on your device before, you'll need to turn on Developer Mode on your iOS device. You can enable this setting by going to Settings->Privacy & Security->Developer Mode. Turning this on will allow you to run this app and other Xcode projects on your device.



After this is enabled, make sure that your device is selected as the build target in Xcode. If your device is not showing up in the list, make sure your device is connected to your Mac via a cable or have both devices be on the same local network.



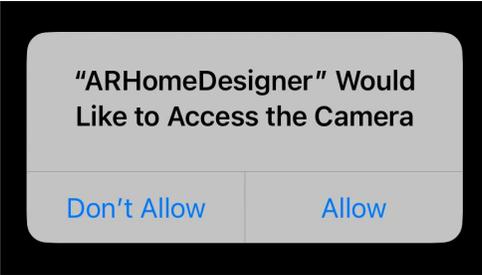
Once your physical device is selected as the target device. Run and compile the app. The build should succeed, however, you will get a warning when the app tries to open on your device. Follow the instructions on the pop-up message to allow the app to run on your device. Search for the account circled in the image below and click "Trust Account".



Once you hit allow, you can navigate back to your home screen to find AR Home Builder added to your home screen.

# First Time Use

When opening the app for the first time, you'll get a message that will ask you for permission to use the device's camera. This is a required feature for the app to function. When this pops up, click the "Allow" button. If you happen to click on "Don't Allow", you can always go to your device's settings and change the permissions there.



# Feature Rundown - The Basics

## Standard View:

Upon starting the app, you'll be greeted with the initial UI screen below. The tab bar below the AR viewing window includes some options and features the user can use, which will be explained later on in the user guide.



## Placing an Object:



This app's main feature is placing virtual objects on detected planes. AR Home Builder is capable of detecting horizontal and vertical planes in the real-world environment. When tapping on a detected plane, the app will create a 2D rectangle model that will match the estimated size of the plane.



 More Options 

*\* Note: The range of plane detection is limited. It is recommended that you approach the wall and make sure that the AR view picks up the whole wall. It is not necessary to view the entire wall at once. As long as you pan over the extent of the wall with the camera, the app can extend the plane out further as you continue to pan the camera over the wall*

# Editing Placed Objects:



After placing the object, you can use a variety of gestures to modify the placed object. Tapping on the placed object will open a pop-up menu in which the user can change various properties of the shape, such as the width and height (measured in meters), its color, a toggle to give the shape's texture a metallic look, the shape's roughness, and depth (distance away from the plane it sits on). Clicking on the Update Shape button will apply the new properties to the shape.



Width: 3.178869    Color:

Height: 2.686365    Metallic:

Depth: 0.02

0 0.1

Roughness: 0.0

0 1

[Update Shape](#)

*Edit Popup Window*



Width: 3.178869    Color:

Height: 2.686365    Metallic:

Depth: 0.02

0 0.1

Roughness: 0.0

0 1

[Update Shape](#)

*Color Changed*



*Metallic Look OFF*



*Metallic Look ON*



Width:  Color:

Height:  Metallic:

Depth: 0.00

Roughness: 0.0



Width:  Color:

Height:  Metallic:

Depth: 0.10

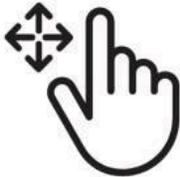
Roughness: 0.0

*Adjusting the Depth of the object*

## Interacting with Objects:

There are a few other ways to modify the object using specific gestures. Each one has a specific use case which you can view below:

### Moving An Object



You can move a shape by tapping on an object and dragging it in the direction you wish to move it. It will only move atop the plane it sits on. If you need to adjust the depth of the shape, refer to page 6 in the manual on the edit menu and its functions.

### Resizing An Object



You can scale the size of the object by tapping on the object with two fingers (a finger and a thumb) and doing a pinching motion with them. When tapping while pinching inward and moving your pinching fingers outward, the object will scale up in size. When doing the opposite, the object will scale down in size.



This only scales the object and does not change the width or height individually. If you need to adjust the width or height of the object, again, refer to page 6 in the manual.

### Rotating An Object



You can rotate the object by tapping with two fingers on the object and turning them like you would on the dial of a padlock in the direction you want to rotate the object.

\* As a note, you can use all of these gestures at the same time, so keep that in mind when you choose to interact with the object.

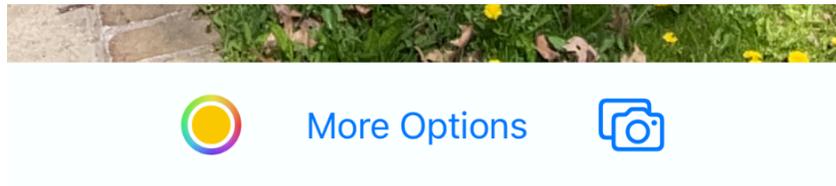
## Removing An Object



If you wish to remove an object from the AR View, simply tap and hold on the object you wish to delete and it will be deleted. This gesture will only work when you tap on an object with one finger when making no other interactions with the object (eg. dragging the object around with a panning gesture).

## Other Functions (Tab Bar)

Alongside the main functionality of the AR view itself, the tab bar on the bottom edge of the screen has some additional features, including a button to take a screenshot of the AR view.

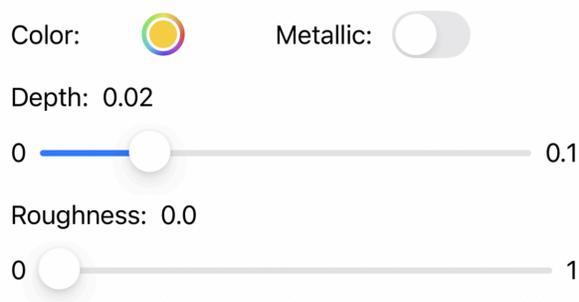


## Color Selector:



The first button opens a color picker dialog that lets you change the color of the objects that you place. The default color when you open the app is yellow, which can be changed via this color picker.

## “More Options” Button



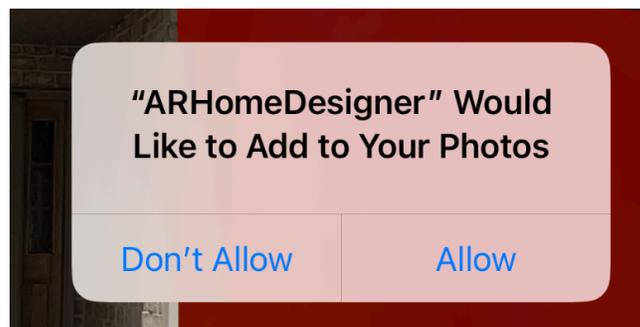
This button opens up a pop-up window, similar to the one on page 6. This box lets you change other properties when creating new objects. You can also change the color here as well, alongside a couple of other features also found on the menu in page 6 of the manual.

## Screenshot Button



Clicking this button will take a snapshot of the current camera frame when pressed. This will save a .png image to your camera roll.

\* When taking a snapshot for the first time, the app will ask permission to save images to the camera roll. If you click on “Don’t Allow” this feature will not work. Make sure to press “Allow”, otherwise you can toggle this permission by going to your device's settings in the app section for “AR Home Designer”



\*\* When closing the app, your work WILL NOT be saved, so be sure to take snapshots of your finished design to reference later.