

# Community Maps 3D Building Footprint Components\*

*\* for Esri 3D Basemaps*



Esri Community Maps Team

Updated 10/4/24



# Esri 3D Buildings Components – Field Definitions

	Field	Description	Field Definition	Expected value	Example value	Graphic examples
A	<b>BuildingID</b>	Unique ID used to tie building together; all building parts for the same building share the same BuildingID	Text – 50 char	string	<b>15056</b>	---
B	<b>BuildingPart</b>	Use to differentiate a building into parts that differ from each other in terms of some building attributes or the building function	Text – 20 char	string	<b>“yes” or part name</b>	<a href="#">Building Parts</a>
C	<b>BuildingHeight</b>	Maximum Building Height represented in Feet or Meters and includes the roof	(DOUBLE - 8)	integer	<b>6.5</b>	<a href="#">Building Height</a>
D	<b>HeightUnits</b>	Units for all Height values in Feet or Meters	a domain	string	<b>“feet” or “meters”</b>	---
E	<b>Levels</b>	The number of above-ground levels of a building or part of a building. The underground levels and roof do not count, but levels that are part-way underground do count	(SHORT -2)	integer	<b>2</b>	<a href="#">Building Levels</a>
F	<b>RoofShape</b>	Shape of Roof -- <b>*Spelling matters!</b>	Text – 20 char	string	<b>“Hip”</b>	<a href="#">Roof Shapes</a>
G	<b>RoofDirection</b>	Direction of a roof shape - recorded as an approximate degree between 0 - 360	Text – 20 char	string	<b>55.8</b>	<a href="#">Roof Direction</a>
H	<b>RoofOrientation</b>	Orientation of roof shape: along or across -- <b>*Spelling matters!</b>	Text – 10 char	string	<b>“along” or “across”</b>	<a href="#">Roof Orientation</a>
I	<b>MinimumHeight</b>	The height of the bottom part of building in Height Units. Used if a building or part of building starts above the ground level	(DOUBLE - 8)	integer	<b>3.2</b>	<a href="#">Minimum Height</a>
J	<b>BaseElevation</b>	The base elevation of the building (height above sea level) in Height Units	(DOUBLE - 8)	integer	<b>150.4</b>	<a href="#">Base Elevation</a>
K	<b>EaveHeight</b>	The height of the building eave in Height Units	(DOUBLE - 8)	integer	<b>5.1</b>	
L	<b>RoofColor</b>	The color (name or color triplet) of the roof of a building or building part in hexadecimal	Text - 20 Char	String	<b>“655E56”</b>	---

**\*Spelling matters for these values – explained below ...**

# Heights, Levels, Direction

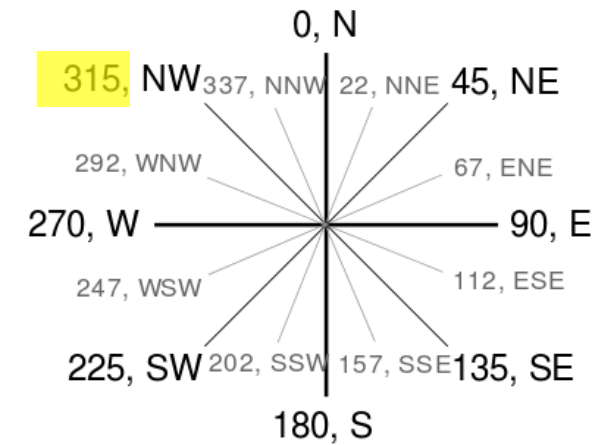


Minimum Height

Above Ground Levels

Eave Height

Building Height



Roof Direction can have two types of values –  
**use the numbers!**

Example Values

3 meters

2 levels

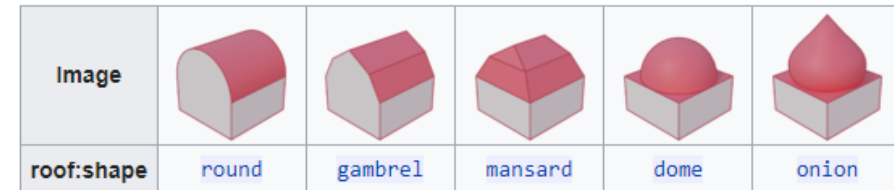
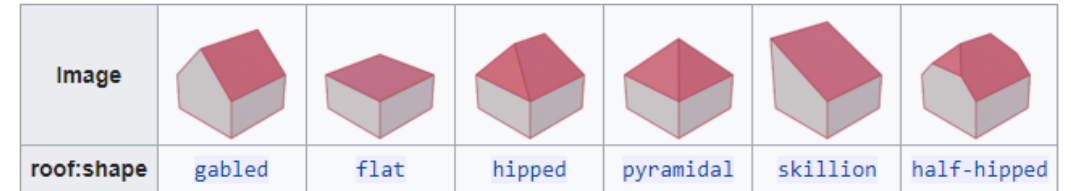
4 meters

7.5 meters

315 degrees

# Roof shapes

If you have this Roof Shape	Use this value for Esri Community Maps
butterfly	other
dome	dome
flat	flat
gable	gable
gambrel	gambrel
half-hip	half-hip
hip	hip
mansard	mansard
onion	onion
pyramid	pyramid
round or vault	round
saltbox	other
shed or skillion	skillion
spherical	spherical
(some other shape not listed above)	other
No roof shape known	NULL or leave blank



See Roof Shape graphics here:

<https://wiki.openstreetmap.org/wiki/Key:roof:shape>

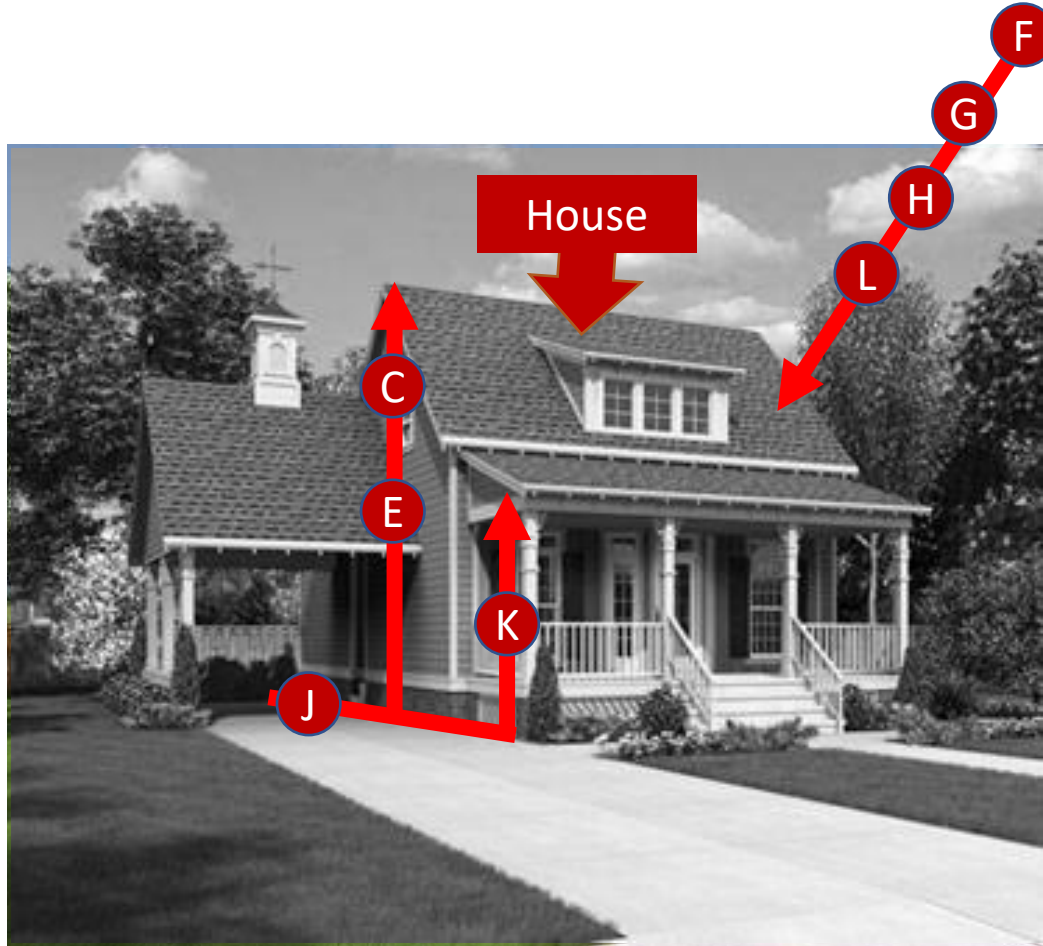


**Spelling matters!**

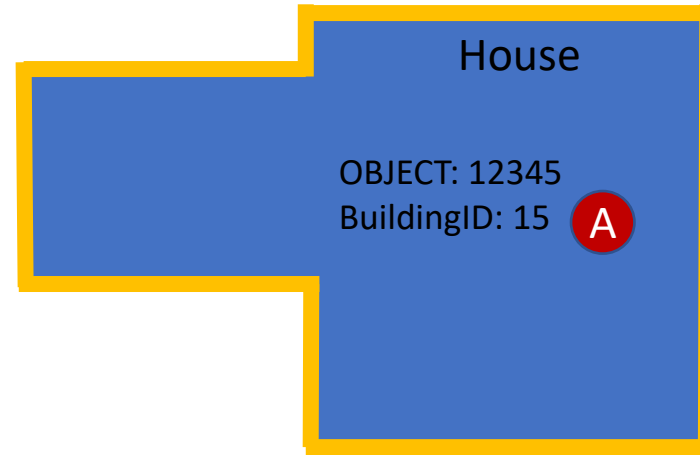
*We're collecting as TEXT then internally matching to a numerical domain.*

*Miss-spellings in your database won't find matches!*

# Single building feature overview



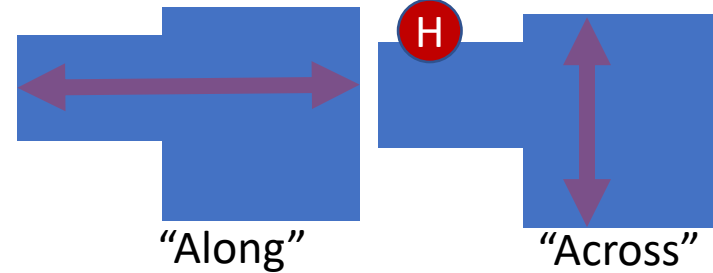
Building outline as one record



House

	OBJECT	12345
A	BuildingID	15
B	BuildingPart	---
C	BuildingHeight	7.5
D	HeightUnits	Meters
E	Levels	2
F	RoofShape	Gabled
G	RoofDirection	315
H	RoofOrientation	Along
I	MinimumHeight	---
J	BaseElevation	342
K	EaveHeight	5
L	RoofColor	655E56

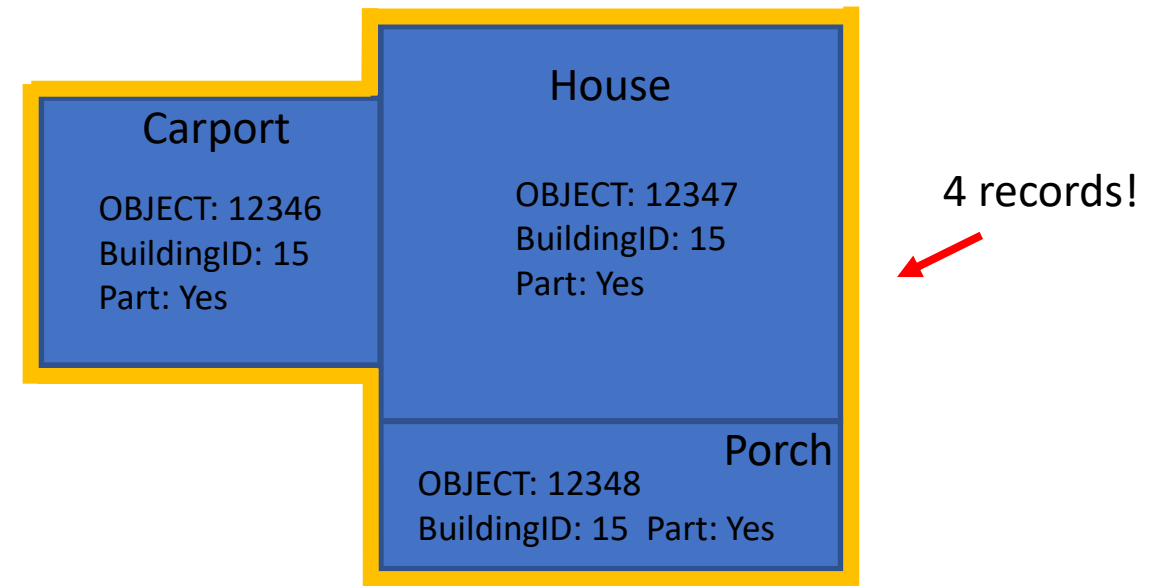
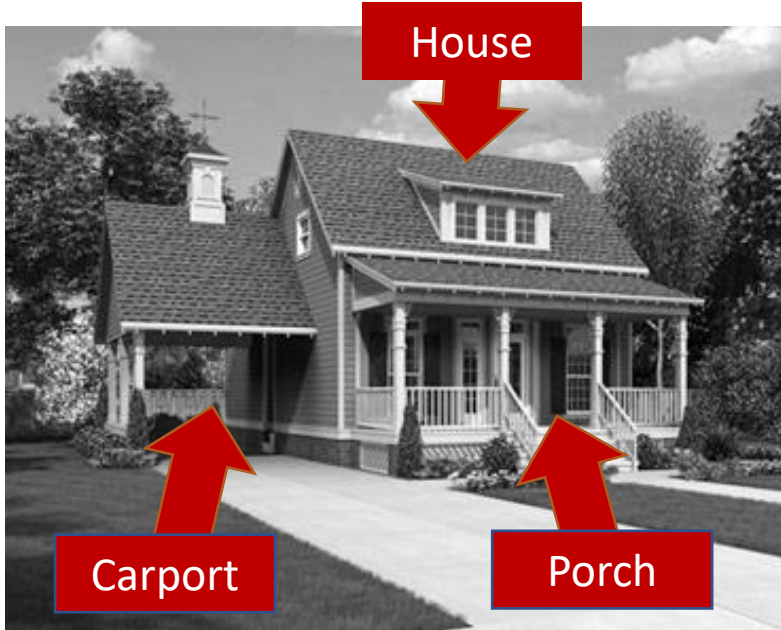
RoofOrientation



**RoofOrientation spelling matters!**

# Building parts

You can model building **outline** and **parts** with multiple records



OBJECT: 12345  
BuildingID: 15

## Building outline

OBJECT	12345
BuildingID	15
BuildingPart	---
BuildingHeight	7.5
HeightUnits	Meters
Levels	2
RoofShape	Gabled
RoofDirection	315
RoofOrientation	Along

+  
parts

## Carport

12346
15
Yes
6
Meters
1
Gabled
315
Along

## House

12347
15
Yes
7.5
Meters
2
Gabled
315
Along

## Porch

12348
15
Yes
4.5
Meters
1
Skillion
315
---

Same BuildingID associates outline to parts

Differences between outline and parts

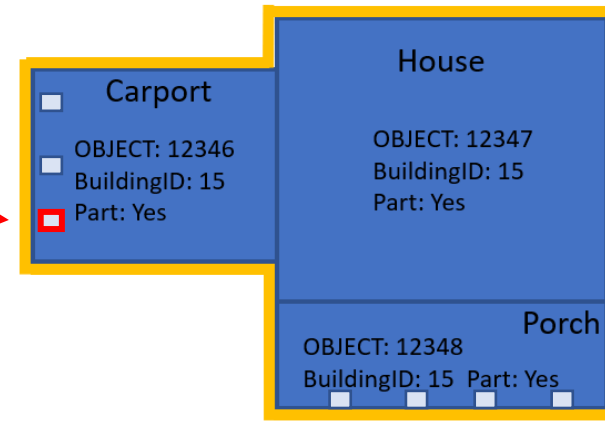
# Parts and minimum heights



Pillars support  
Carport and Porch

Use MinimumHeight when  
structures begin above  
BaseElevation

Pillar  
OBJECT: 12349  
BuildingID: 15  
Part: Yes



11 records!  
Including pillars

Building outline			Carport	House	Porch	Pillar(s)...		
A	BuildingID	15	15	15	15	15	15	15
B	BuildingPart	---	Yes	Yes	Yes	Yes	Yes	Yes
C	BuildingHeight	7.5	6	7.5	4.5	3.5	3.5	3.5
D	HeightUnits	Meters	Meters	Meters	Meters	Meters	Meters	Meters
E	Levels	2	1	2	1	1	1	1
F	RoofShape	Gabled	Gabled	Gabled	Skillion	--	--	--
G	RoofDirection	315	315	315	315	--	--	--
H	RoofOrientation	Along	Along	Along	--	--	--	--
I	MinimumHeight	---	3	--	3.5	--	--	--
J	BaseElevation	342	342	342	342	342	342	342
K	EaveHeight	5	3	5	3.5	--	--	--
L	RoofColor	655E56	655E56	655E56	655E56	--	--	--

Carport and Porch structures begin above Base Elevation

# Add components through Contributor App service delivery

**Building Footprint Parameters** ?  
You must select the field for the labels in your local language.  
Select all, or use query statement to filter your features. ?

Select all features (this will put all features into 'General' category)  
(Defaulting to 244 of 244 total features selected)

Select the field for the labels in your local language

Select the field for the English translation of your label

Create expression to select **Airport** Buildings

---

Create expression to select **Transportation** Buildings

**Define 3D Components (optional)**

**Define Address Components (optional)**

(Total: 244 of 244 selected)

?

2D preview

Expand!

**Define 3D Components (optional)**

Select Field for Height (optional)

Select Field for Minimum Height (optional)

Select Field for Eave Height (optional)

Select Building Height Units

Select Field for Levels (optional)

Select Field for Base Elevation (optional)

Select Field for Building Part (optional)

Select Field for Building ID (optional)

Select Field for Roof Shape (optional)

Select Field for Roof Direction (optional)

Select Field for Roof Orientation (optional)

Select Field for Roof Color (optional)

# Esri Community Maps Team

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