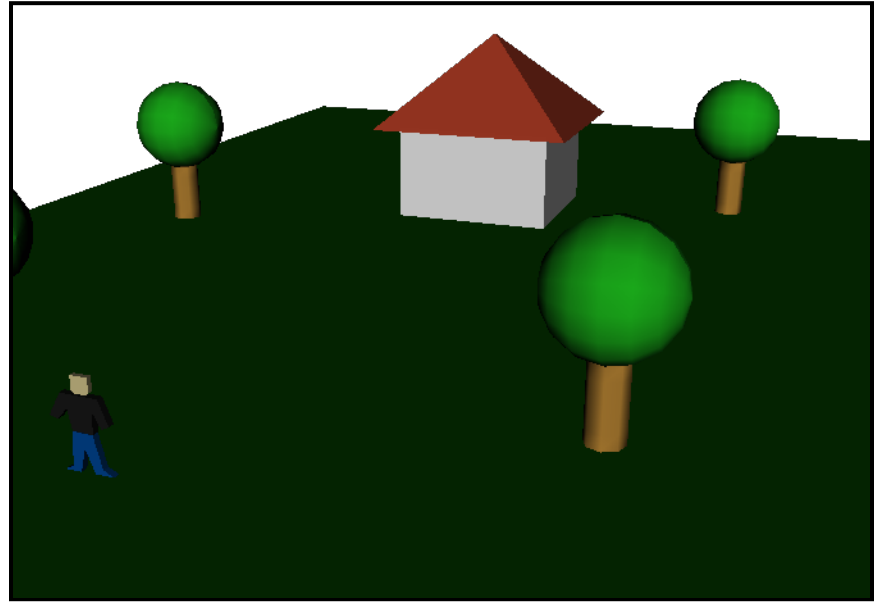
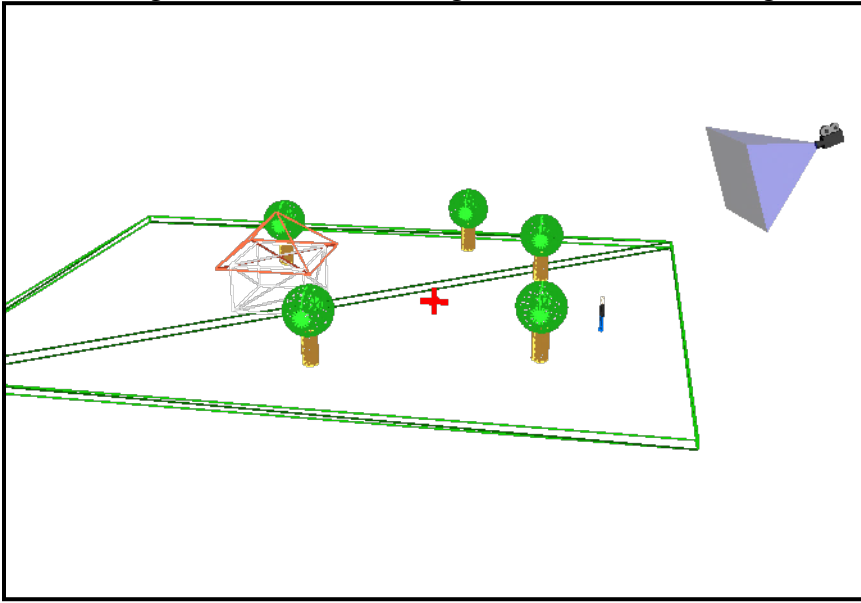


## Ab3d.PowerToys camera types

### TargetPositionCamera

TargetPositionCamera is the most commonly used camera. The camera gives you full control over the target position and allows using simple angles and distance to define the orientation and position of the camera.

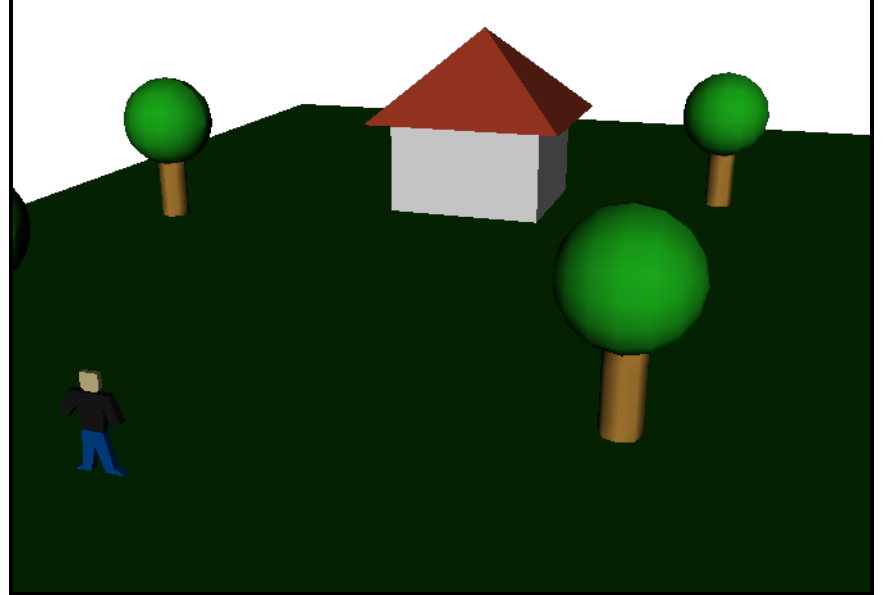
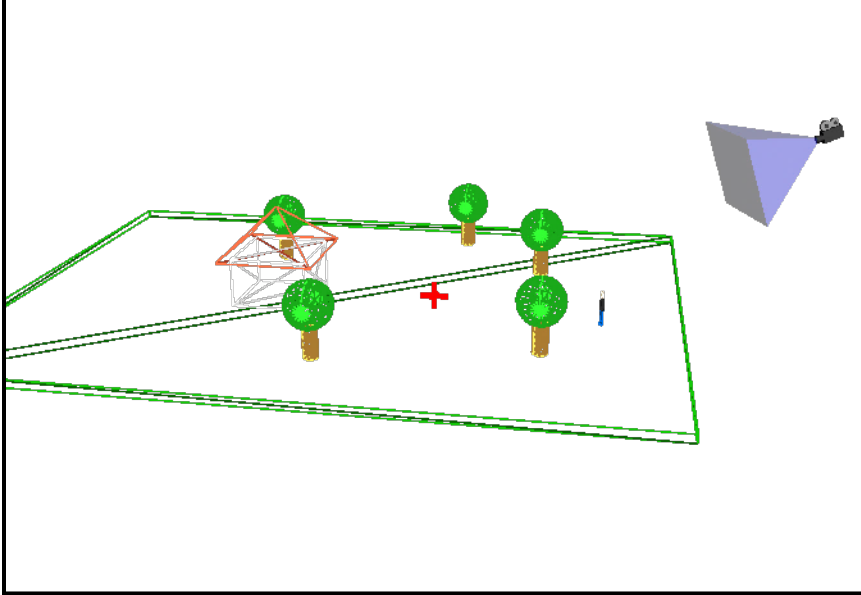
```
<cameras:TargetPositionCamera Heading="-20" Attitude="-20" TargetPosition="0 0 0" Distance="450" />
```



### FreeCamera

FreeCamera is a camera for advanced users. Instead of easy to understand angles, the camera is defined by providing a CameraPosition and a TargetPosition. When used with MouseCameraController this camera is not constrained to rotate around Y (up) axis but can rotate freely. Usually this is not very user friendly, but for some advanced users or when used with a 3D mouse this may be desired.

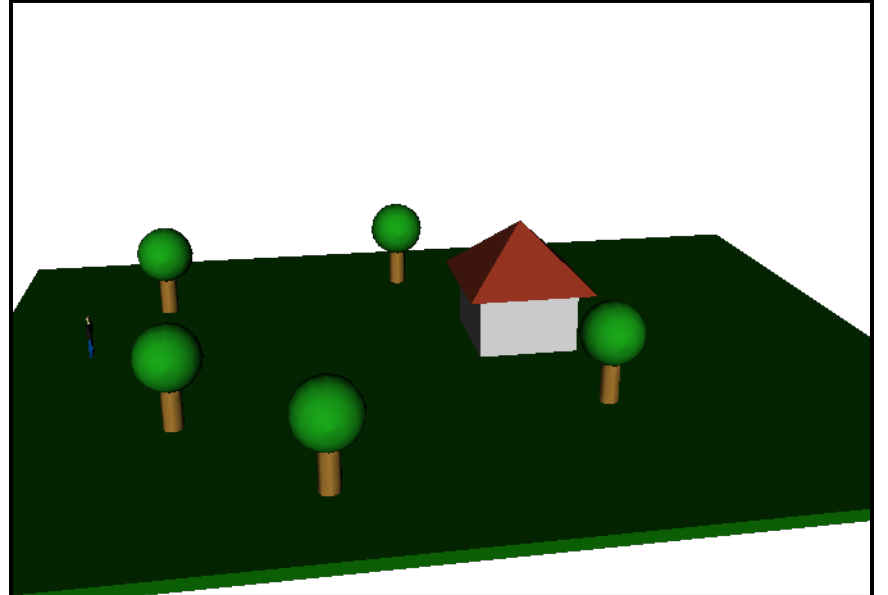
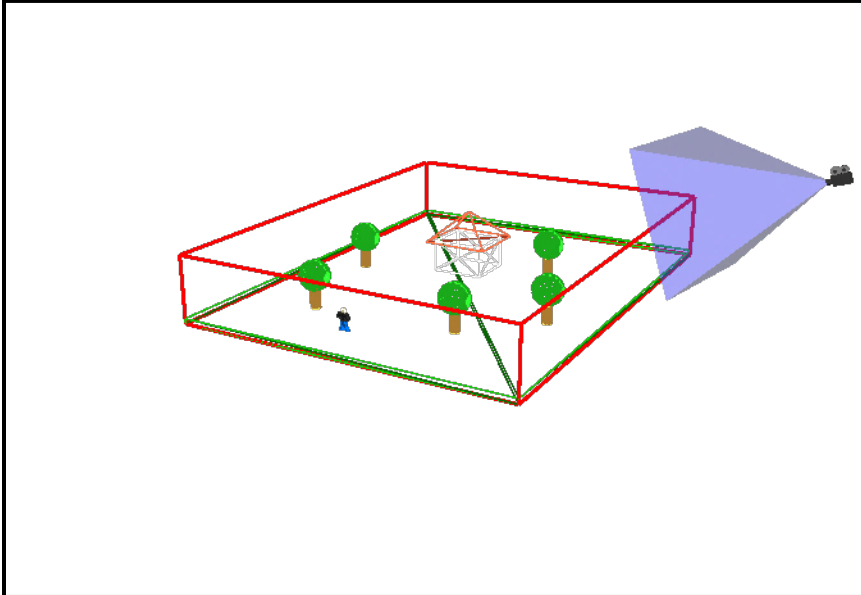
```
<cameras:FreeCamera CameraPosition="130 150 400" TargetPosition="0 0 0"/>
```



### SceneCamera:

SceneCamera is the camera that is the easiest to use. You only set the Heading and Attitude angle and Distance from the center of the 3D scene and the camera will automatically adjust itself to point to the center of the 3D scene. With setting IsDistancePercent property to true, you may even define the distance as percentage of scene's size. When the objects in the scene are changed, you may need to call Refresh method to update the SceneCamera.

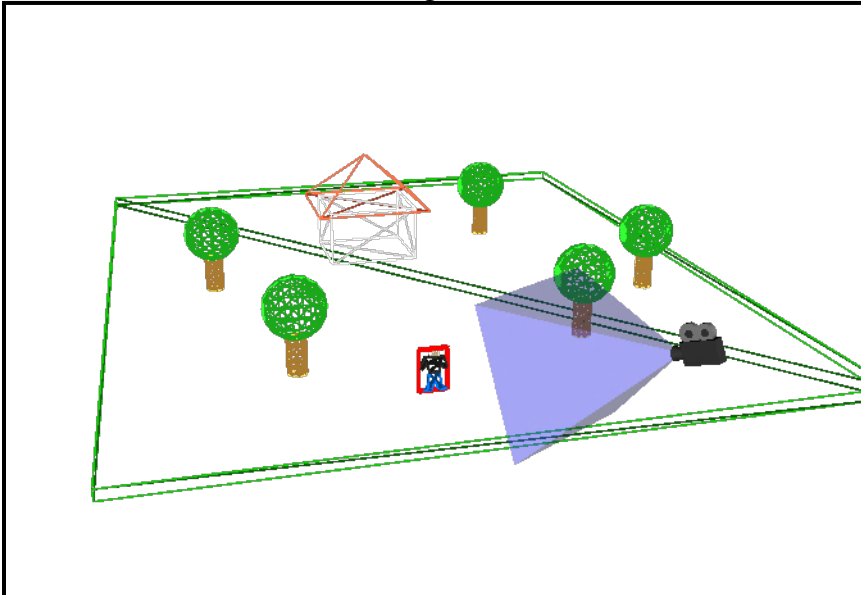
```
<cameras:SceneCamera Heading="-80" Attitude="-20" Distance="800"/>
```



### ThirdPersonCamera:

ThirdPersonCamera is a camera that always looks at the 3D model specified with the CenterObject property. This kind of camera is commonly used in third person games when you look at your character from behind.

```
<cameras:ThirdPersonCamera Heading="-30" Attitude="-20" Distance="200" CenterObject="{Binding ElementName=PersonModel2}"/>
```



### FirstPersonCamera:

FirstPersonCamera is a camera type that is usually used in first person games. There you specify the position of the character eyes and then see the world as you would be looking from the character's eyes - the rotation of the head is specified by Heading and Attitude properties.

```
<cameras:FirstPersonCamera Heading="0" Attitude="0" Position="-42 30 176"/>
```

