

Söldner – Secret War's Building – SDK Tutorial

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1. Introduction

With the Building – SDK you are able to create your own buildings for Söldner - Secret War's. A building isn't simply exported and it is already ingame. It consists of many individual components witch first build and joined together. Many things are taken into account the building parts thus afterwards go together and the damage model have to work properly.

For this reason we have arranged this Tutorial for you. It includes 3d Studio Max Plugins, some example files, one Testmap for Soldner – Secret War's and this documentation.

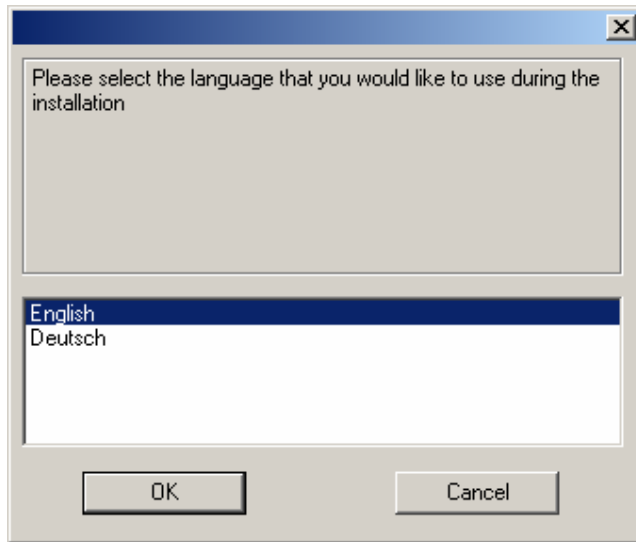
As a prerequisite sure dealing with the Soldner editor and the Soldner directory structure is accepted

2. Installation

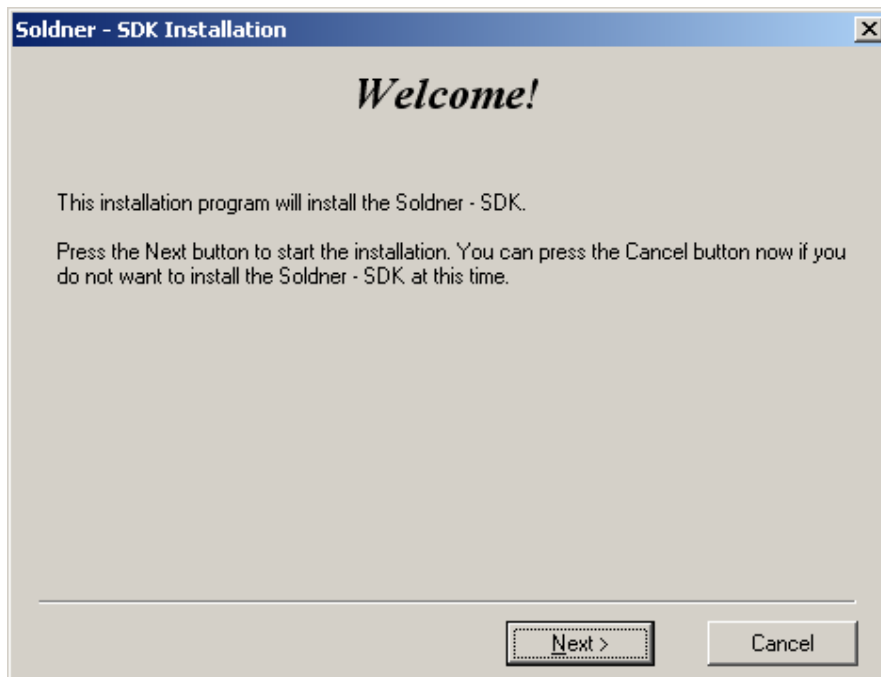
This SDK consists of two installation programs. The „Soldner-SDK.EXE“ installs the necessary 3D Studio Max Plugins and the „Soldner-Tutorial-Files.exe“ installes the tutorial example files and the Testmap.

2.1 Installation of the Söldner Building – SDK

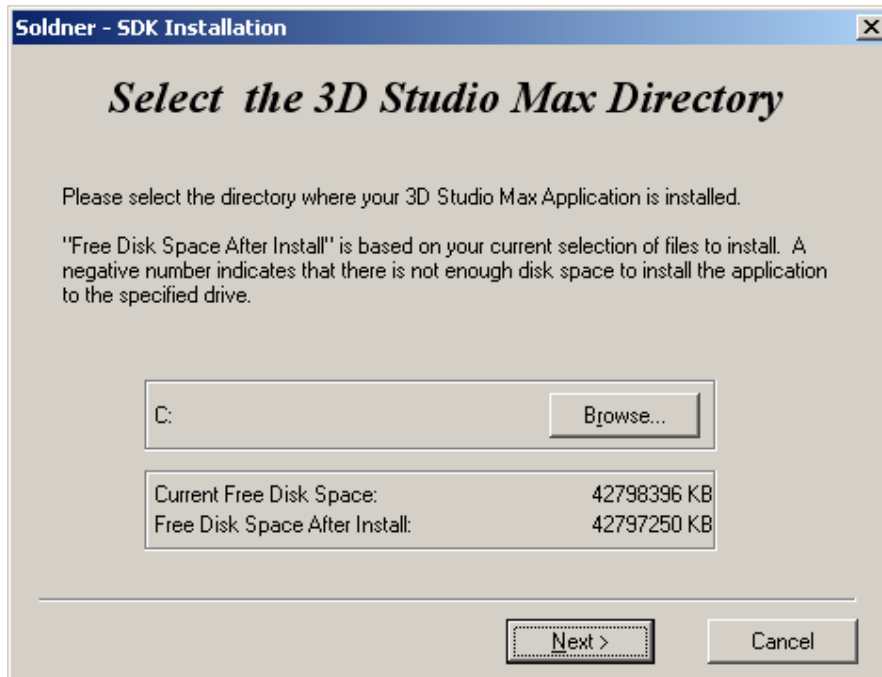
Start the „Soldner-SDK.EXE“ with a double click of the left mouse button in the explorer.



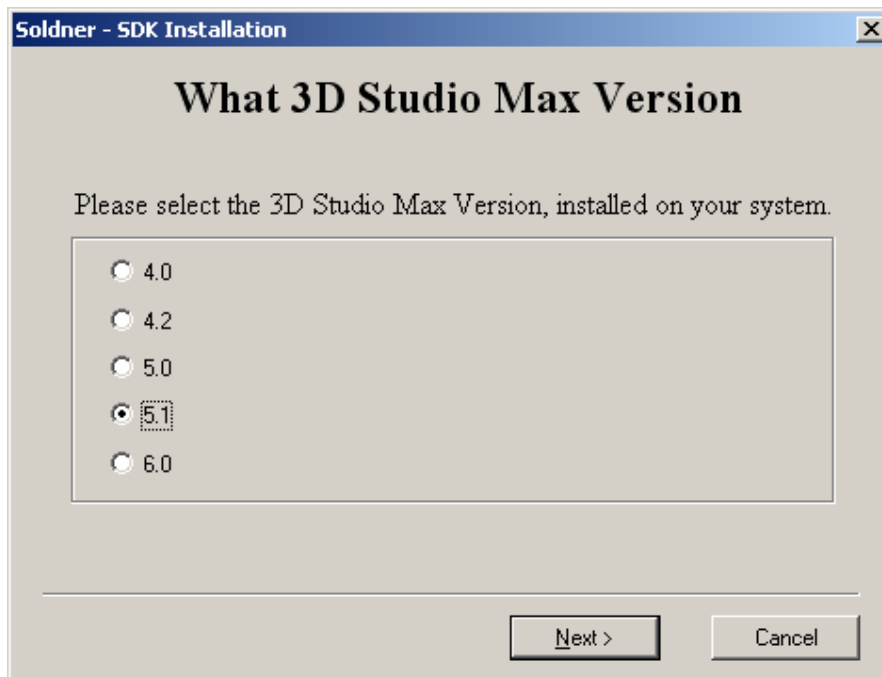
Choose the english language and confirm with „OK“.



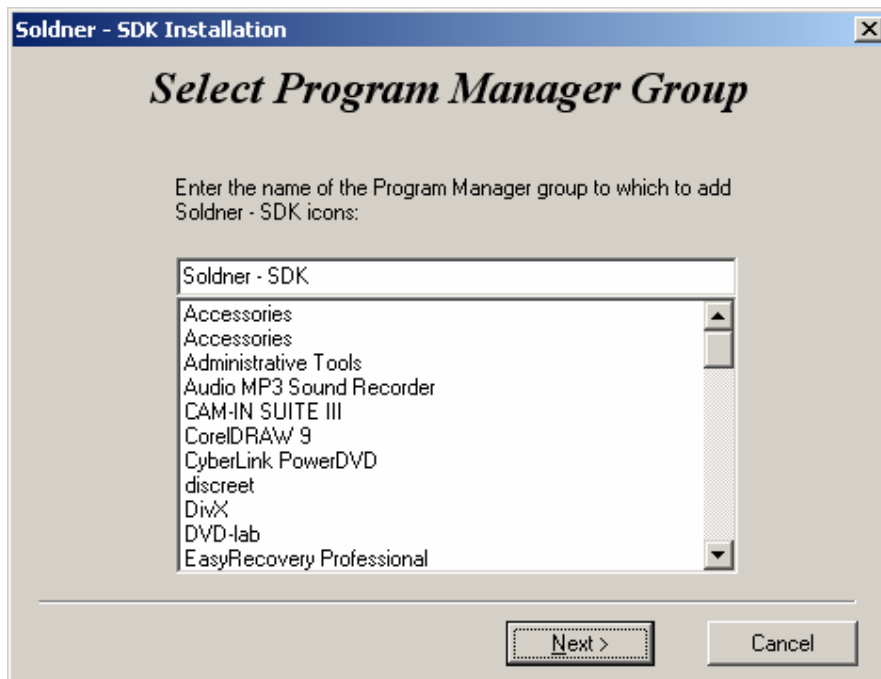
Pressing "further".



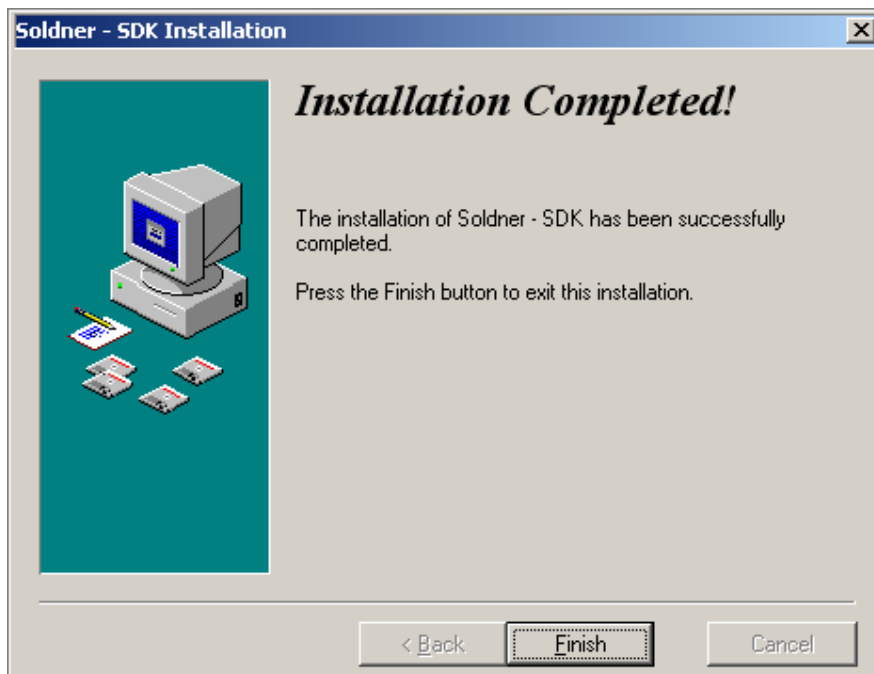
Choose the main directory where your „3D Studio Max“ installation is located. E.g.: „c:\Max5“.



For different 3D Studio Max Version are different plugins available. In this window you have to select your installed version.



Pressing "further".

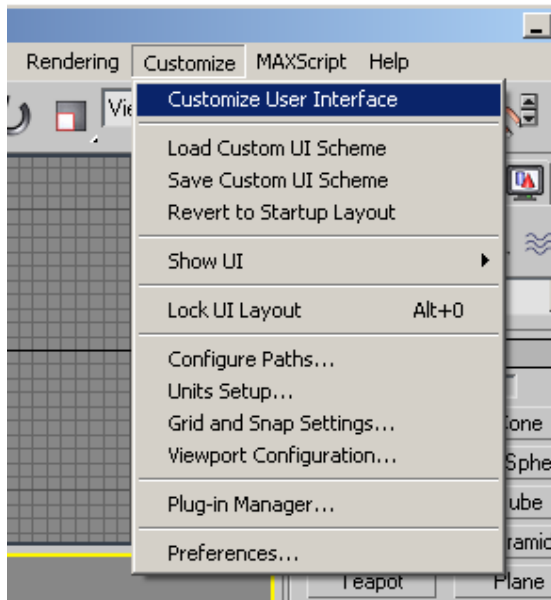


Pressing "further".

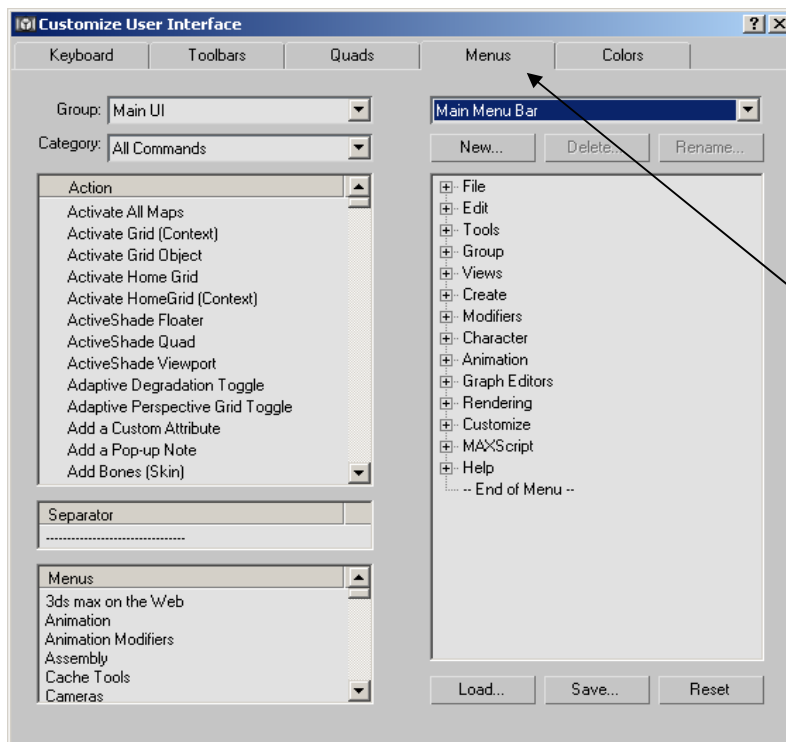
2.2 Establishing Plugins

So that you also can be use all functions of the Plugins for 3D Studio Max, some adjustments must be made.

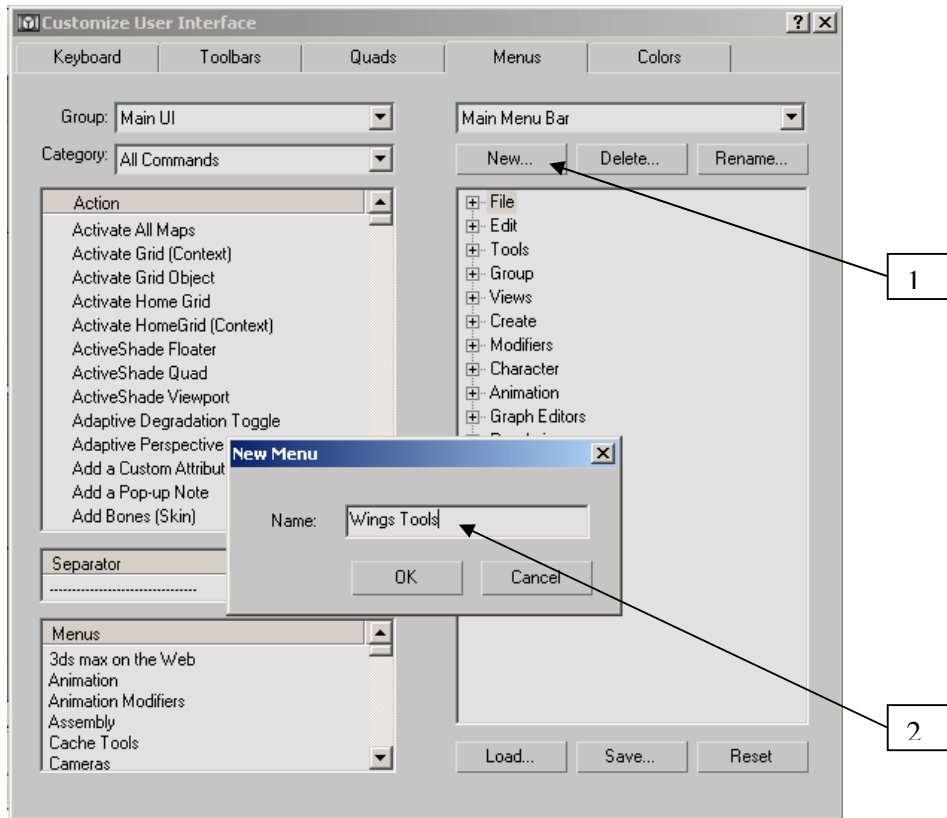
Starts 3D Studio Max now.



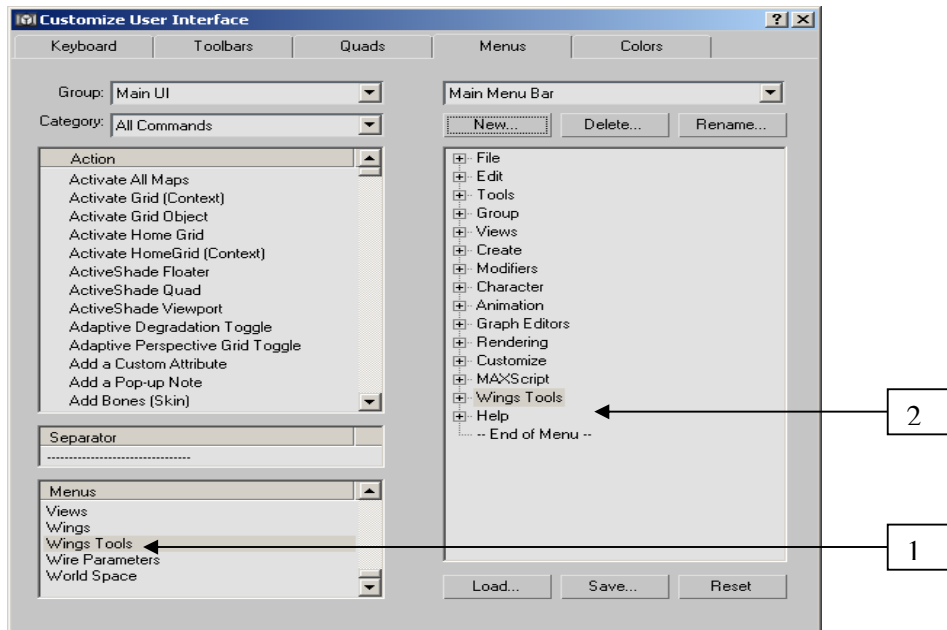
Selects in the menu "adapt" the entry "user interface adapt".



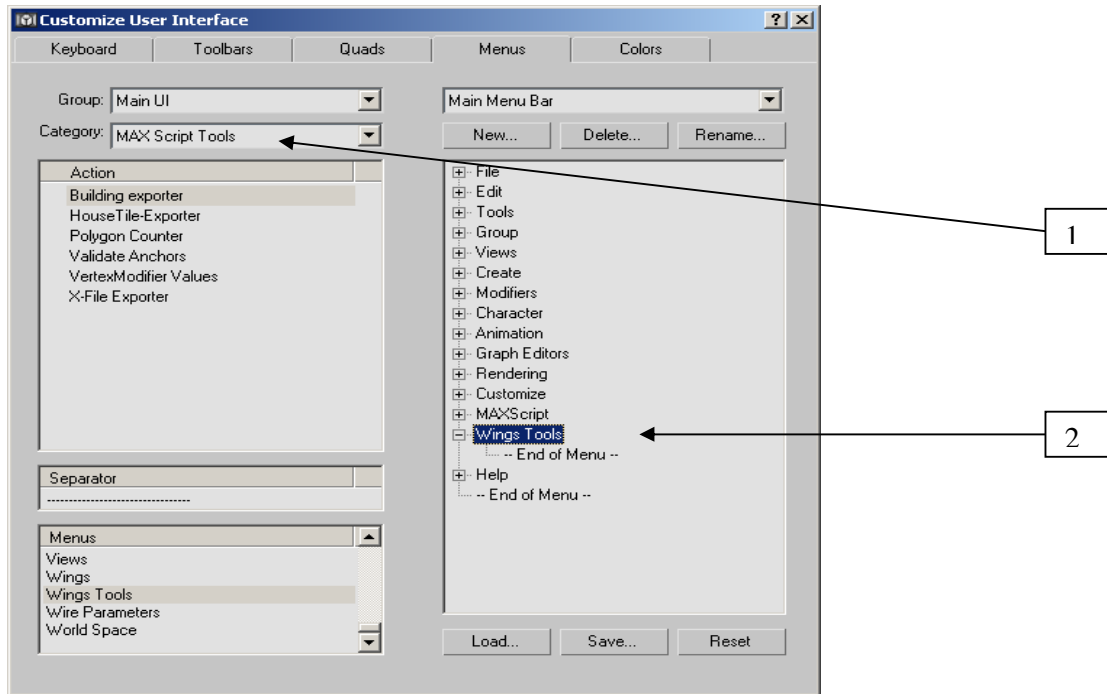
Choose the rider „Menus“.



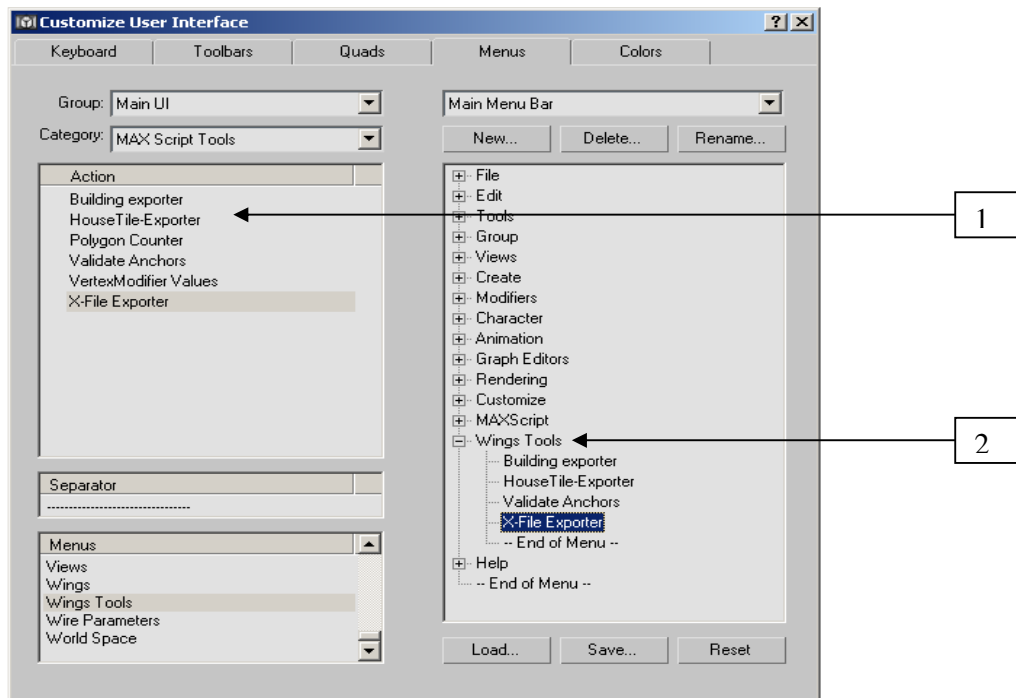
Use the button „New..” to create a new Menu entry called „Wings Tools“.



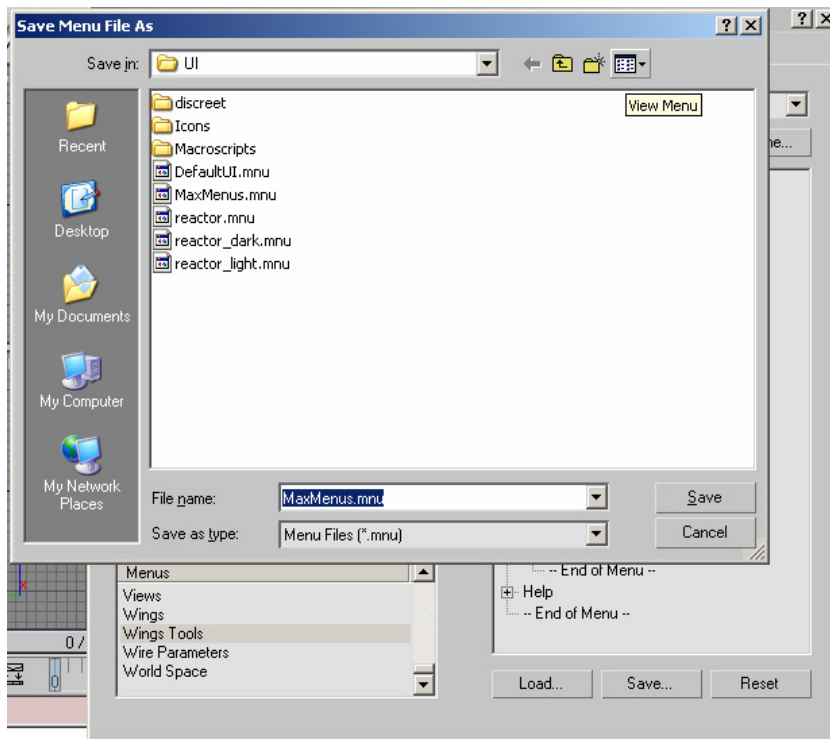
Select in the „Menüs“ list the „Wings Tools“ entry and insert it to the right list by pressing and hold the left mouse button (Drag & Drop).



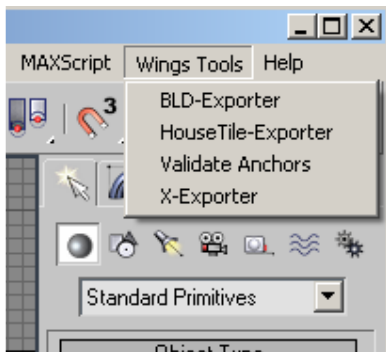
Select the „Max Script Tools“ category (1). By this the „Action“ list will be changed. A click with the left mouse button to the „+“ field on the „Wings Tools“ entry will open the attached menu entries (empty for this moment).



Attach following menu entries to the „Wings Tools“ menu by using the drag & drop function: „Building Exporter“, „House Tile Exporter“, „Validate Anchors“ und „X-File Exporter“.



By using the „Save“ button you can save your new menu and then close the window.



The needed plugings are now available in the 3D Studio Max menu.

2.3 Die Tutorial Dateien

All sample files for this tutorial are combined to one self-unpacking file.

This is a Testmap so that you can test your made buildings directly and around some example files.

Execute the „Soldner-Tutorial-Files.exe“ file and uncompress all files to a temp directory.

Copy all files and directories from the „Testmap“ directory to your Söldner – Secret War's program directory.

You can test your buldings by using the Soldner Map Editor and put your new building into the testmap. After that, start a dedicated lan server with these map in deathmatch mode and connect to it with your soldner game client. Then you can look and test your building ingame. Check using the Testmap before once to go for certain that no faults have crept in to here.

2.4 The HouseTilesLibrary.tlb

All building Tiles in Söldner – Secret War's were stored as *.x file in the Soldner directory structure and in the HouseTilesLibrary.tlb. The latter serves around a faster one load this one to reach elements in the game.

If you insert some new building Tiles into the directory structure, they also need to stored into the HouseTilesLibrary, too. Otherwise you will get an error on loading the game.

To prevent this, the HouseTilesLibrary.tlb must be deleted before the use of new building elements.

After starting the Soldner engine, this file will be new created. But there is only one problem: Since the HouseTilesLibrary.tlb is in the Soldner1.pak, it cannot be deleted directly. You must unpack the Soldner1.pak into any directory, delete the HouseTilesLibrary.tlb, then pack and overwrite the old Soldner1.pak with the new created file.

The new HouseTilesLibrary.tlb file is produces only by starting the Engine when the following directory tree exists: "game/Content/type/3 dObj/TileLib" .

At every change of your building elements the HouseTilesLibrary.tlb must deleted before starting the editor od the game.

Try out this process once to notice that this file is produced really newly.

It also would be good if an unpacked Soldner1.pak would keep you ready for you someplace.

In the further course of this Tutorial some parts are needed from this.

3. Building Elements

Every Building in Soldner – Secret Wars consists of many single Elements, so-called Tiles. Several Tiles, same type, are grouped together and stored in one file.

A group. A group can contain different tile types for walls, roofs, ground etc.. All these tiles must have the same basic form size, though. Such as at a cube. Every tile has the same ground form and could group together to a tile group.

At a rectangular form the thing looks different again. With this the square side elements to a tile group and the rectangular elements must be summarized to another tile group. This separation of the different tile sizes is quite important for the destruction calculation. To this but later more.

4. Naming Convention

So that the Tilemanager of the Engine can distinguish the tiles, there is a certain name convention for it:

<Tiletype>_<Tilegroup Name>_<Tilename>_<DestructionValue>_<Variation>_<lod>

E.g.: W_Tutorial_Wand_00_0_h (german)

E.g.: W_Tutorial_Wall_00_0_h (english)

4.1 Tiletype

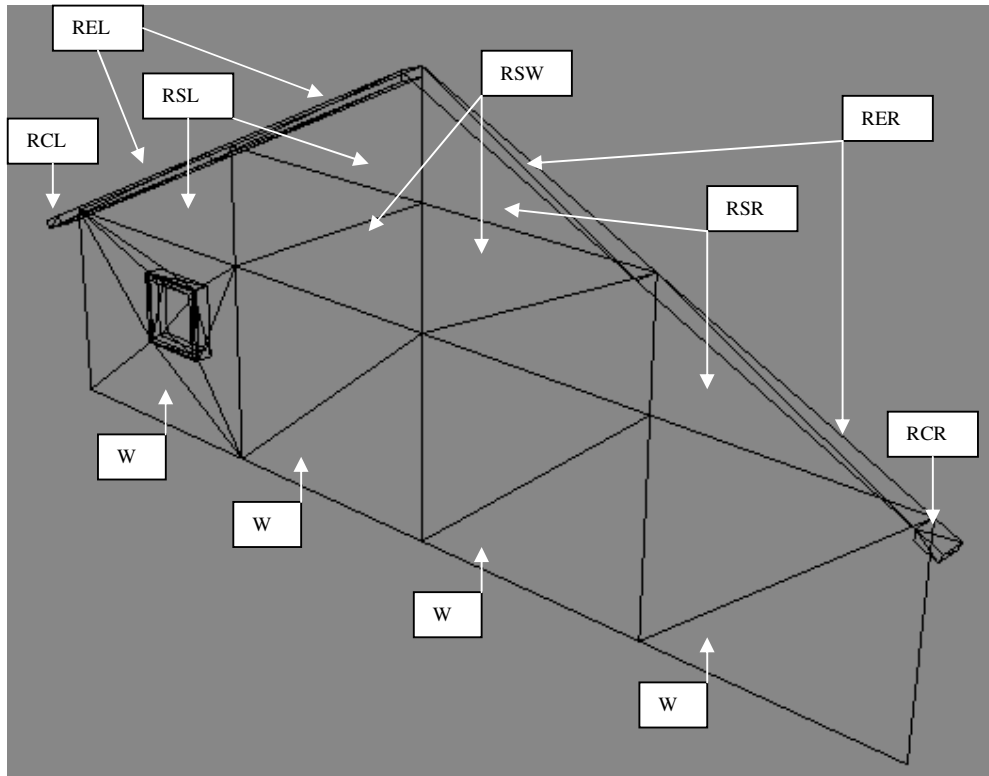
In Soldner – Secret War's you distinguish between different tile types (walls, ground, roof, roof side, roof corner etc.). This distinction is very important for the damage calculation and must be adhered to strictly. The following list shows the valid tile types and its parameters.

Tiletype	Meaning	Number of anchor points and digit number for this <damage specifier>	Valid damage values
W	Wall	2	0, 1, 2, 3
R	Roof	4	0, 2
F	Gound	4	0, 2
RSL	RoofSideLeft	3	0, 2
RSR	RoofSideRight	3	0, 2
RSW	RoofSideWall	2	0, 2
REL	RoofElementLLeft	2	0, 2
RER	RoofElementRight	2	0, 2
RE	RoofFlank	2	0, 2
RCL	RoofCornerLeft	1	0, 2
RCR	RoofCornerRight	1	0, 2

You can ignore the details on the anchor points and the damage values in this place. This is explained more exactly at a later time.

The meaning of the elements is clarified graphically once again in the following representation.

The roof and ground element isn't represented here, however, these names are itself explanatory.



4.2 Tilegroup Name

This part of the name contains the name of the tile group. This name must with the name the 3D studio Max file agree. Later, the tile exporter then produces a *.x file with the name which consists of the tile type and the tile group name.

E.g.: W_Tutorial_Wand_00_0_h ⇔ Tutorial.max ⇔ W_Tutorial.x (german)

E.g.: W_Tutorial_Wall_00_0_h ⇔ Tutorial.max ⇔ W_Tutorial.x (english)

4.3 Tilename

This name can freely choose. It should not be to long and again be recognized.

E.g.: W_Tutorial_WandLinks_00_0_h or F_Tutorial_Boden_00_0_h (german)

E.g.: W_Tutorial_WallLeft_00_0_h or F_Tutorial_Floor_00_0_h (english)

4.4 Damage Value

The damage detail can consist of 1...4 numbers of 0..3 (see table) depending on tile type.

Hands you in, of which damage this tile is part. To this still more is explained in a later place in the Tutorial.

4.5 Variation

The possibility gives max. four using different tile variations. With this the Tile manager decides which of the possible tiles he uses for the construction of the building by chance. The variations are numbered with 0...3.

E.g.:

- W_Tutorial_WandLinks_00_0_h
- W_Tutorial_WandLinks_00_1_h
- W_Tutorial_WandLinks_00_2_h
- W_Tutorial_WandLinks_00_3_h

4.6 Level Of Detail

Three steps are used for the level of detail:

- h = high
- m = medium
- l = low

The last detail step is produced by the Engine automatically. The middle and high step must be modeled.

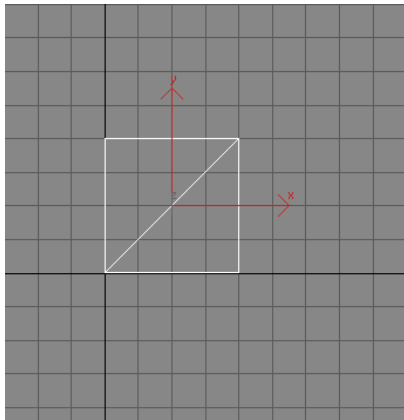
E.g.:

- | | |
|-------------------------------|-----------|
| • W_Tutorial_WandLinks_00_0_h | (german) |
| • W_Tutorial_WandLinks_00_0_m | (german) |
| • W_Tutorial_WallLeft_00_0_h | (english) |
| • W_Tutorial_WallLeft_00_0_m | (english) |

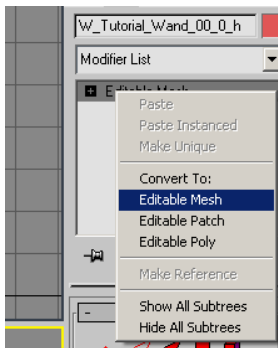
5. Living in an Box

Enough the theory. Now we want to begin with the first building and to be more precise with a simple box.

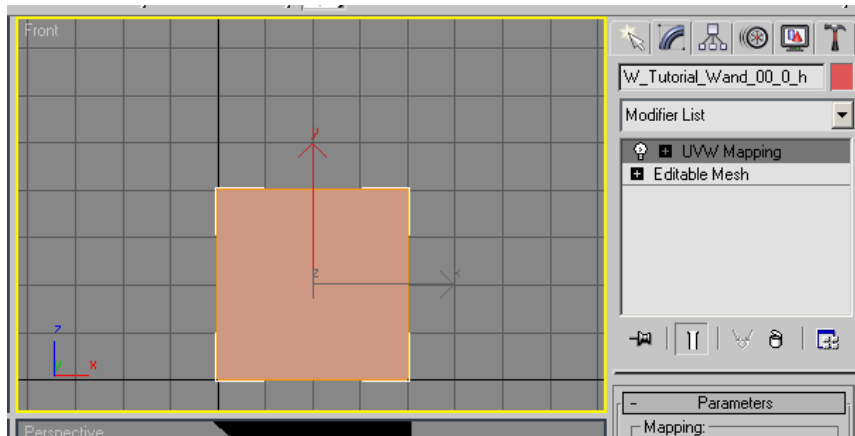
Start 3d Studio Max and create a Plane, names “W_Tutorial_Wand_00_0_h“, with the size of 400x400 and only one segment in the “front” view.



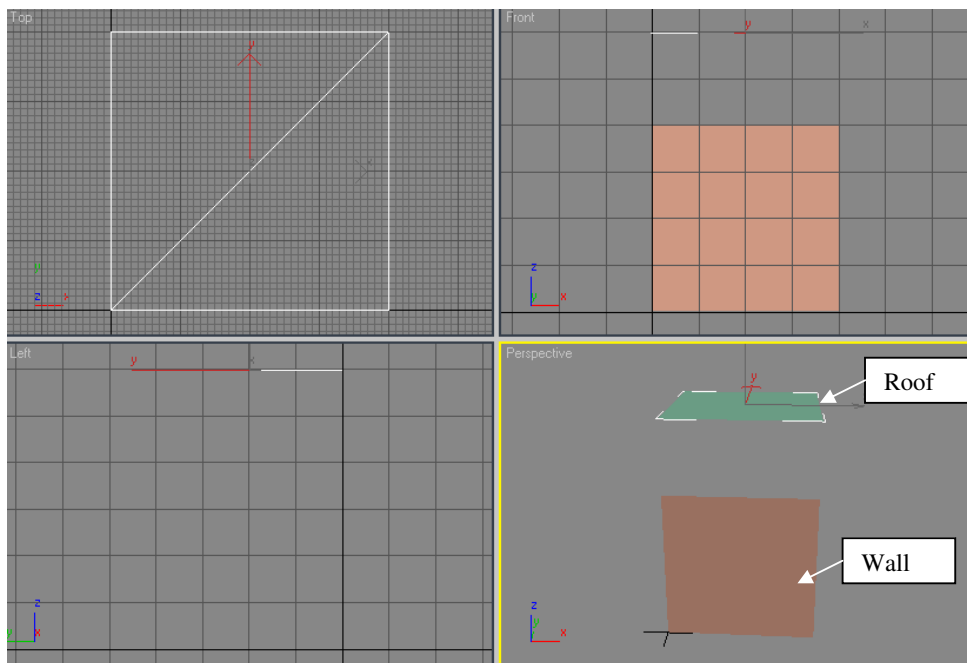
Convert these Plane to a „Editable Mesh“.



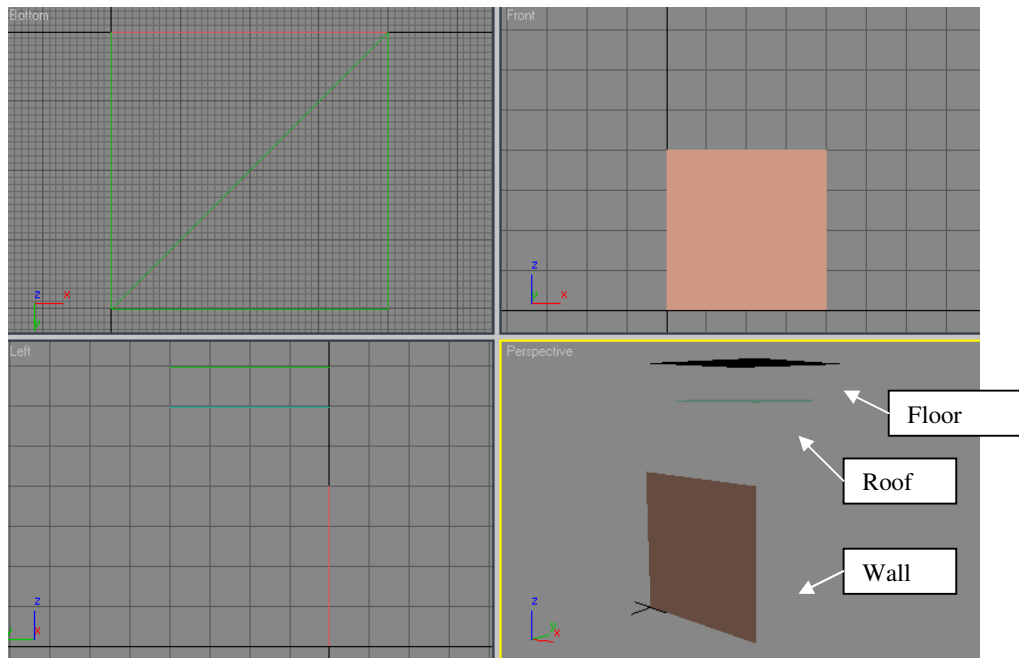
Assign a UVW Map to the Tile and use the „<TMP>\game\Content\Art\3dObj\Textures\Houses\ceiling01.dds“ files from the packed Soldner1.pak as material.



Change to the „Top“ view and create a second plane named „R_Tutorial_Dach_000_0_h“, with the size of 400x400 and only one segment.
Move this plane above the Wall tile. Convert it to a “Editable Mesh” and assign a UVW Map with the same material to it.



Change to the „Bottom“ view and create a third plane named „F_Tutorial_Boden_000_0_h“, with the size of 400x400 and only one segment.
Move this plane above the Roof tile. Convert it to “Editable Mesh” and assign a UVW Map with the same material to it.



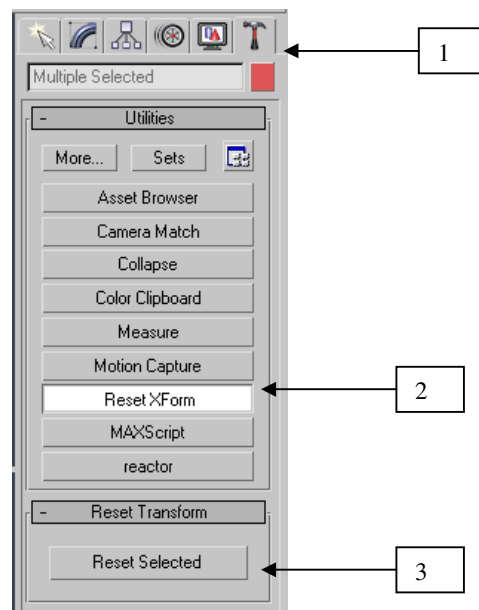
We have three cube elements now:

- Wall
- Floor
- Roof

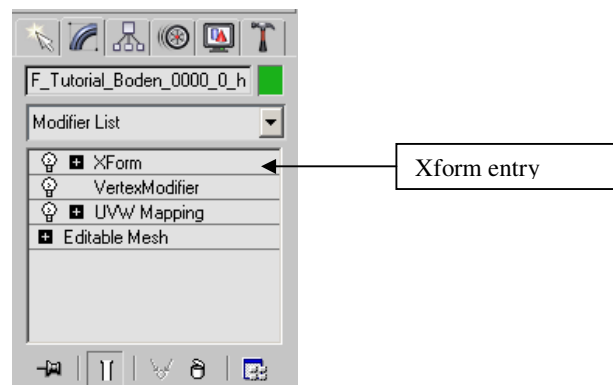
Save your work as „Tutorial.max“.

5.1 Reset Transformation

In the next Step we have to pass all objects to the world coordinate system. Select all objects (STRG + A) and choose in the “Utilities” rider “Reset XForm” and then “Reset Selected”.



A „Xform“ entry will appear into the modifier list.

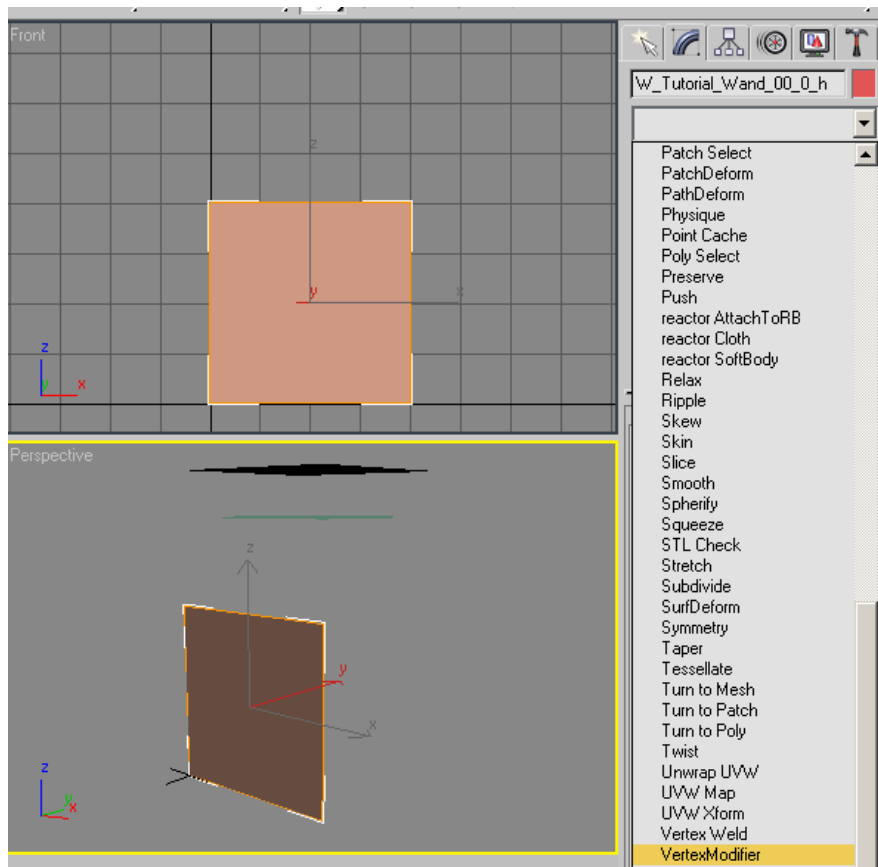


Save your work as „Tutorial.max“.

5.2 Anchorpoints

The destruction level is found out at the so-called anchor points in the Engine. Every tile type has different anchor points (wall = 2; Ground = 4; Roof = 4), see table. These anchor points must be put once in every tile group for every tile type. E.g.: We have a tile group with three different wall, ground and roof tiles, only one wall, ground and roof tile then must respectively be provided with the anchor points.

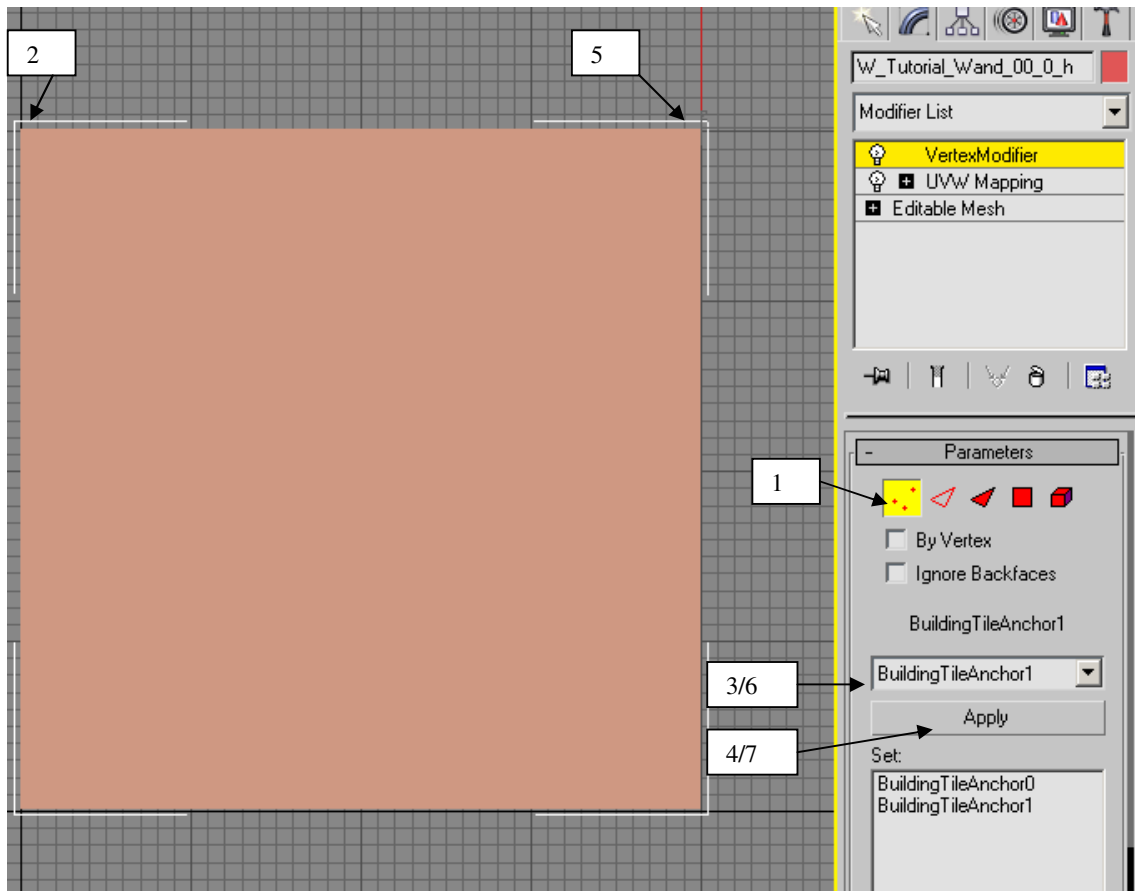
Select the „W_Tutorial_Wand_00_0_h“ tile and choose the “VertexModifier” in the modifier rollout.



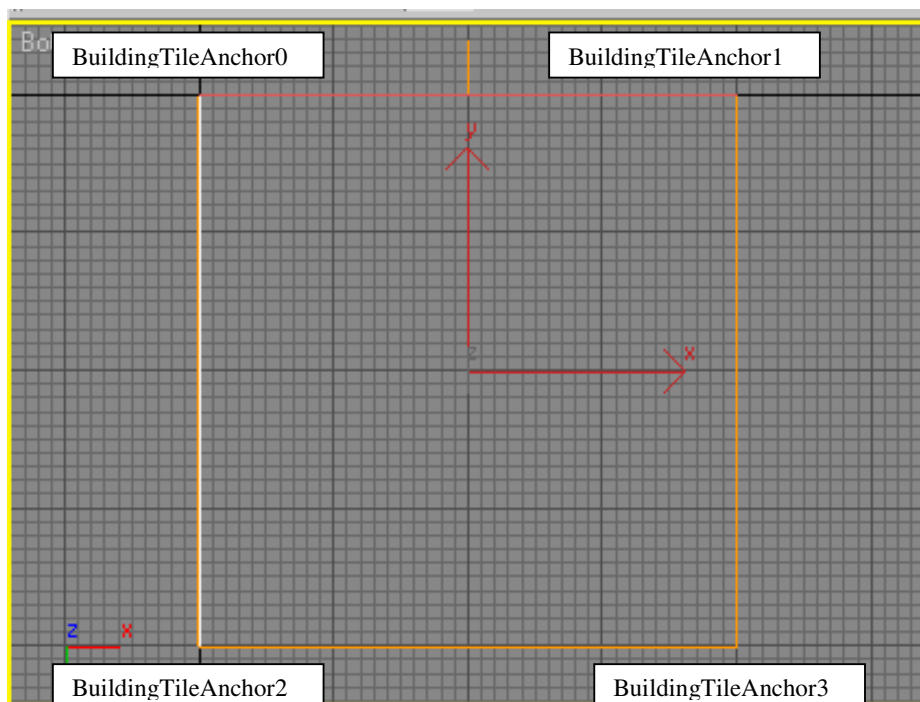
Use the front view. Select the Vertex plane in the parameter rollout and assign the “BuildingTileAnchor0” value to the left upper point (vertex). The select the upper right point and assign the “BuildingTileAnchor1” to them (see Picture). Please remember that you need to deselect the vertex plane after you finished the assigning.

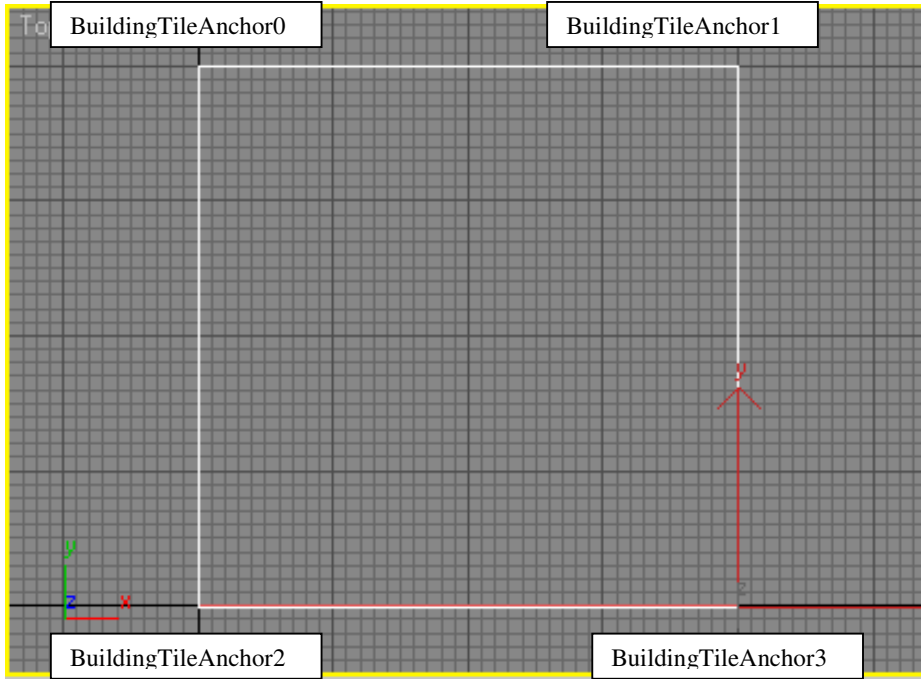
Save your work as „Tutorial.max“.

At the tutorial files includes a file called „Samples\Samples\01\Tutorial_before_collapse.max“.It contains all work steps up to this place.



We similarly proceed with the „F_Tutorial_Boden_0000_0_h“ plane. Choose the „Bottom“ View allocate following anchor points.



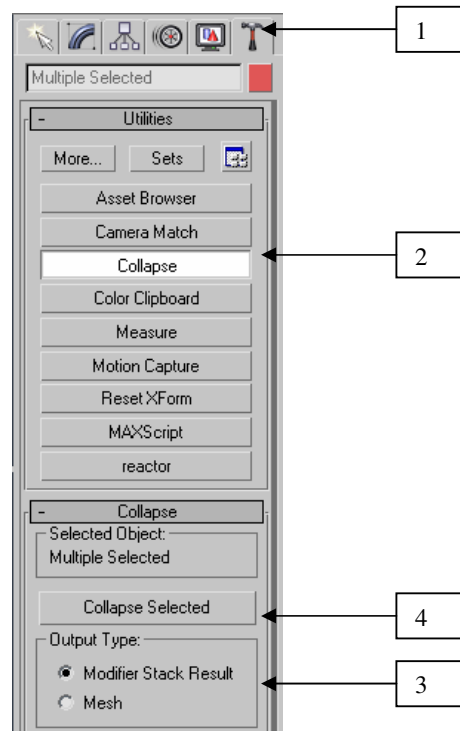


5.3 Collapse

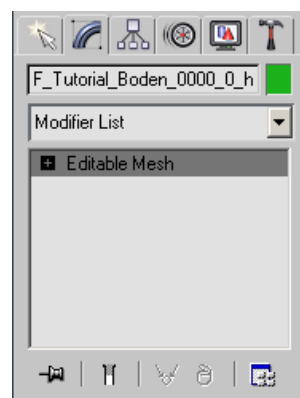
In the last step before exporting we still must downgrade all objects on an "Editable Mesh".

We can achieve this with the "Collapse" function.

Select all objects (STRG+ A) and select in the "utilities" area the "Collapse" function. Choose in the area of "output type" the "Modifier Stack Result" and then press the "Collapse Selected" button.

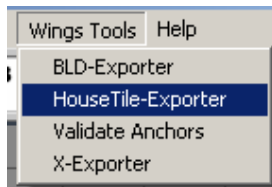


All objects are downgraded to an "Editable Mesh" through this but all applied functions remain unchanged. They are only no longer visible.

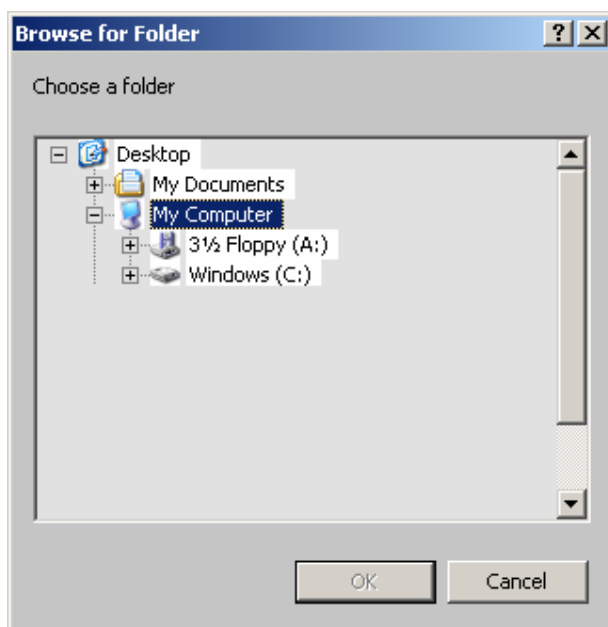


5.4 Exporting Tiles

All building elements (tiles) are completed and ready for export. This process is rather simple. Select all objects (STRG+ A) and chooses the "HouseTile-Exporter" entry in the "Wing's tools" menu.



Choose a temporary directory for the files and hit the "OK" button.



The Exporter creates three files:

- R_Tutorial.x
- W_Tutorial.x
- F_Tutorial.x

Copy all files to the following directory:

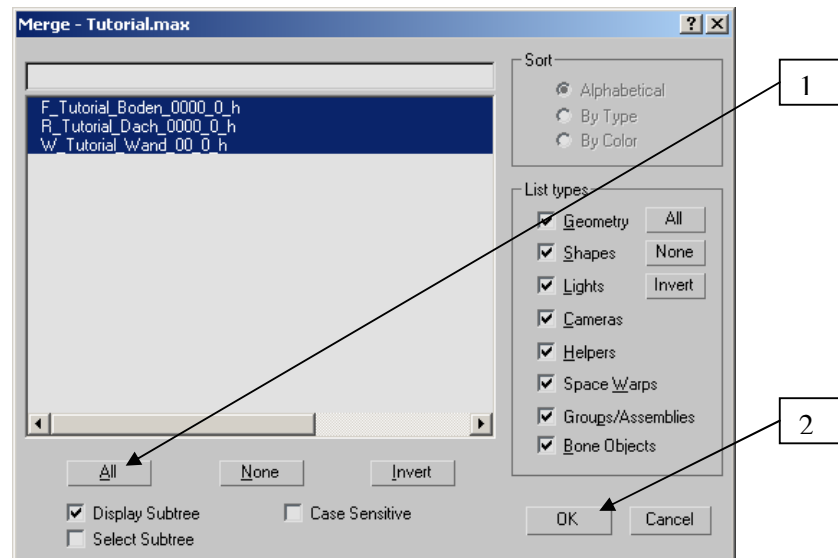
<SoldnerSecretWarsGameDirectory>\game\Content\Art\3dObj\HouseTiles

5.5 Lego Stones

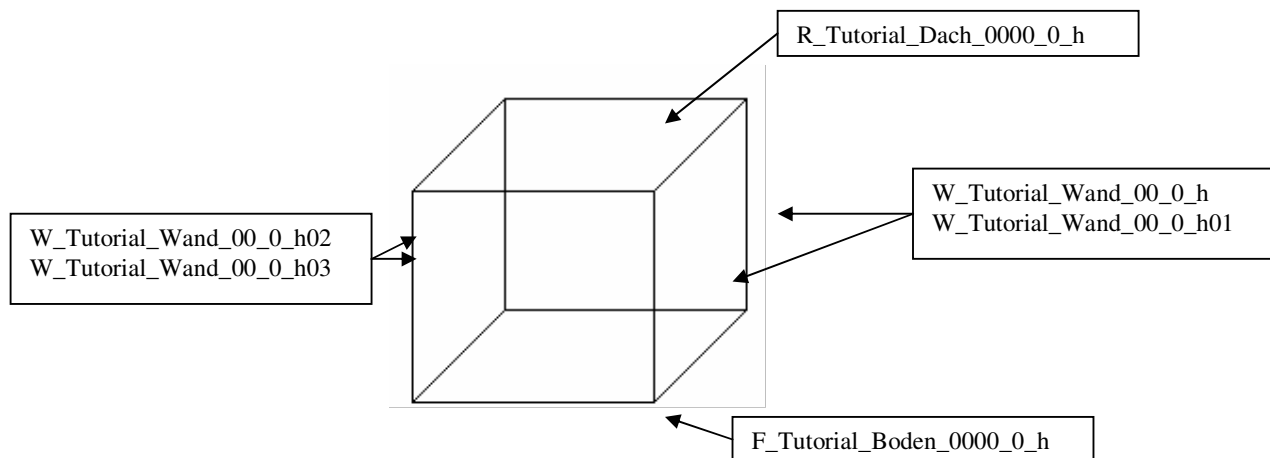
All building elements are finished to bring together. Start a new project in 3d Studio Max with the name „Tutorial-Building.max“.

Choose on „File“ menu the „Merge“ entry and select your building elements (tiles) file (Tutorial.max).

Select your three tiles and hit „OK“.



Put all object together to a cube.

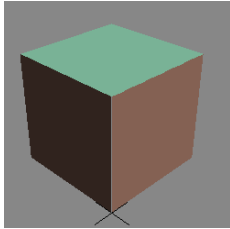


At the assembly you must copy the wall object three times. A numbering is in the name attached:

- W_Tutorial_Wand_00_0_h
- W_Tutorial_Wand_00_0_h01
- W_Tutorial_Wand_00_0_h02
- W_Tutorial_Wand_00_0_h03

This can be ignored at all objects. A renaming isn't necessary.

We have put our cube from four wall elements, a floor element and a roof element together.



To afterwards avoid faults in the game, it is quite important if you join the elements together as exactly as possible. You use the grid function of 3D studio Max best.

5.6 The Matrixobject

For the damage calculation in the game we still must make a so-called matrix object. The information shows the Engine from how many tiles a building is made off.

A matrix object is nothing else as a plane with a certain name. This gets together as follows:

matrix_<Length>_<Height>_<Width>__<Floors over ground>_<Floors under ground>

All values are made in „tilenumbers“. It has to be taken into account that the tile number +1 is indicated respectively at length, height and width.

We have the following values at our cube.

Length = 2 (one Tile +1)

Height = 2 (one Tile +1)

Width = 1 (one Tile +1)

Floors above ground =1

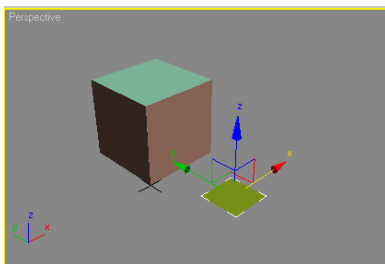
Floors under ground = 0

The result of this is following name:

„matrix_2_2_2__1_0“

Pay attention, that between „width“ and „floors above ground“ two underscores are written.

Create a Plane in the „Top“ view named „matrix_2_2_2__1_0“ with the size 200x200 and four segments (segments and size are unimportant)).



5.7 Building Export

In the last step we need our ready building only to export. Select all objects and select the "BLD-Exporter" entry in the "Wing's tools" menu.

A small window immediately appears with several options.



First select the option „Snap to Grid“ with the value „1“ and use then the „Snap only“ button. Through this all position values will be rounded to 1.

E.g. the position value „4.432; 5.565; 66.666“, will become rounded to „4; 5, 66“.

After pressing the button „Save selected“, choose a temporary directory and the file name „Tutorial01.bld“.

The exporter produces the following file „Tutorial01.bld“:

```
module = "W_Tutorial_Wand_00_0_h"  
pos = "[200,0,202]"  
rot = N  
  
module = "R_Tutorial_Dach_0000_0_h"  
pos = "[200,199,401]"  
rot = N  
  
module = "F_Tutorial_Boden_0000_0_h"  
pos = "[199,201,2]"  
rot = N  
  
module = "W_Tutorial_Wand_00_0_h01"  
pos = "[0,201,202]"  
rot = W  
  
module = "W_Tutorial_Wand_00_0_h02"  
pos = "[400,201,202]"  
rot = E  
  
module = "W_Tutorial_Wand_00_0_h03"  
pos = "[200,400,202]"  
rot = S  
  
module = "matrix_2_2_2_1_0"  
pos = "[209,-322,0]"  
rot = N
```

The position values could be different to your versions, but the main construction should be the same.

You could find a sample file in the following directory „Samples\Samples\01\ Tutorial-Building.max“.

Copy the „Tutorial01.bld“ file into following directory:

“<SoldnerSecretWarsSpieleVerzeichnis>\game\Content\Art\3dObj\Meshes\Houses”

5.8 Materials

To ensure handling the materials (text aurochs) flexibly, you can change the materials afterwards in the *.bld file manually. Open the “<SoldnerSecretWarsGameDirectory>\game\Content\Art\3dObj\Meshes\Houses\Tutorial01.bld“, file with the „Notepad“ and type the following lines in there:

```
material "ceiling01" = "brickwall"
```

Store the file after this under the same name again.
Through this the „Ceiling01“ material will be replaced with the „brickwall“.

5.9 XML Files

A *.xml file also is part of every building. These are in the “<SoldnerSecretWarsGameDirectory>\game\Content\Data\Xml\ObjectDataBase\TerrainData“ directory and bear the same name as the necessary *.bld file. In our case, „Tutorial01.xml“.

It gives the Engine the following information:

```
FWidth = width in meters
FDepth = depth in meters
iFloorsAboveGroundCount= number of floors above ground
iFloorsUnderGroundCount= number of floors under ground
sBuildingClass= the building class
```

Fwidth and Fdepth are indicated in meters. In principle, we can say that 100 units in 3D Studio Max correspond to one meter in Soldner Secret War's.

IFloorsAboveGroundCount and iFloorsUnderGroundCount correspond to the same details as in the case of the matrix object.

The sBuildingClass indicates the building type and can be taken from the following list:

Building Type	XML-Type ID
Unknown	0
Public	1
Urban	2
Agricultural	3

Industrial	4
Infrastructure	5
Military	6
Misc	7
Municipal (town hall, hospital)	8
Airport	9
Port	10
Temple / Church	11
Residence	12
Shop	13
Facility	14
Storage	15
Management	16
Production	17
Power Plant	18
Bridge	29
Fort	20
Semi Industrial	21

This means the following details for the cube:

```
<XML>
  <BUILDING
    fWidth="4"
    fDepth="4"
    iFloorsAboveGroundCount="1"
    iFloorsUnderGroundCount="0"
    sBuildingClass="1"
  />
</XML>
```

Write these lines into the „Notepad“ and save it into the following file:

“<SoldnerSecretWarsSpieleVerzeichnis>\game\Content\Data\Xml\ObjectDataBase\TerrainData\Tutorial01.xml“.

5.10 Terrain Object Classes

In the last step we must inform the engine about the new building.

We manage this by insert the following at the end but before the „</xml>“ line, in the

“<SoldnerSecretWarsSpieleVerzeichnis>\game\Content\Data\Xml\Terrain\TerrainObjectClasses.xml“ file:

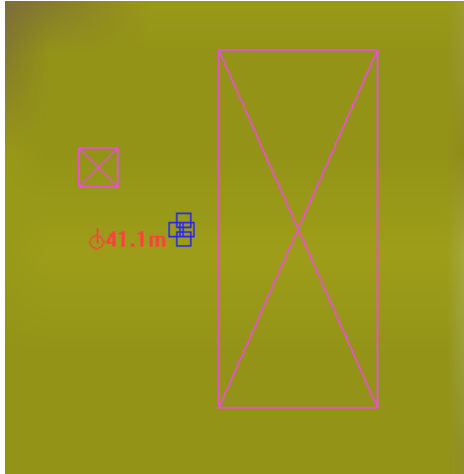
```
    <class
      type="building"
      description="Tutorial01"
    />
```

You must this file unpack from the Soldner1.pak before !

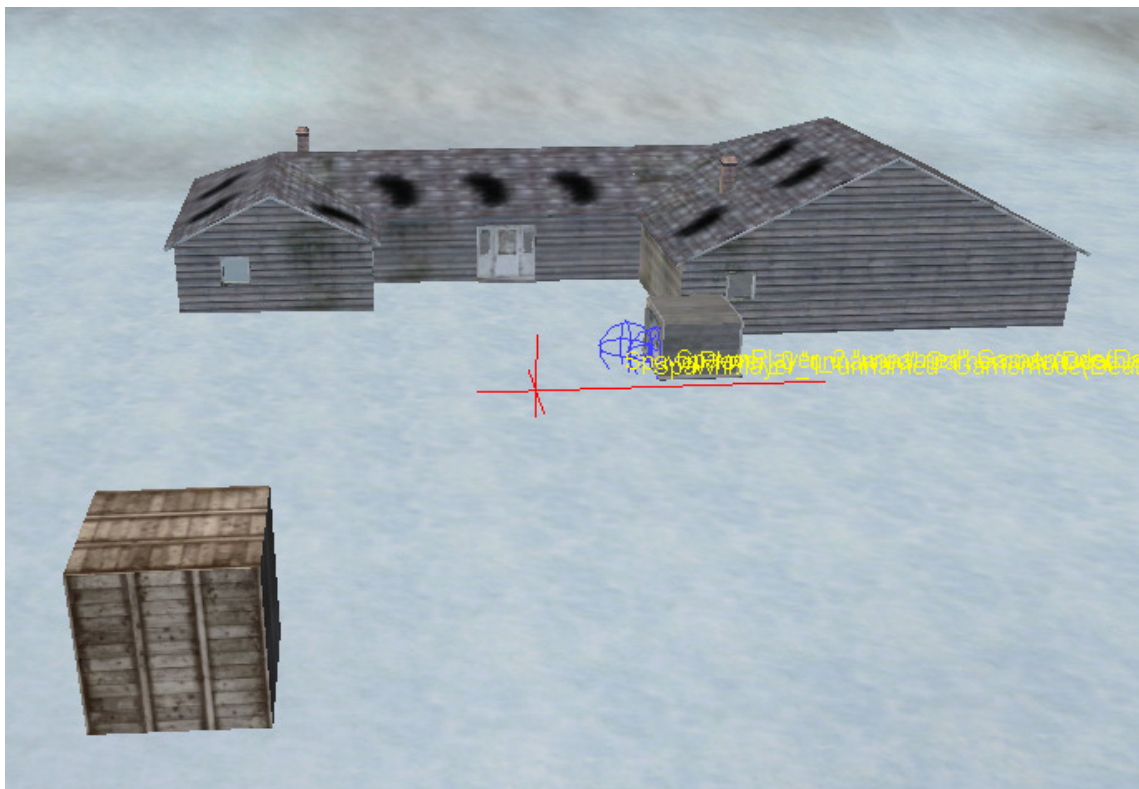
5.11 The Editor

Delete the old „HouseTilesLibrary.tlb“ (see chapter 2.4). You must make this at every change of the tiles.

Start the Editor, select the Detailmap „Tutorial“ and insert your building (Tutorial01) next to the existing House.



You can see your building in game in the second window by pressing the “Engine On“ button.



5.12 The Practice Test

If you run to the terminal, you pass directly your new building (the box). Buy a big Tank for yourselves and shoot to the building. And what happens?

The building disappears with a great bang. No don't worry. You have made nothing wrong.

We still must inform the Engine in the next step now how our building shall look if it suffers a damage. But to this you still need a little theory.

6. The Damage Model

There are four damage steps in Soldner:

- 0 – intact
- 1 – small damage
- 2 – big damage
- 3 – completely destroyed

Soldner uses the anchor points of a tile for the damage inquiry. This means that e.g. there are only two points on a wall to which the damage is noticed. At a ground tile there are four anchor points (see table chapter 4.1) and with that four points to measure the damage. For every anchor point of a tile a damage step must be modeled, now.

This means for a wall, for four damage steps and two anchor points, nine tiles must be created (see table)..

Nr	Anchor Point 0	Anchor Point 1
1	0	0
2	0	1
3	1	0
4	1	1
5	1	2
6	2	1
7	2	2
8	2	3
9	3	2
10	3	3

Since the wall is destroyed completely at the 10th tile, no tile is needed for it.

A ground or a roof element has four anchor points each. To reduce the needed tiles, we'll define that the damage value 0+1 and 2+3 are the same. This reduces the number of tiles to 15.

Nr	Anchor Point 0	Anchor Point 1	Anchor Point 3	Anchor Point 4
1	0	0	0	0
2	0	0	0	2
3	0	0	2	0
4	0	0	2	2
5	0	2	0	0
6	0	2	0	2
7	0	2	2	0
8	0	2	2	2

9	2	0	0	0
10	2	0	0	2
11	2	0	2	0
12	2	0	2	2
13	2	2	0	0
14	2	2	0	2
15	2	2	2	0

The same principle applies to an element with three anchor points as in the case of a ground element. On this the following table is the result:

Nr	Anchor Point 0	Anchor Point 1	Anchor Point 2
1	0	0	0
2	0	0	2
3	0	2	0
4	0	2	2
5	2	0	0
6	2	0	2
7	2	2	0

The name of the tile will inform the tile manager for what damage step it is made.

W_Tutorial_Wand_<damage value>_0_h

The damage value consists of exactly as many numbers as anchor points available are.

E.g.:

2 Anchor points = 00

3 Anchor points = 000

4 Anchor points = 0000

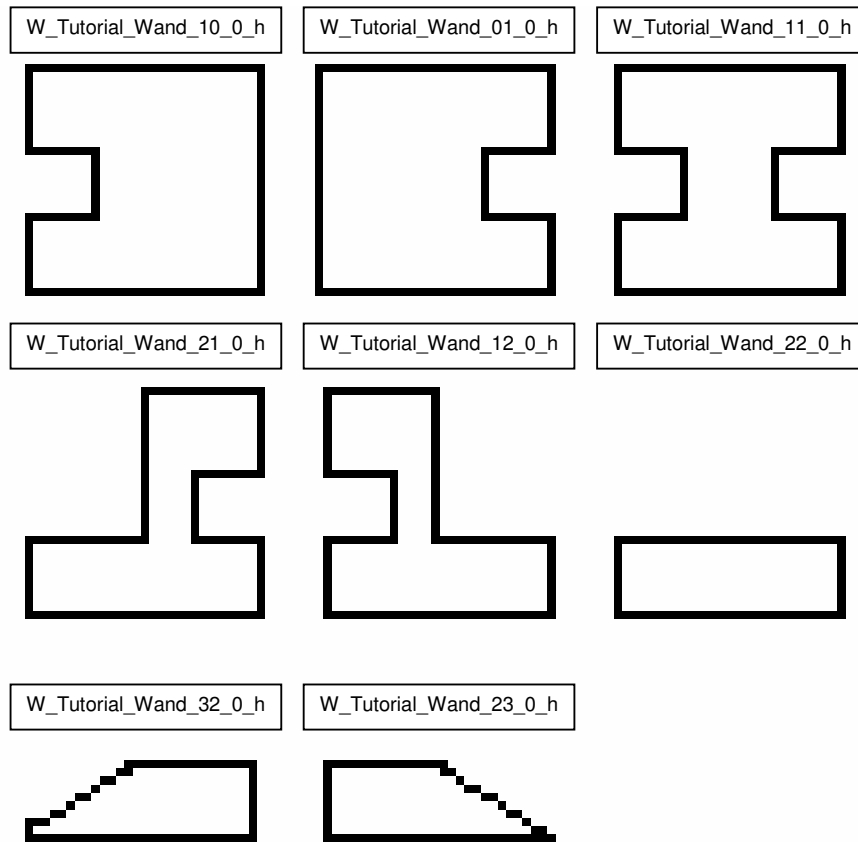
The value of these numbers is determined by the damage step. The naming of the tile looks as follows analogous to damage table of a wall:

Nr	Anchor Point 0	Anchor Pointt 1	Name
1	0	0	W_Tutorial_Wand_00_0_h
2	0	1	W_Tutorial_Wand_01_0_h
3	1	0	W_Tutorial_Wand_10_0_h
4	1	1	W_Tutorial_Wand_11_0_h
5	1	2	W_Tutorial_Wand_12_0_h
6	2	1	W_Tutorial_Wand_21_0_h
7	2	2	W_Tutorial_Wand_22_0_h
8	2	3	W_Tutorial_Wand_23_0_h
9	3	2	W_Tutorial_Wand_32_0_h
10	3	3	W_Tutorial_Wand_33_0_h

The names for tiles with three or four anchor points are analogously.

6.1 Living in an damaged Box

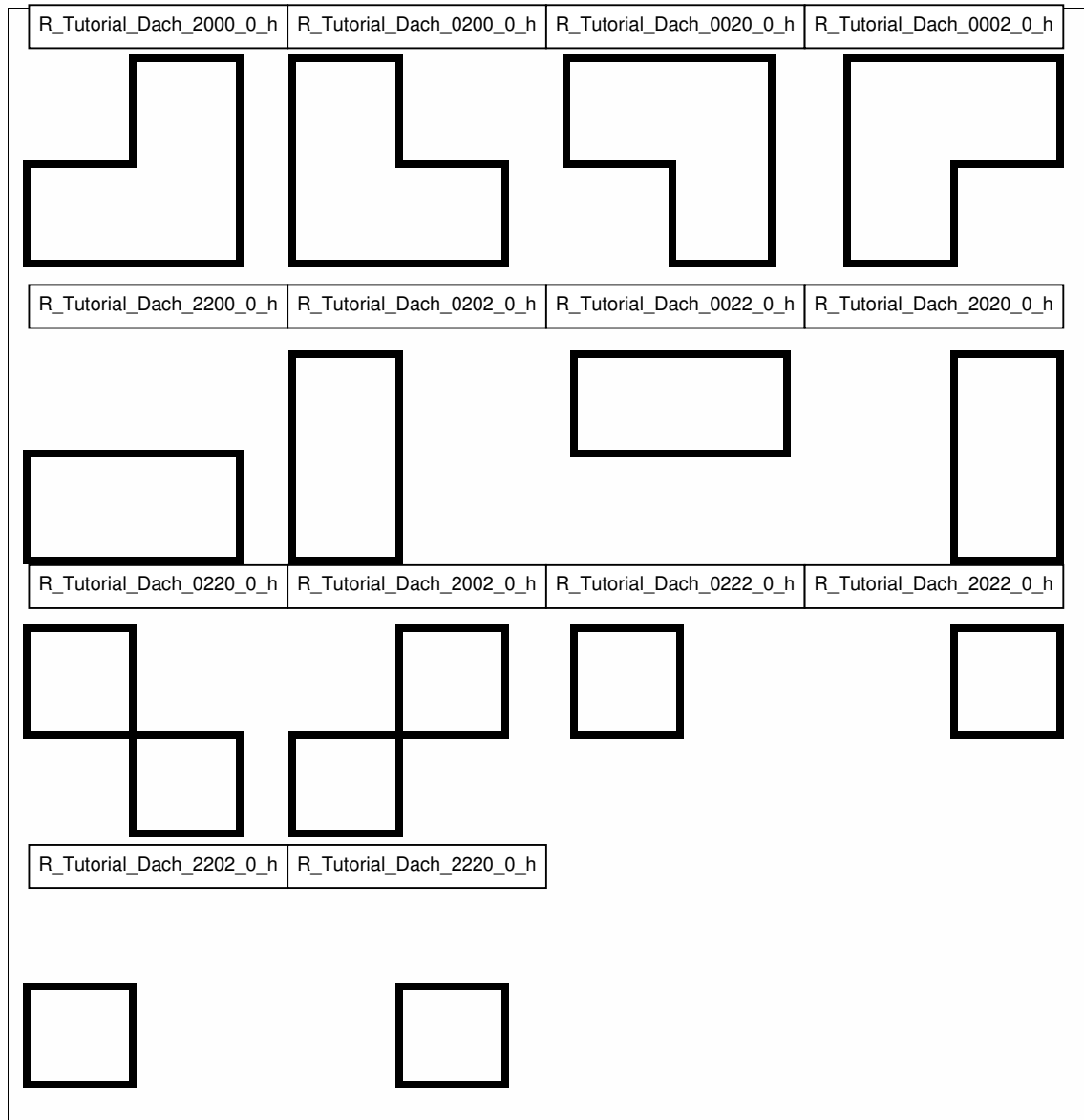
We are coming back from the theory to the practice now. Start your 3D Studio Max and create next to the „W_Tutorial_Wand_00_0_h“ tile following tiles:



Remember that the size of all tiles should not be greater as the base tile („W_Tutorial_Wand_00_0_h“). As you can see, the damage is always on the side where the anchor point is. If you haven't done this yet, convert your tile to “Editable Meshes“. Assign a UVW map and the same material to them.

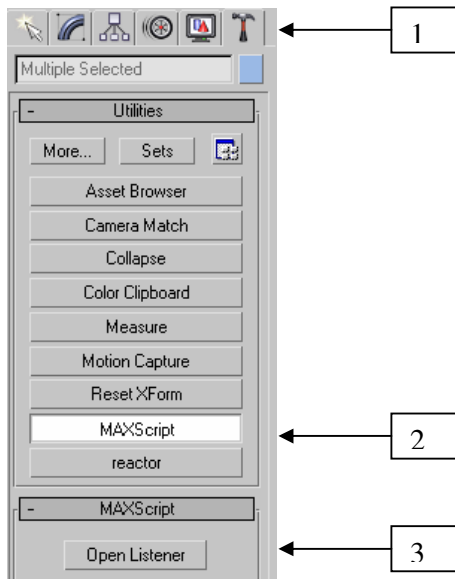


Use the same scheme for the ground and roof tiles. Remember, to use for the ground tiles the bottom view and the top view for the roof tiles. In the picture only the roof tiles are shown. The ground tiles look just the same (only painted on the bottom view) though with another name.

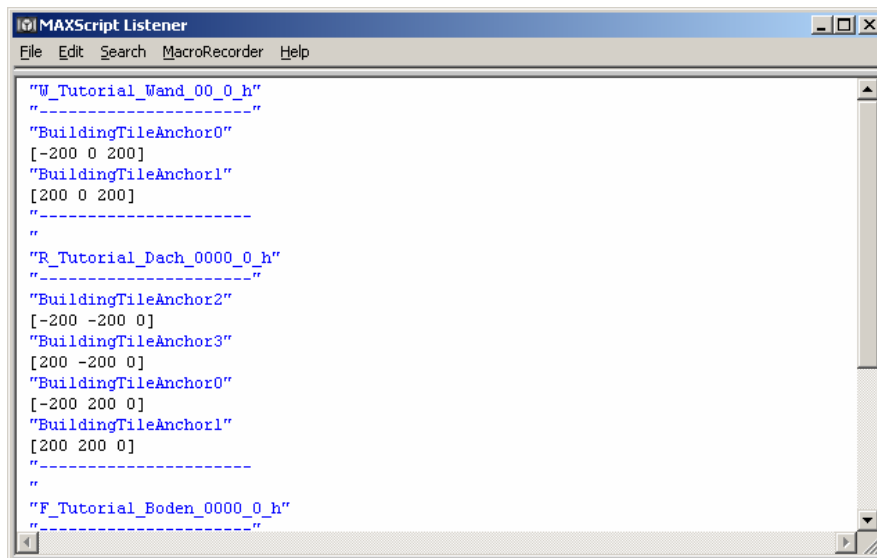
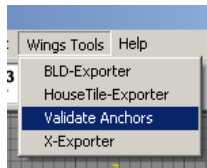


If you are finished with all objects, then select all objects (STRG + A) and reset the transformation (see chapter 5.1).

Open the „Max Script“ Rollout in the „Utilities“ rider and open the listener.



Choose the „Validate Anchors“ entry in the „Wings Tools“ menu. A script which checks the allocated anchor points will be started.



The anchor points for all three base tiles must appear here. If not, you have done a mistake on every step. However, this isn't a problem. In this case allocate the anchor points newly and execute the test once again.

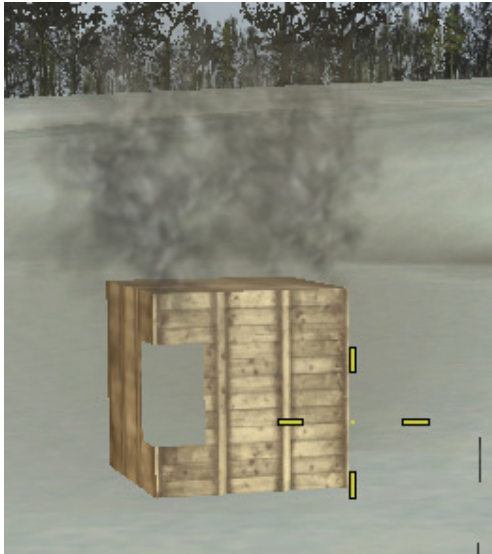
Select all objects and collapse them (chapter 5.3). The export all objects as shown in the chapter 5.4.

6.2 The Practice Test No. 2

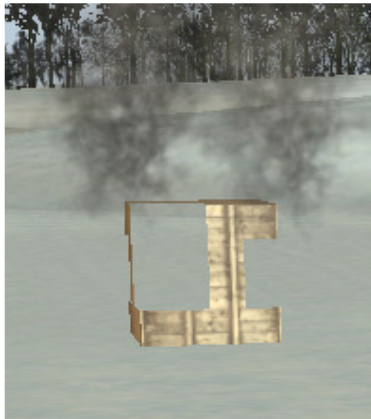
Copy all your Tilegroups to your Soldner directory:

<SoldnerSecretWarsGameDirectory>\game\Content\Art\3dObj\HouseTiles

Delete the existing HouseTileLibrary.tlb and test you building in game. The building doesn't have to be made newly because it is build only from the base tiles. Buy a “Bradley” Tank on a terminal and give one shoot to your building. The result should look as follows:



Buy a „Abrahams“ Tank and shoot one times to your building.



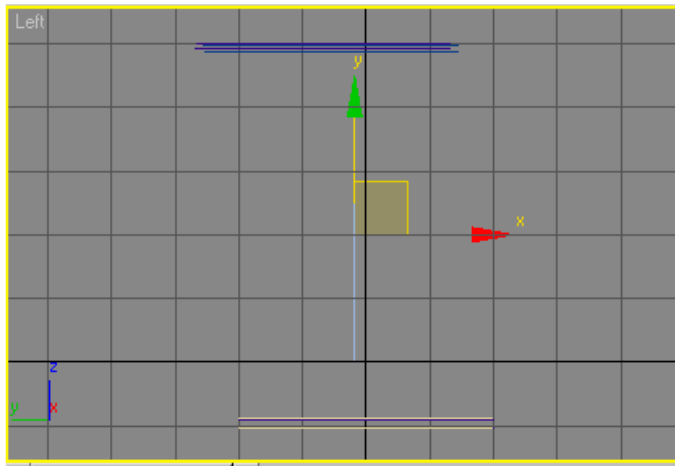
Great. „Congratulations“. Your first building is finished.

7. Within the Box

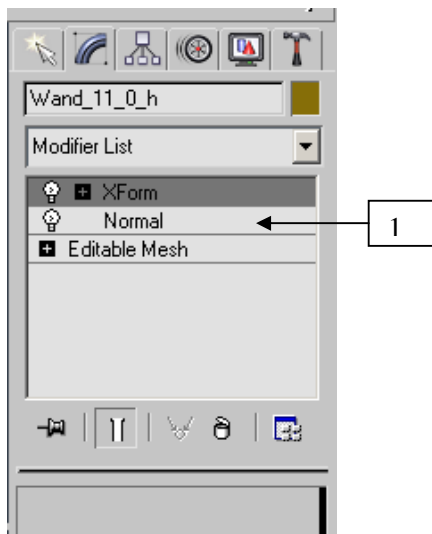
If you view more exactly at your half destroyed box, then you will see that aren't any walls within the box. To recognize the walls thus also within the box, you must draw the insides for every wall (incl. destroyed tiles).

You can do this very simple by selecting all Wall tiles, use the “Shift” key (hold) and move all selected tile a little bit to left.

By this process all selected tiles are copied.



Select all new copied tiles and assign a “Normal” modifier to them. By this modification the areas produced newly from the other side get visible.



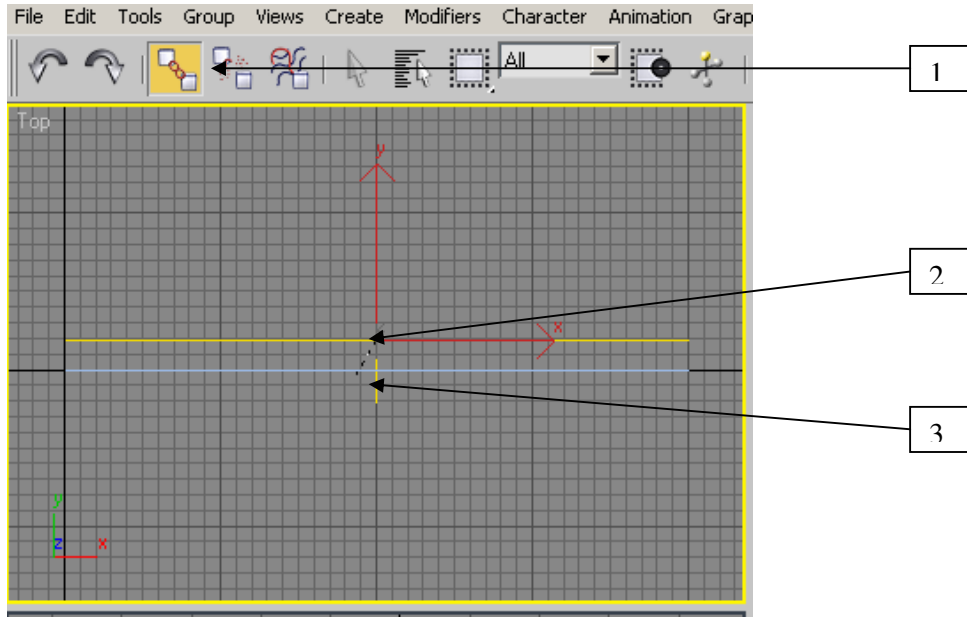
Reset the transformation on all these tiles (see Chapter 5.1).

Rename the elements after the following scheme:

Wand_00_0_h, Wand_10_0_h, Wand_01_0_h, Wand_11_0_h, Wand_21_0_h,
Wand_12_0_h, Wand_22_0_h, Wand_23_0_h, Wand_32_0_h

The backs of the wall elements must be linked with the fronts now.

Choose the „link“ button and click with the left mouse button to the back tile,. Then move the mouse pointer (with a pushed down left mouse button) to the front tile.
If the link works, then the front tile will be highlighted. Pay attention that you link the back tile to the front tile, not reversed. In this case the export will not work.



The following links must be done:

Wand_00_0_h-> W_Tutorial_Wand_00_0_h
Wand_10_0_h-> W_Tutorial_Wand_10_0_h
Wand_01_0_h-> W_Tutorial_Wand_01_0_h
Wand_11_0_h-> W_Tutorial_Wand_11_0_h
Wand_21_0_h-> W_Tutorial_Wand_21_0_h
Wand_12_0_h-> W_Tutorial_Wand_12_0_h
Wand_22_0_h-> W_Tutorial_Wand_22_0_h
Wand_23_0_h-> W_Tutorial_Wand_23_0_h
Wand_32_0_h-> W_Tutorial_Wand_32_0_h

If you have finished with all wall tiles, you can make the same with the ground and roof tiles.

The name scheme is the same as in the case of the wall tiles:

Boden_0000_0_h - Boden_2220_0_h

Dach_0000_0_h - Dach_2220_0_h

Select all tiles and collapse (Chapter 5.3) them. Then export all objects as shown in the chapter 5.4.

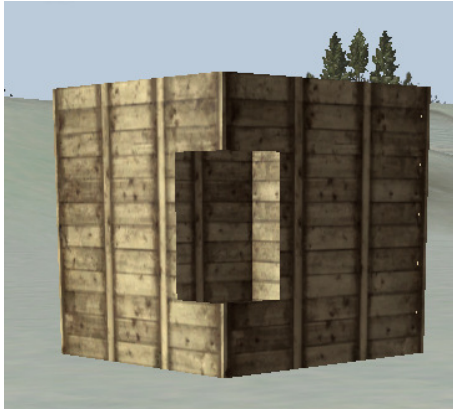
7.1 The Practice Test No. 3

Copy all new created tile groups into the Soldner directory:

<SoldnerSecretWarsGameDirectory>\game\Content\Art\3dObj\HouseTiles

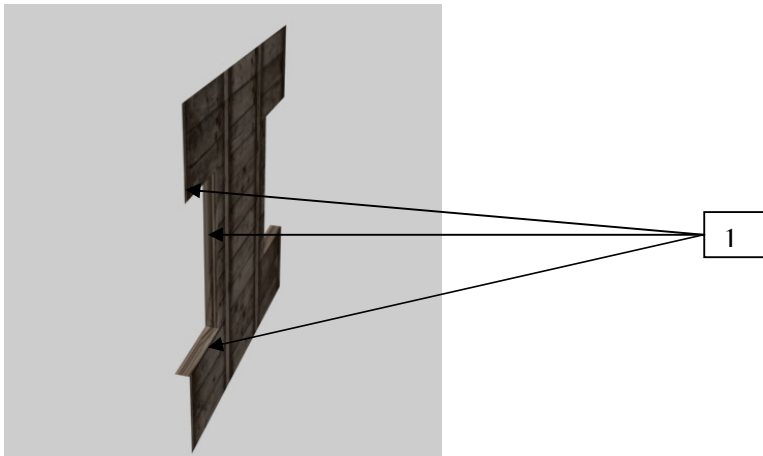
Delete the existing HouseTileLibrary.tlb and test your new building in game.

The building doesn't have to be made newly because it is build only from the base tiles. Buy a "Bradley" Tank on a terminal and give one shoot to your building. The result should look as follows:



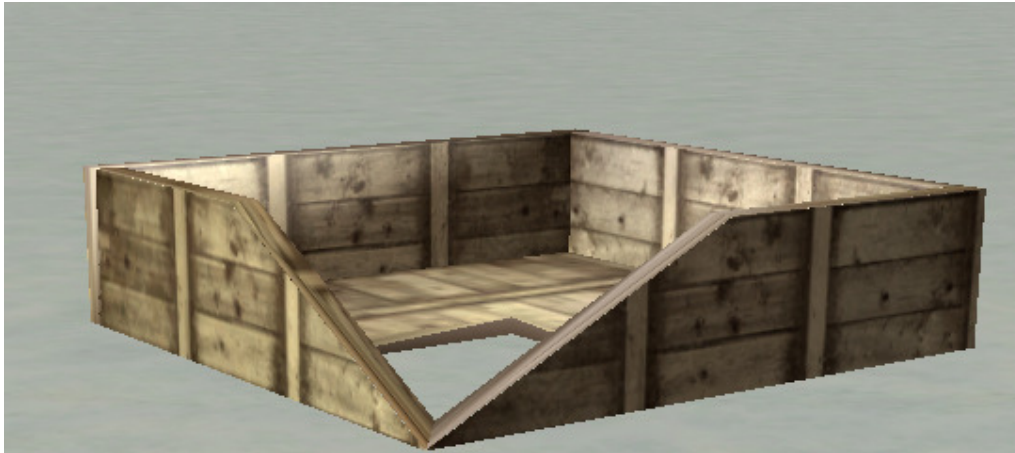
7.2 Gaps

Perhaps you have already noticed it but there is a small flaw at this variant. For the destruction step represented here the gap is invisible between front and back. You can remove this problem by closing the gaps with planes.



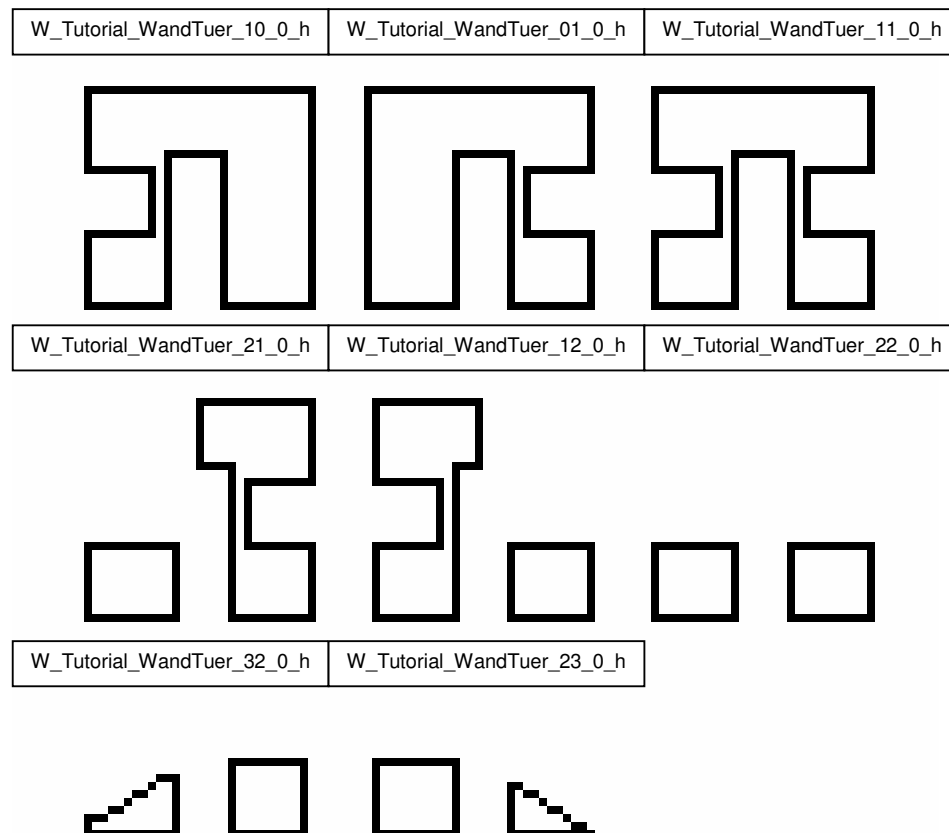
Therefore you can use the back- or the front tile. However, take care that the two tiles aren't connected.

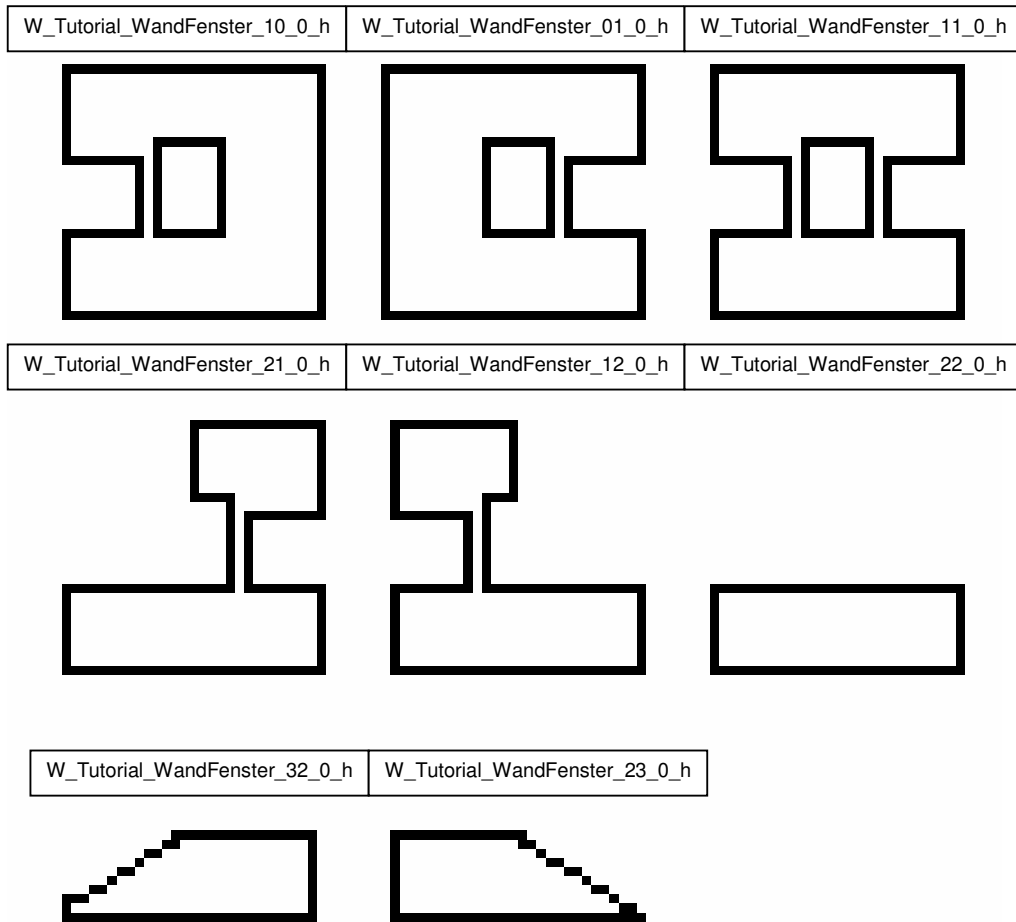
Model all this tiles in this way that no more gaps in the model then can be seen anymore.



8. Come in, look out

In the last chapter we would like to deal with windows and doors. Before we can include these in our model, we must make two new wall elements. One shall have a window opening and the other one a door opening. Create them in the same way as a normal wall element.





8.1 The Practice Test No. 4

Export the tiles made newly and don't forget the Xform, the collapse and the anchor points.
Copy all new created tile groups into the Soldner directory:

<SoldnerSecretWarsGameDirectory>\game\Content\Art\3dObj\HouseTiles

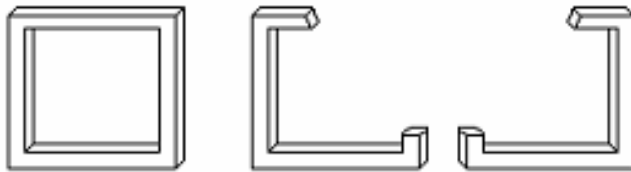
Delete the existing HouseTileLibrary.tlb and test your new building in game. The result should look as follows:



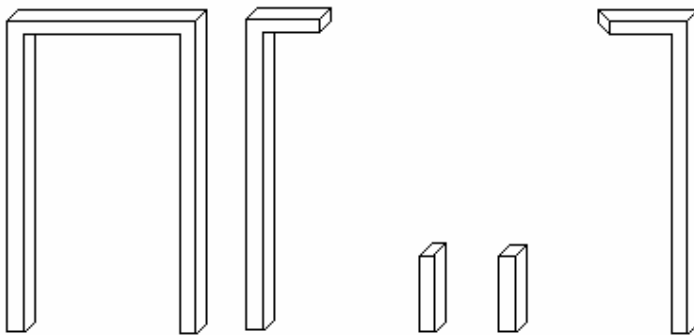
8.2 Window- and Doorframes

Where a window and a door are, a window and doorframe isn't far either. Produce a frame for the corresponding openings and link these with the respective main tile. You can also make a destroyed frame and also link these with the respective main object for the destroyed tiles. As material you can use the same Texture as in the case of the walls. The naming isn't decisive here, but it may not be similarly with F_Tutorial or W_Tutorial. The following names were used in the example files:

Win1_a01_01 - Win1_a01_09



Doorframe1_a01_1 - Doorframe1_a01_9



8.3 Glasses

Window panes are nothing else but boxes (no planes) which are identified with her name as glass. Like all additional objects, the glass plates have to be linked to the main object. The object name has to start with "Glass" and a number in ascending order (Glass0, Glass1, Glass2,). All letters are ignored after the 6 th., i.e.: Glass2_yyy = Glas2xxx.

There exist two kinds of glass:

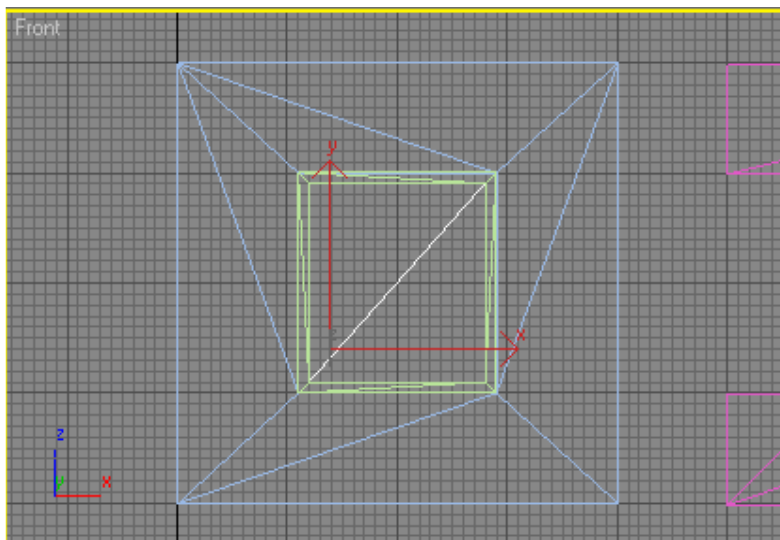
Single-sided glass (looks the same on both sides). The name of the used texture has to start with "SingleSidedGlass". By this name the Backfaceculling is deactivated in the Engine. As a model you can use a plane for it.

Glass: Therefore you can use different materials. (1 mapping channel). E.g. for different reflections at the inside and outside. For this you must create several objects which then must have the same name (e.g. Glas2).

The window pane shall consist of so few points (Triangles) as possible. These are always at least 2 (SingleSidedGlass) or 4 (Glass) at a Quad.

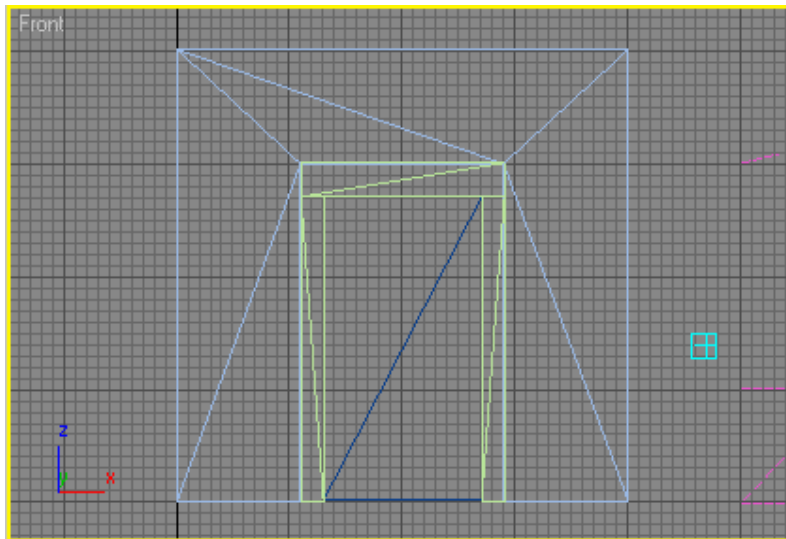
Window panes only shall be available at the not damaged tile (damage value 00). Shall no more windows be visible as soon as a tile is damaged. The window frame isn't concerned by it. The frame and the plate must always be separate objects. Both of them must one by one be linked with the main object.

Draw a box with the name "Glass0_win1_a01" into the window opening at the „W_Tutorial_WandFenster_00_0_h“ tile. Convert it into a „editable Mesh“ and assign a UVW map with the „Glass_Dummy.dds“ texture to it. Link the new object to the main tile „W_Tutorial_WandFenster_00_0_h“.



8.4 Doors

Doors are simple boxes which identified with the name as a door (similar as in the case of the glass). Draw a box with the name “Door_1_a01” into the door opening at the „W_Tutorial_WandTuer_00_0_h “ tile. Convert it into a „editable Mesh“ and assign a UVW map with the „ Windoor_A.dds “ texture to it. You can use a different UVW map for each door side. Link the new object to the main tile „ W_Tutorial_WandTuer_00_0_h “.



8.5 The Practice Test No. 5

Export the tiles made newly and don't forget the Xform, the collapse and the anchor points. Copy all new created tile groups into the Soldner directory:

<SoldnerSecretWarsGameDirectory>\game\Content\Art\3dObj\HouseTiles

Delete the existing HouseTileLibrary.tlb and test your new building in game. The result should look as follows:





9. Concluding Remark

„Congratulations“. You have finished the tutorial and now you have all knowledge to create your own buildings for Söldner – Secret War's. I hope you have liked it and I could a little simplify the getting into the matter.

For all your modding and construction projects I wish you all best,

your Alexander „Gagagu“ Becher