

# Modular Integrated Landscaping System (IV)



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In this article there will be a deeper development of the multilevel elements to build higher hills and mountains, the rules of which were briefly described in the previous article. Furthermore, we will see the last elements of the MILS rules that were pending to be shown: the Transition Terrain Modules (TTM). The last part of the article will describe our effort to build 3 MILS dioramas at the last HispaBrick Magazine Event 2012 and some reflections.

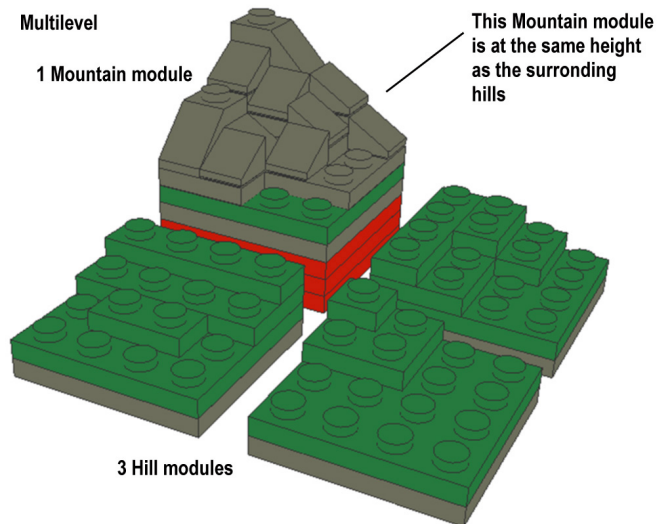
## Multilevel hills and mountains (expansion)

As was written in the last article, the height of the hills and mountains could be more than the height specified for a single module. In order to achieve this, we defined the multilevel system, that was intended to create larger mountains by placing some modules with their base surface at the same height as the top borders of the surrounding hills or mountains. It is not mandatory that builders choose all the modules of the same type. The lower modules can be of hill type and the upper modules can be mountains, or the mountain modules can be placed on the lower part with plain modules in the upper part, and of course there is always the option to make a multilevel element with modules of a single type.

We can see this with an easy example: a corner of a diorama with a multilevel element with a mountain module at the top (level 1) and three hill modules at the base (level 0). As the higher module is placed just in the corner, the other three modules are placed forming an 'L'. The three hill modules of the base (level 0) are composed of 2 modules with a full profile side facing the hole in the corner of the diorama, on each side of the 'L', and one corner module to join the two modules in the correct way to have a consistent terrain. In the resulting gap, the mountain module is placed on some supports, so that it has the same height at its surface as the highest borders of the hill modules. These supports must be 4 bricks + 2 plates + 1 tile high to get the correct height. The supports can be made in many ways, there isn't any specific shape, but it is recommended to have good stability using X shaped surfaces. The mountain module, in this case, is intended to be a corner shape module, in order to have a consistent landscape without gaps. In this way you can have a small multilevel element with MILS modules in a diorama.

This example could also be done with a single BTM module instead of the mountain module, like a small tableland. If we decide to build the multilevel element in the middle of the diorama, with 2 modules at the top level (Level 1), we will need at least 10 modules of the type selected to form the base (Level 0) and of course enough supports to hold the upper modules.

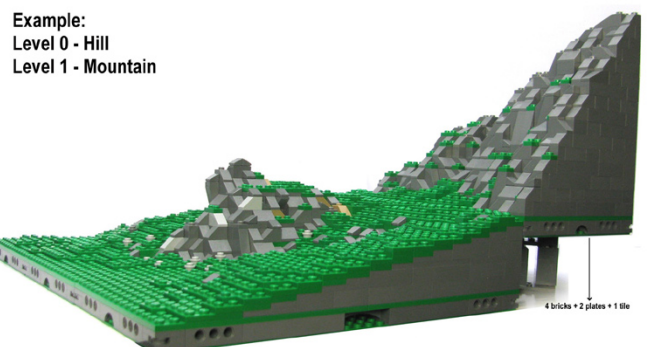
This system also can be used to build cliffs, with a row of mountain modules dividing the lower part of the diorama,



with modules placed on the table, and the top elements with modules placed on any kind of support of 15 bricks + 2 plates + 1 tile high. A simple pile of bricks is not enough, this type of supports needs more contact surface, as the higher it is, the more likely it is to fall down. Is better to have several supports instead of one to have a better distribution of the weight and to avoid damage to the baseplates of the modules.

The MILS system needs a lot of modules to build the base, or lower part of the multilevel items, and many of them must contain FULL profile sides to have a continuous landscape. These are some of the reason why they have a very high piece count, so they are really expensive to build.

This technique could be used 2, 3 or more times in order to get more levels, to form great and very high mountains, but





this type of construction is very difficult and complex to carry out without a careful planning, and due to the high number of modules they may be unstable. So it is recommended to use another type of construction, with less elements and stronger foundations, with compatible sides with the MILS system, or using transition elements, that we are going to describe in the next point.

### TTM (Transition terrain module)

This is the last group of elements to be described in this series of articles. These elements don't need to be 32x32 studs. These elements are often used as transition parts between MILS modules and other elements which have no compatible sides or which due to different height or dimensions cannot otherwise be used with the MILS modules. The form, height or size of these TTM items depends on what the builder needs to join non-MILS elements with other MILS modules in the diorama.

The most common example of these elements can be seen when a single baseplate is placed in a MILS diorama. The baseplate element of the landscape has a different height from that on the surface of the MILS modules. You can place the baseplate on several supports of 1 brick + 1 tile to have them at the same height, but this is not always possible. Another way, using TTM elements can be carried out by adding some small baseplates with one side with the same height of the aforementioned baseplate, and the other side with the elevation of the MILS part of the diorama. In other cases, a builder who wants to include a 48x48 element in the middle of a diorama, surrounded by MILS modules, will have gaps. The gaps are different from the standard 32x32 studs

of the MILS modules, so there is a need of smaller elements like 16x8 baseplates, to be placed in the gaps between the MILS modules and the 48x48 baseplate. These elements are constructed when they are needed, so there are no specific features or sizes for them, just the surface needed to cover all the gaps and get a homogenous terrain.

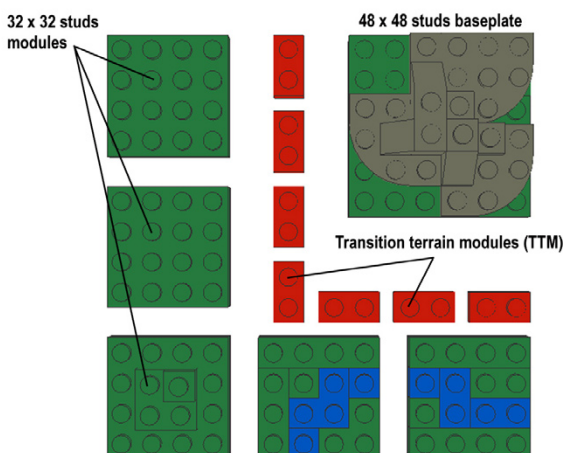
This type of element is also very useful to include different building techniques with MILS dioramas. For example, a road built with a SNOT (Studs not on top) technique with a thickness of 1 brick can be placed on a baseplate with two more plates to have the same height of a road module. So it is possible to combine SNOT roads with MILS modules with roads. Furthermore, these elements do not need to be simple baseplates between MILS modules and other types of landscape elements, they can be used to add some special features in MILS dioramas. For example they can be used to reproduce a vertical ramp of 60 bricks height in 8 studs to divide two areas of the diorama. And of course, if there is no place to add more 32x32 modules you can always fill the gap with these elements. So we can think of these elements as complements to get more connection possibilities in our MILS dioramas, or to fill the gaps that appear when we want to include some other landscape elements of sizes different from 32x32 studs.

### Construction of MILS dioramas at the HispaBrick Magazine® Event 2012

We made 3 different dioramas with MILS modules at our HispaBrick Magazine Event 2012, with modules built by different participants.

The first diorama, which had been planned at previous events, was based on the Battle of Hoth of the Star Wars™ saga. It contained 23 modules, with snow terrain, the trench and the shield generator. The main effort in this diorama was to build as many basic modules as possible to have enough space to place all the war machines, troops and elements of the diorama. The diorama also contained some BTMs with small reliefs, or a crashed snowspeeder, and some CTMs with the trench. The final result was a very nice diorama to depict the battle. Furthermore, we were able to include a white baseplate placed over supports to fill the gap of some missing modules, and the result was perfect. This is a diorama we can build in many sizes and configurations, depending on the available space and modules. For future events we want to add the hill with the Echo base, with the main door entrance, so we hope we can build it for the next HispaBrick Magazine Event.

The diorama of Hobbiton was built around the new LEGO® set 79003 An Unexpected Gathering. Bilbo's house was placed



directly over some basic modules. Then we placed some other modules containing a road and a river to form a small diorama of a typical hobbit village. We prepared some decorative elements for this diorama, like trees, a small orchard and farmland. These type of things were a nice addition, because they were very easy to place on the diorama and had a great visual impact. One of the things we realized when we built the diorama was that the final aspect of the road with the irregular borders was far better than the roads with straight borders. This is a detail we have to work on in our road modules, adding more irregular borders to create a more realistic look. We also included a little river mouth, although we didn't have enough modules to complete the bank of the lake. But it was a nice addition too, and the lack of additional lake elements was not too bad.

The castle diorama was improvised. We had prepared many modules but we didn't plan any specific diorama. Once we had the place of the diorama assigned, we gathered all the modules and we began to move them as if they were the pieces of a puzzle. We needed a large plain area to place the castle, so all the basic modules were used for that purpose. We used 4 straight river modules and another river mouth on one side of the diorama in order to leave the middle of the diorama for the castle. In one corner we placed the shore modules to form a very irregular coastline, with the river mouth. The hill and mountain modules were placed on the opposite side, in a narrow fringe because we needed all the space in the middle to put the castle, so we could not build a great hill or mountain. One of the advantages of the modular system was that we were able to adapt our diorama to the available space, as we had to use the last available place in the exhibition. Unfortunately, at that stage we didn't have any decorative elements like trees or shrubs left, so the diorama seemed to be empty. Nevertheless this was a great opportunity to realize how useful the MILS modular system could be to build an improvised diorama in only 20 minutes. Contrary to the diorama of Hobbiton, the look of the roads in this diorama was a little ugly, because the borders of the road were straight. So these modules will need a rebuilding process to get a more realistic appearance.

After building these dioramas we could draw some conclusions. We had no problem to replace some missing or forgotten modules, we just replace them with another one of the same type and the building process continued without any problem. The corner identification system was a great advantage in the building and disassembling process. Each builder could identify his own modules very fast. The comprehension of the MILS rules and the different types of modules, except for the absence of certain types of modules, was perfect, and we had no problems to connect the modules of different builders. There were some problems with the ratio of module types, because we need more space to put large structures and buildings over the surface of the diorama, and we didn't have enough plain modules. On the other hand we had plenty of modules with hills or small reliefs, so we need to build more plain modules to display a city or a big castle. We had a good quantity of road and river modules, but in the case of the river modules we had too many straight elements and only one curved section, that we couldn't use. The opposite happened with the roads, we had more curved sections than straight ones, so we couldn't make a decent road between the castle and shore. One type of module that could be very useful in dioramas with villages and roads is a T junction, which allows you to have several roads in the same diorama. Another key factor with MILS modules are the curved sections of the roads and rivers. The MILS rules say that a single curved element of a river or road is required to be 90 degree curve. The concatenation of two of these modules to form a zigzag takes up a lot of space, so this type of landscape feature needs careful planning. Other landscape features like the hill and mountain modules were used in the rear part of the castle in separate groups to fill the gaps in the diorama, so nothing can be said about these elements, as they were not used to their full potential. One final, but not less important detail was the shortage of trees or other small decorative elements. They have a huge visual impact, and without them our dioramas maybe give the impression of being empty. We need to make an effort to bring along more trees, plants or small things to put on the dioramas.

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**MILS Castle diorama**



**MILS Hobbiton diorama**



**MILS Hoth diorama**