

Learning to build

The recent building of a full-sized house made of Lego by James May, a presenter of the television programme *Top Gear* and, more recently, his own series *Toy Stories*, showed that the world of toy bricks and real bricks might not be too far apart.

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The fact that James May's full-sized Lego house has now been demolished and the bricks given to charity highlights the important difference between toy building sets and real buildings. The former have to be demountable and capable of being used in as many different ways as possible, whereas the latter, despite recent events, are generally designed to be as permanent and unalterable as possible.

Toy building sets are as much about learning about building as they are about the design of buildings. So how do they imitate the process of building?

Richter's Blocks and Lott's Bricks

A set of wooden building blocks has been part of many toy collections since they first appeared at the end of the 18th century. The problem with such blocks is they are normally too light to imitate the stability of real stacked masonry. Both the German-made Richter's Blocks, which first appeared 1880, and the United Kingdom imitator Lott's Bricks, which appeared 1911, were made from coloured chalk and sand in a matrix of linseed oil varnish, making the blocks satisfactorily heavy in the hand, like small stones. Sets of both blocks have been found in New Zealand.

The heaviness of the blocks meant that, with a level surface and a very steady hand, the plans and elevations provided could be followed to produce substantial buildings, such as Lott's cathedral (see Figure 1).

These sets would have taught a child patience if nothing else. Later Lott's sets included blocks with a window printed on to them in place of leaving modular gaps in the structure, which makes the building process much more straightforward. This might be seen as the first step in the general dumbing down of what a child learns from toy building sets.



Figure 1: Lott's Bricks cathedral.

Miniature bricks from pottery firms

In New Zealand, the Luke Adams pottery firm made a toy called Kiddie Bricks. It consisted of scale clay bricks that could be stacked and, according to the Canterbury Museum, people could choose their own set from a tub of bricks in the factory shop. However, they appear to have come without instructions. A recent revival can be found in the miniature bricks produced by Barry Brickell's pottery at the Driving Creek Railway in Coromandel. These are also scale, although much larger, and come with longer bricks as lintels, making shelter construction easier.

Brickplayer was another version of this kind of toy, which more closely imitated how brick buildings were made (see Figure 2). It appeared just before World War II in the United Kingdom. Miniature clay bricks were mortared together with a paste made from flour, powdered chalk and water, and the sets came with a miniature trowel. Metal windows and doors could be built in (later these were plastic), and a cardboard roof completed the structure. Soaking the brick part in water released the clay bricks so other models could be built. This toy had the advantage of making buildings that were about right in terms of scale for O-gauge model railway layouts, and plans were provided for building things like stations and signal boxes.

Hints on building with Brickplayer suggest building up courses at the corners and using a straight edge to make sure the coursing is level, thus teaching the rudiments of bricklaying to the young.

Lincoln Logs for log cabins

Lincoln Logs was another variant that imitated the building process, which was first patented by John Wright, son of the famous Frank Lloyd Wright.



Figure 2: Brickplayer (the later, contemporary version).

Lincoln Logs were toy logs notched at the ends, which could be made into log cabins just as a real log cabin would be made out of tree trunks. Gables with serrated verges were then added so that slats could be laid across them to form a pitched roof.

This is one of the few building toys where the roof had to be constructed from the eaves up (imitating real life), rather than the roof arriving as a prefabricated plate, like the hinged cardboard roofs of Lott's Bricks (see Figure 1). There was an Antipodean version of this toy called Logge and Timba (see Figure 3).

Bayko – realistic buildings but strange technology

Of all construction toys, Bayko produces the most realistic buildings – at least in terms of producing instantly recognisable inter-war United Kingdom houses – using the strangest building technology. Bayko is entirely plastic – originally Bakelite, hence the name. Metal rods are inserted into a baseboard covered with a grid of holes. Plastic panels are then slid between these rods to form the walls, windows and doors. The structure is unstable until corner gusset plates are threaded on, which must have tried the temper of many a small child (and adult). The roofs are also a somewhat unsatisfactory preformed plastic hipped structure that just gets dropped on at the end. However, the end result (see Figure 4) is very solid and quite convincing, despite the colours (or maybe because of them).

The palette of Bayko was later enriched with domes and columns, making it useful, according to the instructions, for building mosques. Although it was made in the United Kingdom, Bayko was sold in New Zealand.

Minibrix and Lego

Lego, which was invented in the 1940s, had a precedent – rubber Minibrix – made in the United Kingdom and sold in New Zealand. These modular bricks had interlocking circular 'buttons' that could be pressed into the corresponding hollows of the lower brick (this is the inverse of Lego, where the 'buttons' point upwards). However, both systems soon teach children that stack bonding, so beloved of architects because it makes the wall look different, leads to instant instability. Minibrix had the added charm of coming with a set of rubber roofs although the celluloid windows are particularly difficult to fit (see Figure 5).

The rubber takes a lot of pressing together. The rubber must have been attractive to other members of the household too, as dog tooth marks are often found in the bricks (chewed Lego pieces must be consumed whole as it is rare to find bits with bite marks).

Change from plans to step-by-step

The big difference between Lott's Bricks, Bayko, Brickplayer, Minibrix and Lego is the level of interpretation in the instructions. Older sets offer plans and sometimes elevations, but you have to know how the system works and use trial and error to interpret them. In contrast, every Lego set comes with a full set of step-by-step instructions showing precisely where and when each brick is placed.

Perhaps this simplification reflects the fact that building is itself now based more on the assembly of manufactured components on site rather than on using trade skills honed over many years. This will be explored further in the next issue of *Build*. ■



Figure 3: Logge and Timba.



Figure 4: Bayko.



Figure 5: Minibrix.