



## Using BlueBrick to Design PSLTC Layouts

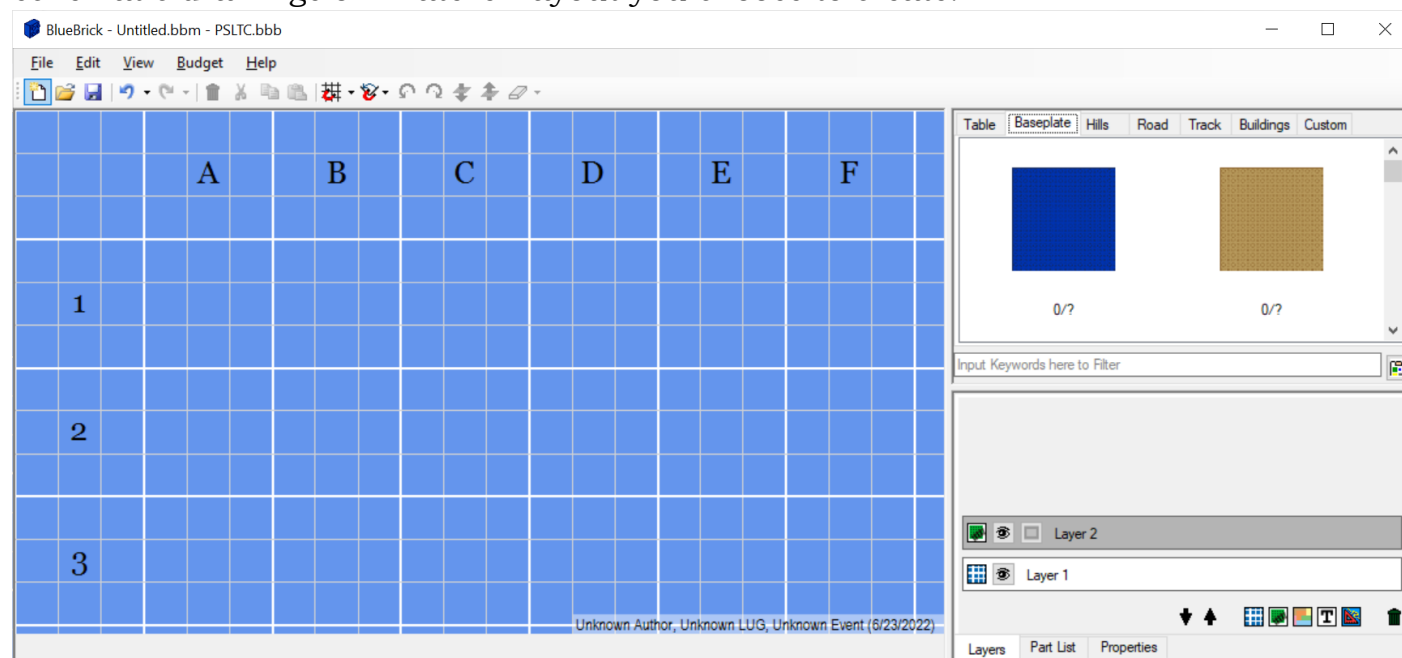
Thomas Garrison

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### About BlueBrick for PSLTC

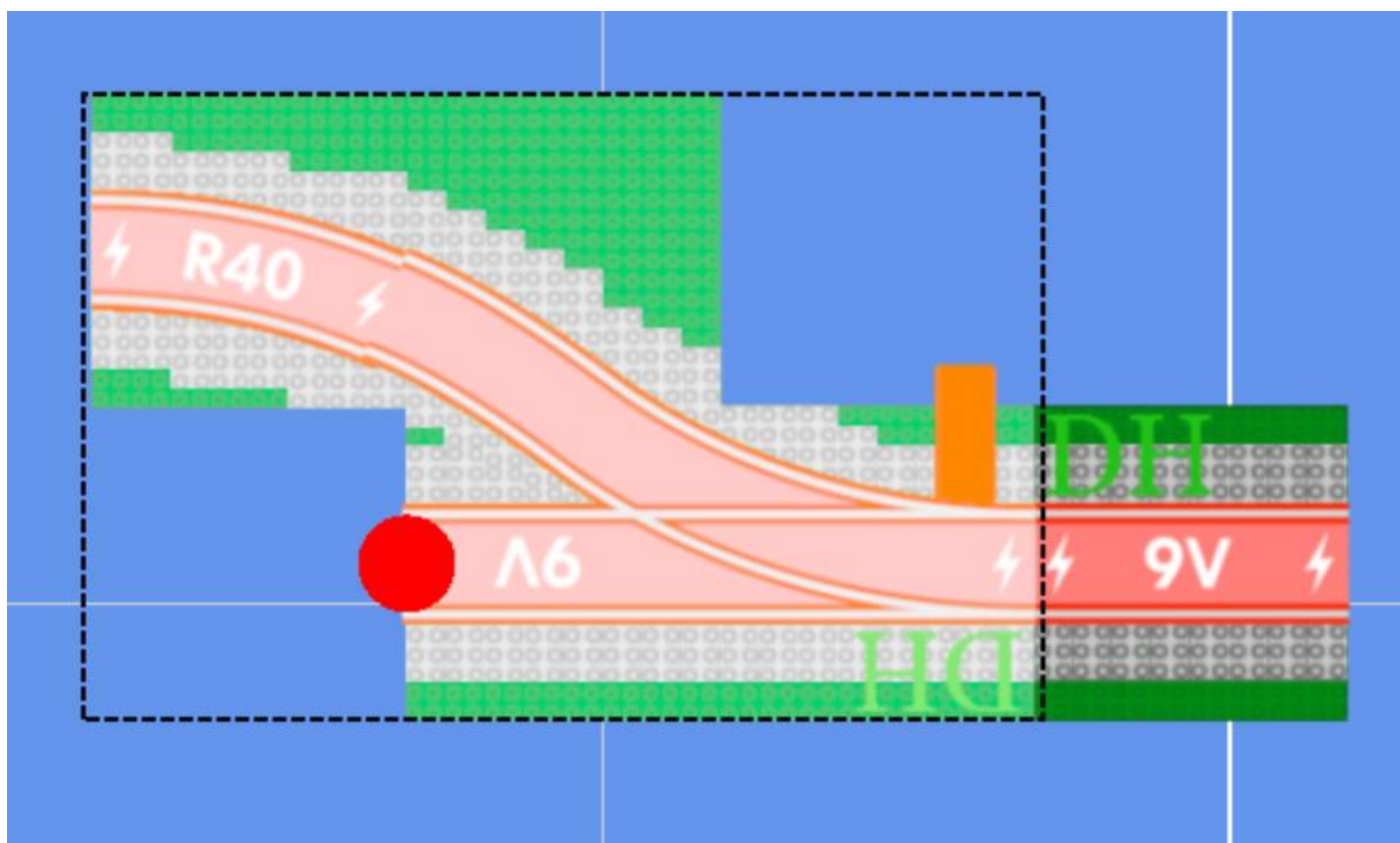
BlueBrick (<https://bluebrick.lswproject.com/>) is free software developed by Alban Nanty to create plans for Lego displays, particularly Lego train displays. It generates top-down schematic drawings of whatever layout you choose to create.




BlueBrick is designed for modern versions of Windows but been run on Linux and other operating systems with a little work. One of the great strengths of BlueBrick is how easy it is to extend and revise the parts library, allowing it to be customized to a user's or club's needs. Part creation can be as easy as taking a top-down picture of a physical or virtual model or creating an assembly from existing parts (including pictures) and saving it as one object. Parts that are not needed and clutter up the interface (such as 12V track, European-sized table, or rare baseplates) can be altered to be hidden from the user or simply deleted without breaking anything. The PSLTC customizations consist of a revised Parts Library parts.zip (<http://www.psltc.org/articles/parts.zip>) and an inventory file PSLTC.bbb (<http://www.psltc.org/articles/PSLTC.bbb>) available for download from the PSLTC website.

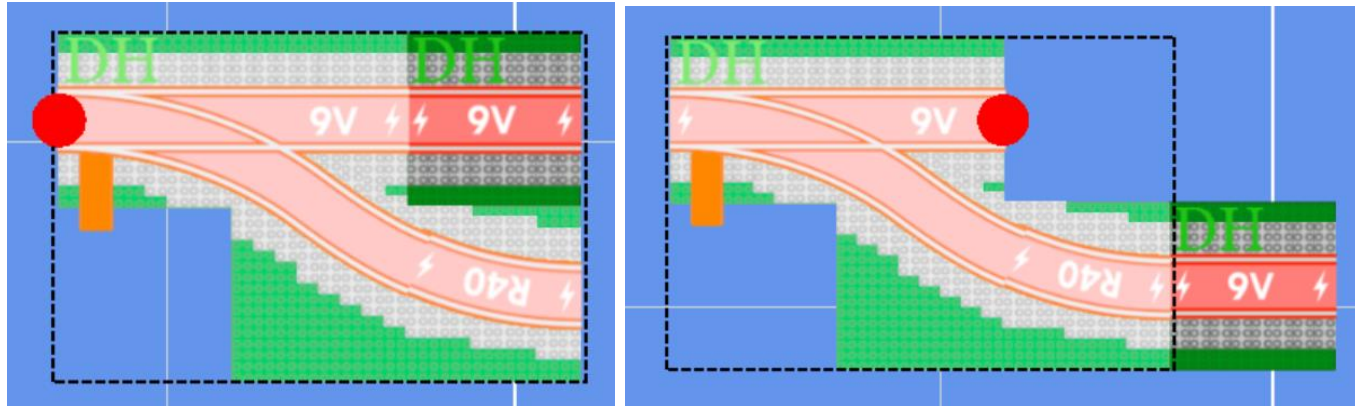
## Getting Started

Begin by downloading and installing BlueBrick from the BlueBrick website. In the BlueBrick directory, rename the “parts” directory to something else (such as “parts.vanilla”); this clears room for the PSLTC Parts Library but ensures that parts excluded from the Library will still be available if you need, say, monorail track. (You can add parts to the Parts Library at any time by saving in BlueBrick, going to File > Reload Part Library, copying the GIF and, if any, XML file for the new part, and clicking OK on the BlueBrick dialog to say you are ready to reload.) Extract the parts.zip archive into the BlueBrick directory as the new “parts” directory and put the PSLTC.bbb file into the BlueBrick directory. Then execute the BlueBrick program and start playing. The Parts Library lives in the tabbed folders on the right; you can click and drag parts to the




blue layout area on the left. Once you have a part highlighted in the layout area clicking on parts makes them appear adjacent to the highlighted part. If the part has connection points a connection point will have a big red dot (you can select another connection point by clicking near it) and parts added from the library will connect appropriately and the

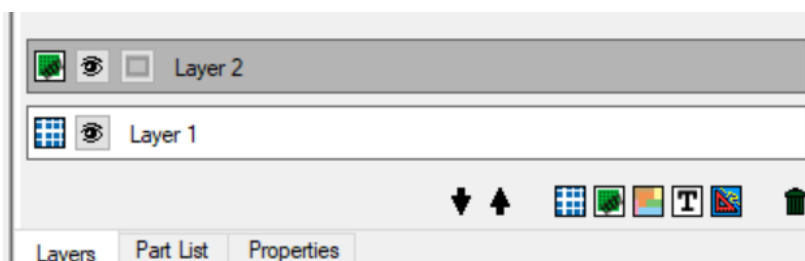
rotate buttons  will rotate the part through its connection points.



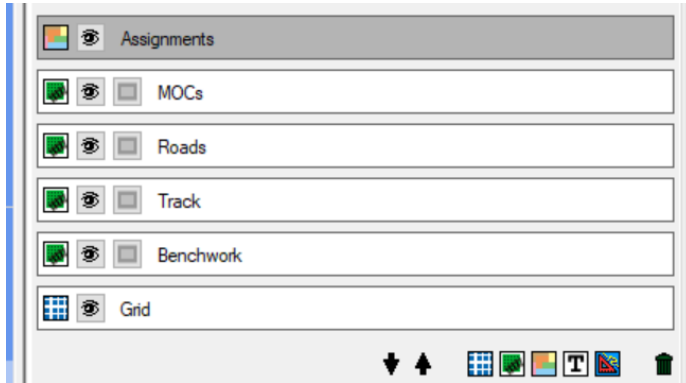
Just as toast always lands butter-side-down, plan to have to rotate every first piece of curved track or curved road as it will start out pointing the wrong way. Zooming is done with the scroll wheel on your pointing device in a mysterious way where behavior depends on where on the layout the mouse pointer is. The only way to learn it is to practice until it starts to make sense. The BlueBrick website has additional user interface help, including all the keyboard shortcuts.

## Making Layouts with Layers

BlueBrick uses layers to organize the parts of a layout. This is especially useful when parts are physically on top of each other. Within a layer, you can move highlighted parts to the top or bottom using the menu icons,  PgUp & PgDn, or the right-click context menu. This is useful when you have laid some bare track and now want to tuck baseplates under it, but in BlueBrick the baseplates completely hide the track. Highlighting the parts you want and only the parts you want can be tricky; after accidentally moving the underlying table a few times every time you tried to jog a baseplate into place you will be ready to use actual layers.



Layers live in the lower right corner of BlueBrick, in a tabbed interface with “Part List” (which tells you how many of which parts you have used in the layout) and “Properties” (which lets you enter your name and gives layout dimensions). BlueBrick layers can be type Grid, Brick, Area, Text, or Ruler (most work is done in Brick layers); a new layer is created by clicking the icon of the appropriate type. Layers can be reordered or deleted



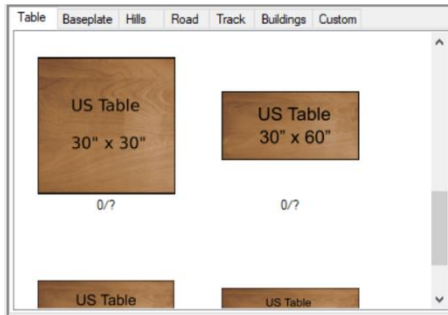
with the adjacent controls. Layers visibly behave as they appear on the stack, so if you have your layer with all the track below the layer with all the tables on the stack then the tables will cover up the track until you reorder them. The layer stack shows (for each layer) an icon of its type, a switch to set opacity to zero (useful, for example, when you’ve got a whole layout and you want to make everything but the tables

invisible so you can see how to set them up), a switch to show hulls (you don’t care about hulls), and the name of the layer. Clicking a layer once makes it the active layer. Double-clicking it brings up a dialog where you can change the layer name and set some type-specific parameters. Area layers let you paint parts of the layout in different colors. (Based on the underlying BlueBrick grid! Start your tables against a gridline!) This is mainly intended for saying “the red area is for this person and the yellow area is for that person”.

For most show layouts, you can build your layouts in layers, hopping between them based on your givens and druthers. You have a space of dimensions X by Y and access to this many tables of these types; set up your tables in an accessible way (remembering 18” for each rope line) that will let you put what you want on them. Track takes the most space with (usually) rigidly constrained geometry, so place that first in a layer; then work in city blocks or large modules. If those city blocks or modules leave dead space, go back and reconfigure the track.

When you are ready to share your layout, you can go to File > Export Picture, select what of the layout you want to show, set pixels per stud to show the detail you need without an insanely large file, and go. You can also share the BlueBrick file (.bbm) that you have saved early and often, but keep in mind that the file is only intelligible to users who have all the parts, in this case the PSLTC Parts Library and any new parts you have created.

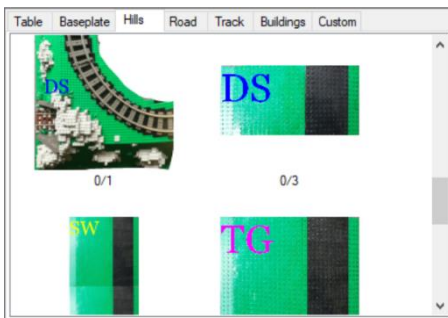
## The PSLTC Parts Library



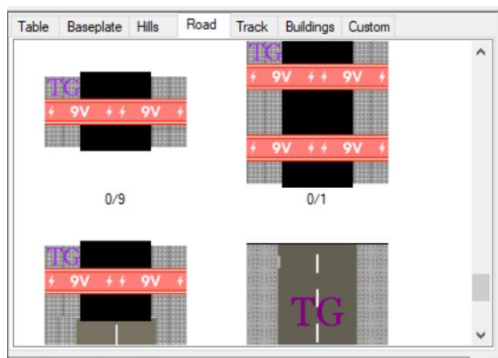
The tables included are the standard club table size (30"x60") along with other handy club table sizes (45"x60", 30"x45", 15"x60", 30"x30", 60"x90") as well venue-provided tables: the standard 30"x96", the 30"x72" tables provided by Jet City Comic Show every year after assuring us that they would be 30"x96", and the 24"x96" tables at Emerald City Comic Con (when supplied by an event company; the venue does have other sizes). Also included is 24"x48", which is a terrible Lego size but readily available and transportable when needed for utility.



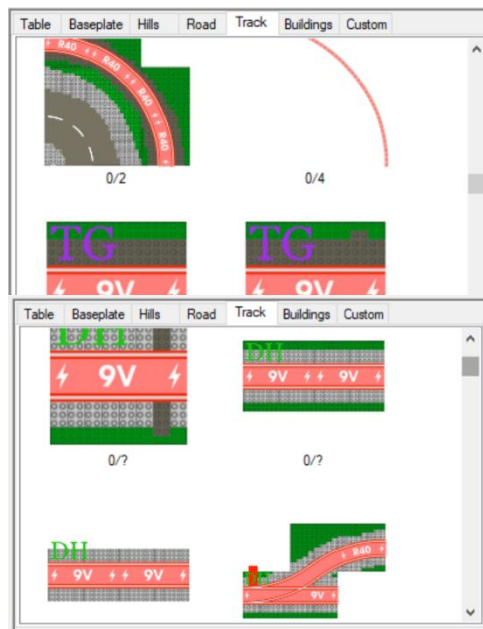
Baseplates are commonly available color/size combinations that are multiples of 8 studs. Available quantities of these are not tracked (since people keep using them to build, and buying more) but BlueBrick will keep track of how many a layout uses so alarms can be raised if the layout calls for dozens of 48x48 green baseplates.



Hills are PSLTC standard module hills, in all known current configurations. The art specifically uses the old standard with black plates on the hilltop because otherwise a plain hill module looks like a green baseplate from the top. Hill parts do not properly implement connection points because those are hard, and may be distorted since some hill parts were created by torturing top-down photographs without respecting the internal dimensions of the original hills.



Roads are currently PSLTC modular roads (2002—2019 roadplates with two-plate tall, 7-stud gray sidewalks) but could include future modular roads. Parts owned by different people are counted as separate parts so the layout designer knows what parts are available depending on who is contributing to the layout.



Track parts are the most clearly schematic, rather than literal, representations. Lego train track is represented using Michael Gale's schematic track library ([http://1-gauge.org/wiki/index.php?title=CAD\\_Tools](http://1-gauge.org/wiki/index.php?title=CAD_Tools)). In this library, vivid red elements stand for contemporary all-plastic Lego track (non-Lego track is different colors) while 9V track is a washed-out red with lightning bolt symbols. This makes it immediately clear in layouts if

track is plastic or 9V. For ballasted track, the ballast is abstracted: whereas traditional PSLTC ballasted track is ballasted with a speckled mix of light gray, dark gray, and minor secondary colors (and has ties), the schematic for ballasted track uses dark gray plates on the baseplate outboard the track schematic to indicate that it is ballasted with traditional PSLTC ballast (which has one plate between the baseplate and the track element). In contrast, the schematic parts use uniform light gray plates to indicate track ballasted using two plates between the baseplate and the track element (which in real life are ballasted in different shades of light gray with a mix of shapes), with separate parts for when these assemblies are not mounted on baseplates. The PSLTC Parts Library includes all known functional varieties of ballasted track used by PSLTC, including 16-stud straights, 32-stud straights, straights with 9V power leads, switches, curves, curves concentric with curved PSLTC roadplates, and more.

## The PSLTC Budget

BlueBrick has a budgeting feature to tell you if you try to build a layout with more parts than you have available. For the PSLTC Parts Library we are concerned with PSLTC standard hill modules, PSLTC roadplates, and ballasted track, each part tracked by its different possible builder. Baseplates and unballasted track are not tracked because they fluctuate too much and are generally available in adequate quantities. The layout designer should still monitor usage of these parts in a layout (using the Part List tab in the lower left of the BlueBrick screen) to ensure they will be available. Tables could be good parts to budget, but the heavy use of venue-provided tables makes the available quantities layout-specific.

To load the PSLTC budget, go to Budget > Open and select the PSLTC.bbb file. This budget can also be set to always open at startup via Edit > Preferences > Part Library. While using a budget, below every part in the Part Library BlueBrick displays “M/N”, where M is the number of times that part is used in the current layout and N is the quantity of that part according to the budget (or “?” if that quantity is not specified in the budget). When  $M > N$ , the ratio turns red to indicate a problem (and the part is flagged in the Part List). Clicking on the ratio allows the user to change the budget quantity of that part, but is not advised as, first, the new budgeted quantity presumably does not reflect reality and, second, the change to the budget will be purely local and the PSLTC.bbb file posted on [psltc.org](http://psltc.org) should be the authoritative and accurate budget of available parts for PSLTC layouts.