



Large Layout Design Considerations



BrickFest 2003

Layout Design Track

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What do you need to consider?

- Overall layout
- Landscaping features
- Building upwards
- Zoning / Train types
- Number of trains operating
- Train tolerances
- Powering system



More considerations...

- Train yards
- Crossovers
- Modules and fit
- Legs and tables
- LDCC and automation
- Storage
- Setting up and breaking down
- Questions/discussion



Overall layout

- When designing your layouts it is a good idea to consider what areas of your layout you want to highlight.
- These areas may include:
 - Bridges
 - Structures
 - Landscape features
 - Scenes
 - Humorous items



Landscaping features

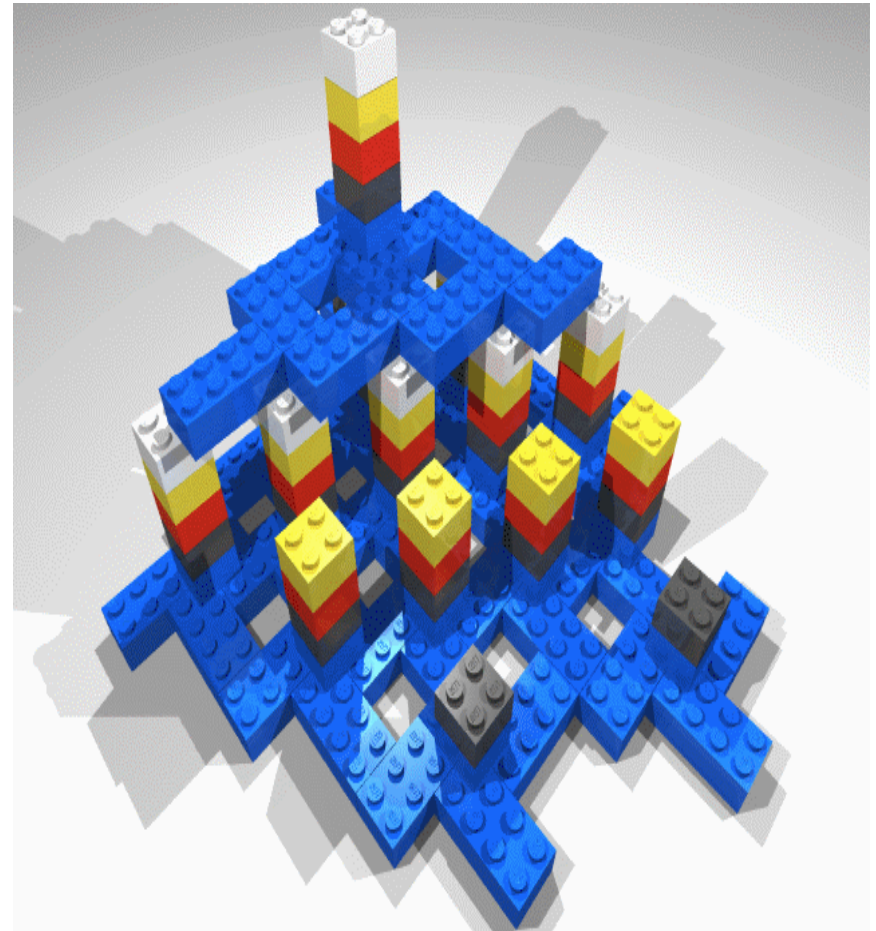
- Adding some depth in your layout will help it look more robust and real.
- Try creating two or three different tiers with in your layout to create the effect of hills and valleys.
- Try adding water features, use tan and brown bricks to simulate sand and dirt

An Example



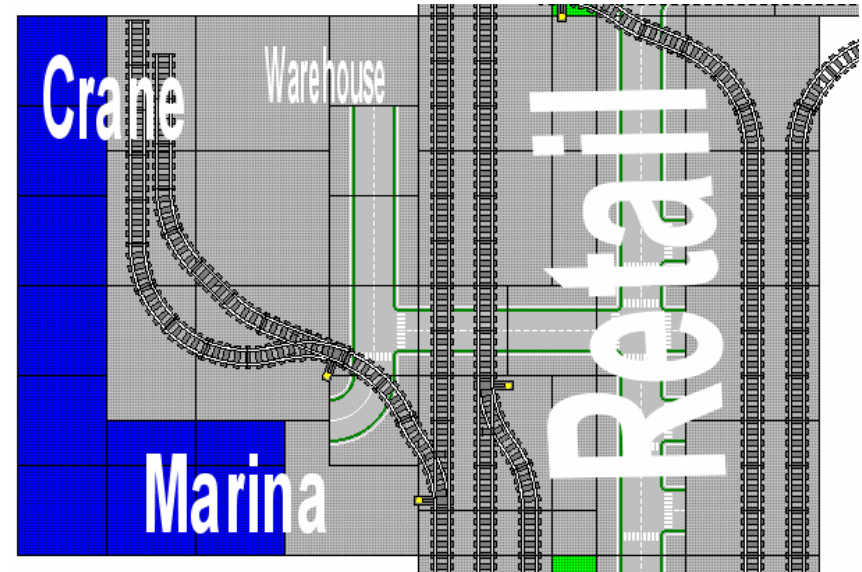
Building up

- Landscaping features such as hills and valleys can be built both lightweight and sturdy
- Use a lattice structure developed by GMLTC as shown
- Use your own design
- But do something! Solid is less sturdy and weighs too much!



Zoning

- Decide on what type of layout you want, Residential, Industrial or a mix of both.
- Try to Zone areas of the layout so that Industrial and Residential areas are separated.
- Try to ensure that all buildings in the same area are of the same scale.



Train types

- Typical mix for an industrial layout:
 - You might have more freight trains running on your layout at slower speeds.
 - Occasionally, have a commuter train passing through fairly rapidly.
- Typical mix for a Rural layout:
 - Longer freights at relatively high speeds
 - Intercity (VIA, Amtrak) passenger



Number of trains operating

- Another consideration on your layout may be the number of train lines that are on your layout.
- Larger layouts tend to work better with multiple train lines running throughout the layout.
- Local loops can be added to enhance the 'movement' on the layout



Train tolerances

- There are some limitations to take into considerations when it comes to the rolling stock that you use on your layout.
- 8-wide trains tend to need a larger turning radius and can interfere with switches.
- Inclines should be limited to $\frac{1}{2}$ plate to 2 plates per straight track segment, and no plates to 1 plate on curves.
- Small dips in the track can cause trains with a low clearance (LEGO ATSF Super Chief for example) to derail.

Powering the track

- Try to plan your layout to include areas to hide your controllers, RCX's, and powered features,
- Make sure they are accessible however in case of derailments.
- For larger lengths of track it may be necessary to use multiple power sources.
- Some use non LEGO heavy gauge feeder wire for long routings





Powering the track (DCC style)

- Ensure that the main DCC RCX is placed in such a way that a remote control can be used from any area of the layout to control the trains.
- DCC Boosters can be hidden around the layout within buildings.
- If you plan on using throttle controllers, you may want to place electrical plates around the layout so that throttles can be moved around the layout.

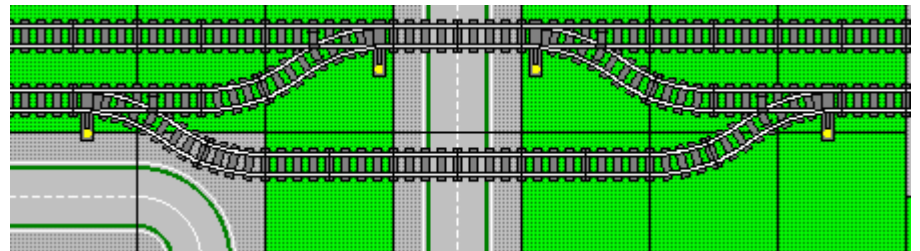


Train yards

- A large layout should include a good sized train yard to hold excessive rolling stock, here trains can be assembled and prepared to be moved onto the main lines.
- Having two entrances to your train yard, one on each side is also an asset, this will allow a train to enter the yard regardless of the direction it is heading without fouling the main with reverse moves.

Crossovers

- If you have multiple main lines, you may want to include a crossover into the layout.
- A crossover will allow you to switch your trains from the outer to the inner track with out picking them up.
- You may also want to investigate modified switches that will fit into a smaller area.





Modules and fit

- Modules allow you to create layout that can be in any shape or size.
- Common module standards: (some clubs using them shown)
 - 96 x 96 studs. (30"x30") (PNLTC, MichLTC)
 - 96 x 192 studs (30"x60") (PNLTC, MichLTC)
 - 96 x 128 studs (30"x40") (MSLTC)
 - 128 x 128 studs (40"x40") (NGLTC, WamaLTC, NELUG)
- Many clubs, including PNLTC and MichLTC, post their module design standards, or check the ILTCO library



Why use Modules?

- These modules fit through most household doors
- Will allow you to easily join your layout to other LTC's if you follow the proper track connection standards.
- Control your destiny at shows compared to banquet tables
- A downside is increased setup time
- When constructing your modules use the proper tools to ensure clean smooth cuts and a perfect fit.

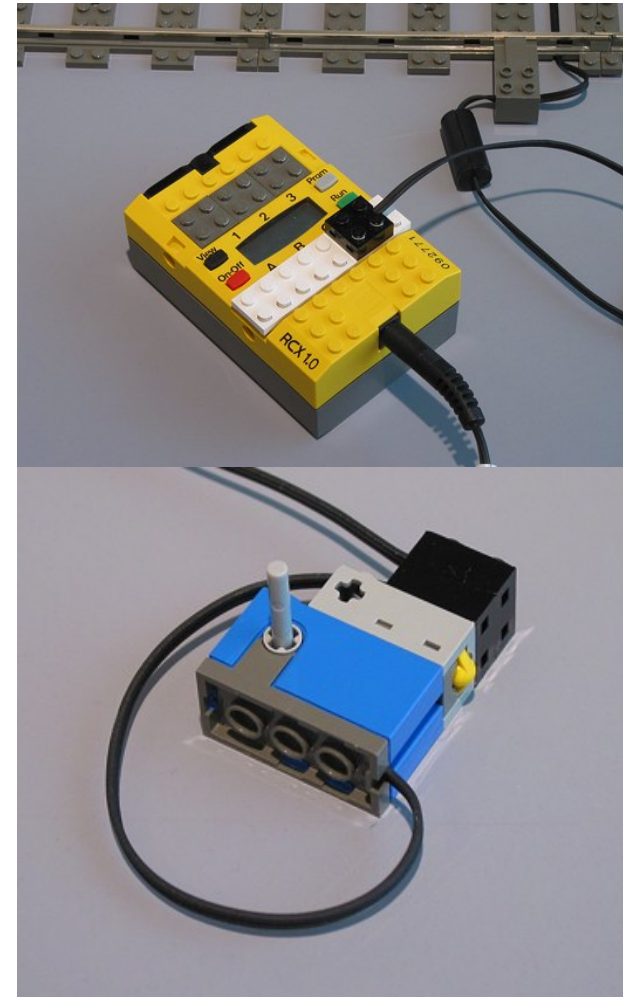


Legs and tables

- Once you have modules, you will then need Legs.
- PNLTC has also created a design for some legs which allow you to level your module through a set of adjustment bolts.
- rtiToronto uses a table that holds 2 modules with 12 adjustment points (4 on the base of the legs and 4 under each module) to allow for better leveling.

LDCC and automation

- Mark Riley, the creator of the LDCC firmware for the RCX has allowed for new types of layouts:
 - Single track Dog bones (reverse loops)
 - Single track layouts with multiple trains operating at different speeds.
- As the firmware develops there may be the opportunity to automate items around the track via the LDCC RCX brick.





Storage

- For transportation and storage, try to divide your layout into a series of separate segments.
- Although the time required to connect the segments together will increase, the segments are easy to carry and can be placed into boxes to prevent damage.
- 48 x 48, 48 x 32 are both manageable sized segments



Setting up and breaking down

- Determine ahead of time what areas of the layout need to be build first, the people in charge of these areas should arrive first.
- Know ahead of time how long it will take you to disassemble your layout, so you are not rushed when a show has ended.
- Be wary of volunteers who may seem to be a good help at first, but may cause breakage of displays due to in proper handling.
 - They may just be trying to rush you out of the venue.
 - It's OK to be the last layout out.



Questions/discussion
