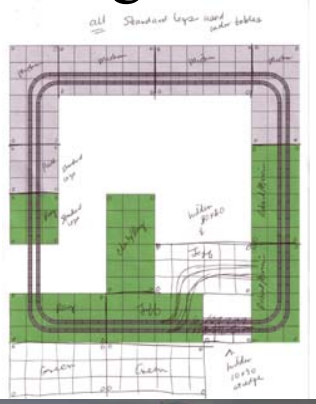
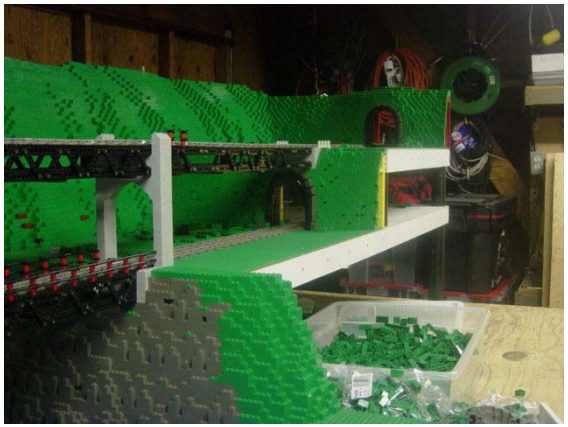
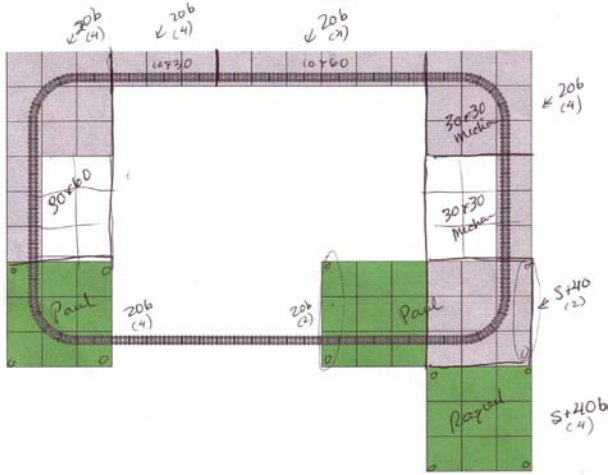
The Making of a Multi-Dimensional Train Layout

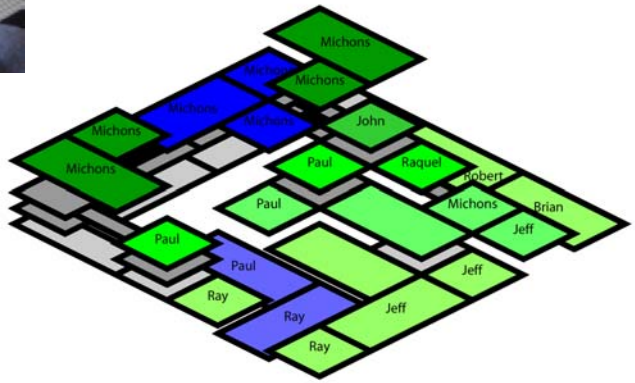


Presented by SCLTC Members:
Robert Powell
John Gramley
Ray Silva

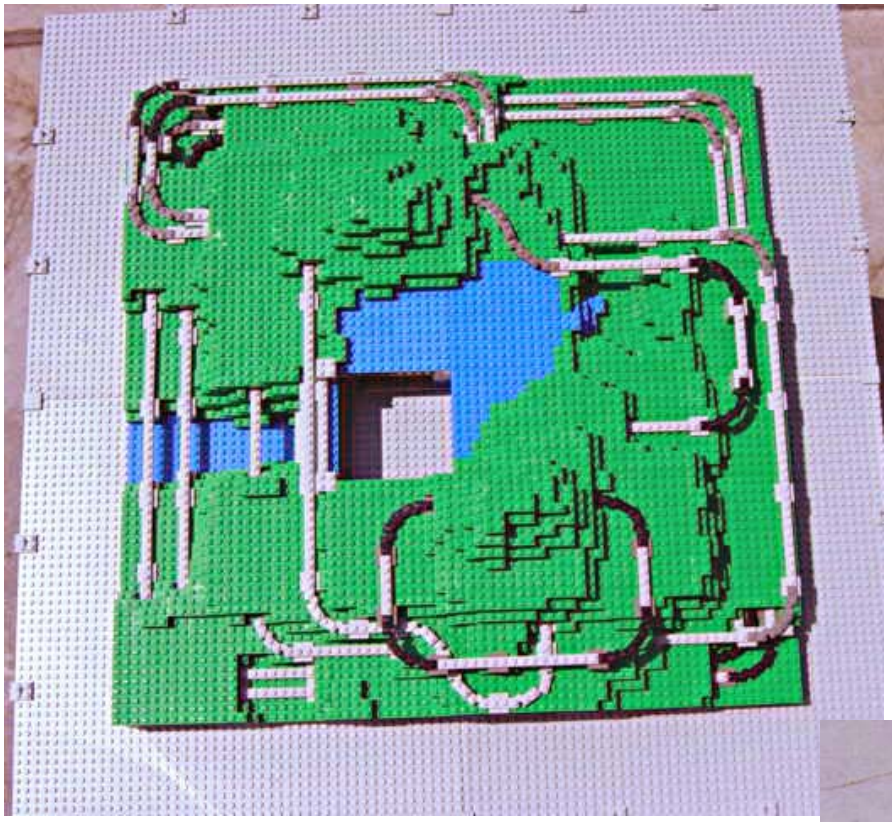
Part 1: Concept and Design







Previous Layout



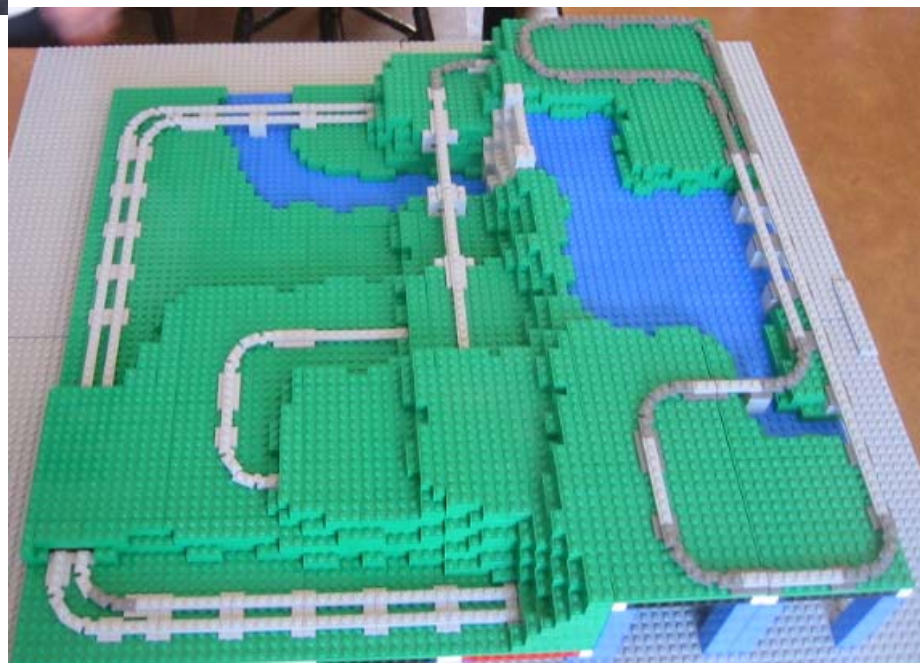
Mini Model First Revision

Pros:
3D view
Build area visible

Cons:
Time Consuming

Scale:
1 stud = 8 studs
1brick = 10 Bricks

Mini Model Final Revision



Layer Representation

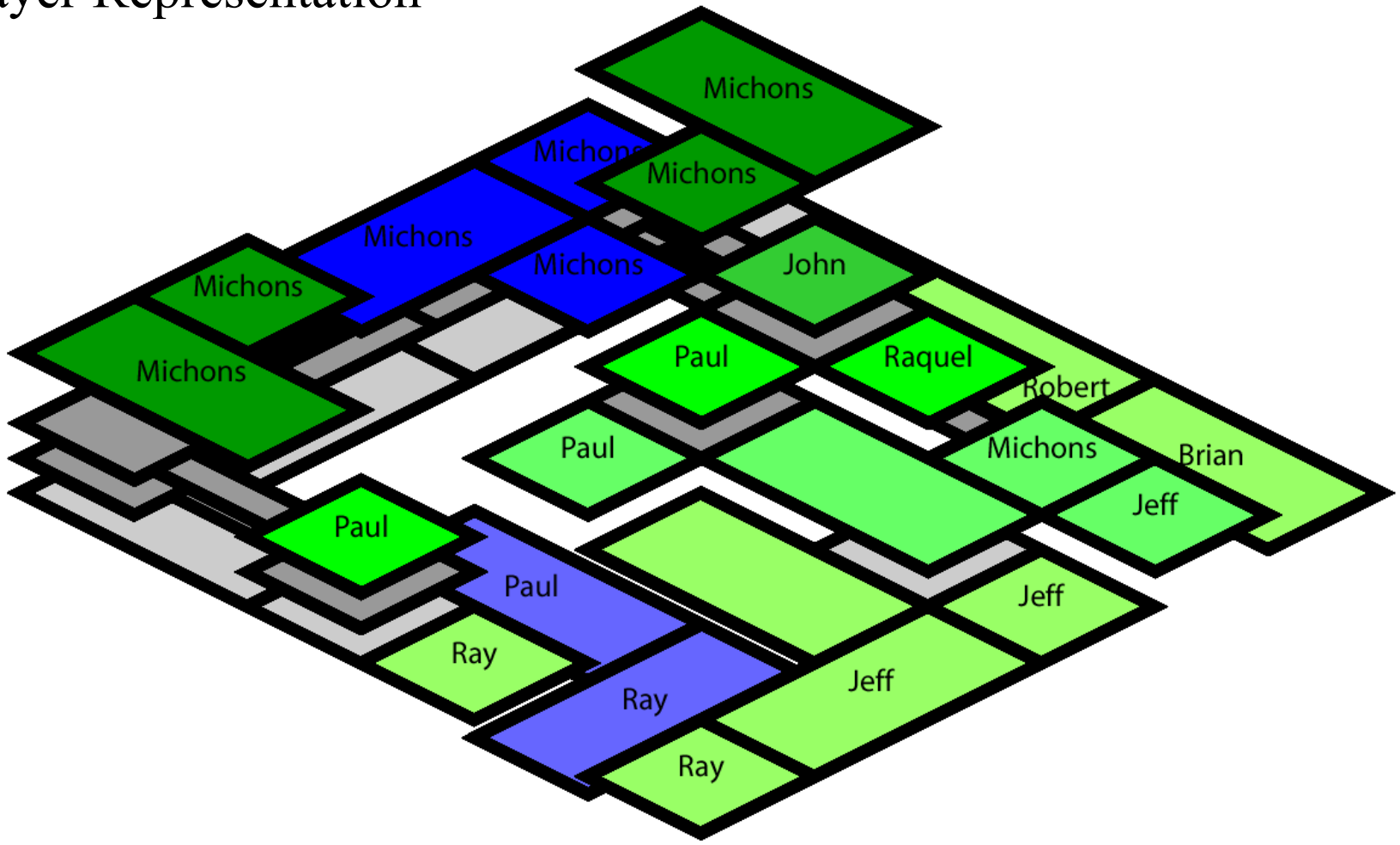
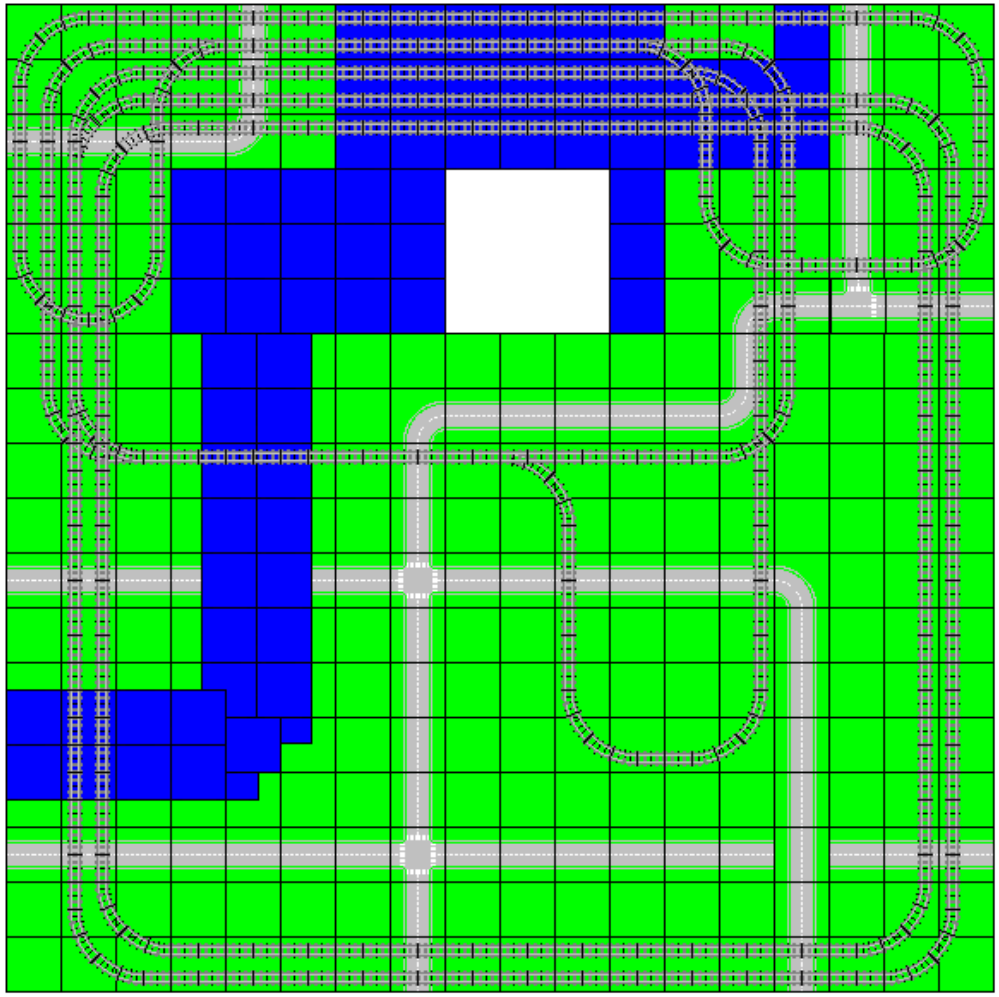


Table Stacking

Table Stacking Benefits

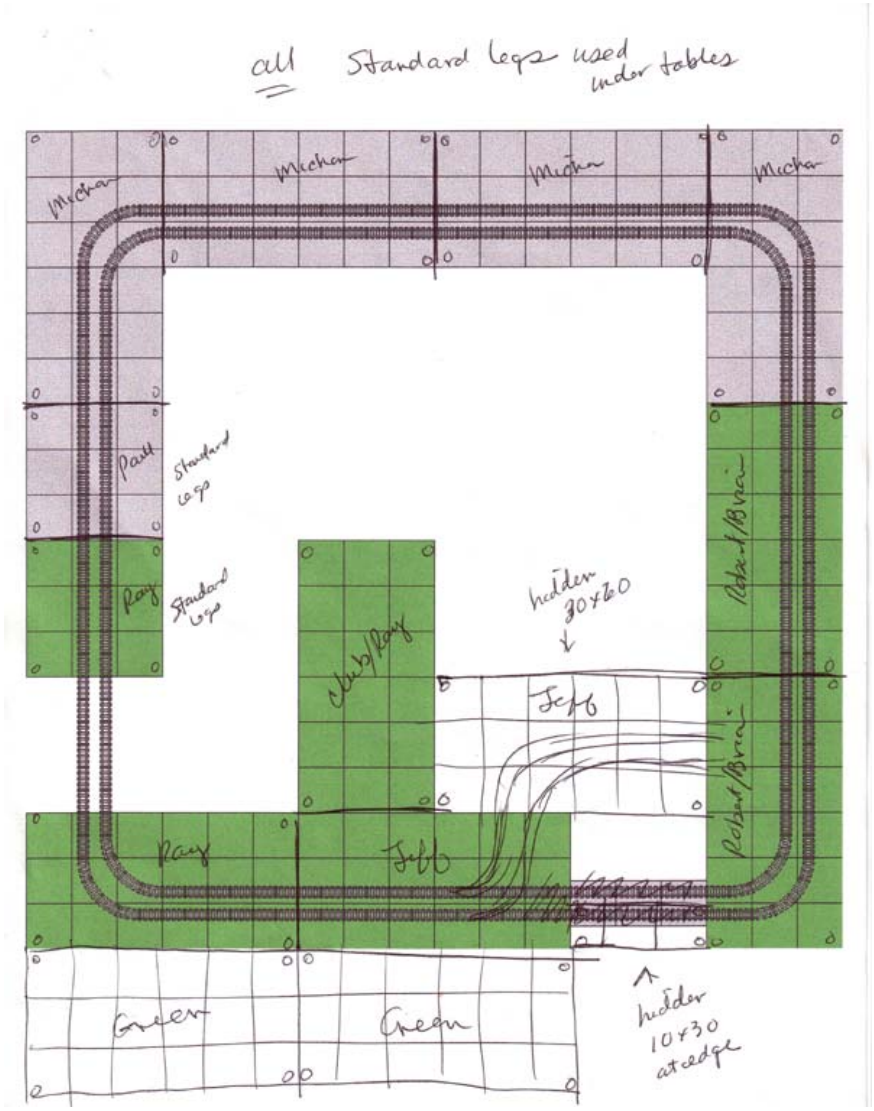
- Very Stable
- Easy to Assemble
- Easier to Transport
- Added Storage Space
- Less Bricks!

Track Plans

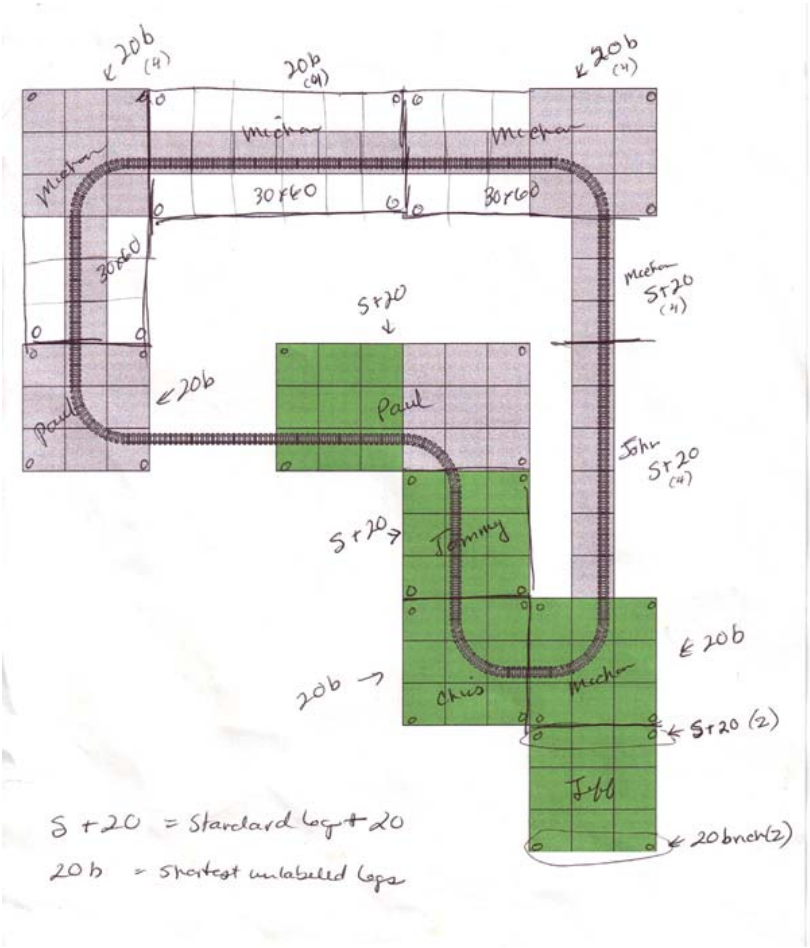


Track plans are created using Track Designer

Track Plan Printouts

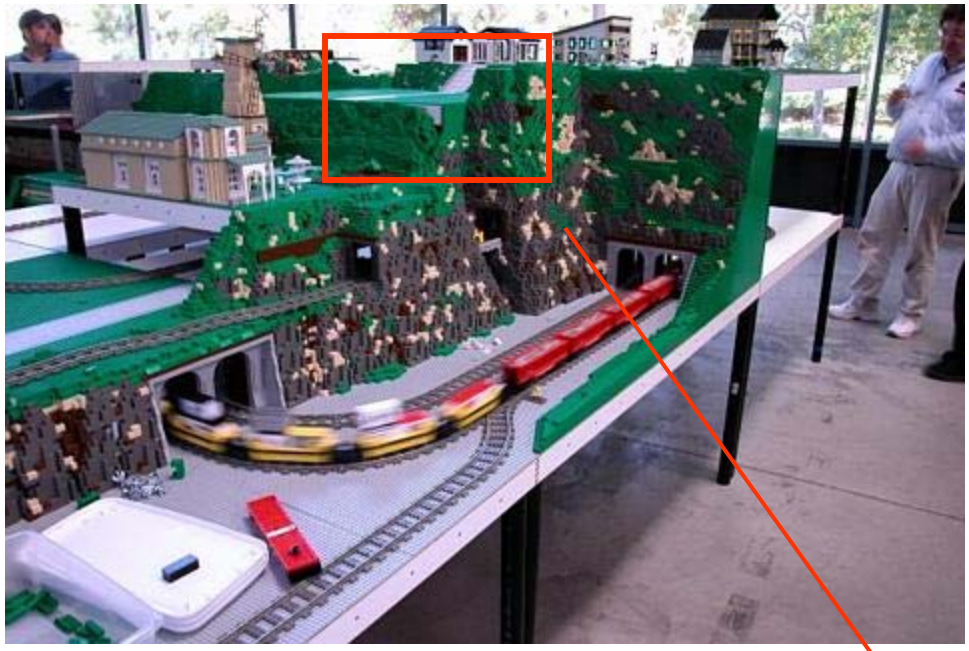


Level 1



Level 2

Construction Begins



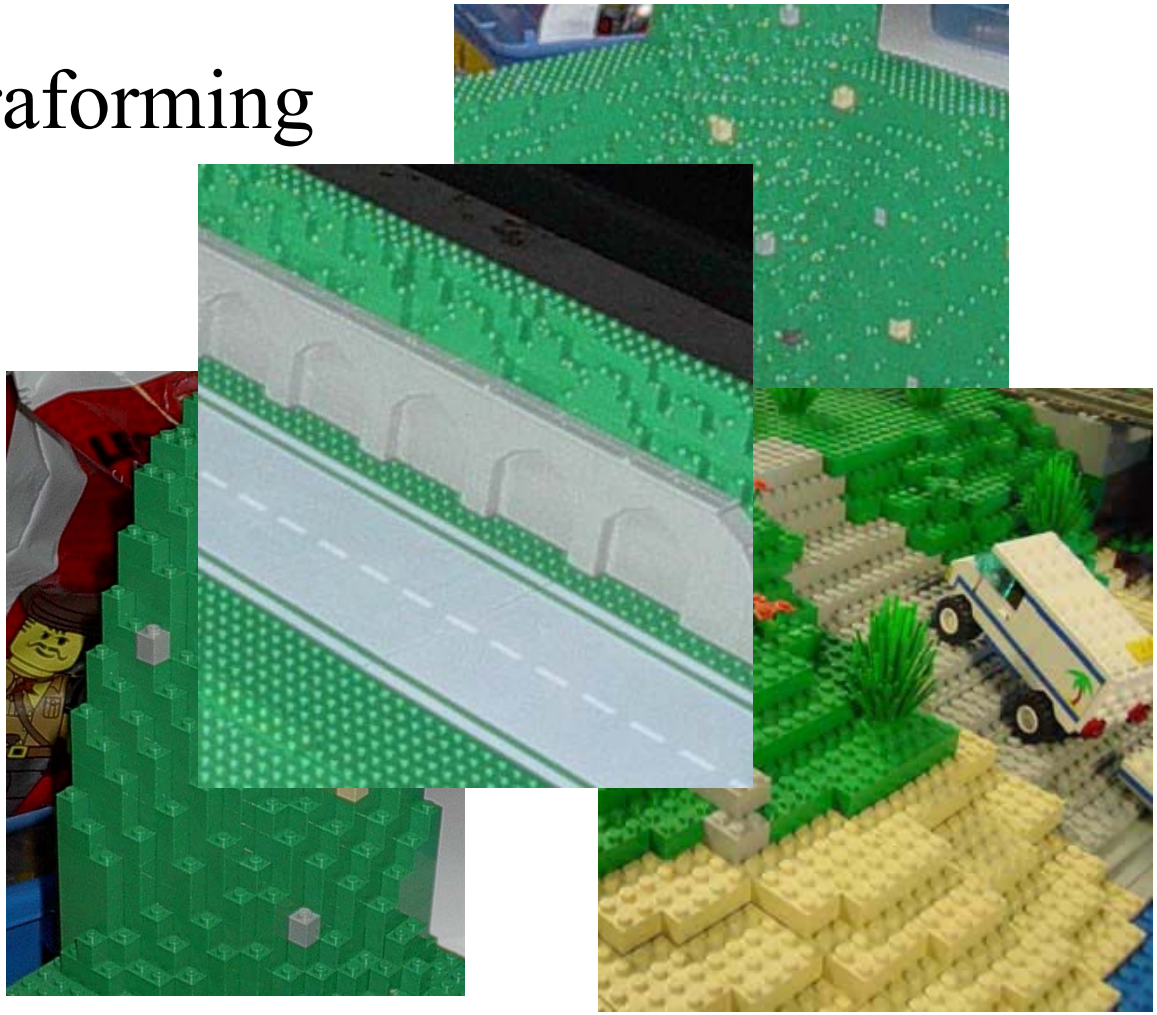
Test Setup

- Edge Matching
- Assistance to Club Members
- Change Roadway if needed
- Adjust Overall Layout

Finished Product!

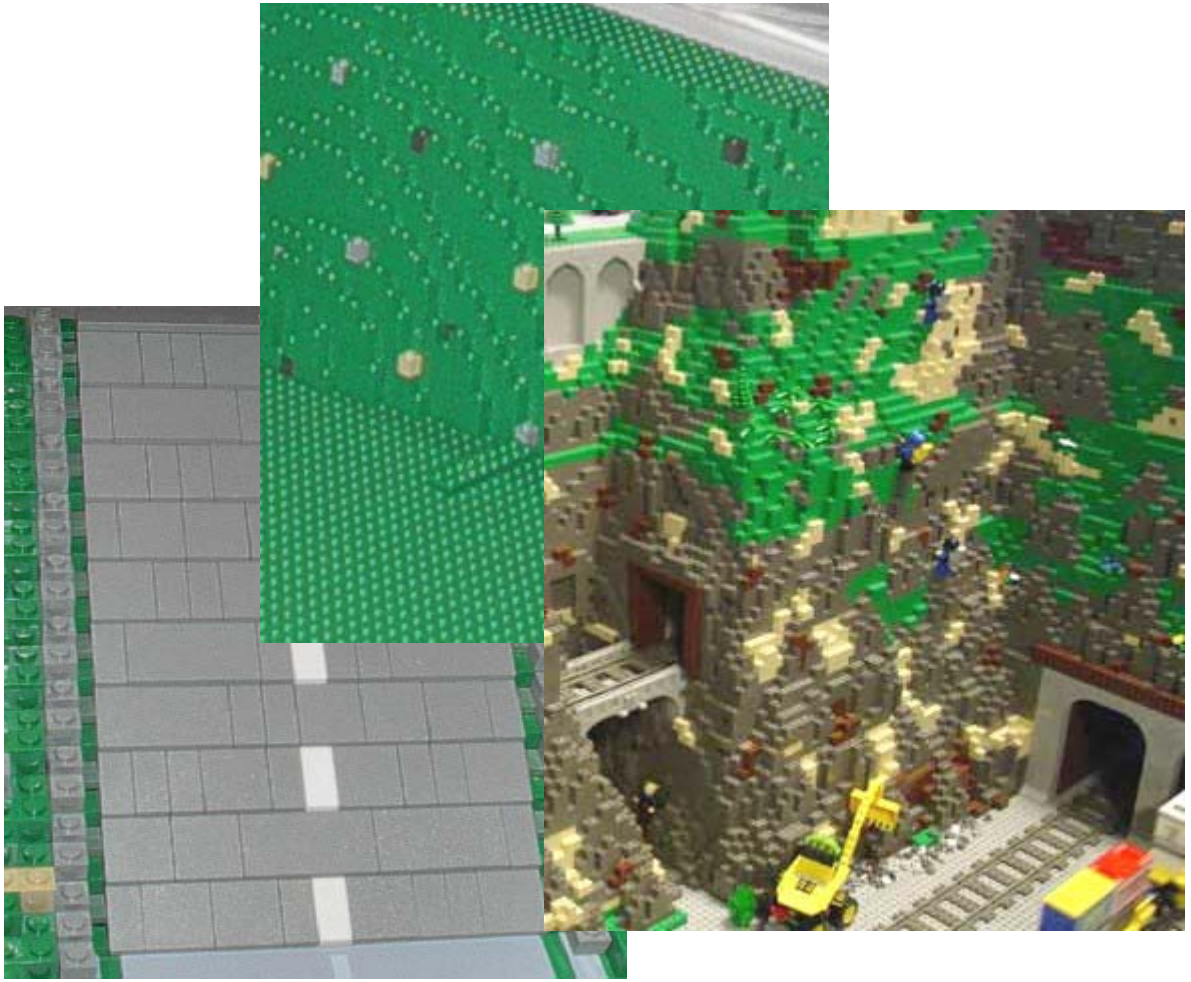
Part 2: Terraforming Overview

- Kinds of Terraforming
- Got Bricks?
- Substructure



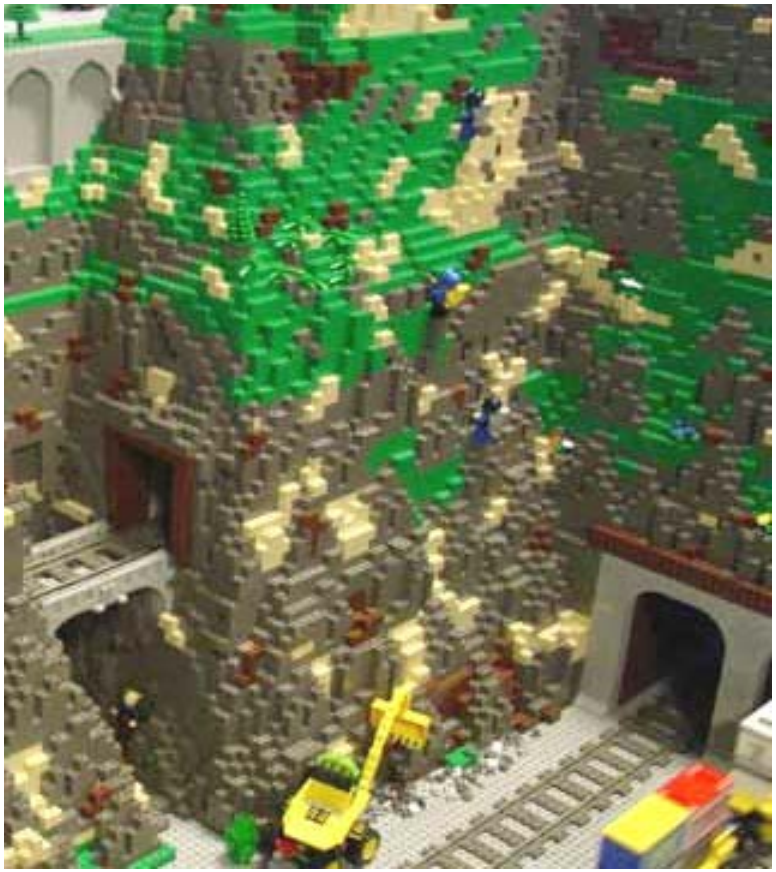
Kinds of Terraforming

- Cliffs
- Beaches
- Hillsides
- Roads
- Corners



Cliffs

- Very steep slopes
- Excellent place to use BURPs and LURPs
- With good understructure, you could use 1xn bricks rather than 2xn bricks

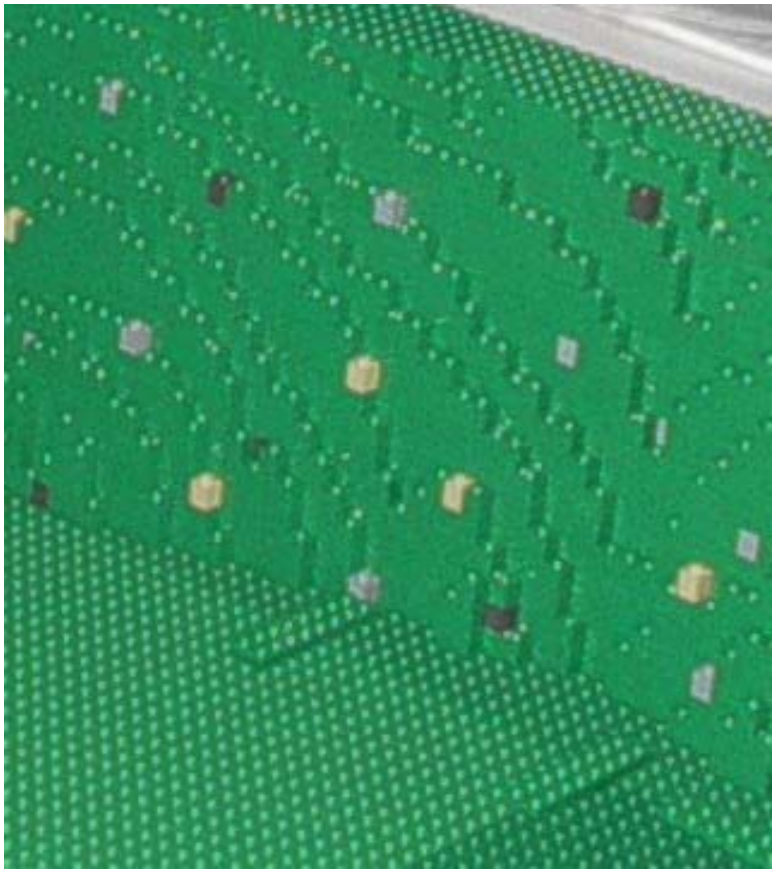


Beaches

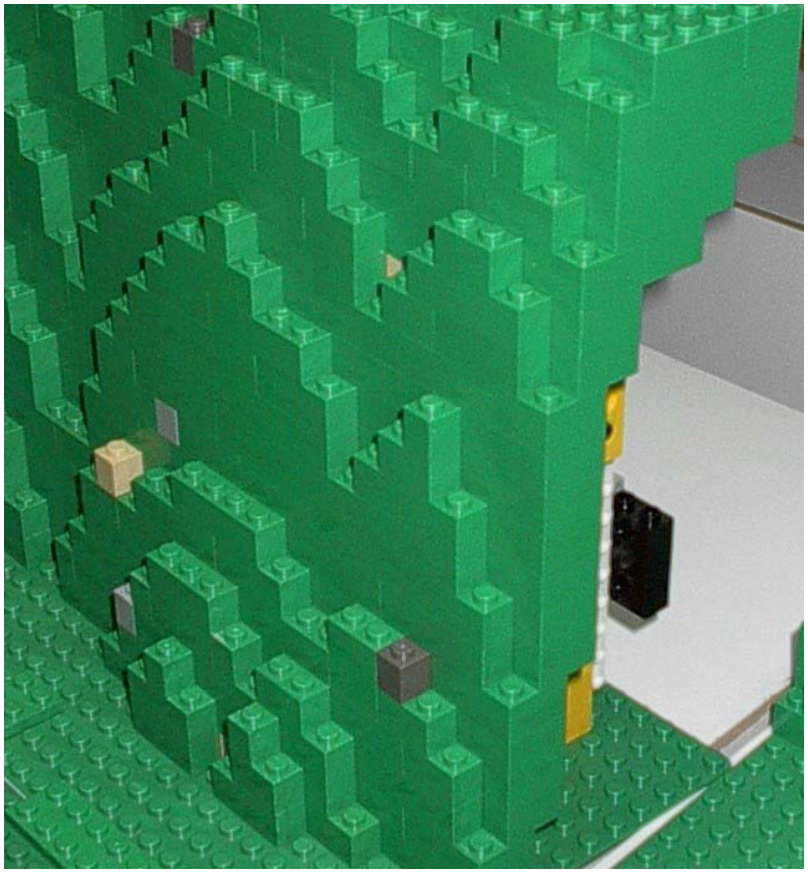
- Very shallow slopes
- Uses a lot of longer bricks
- Good place to use plates for very gradual sloping
- Saves on green bricks - uses a lot of tan

Hillsides

- Any slope between cliff and beach
- Ours have slopes greater than 1
- Conserves flat space for buildings and even trains :)



Hillsides, cont.

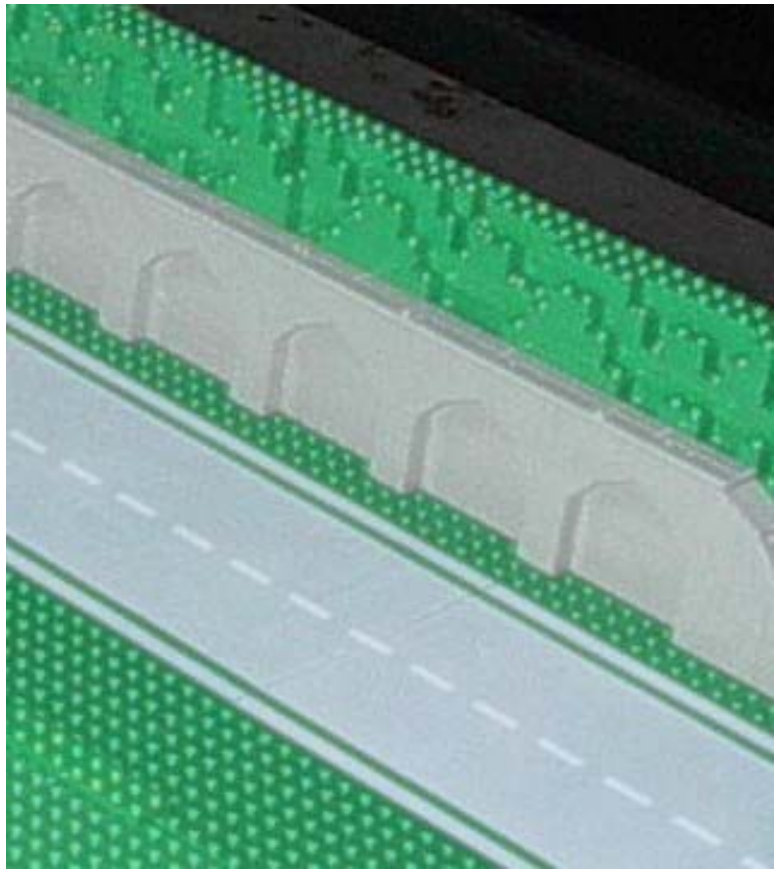


- 2xn bricks work best - forms a thick wall
- Start with a wave-shaped base to simulate slow erosion
- Slowly move “wave” back as you build up

Roads

Next to terraforming

- Tight fit - only 8 studs
- Great spot for cliff
- Retaining walls



Roads, cont.

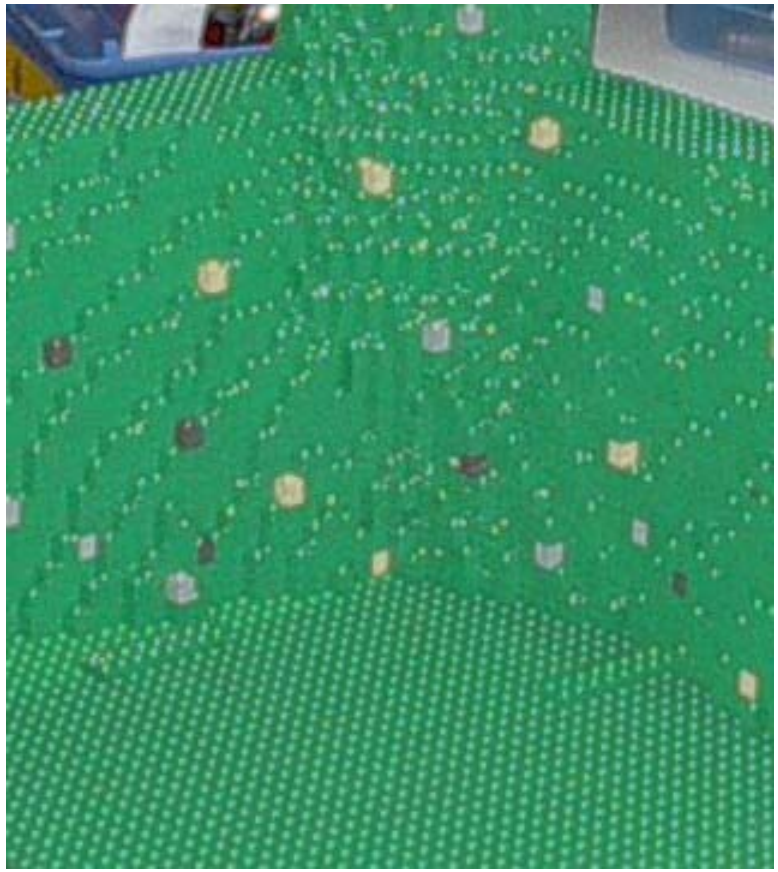
Within terraforming

- Slope bricks
- Jumper plates to keep center stripe centered
- Could also try angled plates or roadplates

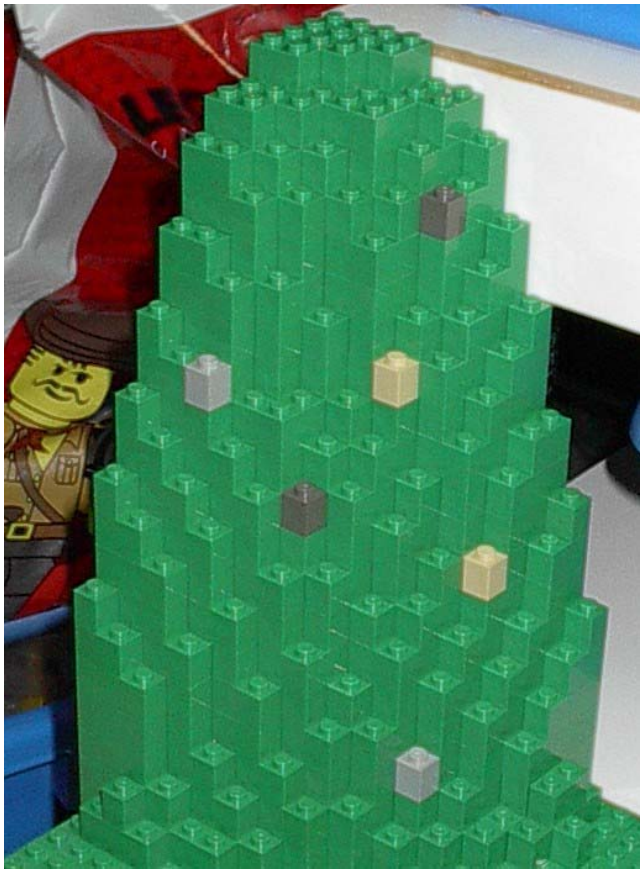
Corners

Inside corners

- Can be tricky to get a smooth, natural curve
- Takes more bricks than a straight section



Corners



Outside corners

- Can be done after straight sections
- Build to fit profiles of both adjacent sections
- Easy to transport by itself

Got Bricks?

- How many bricks does it take?
- What kind of bricks are used?
- What are the best places to get bricks?

How many bricks does it take?

- A lot - but not as many as you might think
- Approximate number of bricks

  ≈ (Length x height) / 2
- If slope is less than 1, it will use more bricks and longer bricks.
- Our terraforming includes about 40-50K bricks, not including substructure

What kinds of bricks are used?

Green Bricks

- 25% 2x4 bricks
- 25% 2x3 bricks
- 25% 2x2 bricks
- 25% Other sizes

Other colors

- Natural tones that match local rocks/soil
- Smaller bricks for speckled look
- Larger bricks for rocks, boulders, cliffs

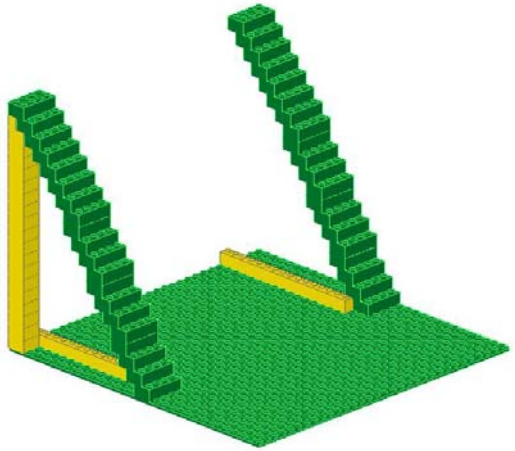
Good places to find bricks

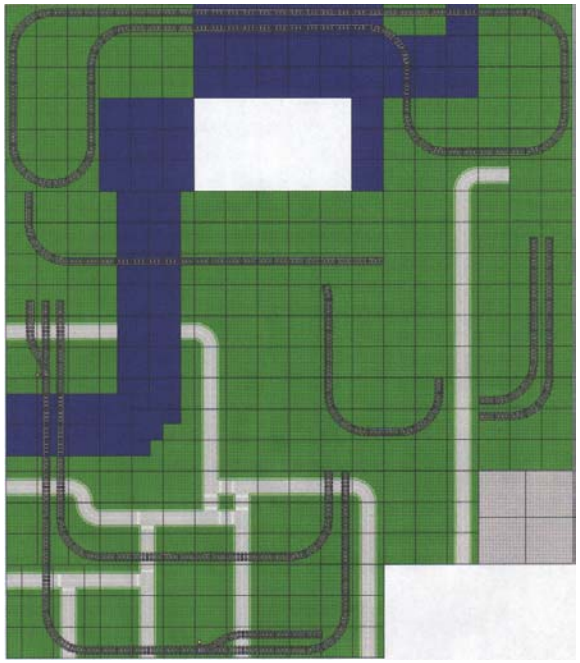
- lego.com - bulk bricks (2x2, 2x4, asstd.)
- brickshelf.com (all sizes)
- Your local club
- Newspaper, garage sales, flea markets

Substructure

- Substructure is what keeps terraforming from becoming a landslide
- As long as it's built well, any substructure will stand up to travel
- Can be as simple as Duplo or as complex as Technic
- Basic rule of thumb - use your LEGO leftovers or what's cheap

Part 3: Coordination





Modularity

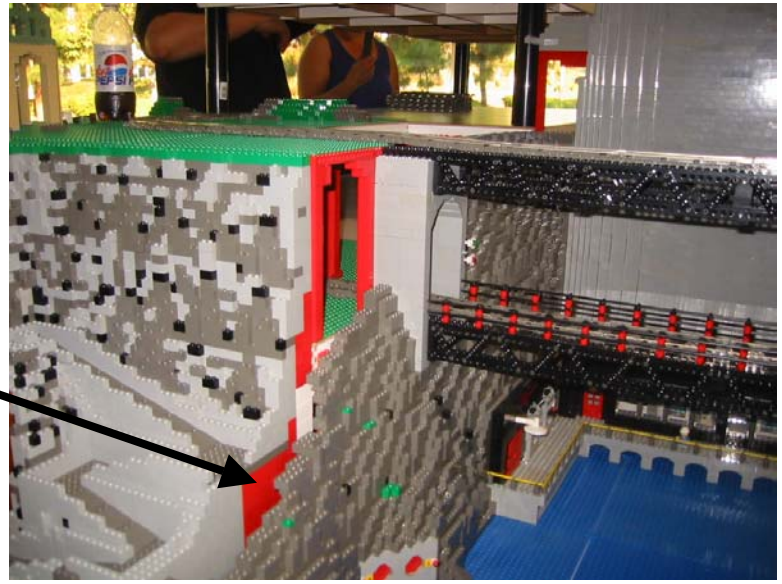
Table sizes of 30x30 and

30x60 are most often used.

Benefits are many, one being transportation.

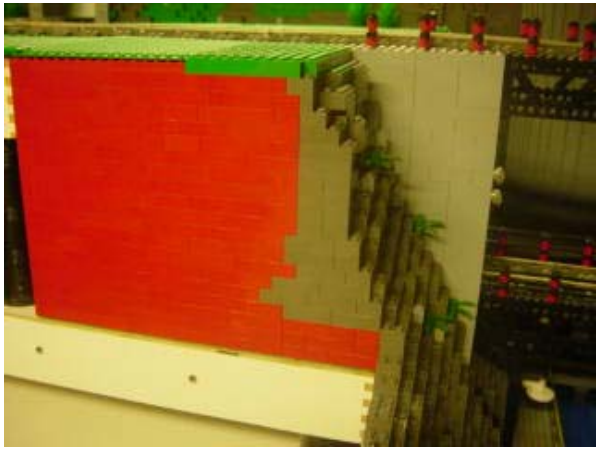
Edge Matching

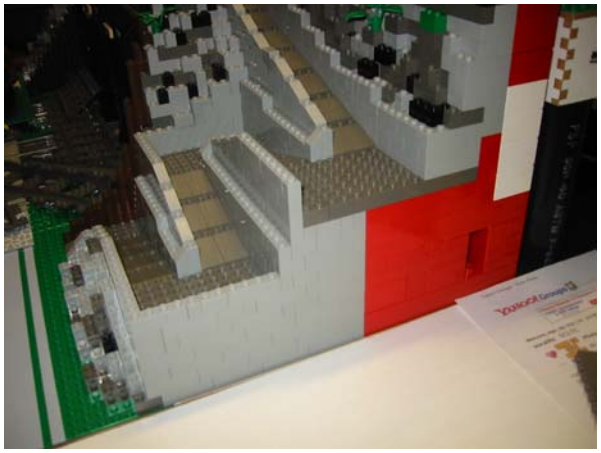
Trial Layout points out areas where 2 table edges match up that need to be reworked by one or both club members.



2 areas need to match up to hide support structures underneath.

Edge Matching





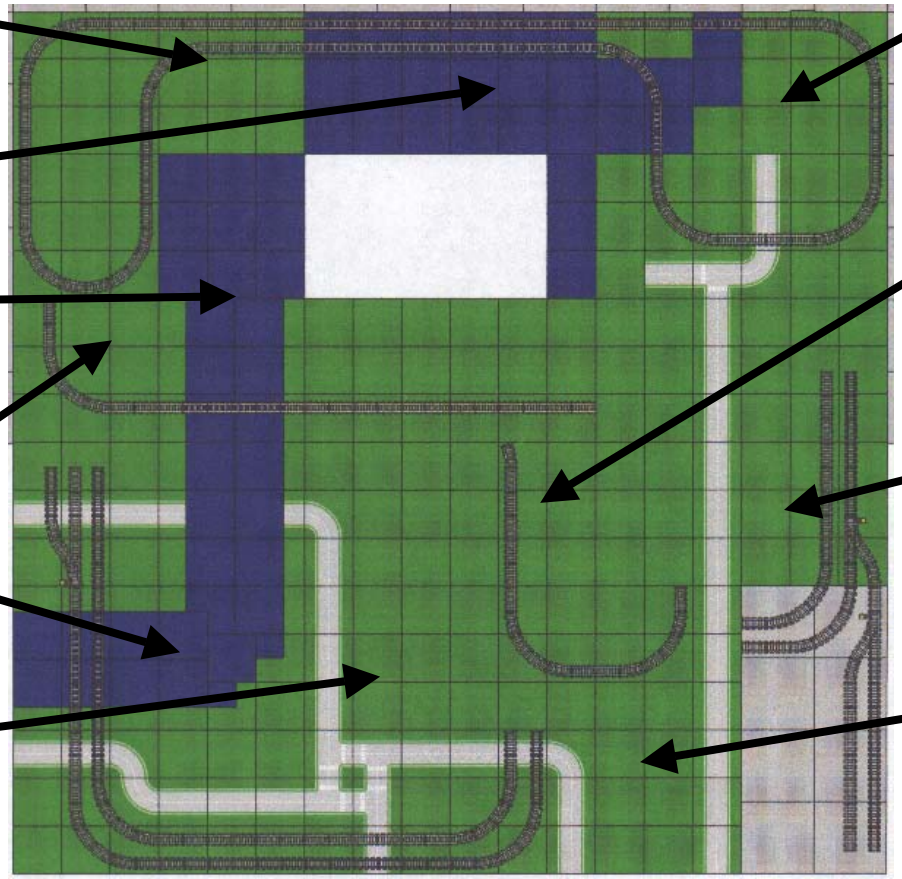
In some instances, club members exchange digital pictures to match-up the terraforming.

Zoning

- Since this is a mountain town, the areas could be many and varied, but should flow from area to area.
- Our Mountain Town had the following zones
  - Residential and Commercial
  - Light Industry and Mining
  - Recreation (Reservoir and Camping)
  - Dam and River

Zoning

Different venues allowed us more display space, so we were able to expand the layout. Our initial layout was limited to 15'x15'



Campground

Reservoir

Dam

Park

River

Business District

Heights Residential

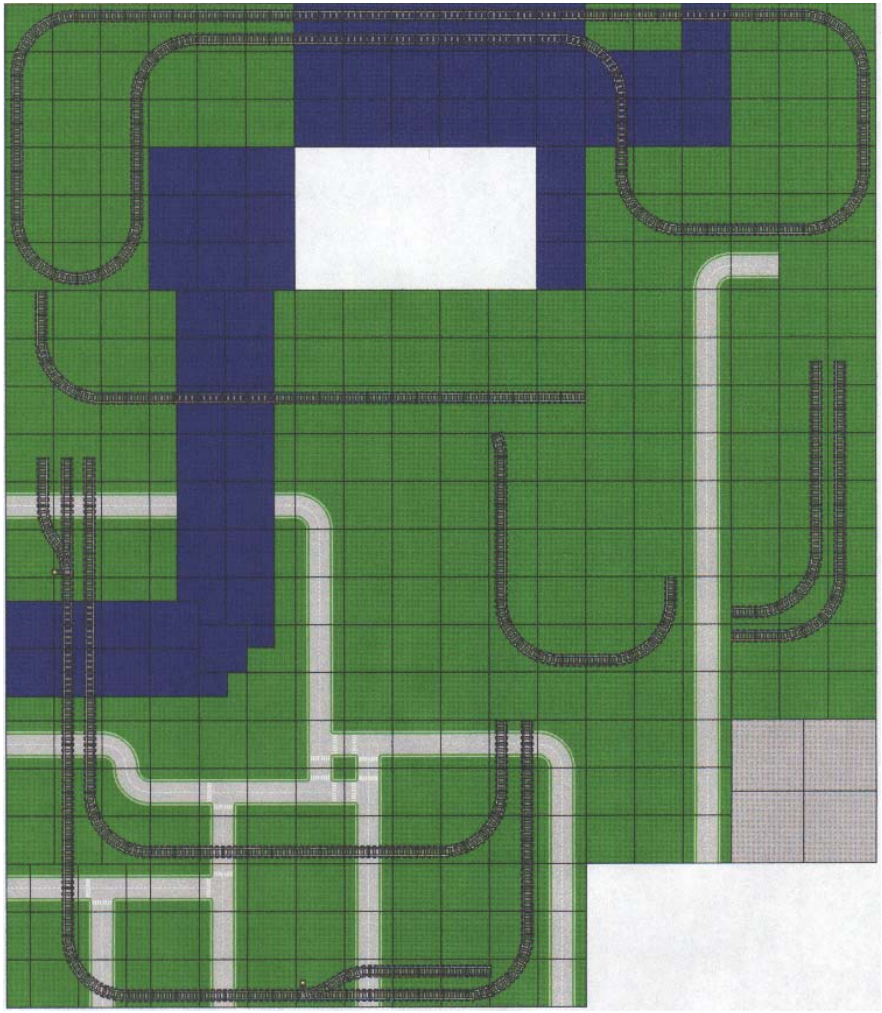
Residential

Mining Camp

Light Industry

Zoning Changes

We concentrated the expansion to one edge of the layout, expanding the downtown area.



Two 30x60 tables added and the downtown expanded.

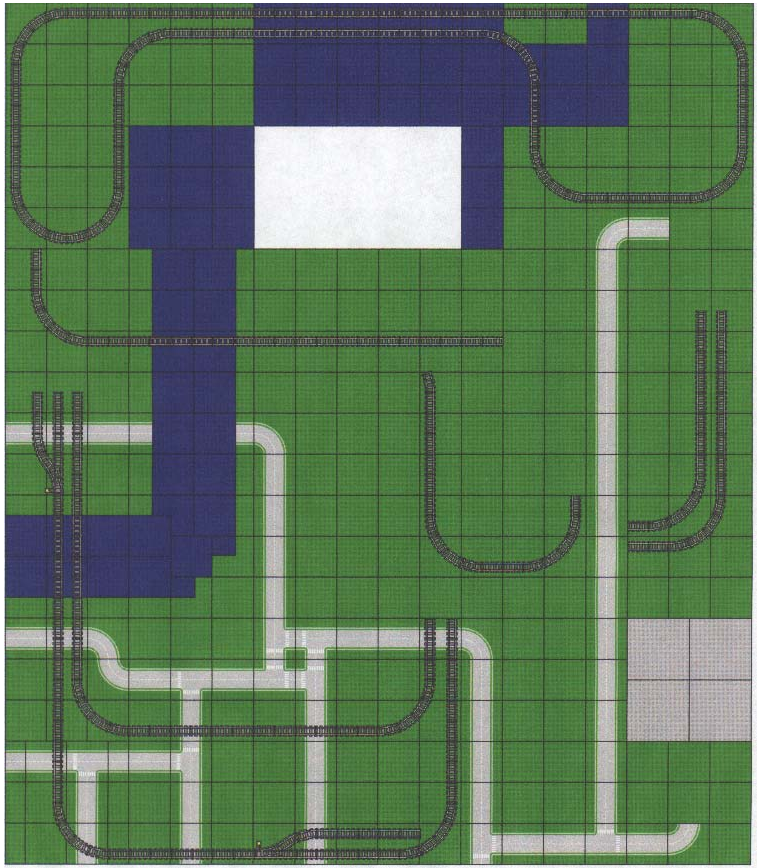
Zoning Changes

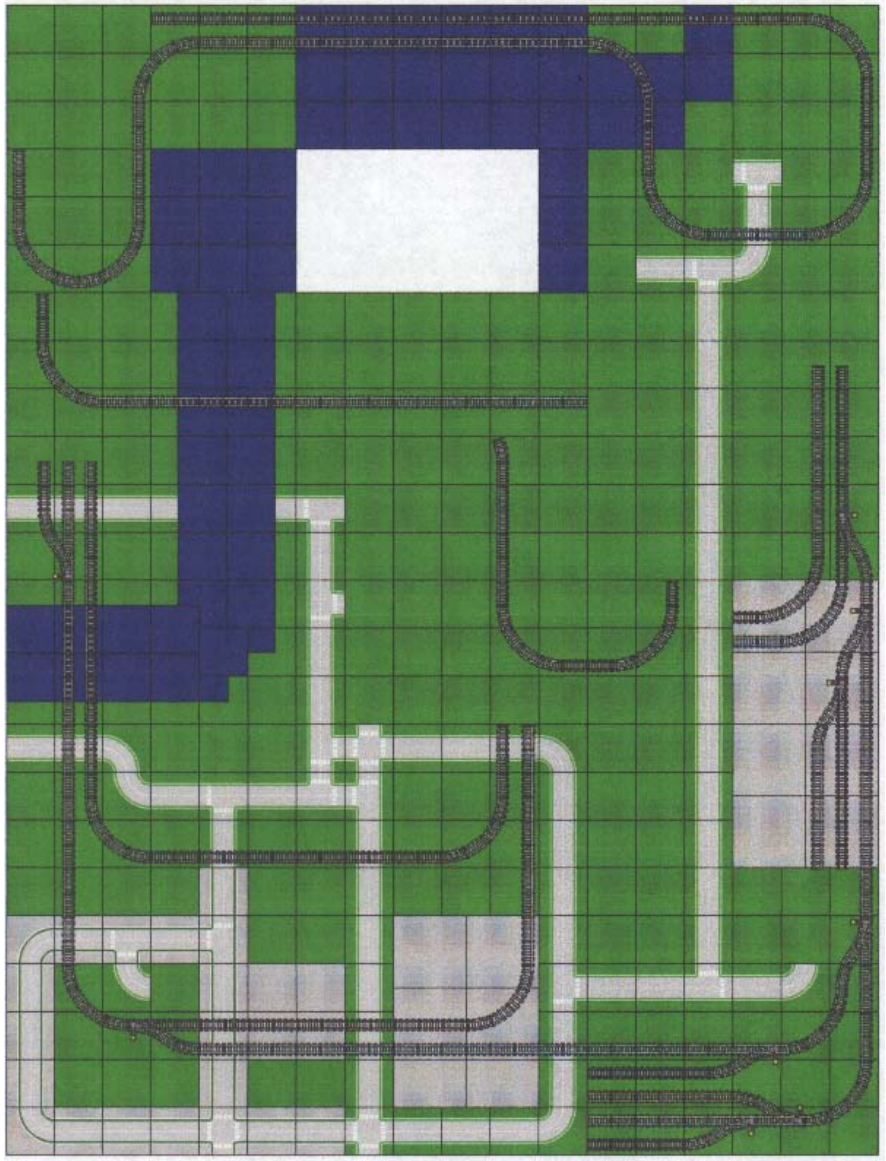
We Made changes to other areas of the layout too.

No street access for these residents.

Roadway added by adding in an overpass.

Zoning Changes





At one venue, we were even able to make our addition during public viewing time.

Zoning Changes

We added activities to match the holidays and the seasons...

...a holiday parade and decorations were added to the expanded downtown...

…and the Boy Scouts selling Christmas Trees.

Scaling

The surrounding area needs to be taken into account when constructing and placing building structures so that details, such as the SCLTC hillside sign, are not hidden...

Scaling

...or buildings of complementary scale are next to each other.

These two examples of residential areas look fine since they are in two different areas of the layout.

Set-Up

It's critical that people arrive when their section of the layout goes into place so as not to hold up the set-up of the overall layout.

Start at one corner of the layout and work from there, remembering that some areas will become inaccessible.

Some tables became the work of multiple club members, so some set-up had to be done on site.