3D Beyond Buildings

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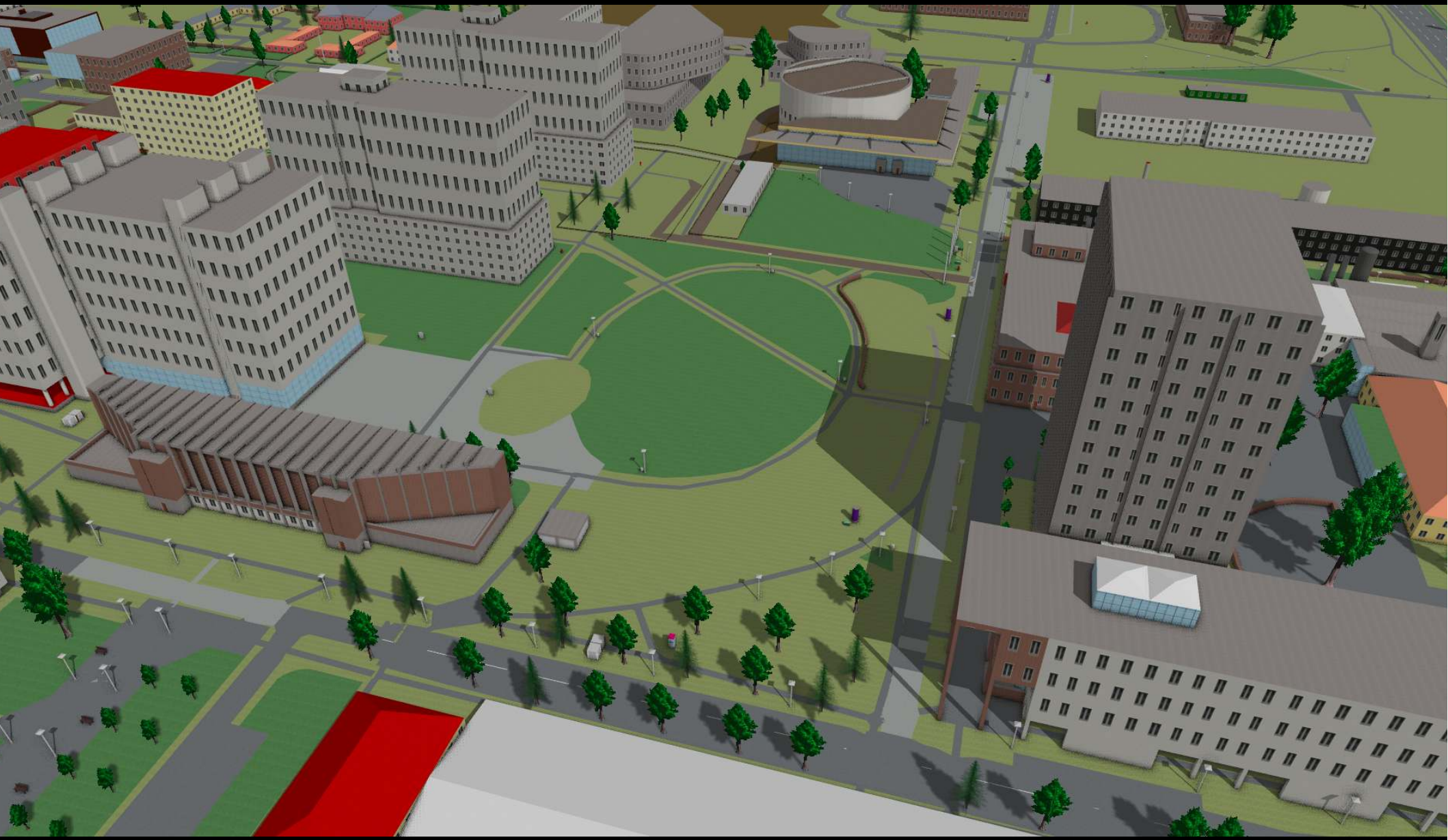
State of the Map 2018

OSM2World

- Open-source software
- Creates 3D models from OSM data
- Render models or export to .obj

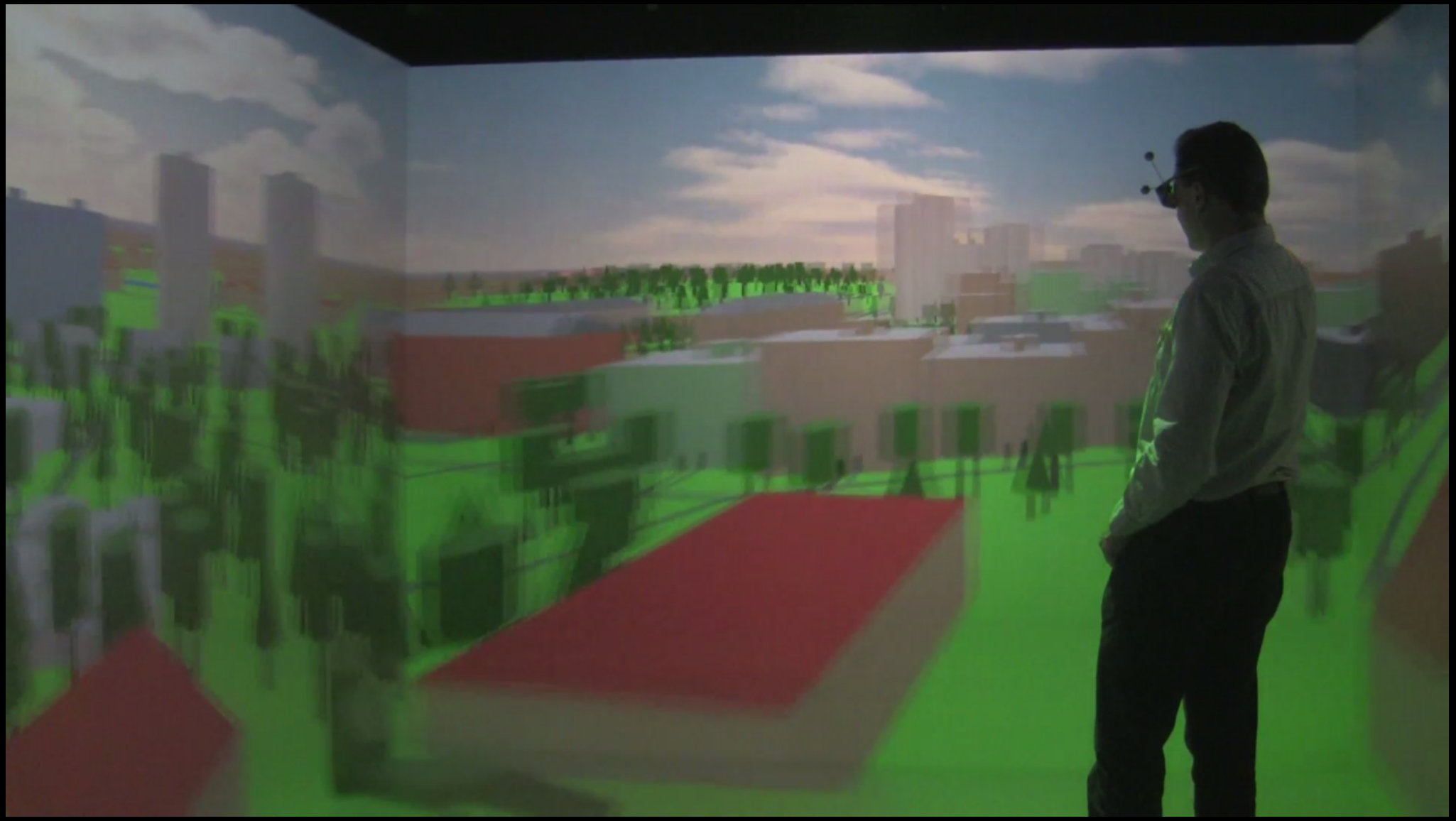
OpenGL rendering



Game development

http://wiki.openstreetmap.org/wiki/SuperTuxKart

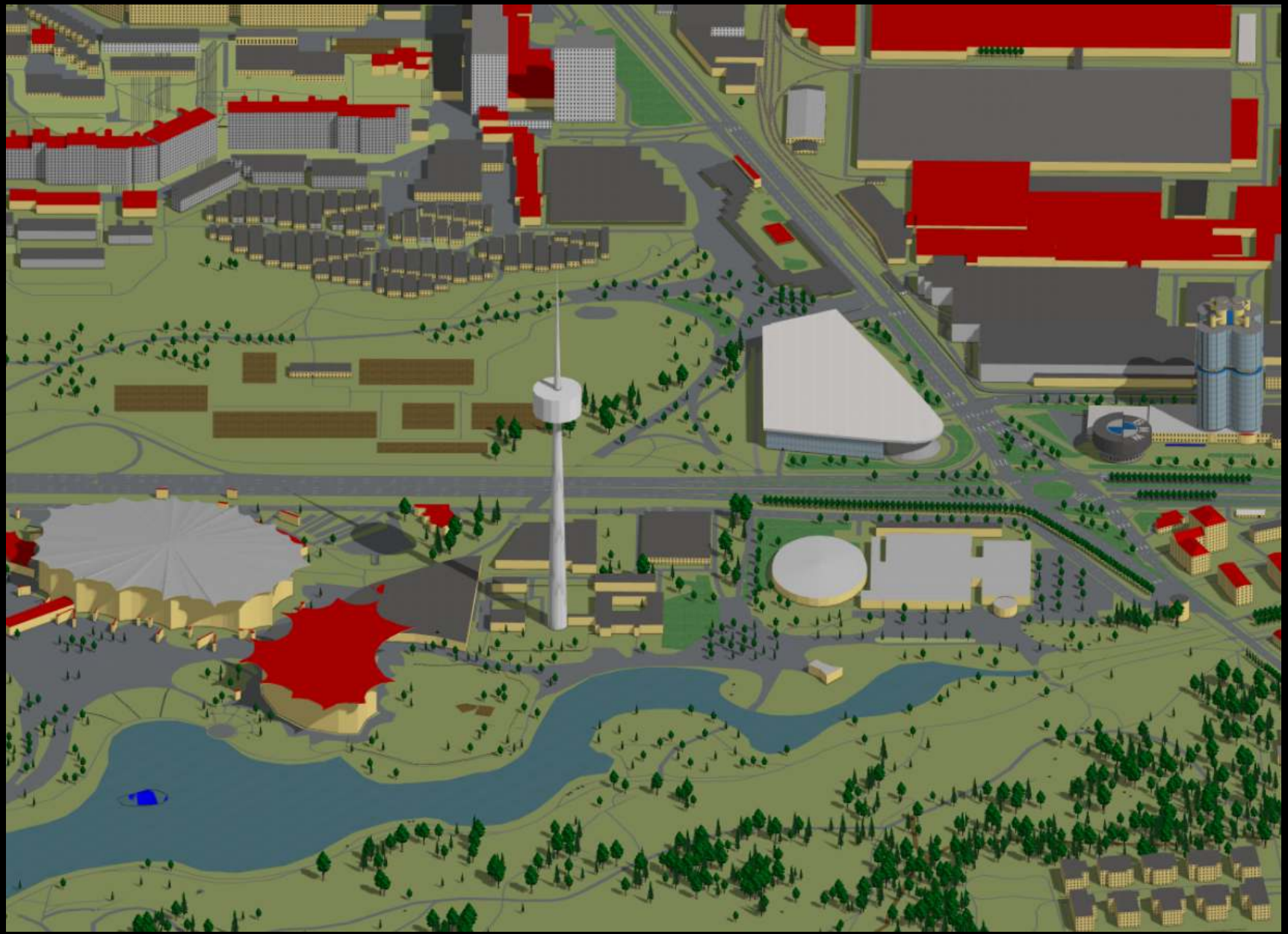
Virtual reality



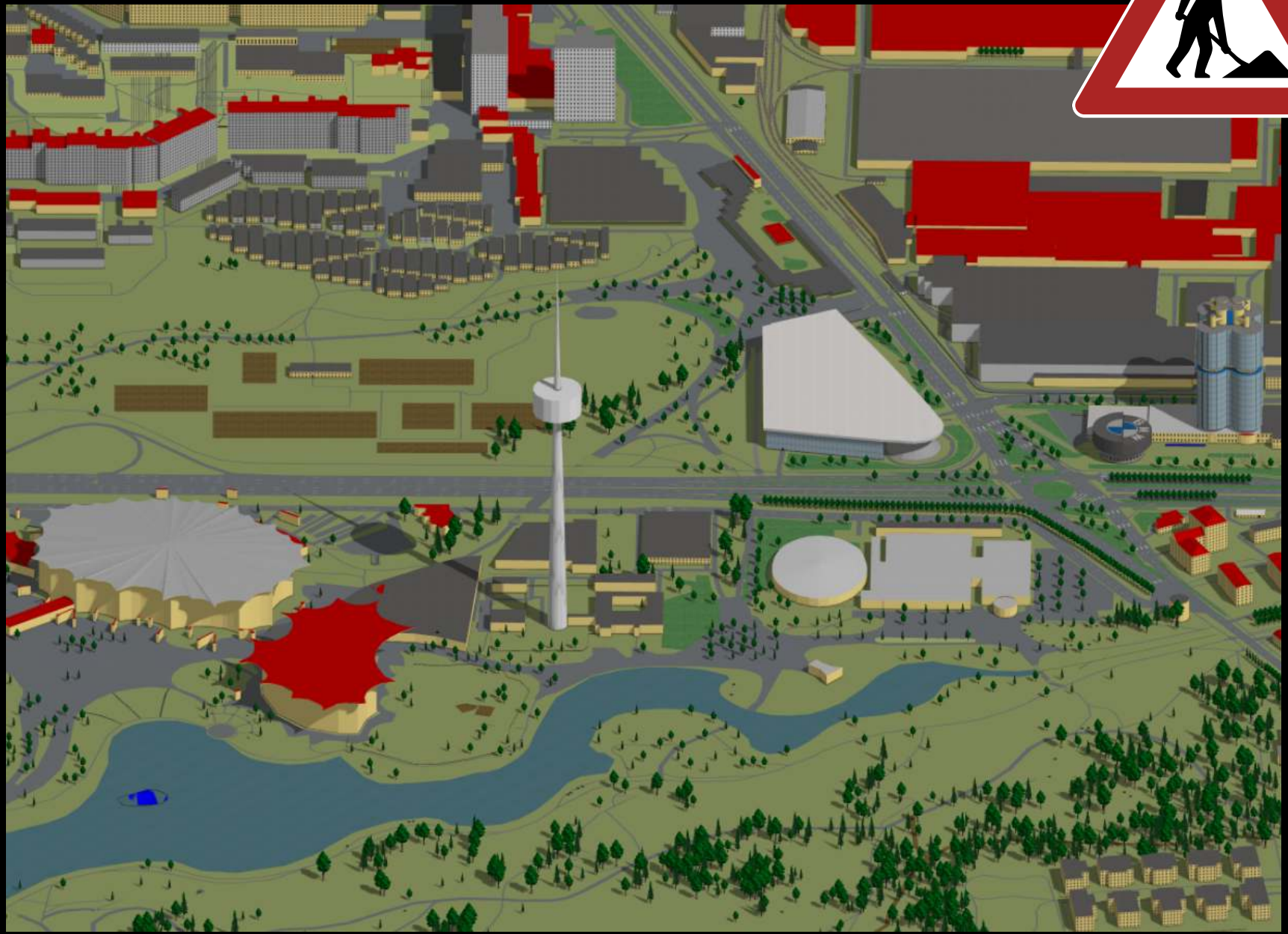
http://forum.osm.org/viewtopic.php?id=20012

Video art

maps.osm2world.org



maps.osm2world.org



Simple 3D Buildings

Simple 3D Buildings

- building, building:part
- height, min_height
- building:levels, roof:levels, ...

Simple 3D Buildings

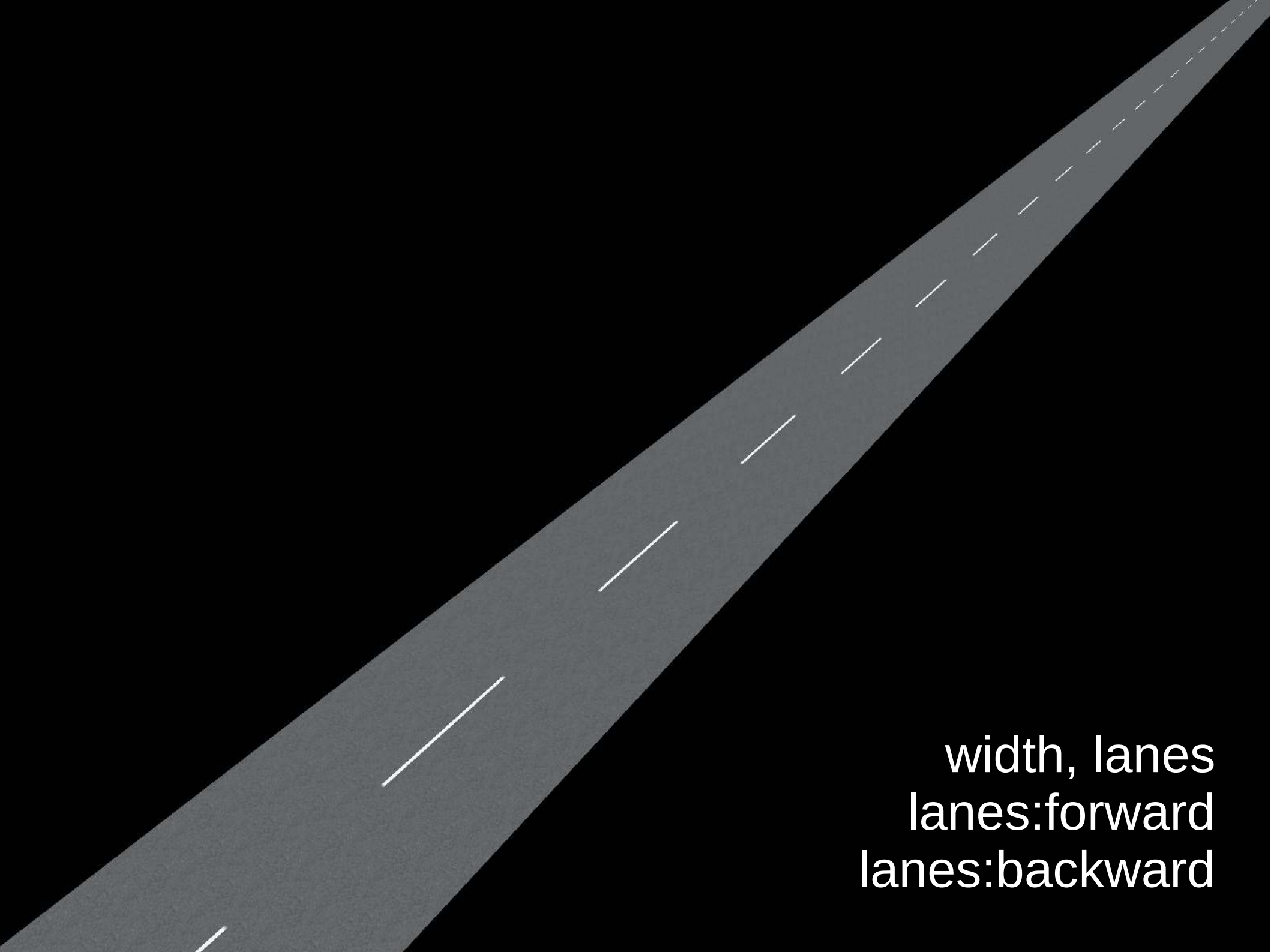
- building:colour, roof:colour
- building:material, roof:material
- roof:shape, roof:direction, ...

Simple 3D Buildings

- Defined in 2012
- Supported by lots of renderers
- Somewhat limited, but well established

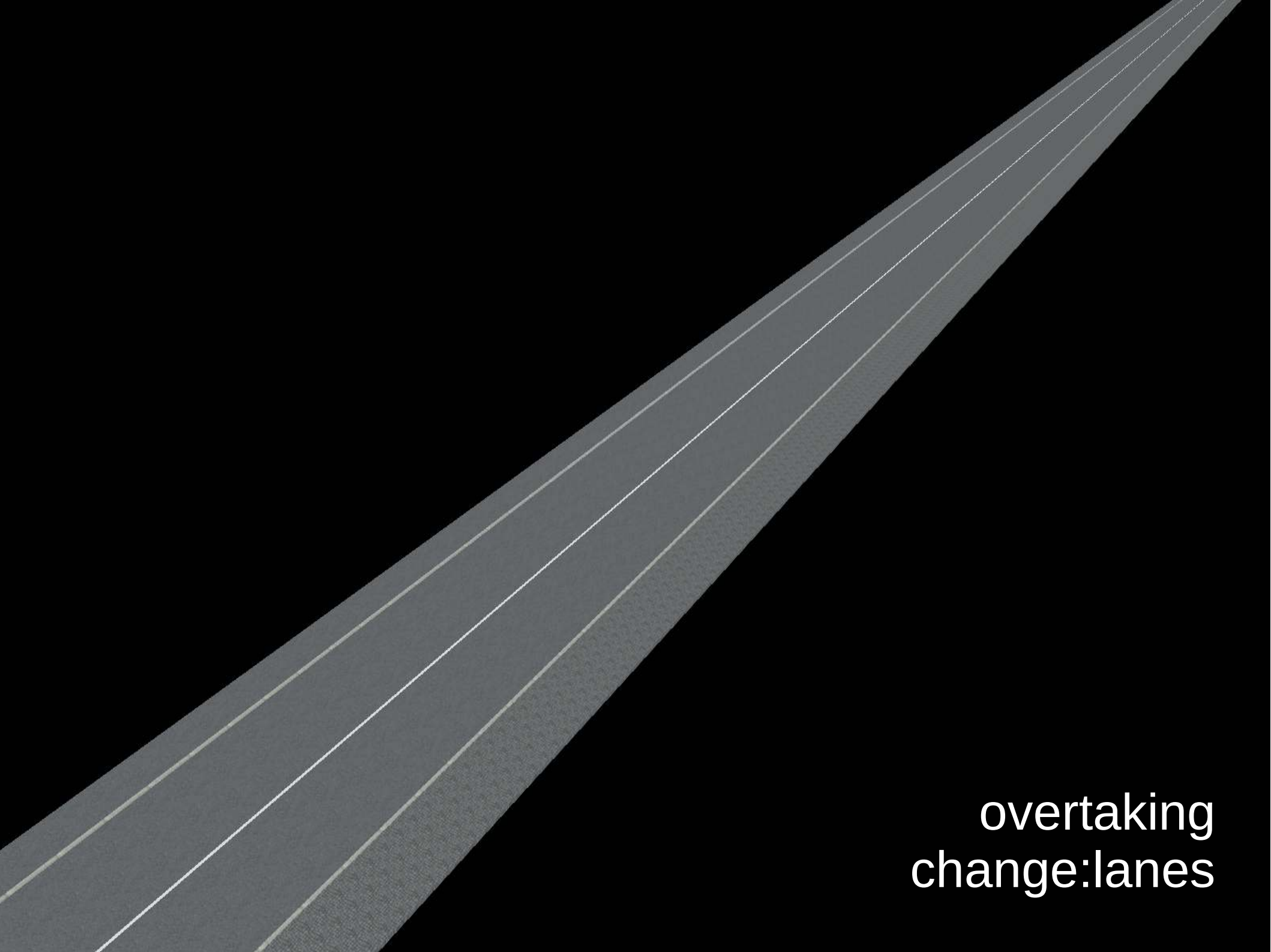
Beyond buildings!

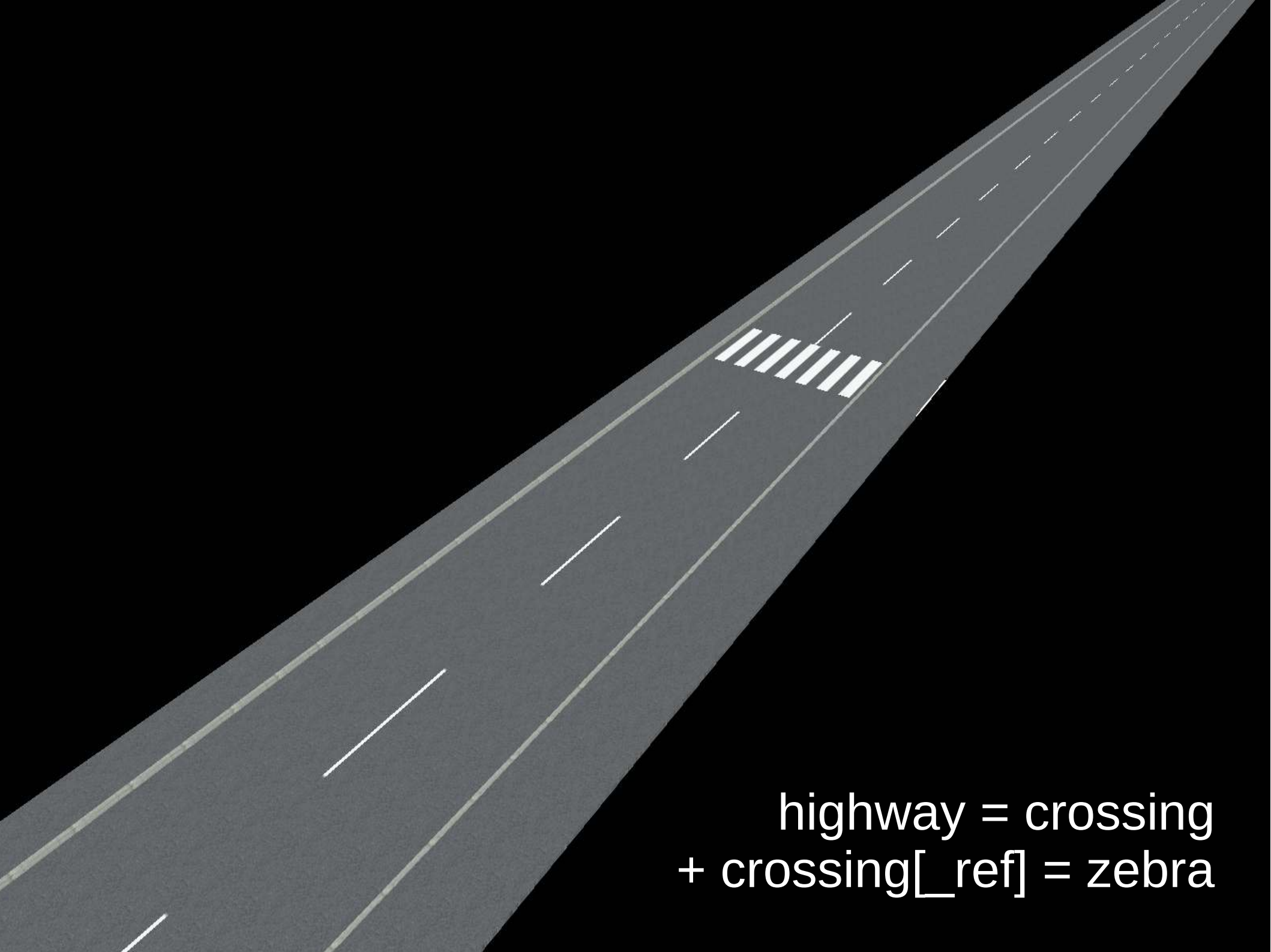
Road and Rail

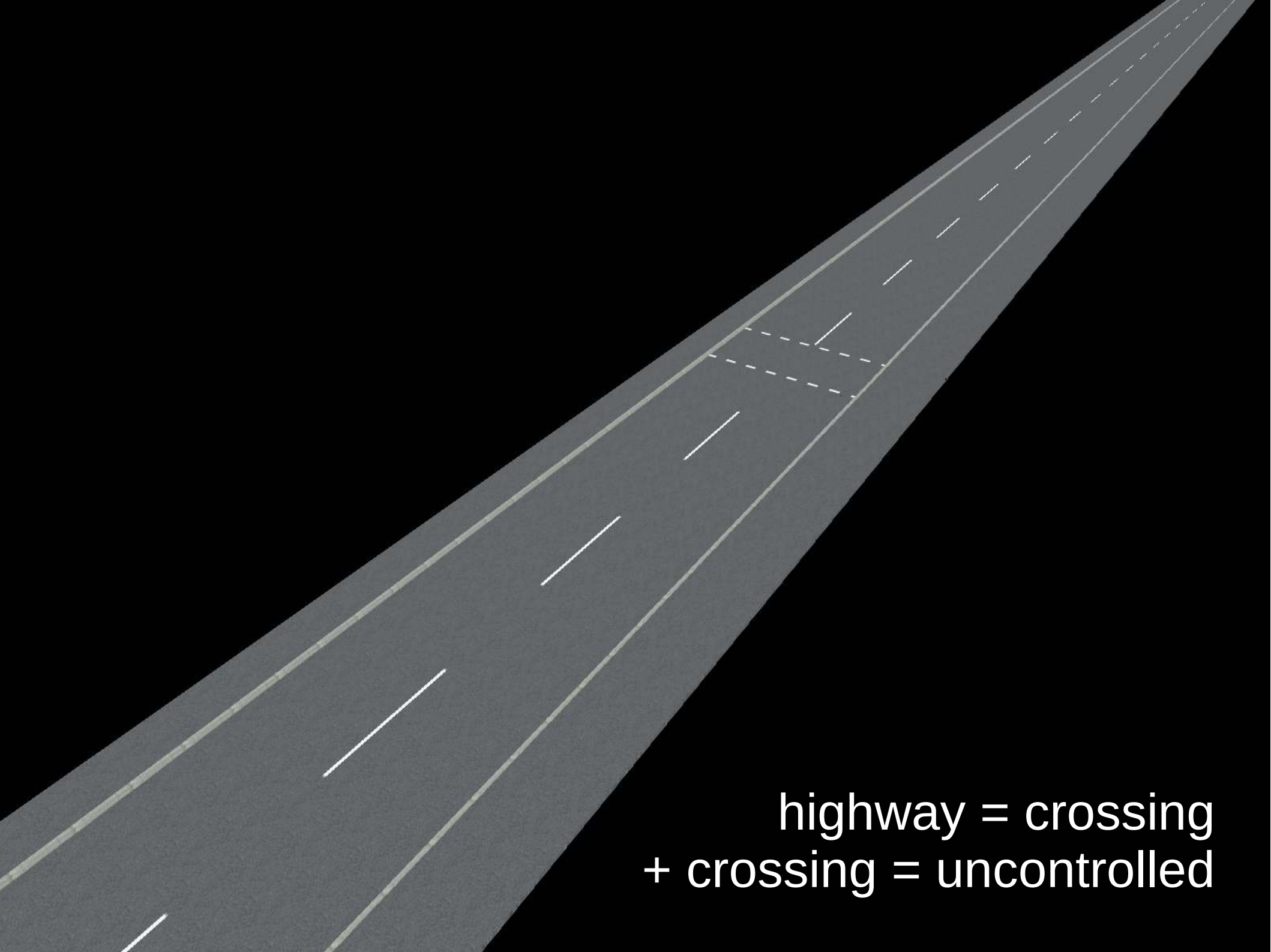

width, lanes
lanes:forward
lanes:backward

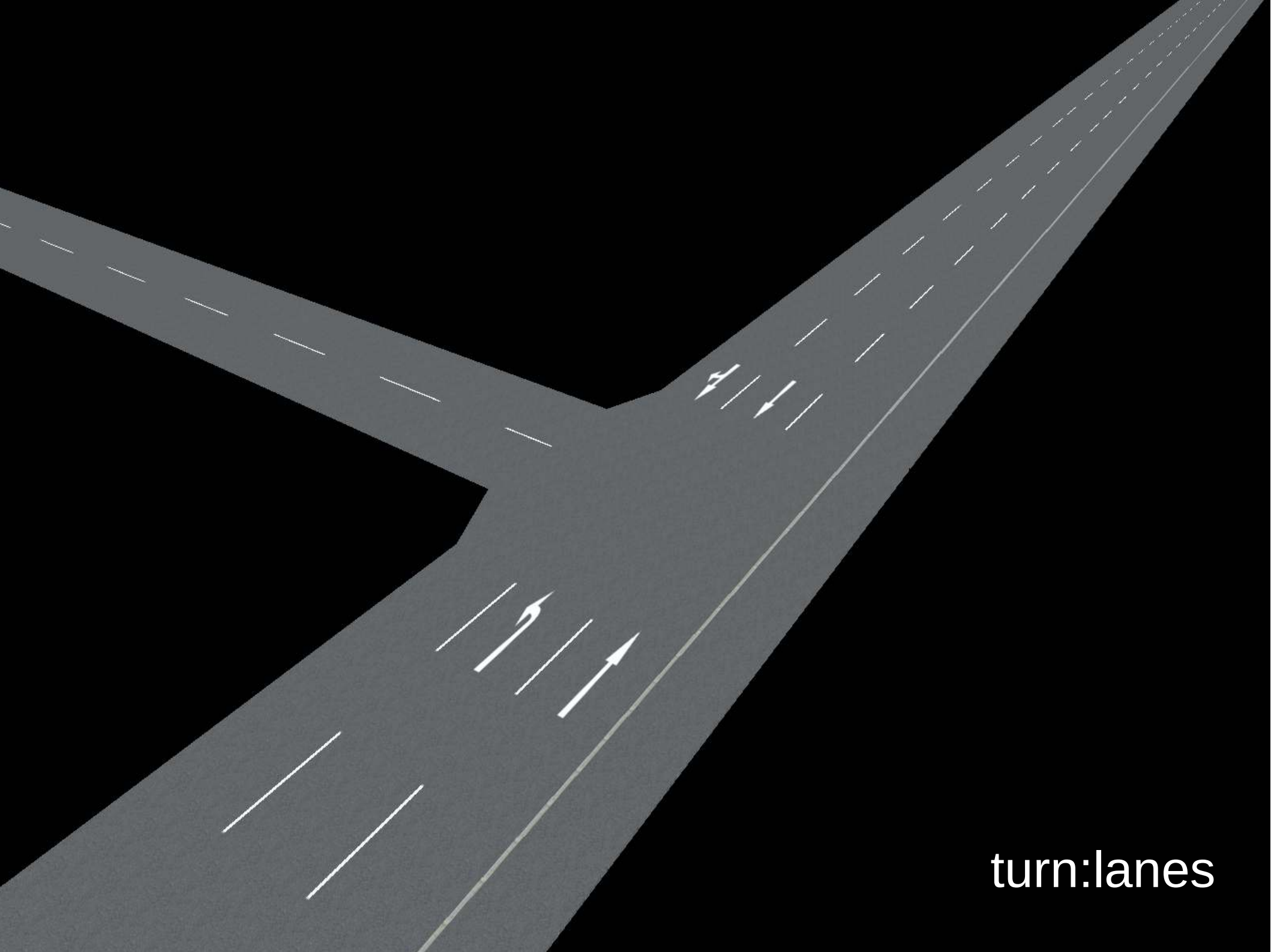

sidewalk = both


sidewalk:right:width
sidewalk:right:surface


overtaking
change:lanes

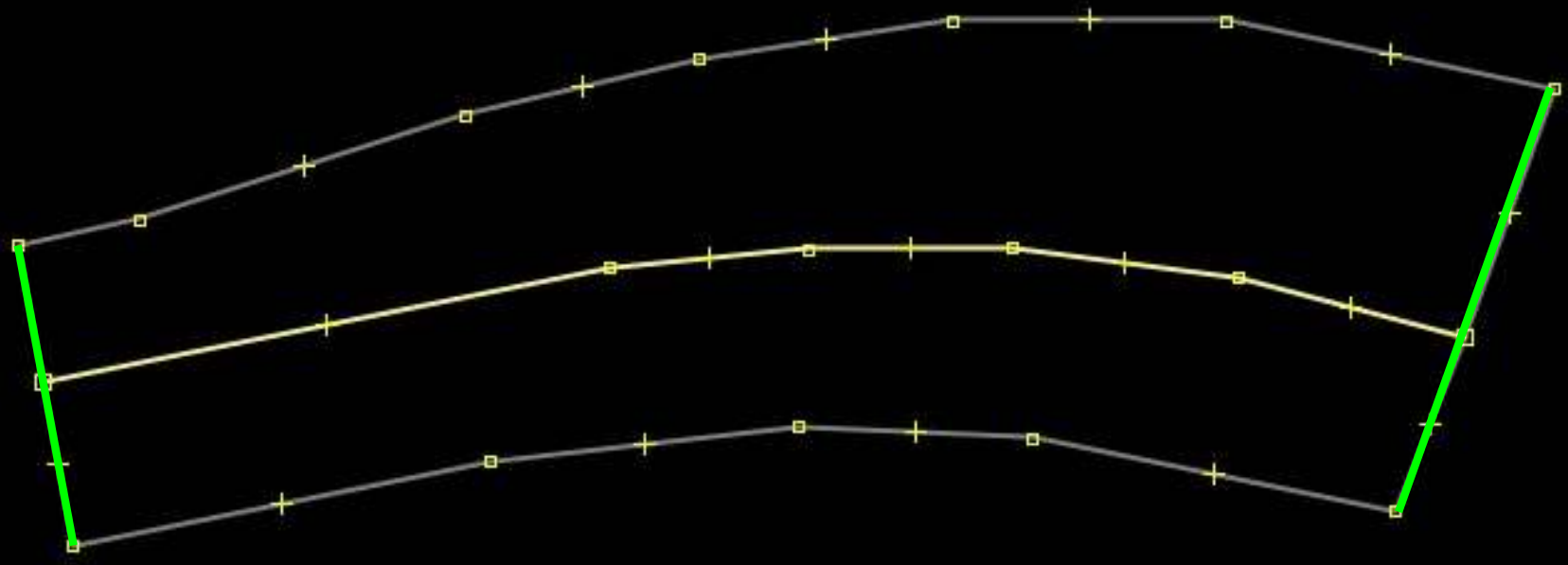

highway = crossing
+ crossing[_ref] = zebra


highway = crossing
+ crossing = uncontrolled

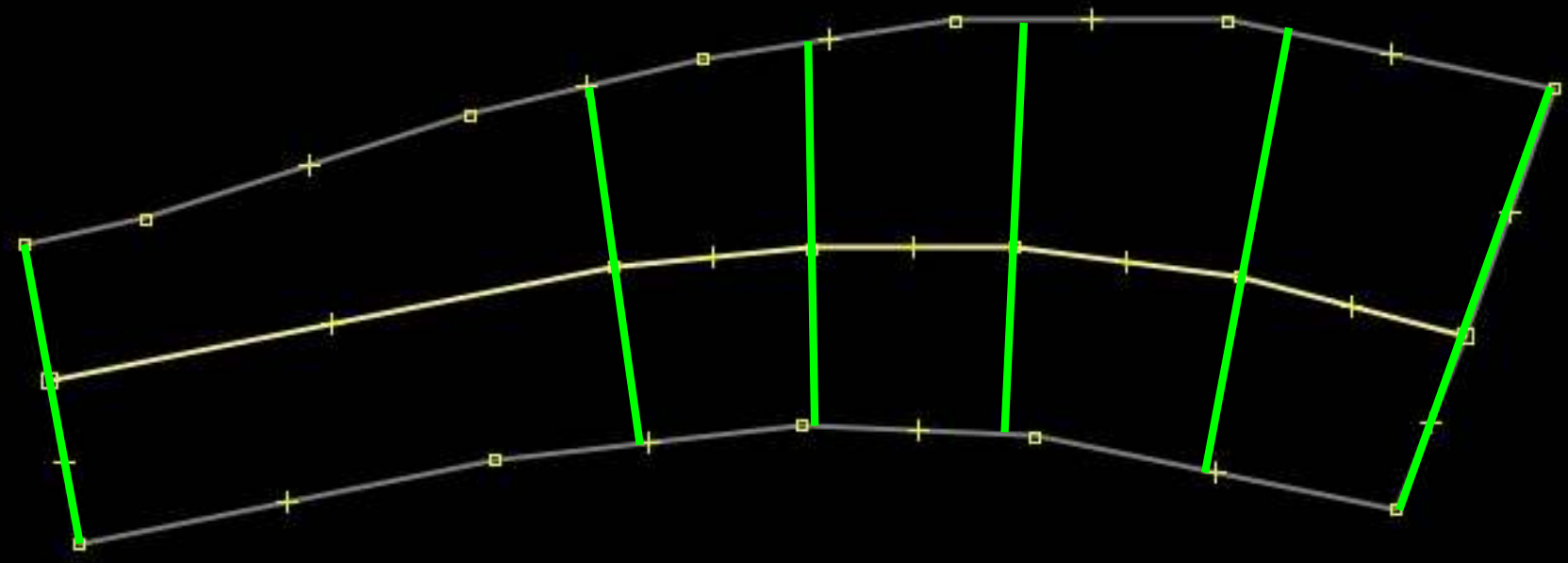

turn:lanes

traffic_sign

Work in progress: area:highway

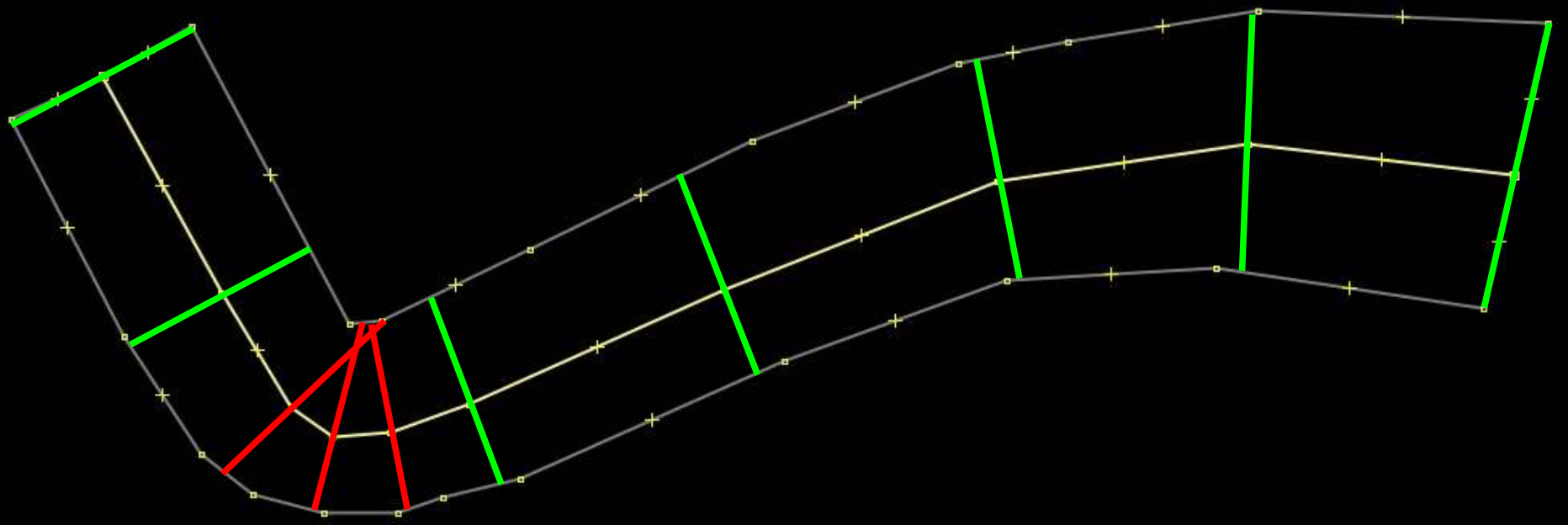


Work in progress: area:highway



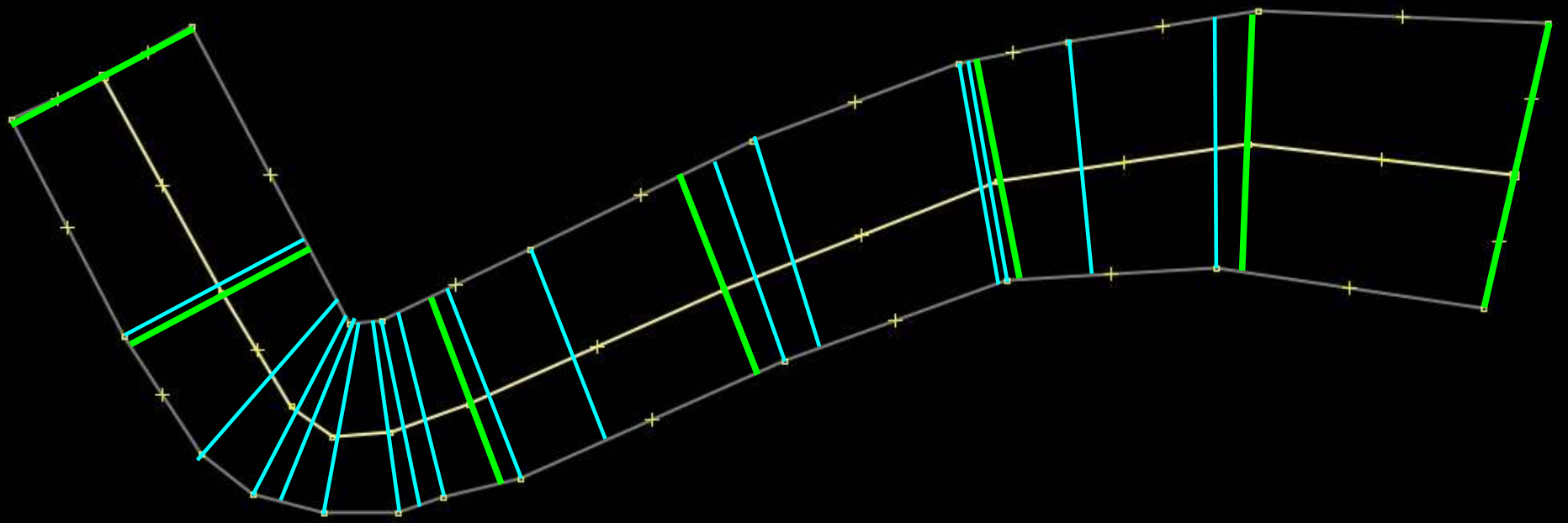
Attempt #1: angle bisector
at each node of the way

Work in progress: area:highway



Attempt #1: angle bisector
at each node of the way

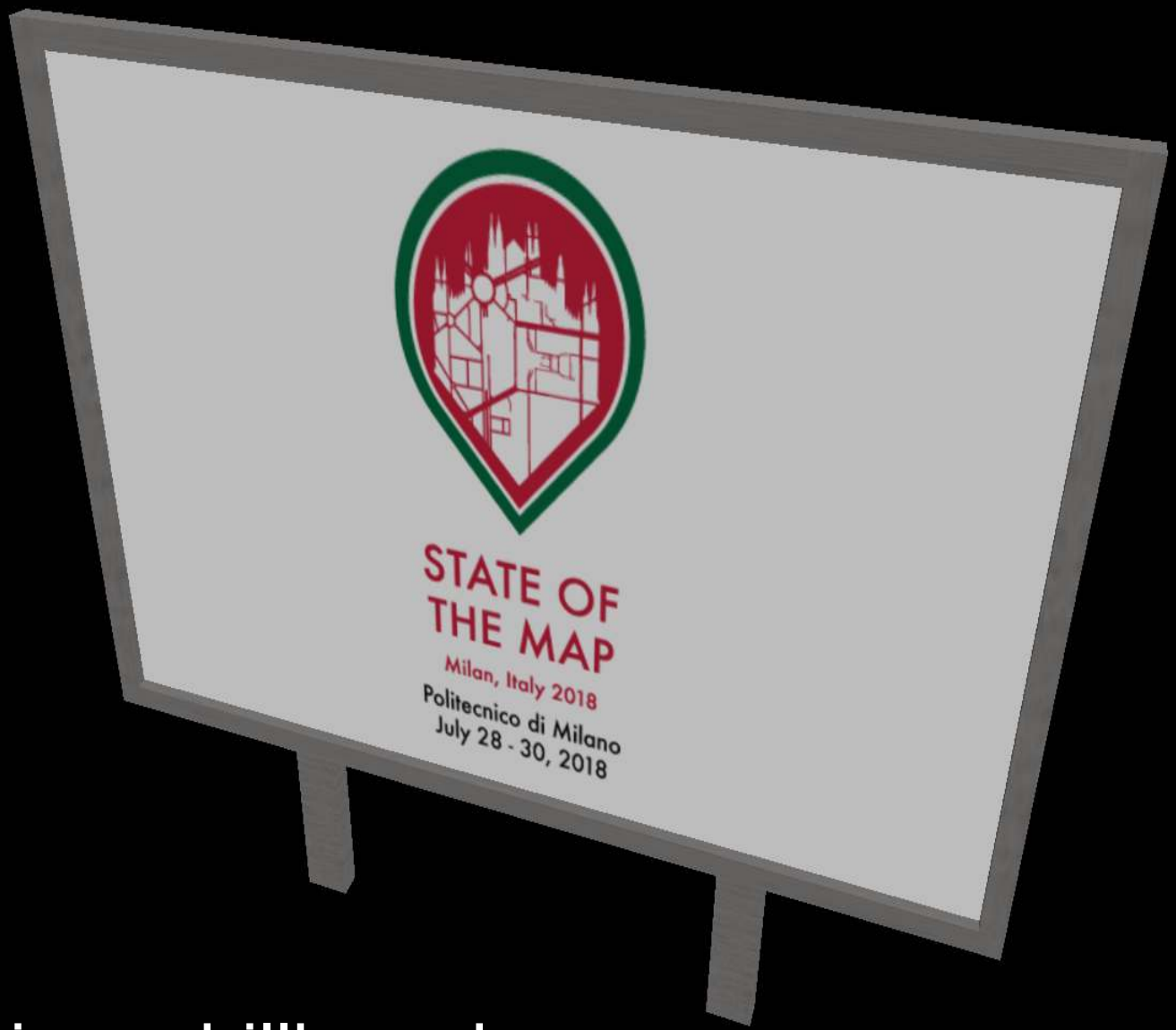
Work in progress: area:highway



Combine angle bisector
+ relative length along the way and outline

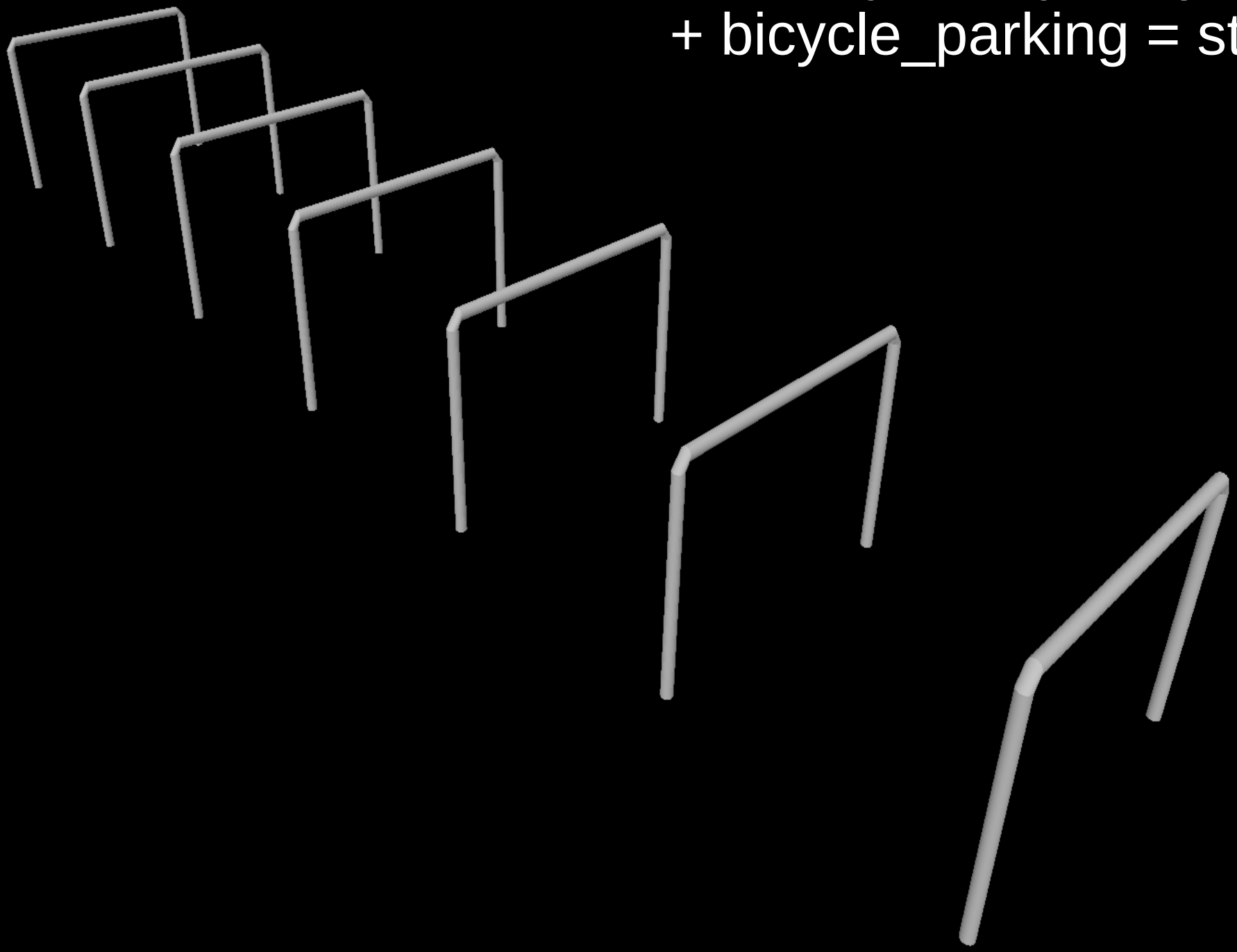

railway, gauge, ...

Street furniture



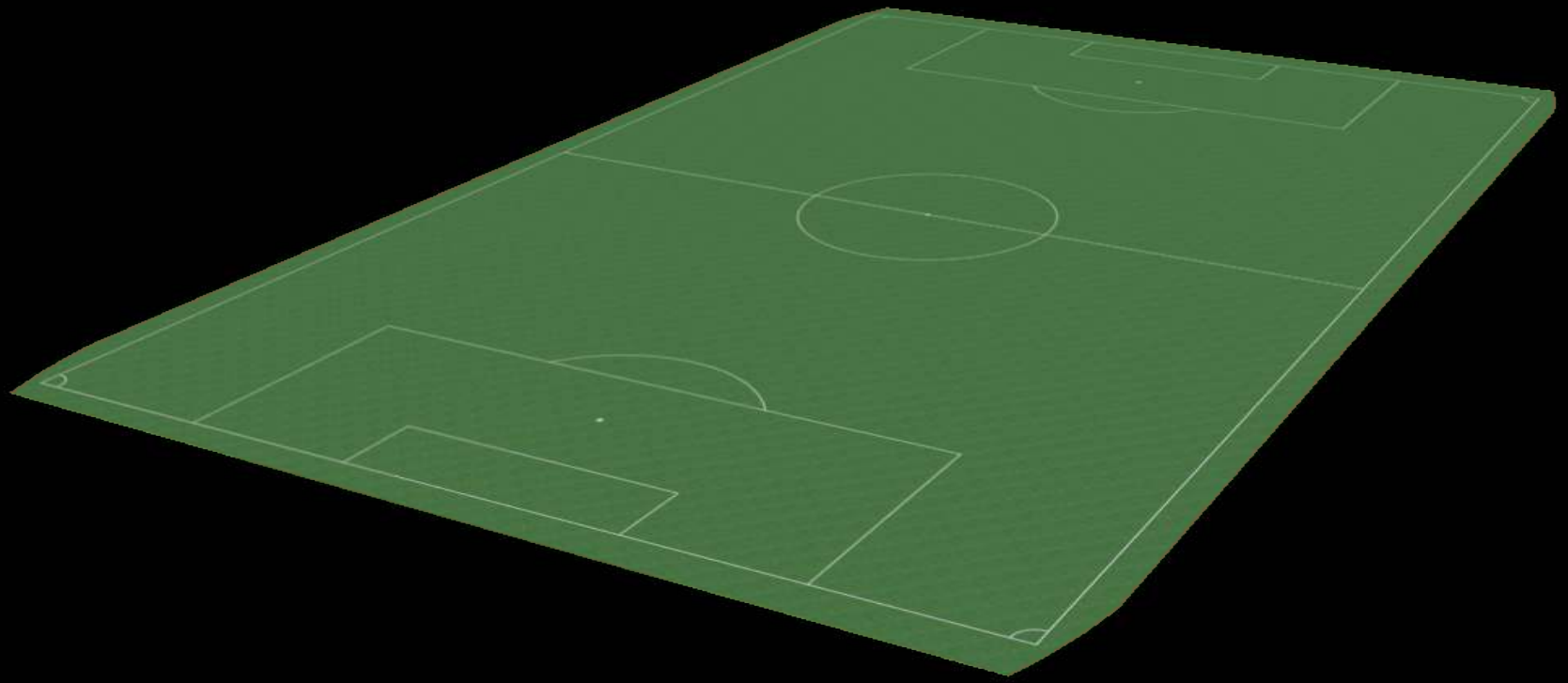
advertising = billboard
height, width, two_sided, ...

amenity = bicycle_parking
+ bicycle_parking = stands

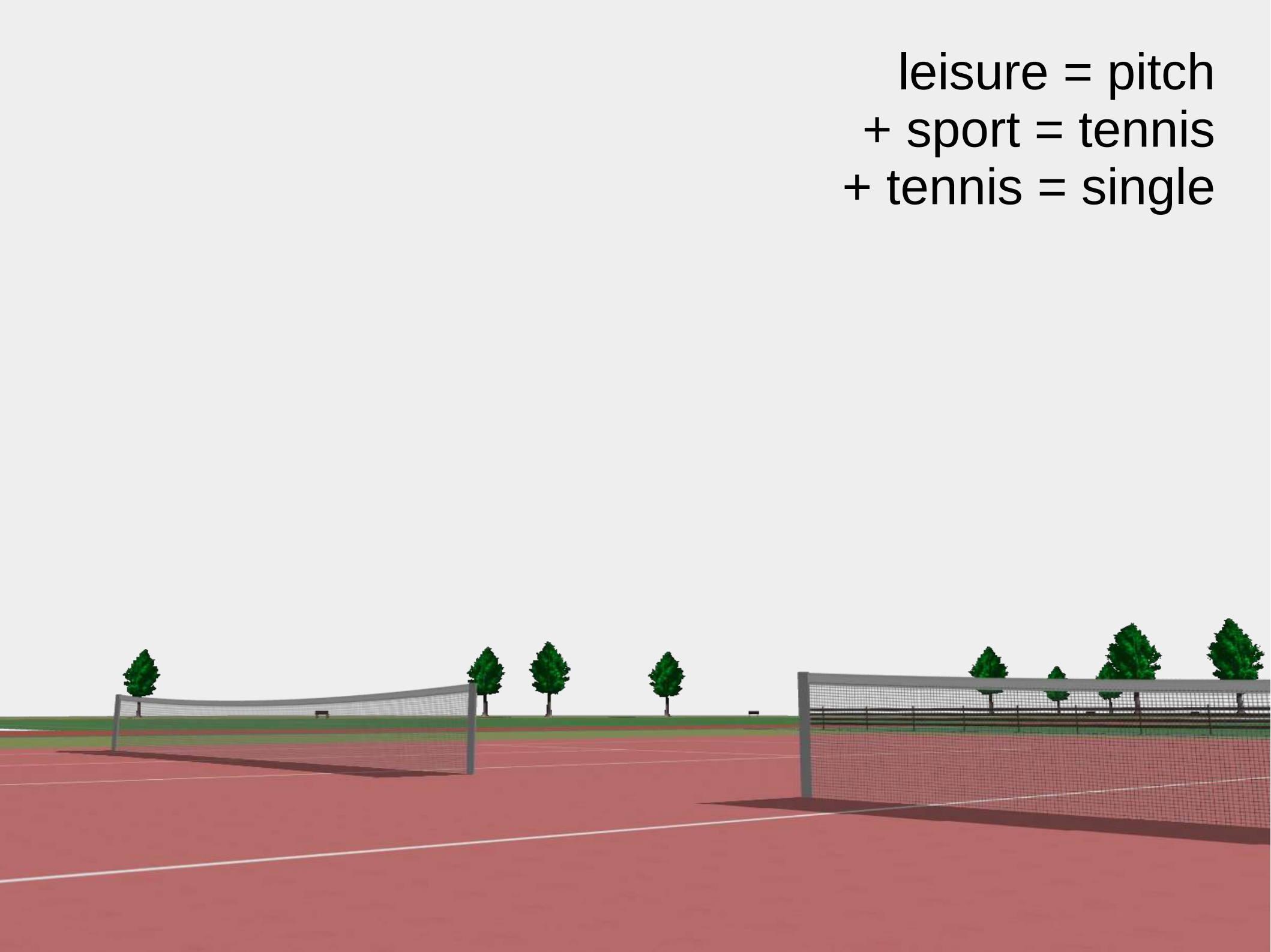


A lot more ...

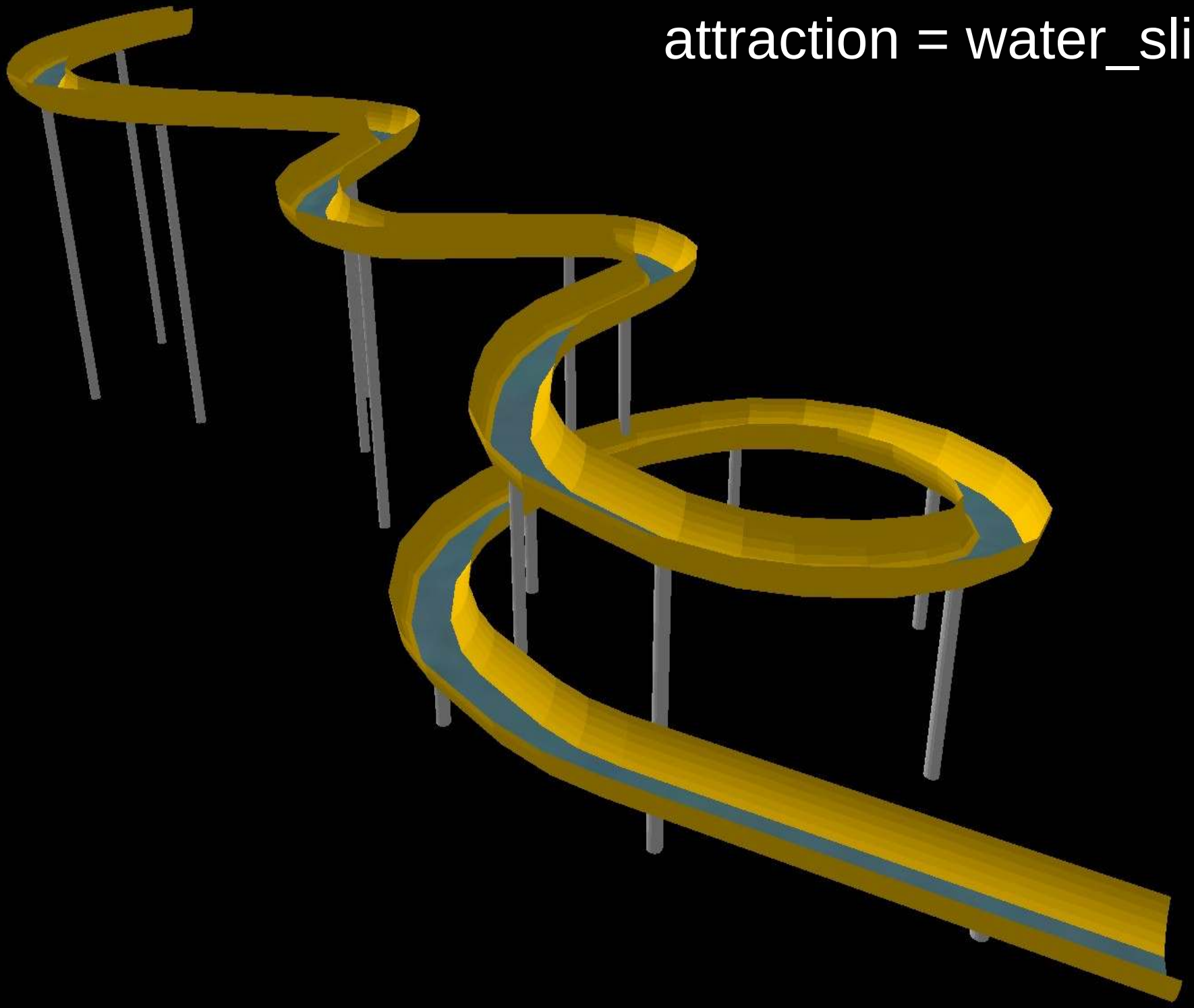
leisure = pitch + sport = soccer



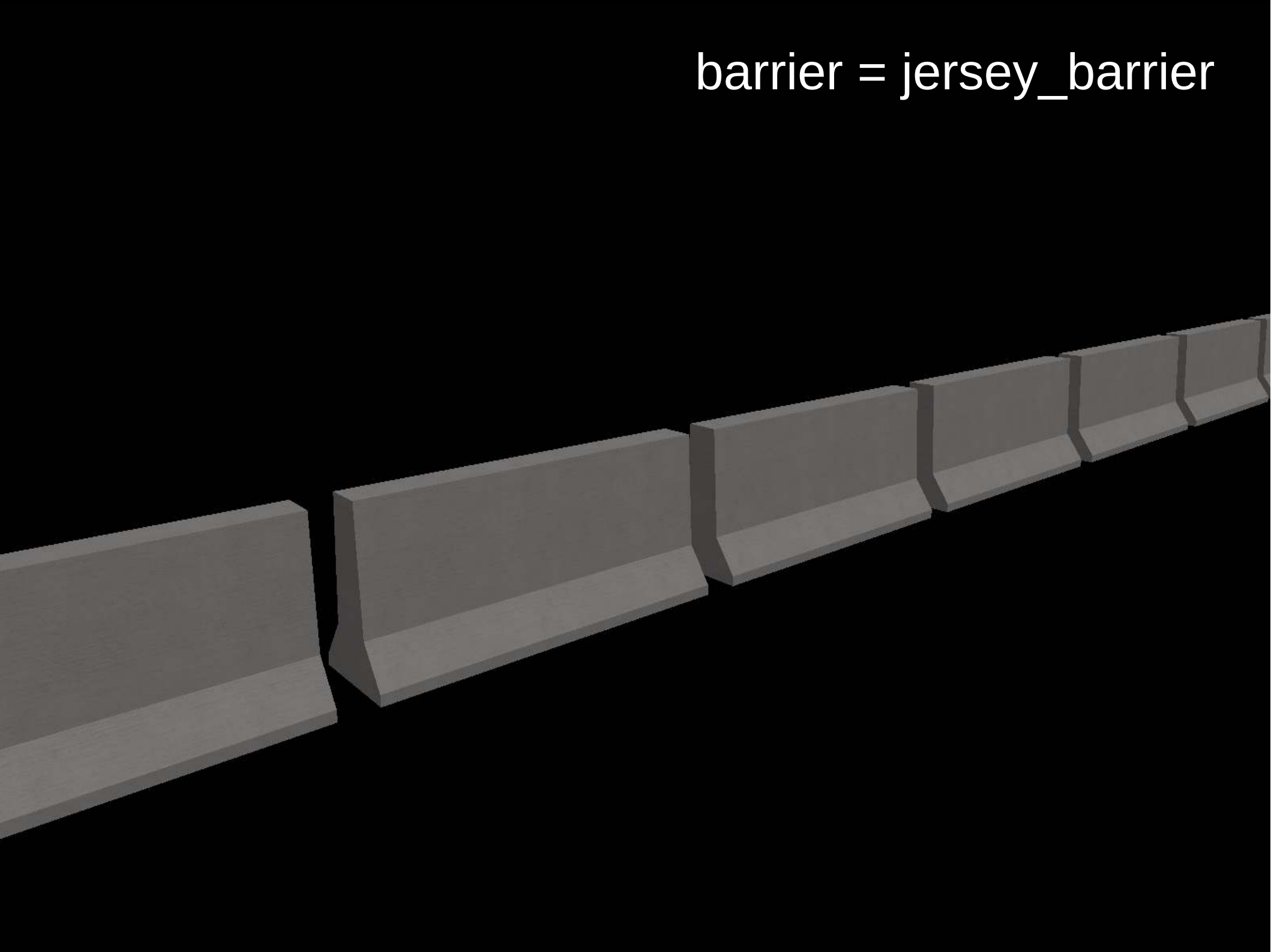
leisure = pitch
+ sport = tennis
+ tennis = single



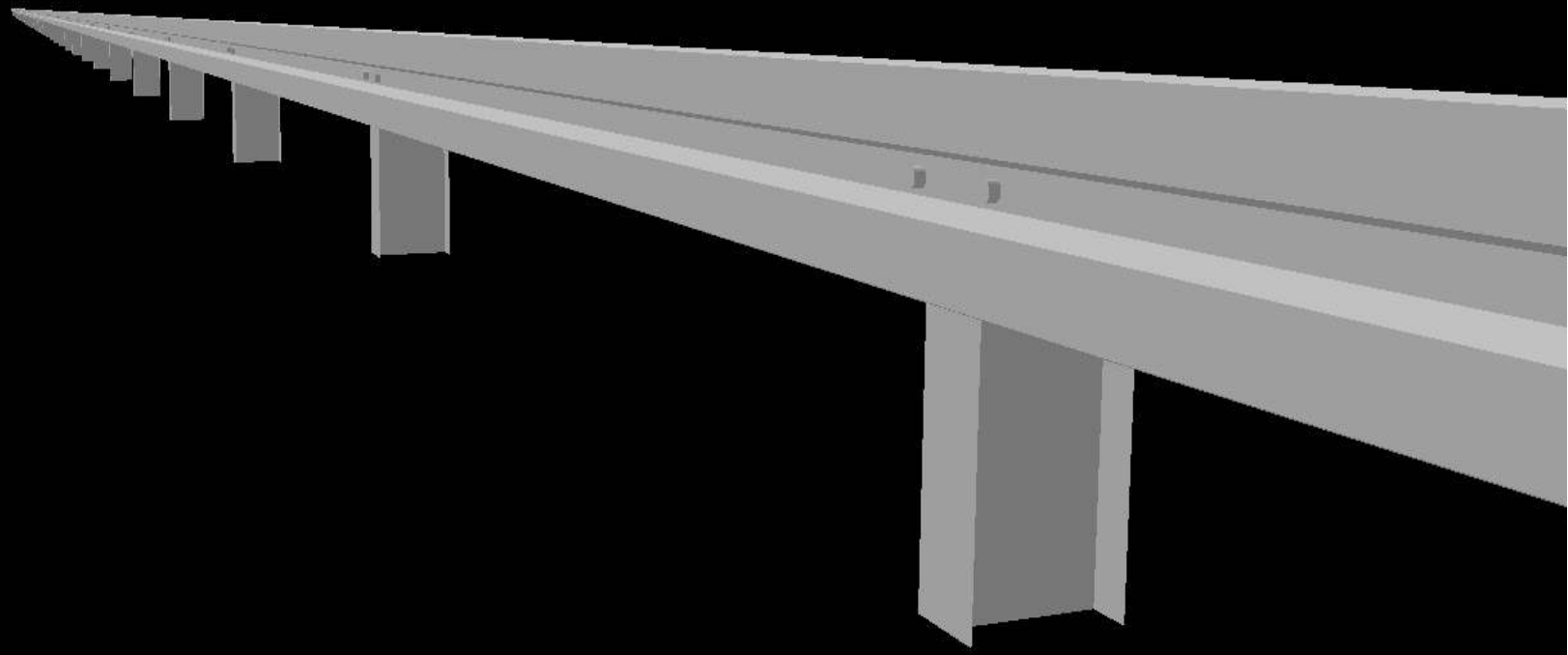
attraction = water_slide



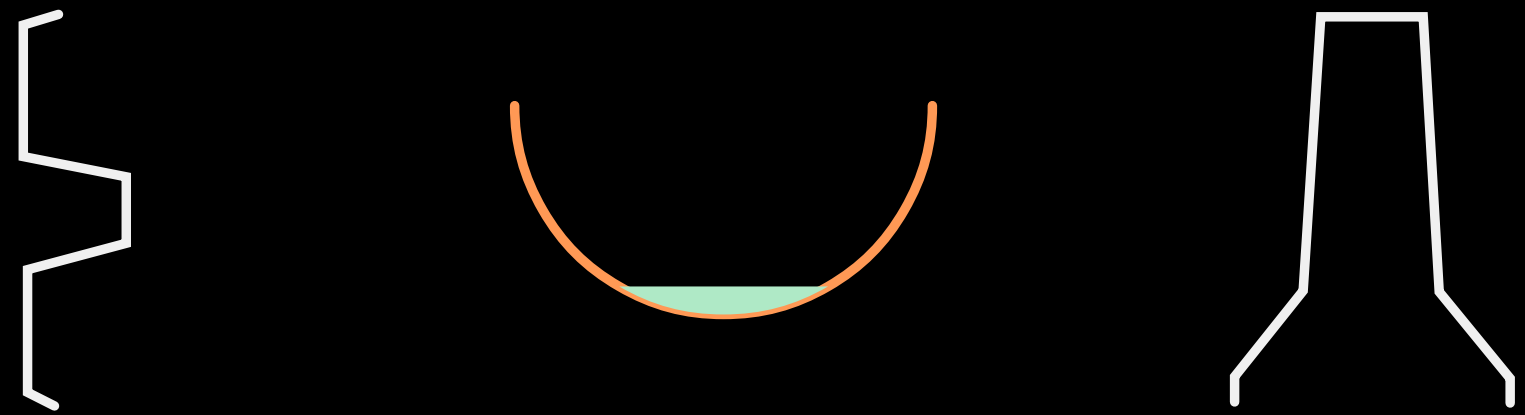
barrier = jersey_barrier



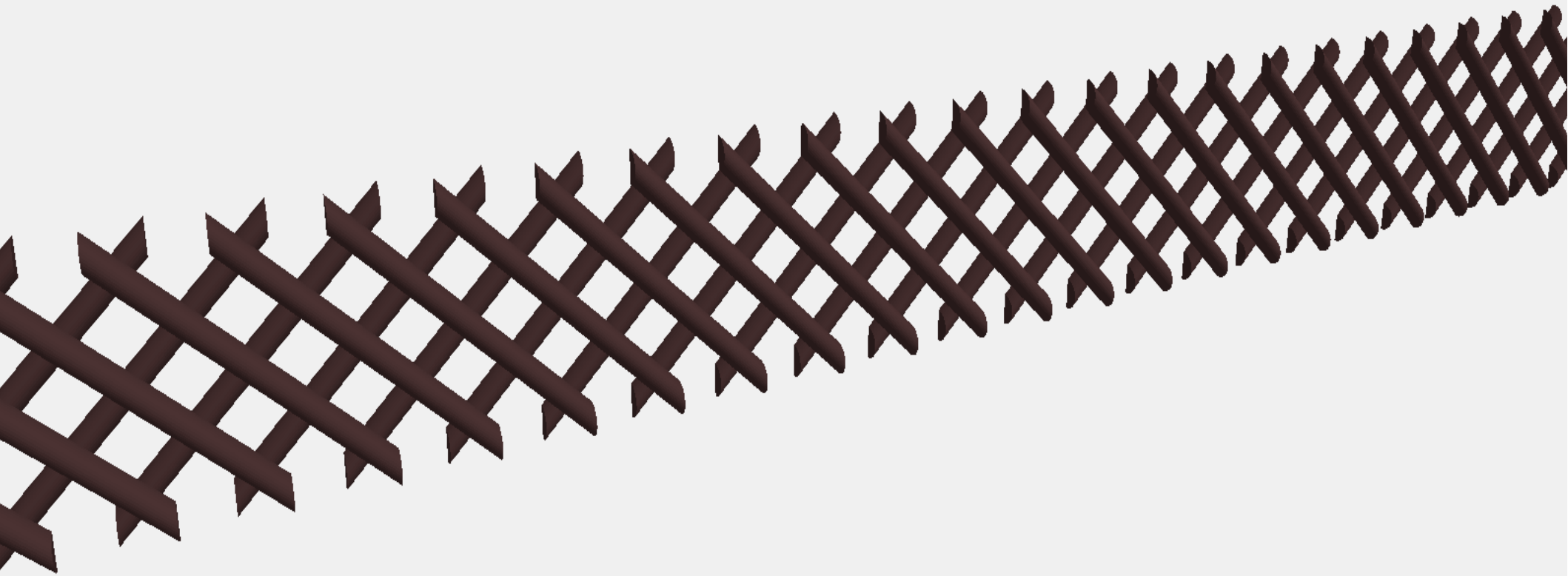
barrier = guard_rail



Implementation: Extrusion

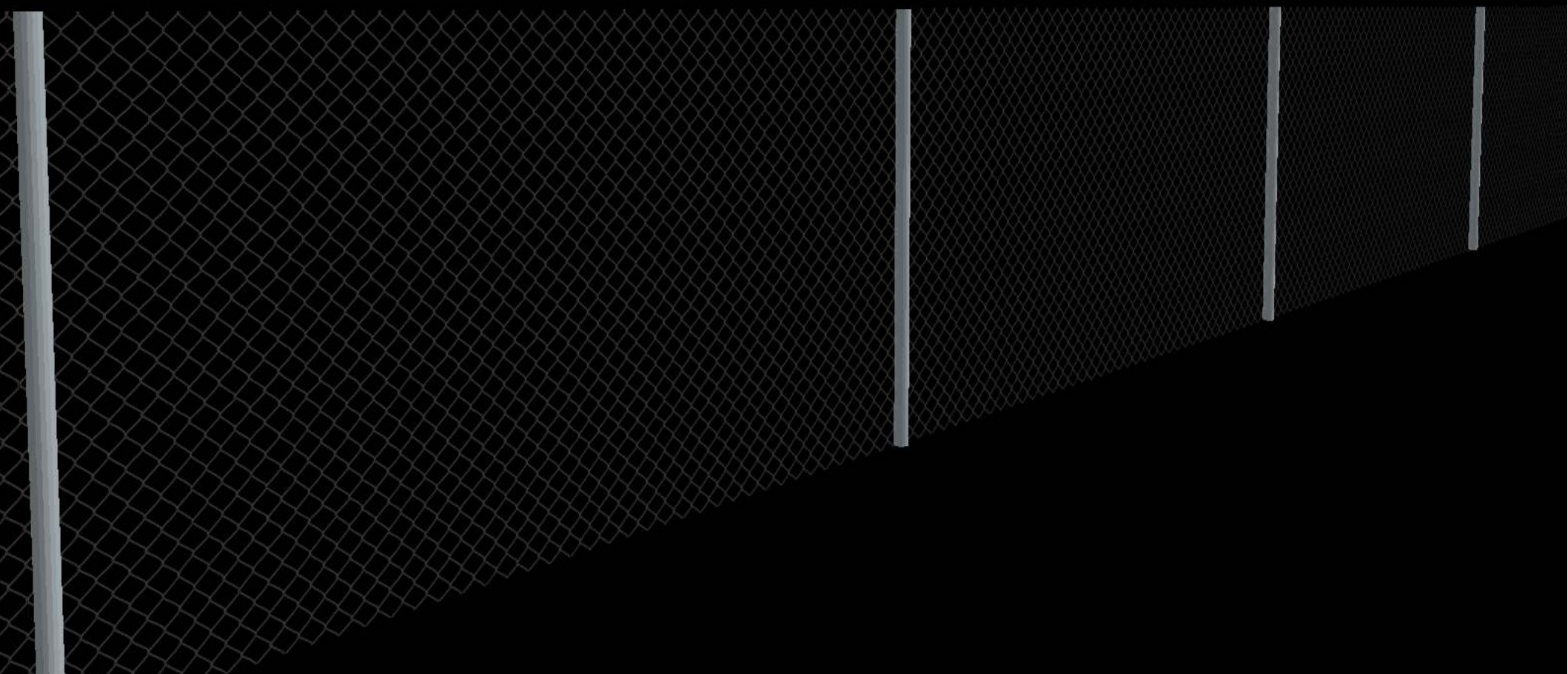


barrier = fence + fence_type = trellis_work

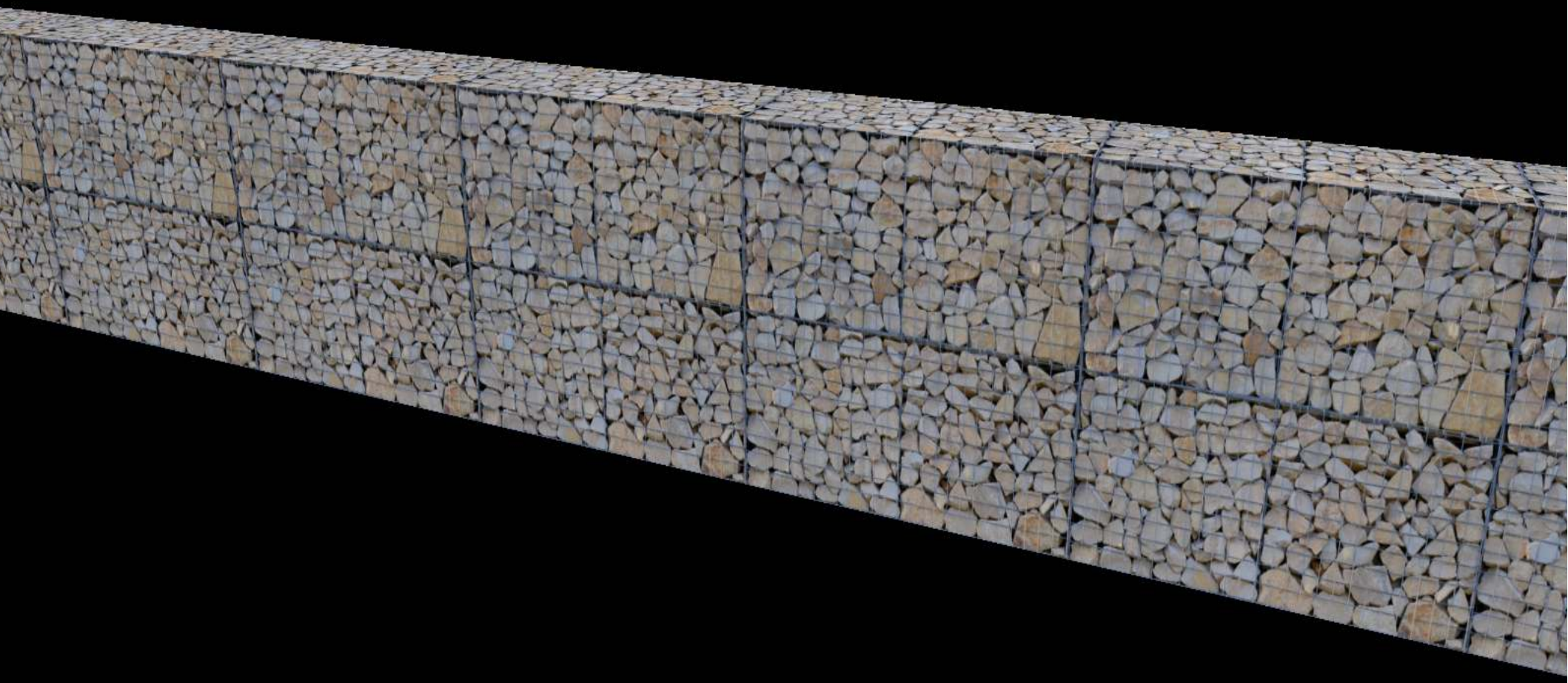


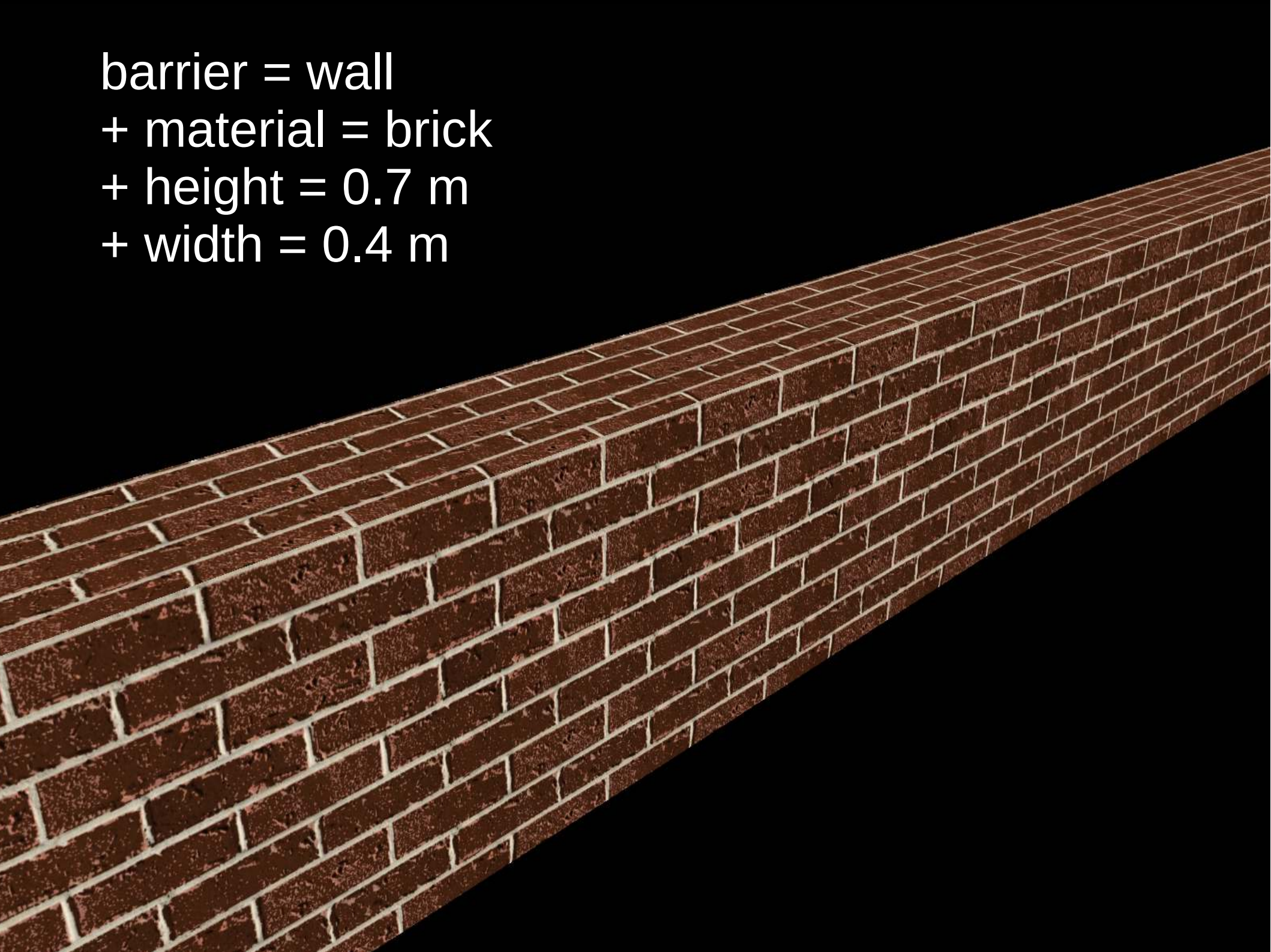
barrier = fence + fence_type = railing

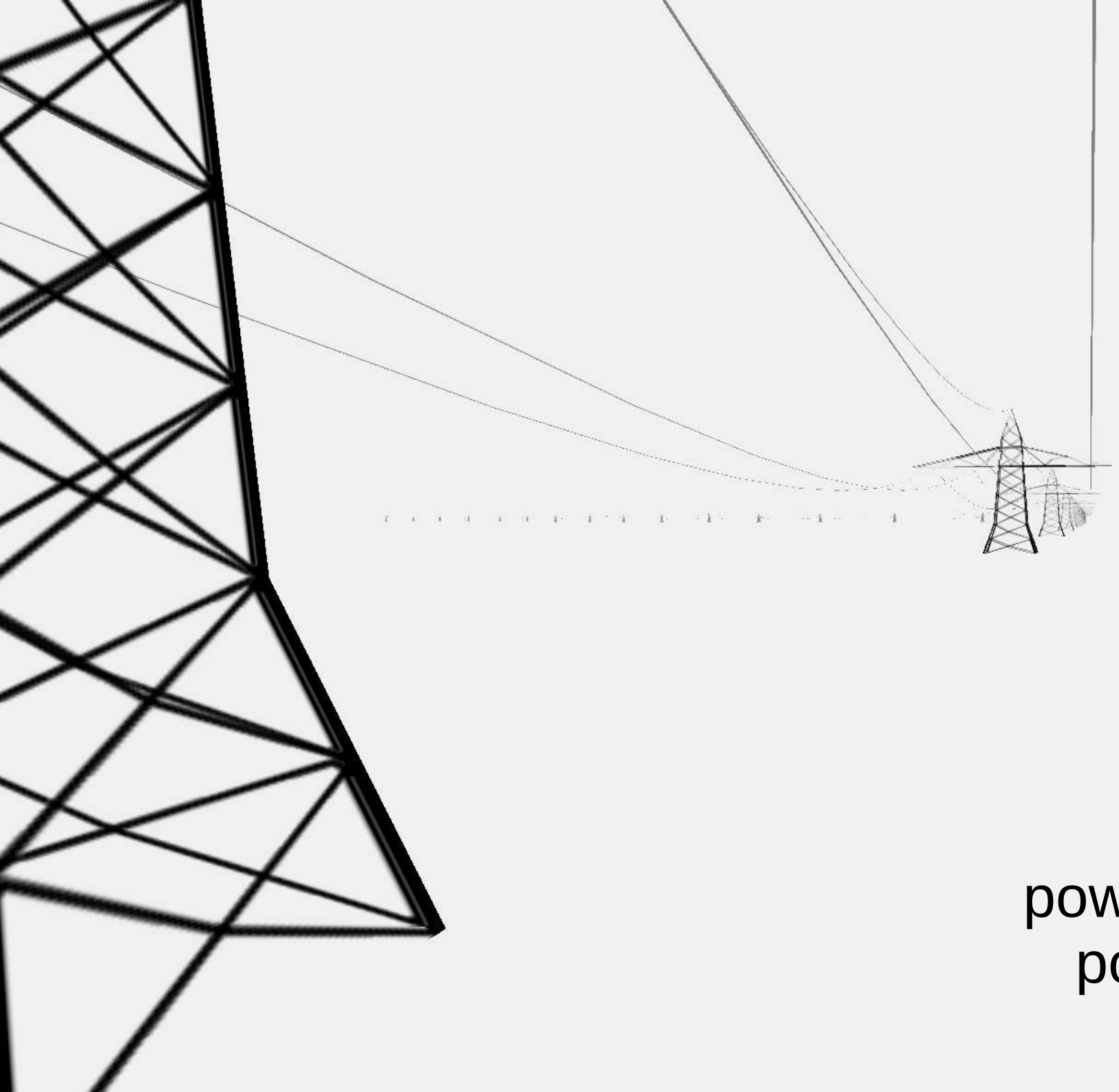
barrier = fence + fence_type = chain_link



barrier = wall + wall = gabion




barrier = wall
+ material = brick
+ height = 0.7 m
+ width = 0.4 m



power = tower
power = line
cables = *

man_made = flagpole + country = *

A lot more...

cooling towers, statues, lift gates,

lockers, wall charts, life rings, racetracks,

parking spaces, obelisks, phone booths,

cell towers, lighthouses, gas stations, sewage plants,

tree stands, rumble strips, vineyards, atms,

airports, elevators, traffic lights, waterfalls,

bobsled runs, ski lifts, playground equipment, water fountains,

cameras, ferris wheels, watermills, traffic islands, chains, turnstiles,

flood light poles, cattle grates, traffic mirrors

Beyond OSM?

3D Model Repository

3dmr.eu

1. Create a 3D model in .obj format
(using Blender, SketchUp, ...)

2. Upload it to 3dmr.eu

3. Link it with OSM

```
3dmr = 42
```

Help welcome!

Help is welcome!

- Coding, e.g.:
  - support for additional features and tags
  - WebGL frontend development
  - osm2pgsql + tirex
  - new output formats
  - creative use cases (games, 3d printing…)

Help welcome!

- Lots of non-coding work:
  - topic experts
  - better textures and 3d models
  - render style improvements (e.g. localization)
  - distribution (e.g. Windows installer)
  - ...

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  - distribution (e.g. Windows installer)
  - …
- And, of course: More mapping! :)

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