Schedule 117 to the Minutes of the Public Hearing meeting of Richmond City Council held on Tuesday, September 8, 2015.

City of Richmond - Public Hearing
September 8, 2015

Hello my name is John ter Borg,
B.Eng., MLWS, LEED AP

I live at 5860 Sandpiper Court

I am speaking to the problem that is the City of Richmond's double counting control for overheight spaces. I first brought up the concern at the April 20th, 2015 Public Hearing.

Building Massing

As mentioned five months ago, reducing the overheight room allowance from 5.0 m (16.4 ft) to 3.7m (12.1 ft) would address the majority of the problems experienced with building massing that we experience in Richmond today.

If you have not noticed, Vancouver, Burnaby, and Surrey have done away with this awkward dimension long ago and they are in no hurry to turn back. The reason is because it contributes to construction practices that are damaging to neighbourhoods and the community.

In the proposed bylaw that we are discussing we will only need to change one thing. All references to 5.0 m overheight allowances need to be changed to 3.7 m. And everyone will go home happy tonight. Builders can still build rooms to 16 ft, 20 ft, or 22 ft heights if they choose, they only have to count these excessive height spaces as additional floor area as is the practice in our neighbouring cities.

Lego Demonstration

As demonstrated by these Lego building blocks we can see in three dimensions how uncontrolled overheight spaces contribute to massing in new houses.

1) You see these two houses are built with the same number of blue blocks.
2) The red blocks represent overheight areas.
3) These two houses are the same size. And they are both maxed out. They have the same FSR and there is no difference in the walkable floor area.
4) This shows us exactly what is happening in Richmond today.
5) Notice that the overheight spaces not only push the building footprint into the sideyards, but into the backyard as well. This loss of backyard area and green space is a community concern.

Protect Backyards

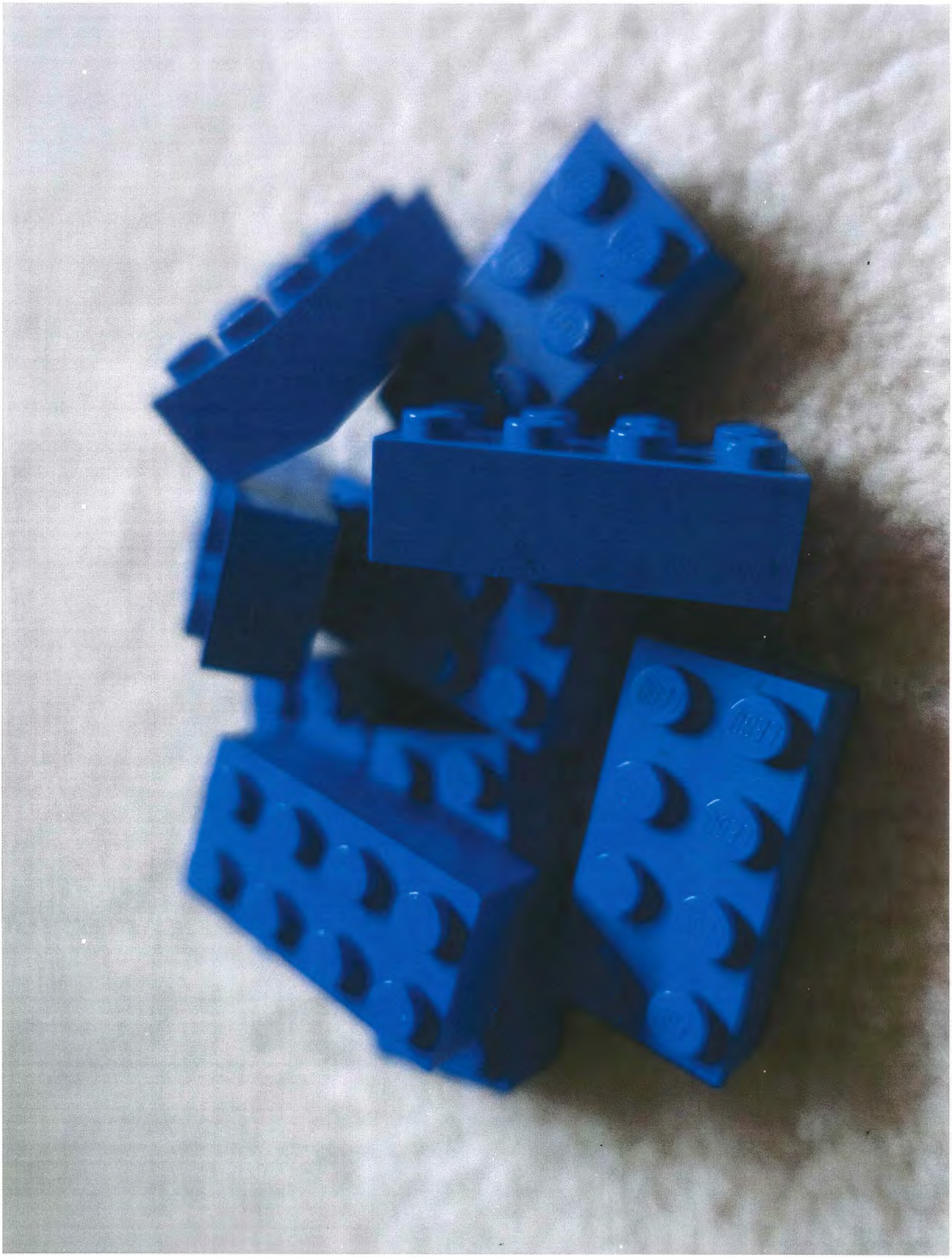
It is through this demonstration that we see how the 5:0 m (16.4 ft) overheight areas directly impact backyard areas and contribute to the loss of mature trees, the loss of privacy, and loss of sunlight in people's backyards.

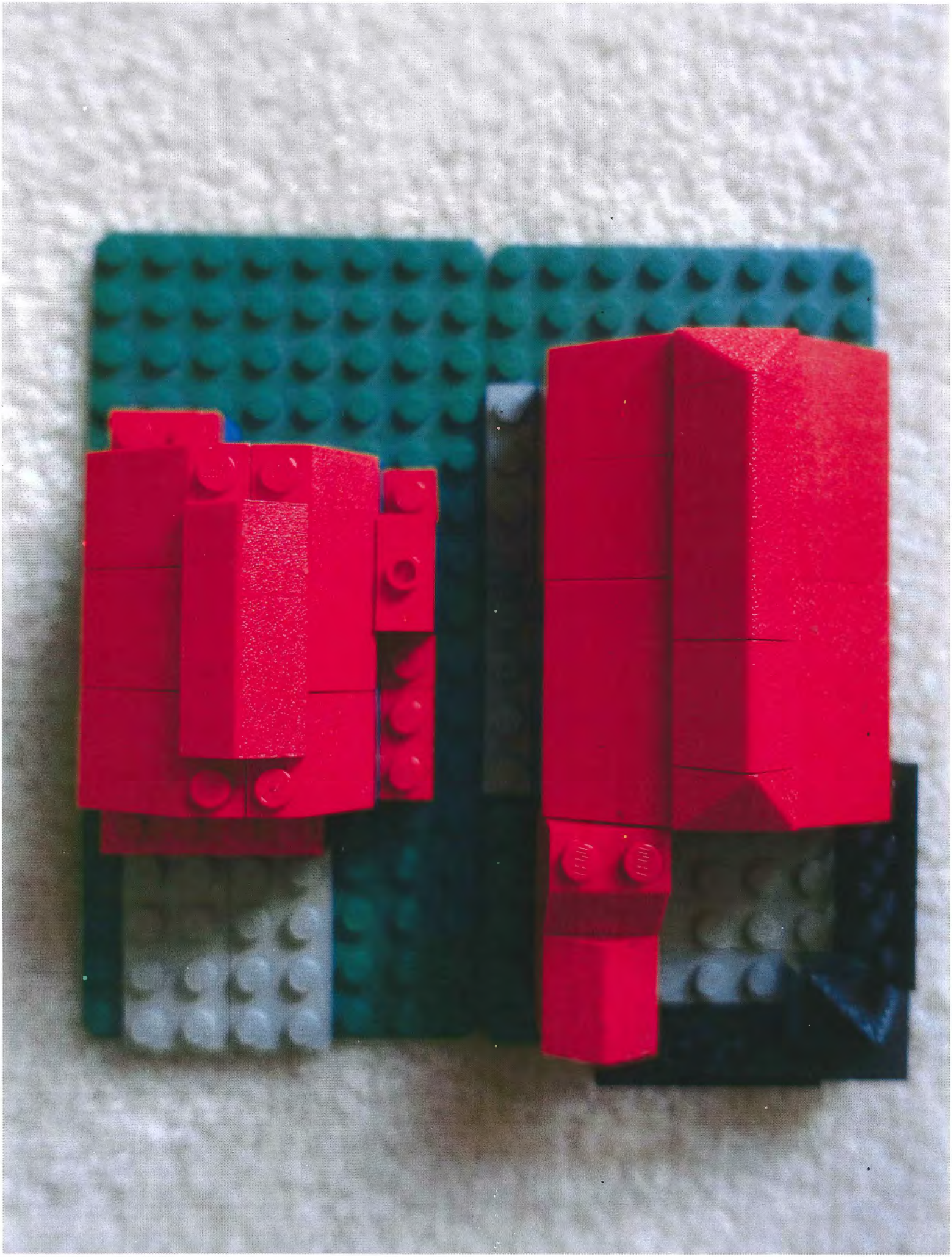
This is why I maintain that changing our bylaw from 5.0 m to 3.7 m is what is needed to control massing for new house construction in Richmond today.

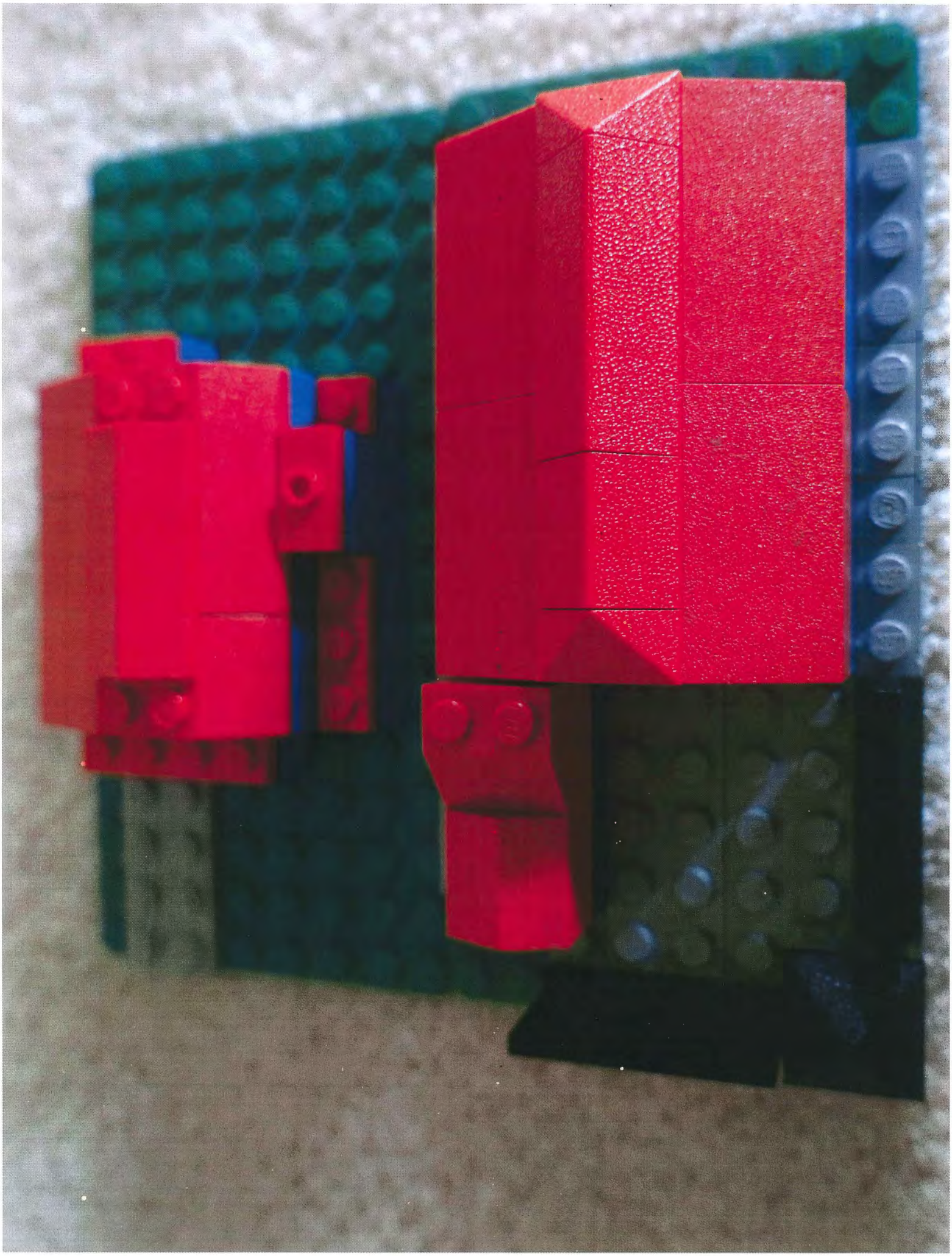
For science-based guidelines and technical resources that further support the retention of onsite greenspaces we can look to the cities of Seattle and Portland as leaders that we can follow to encourage 'greening' of Richmond's Building Bylaws.

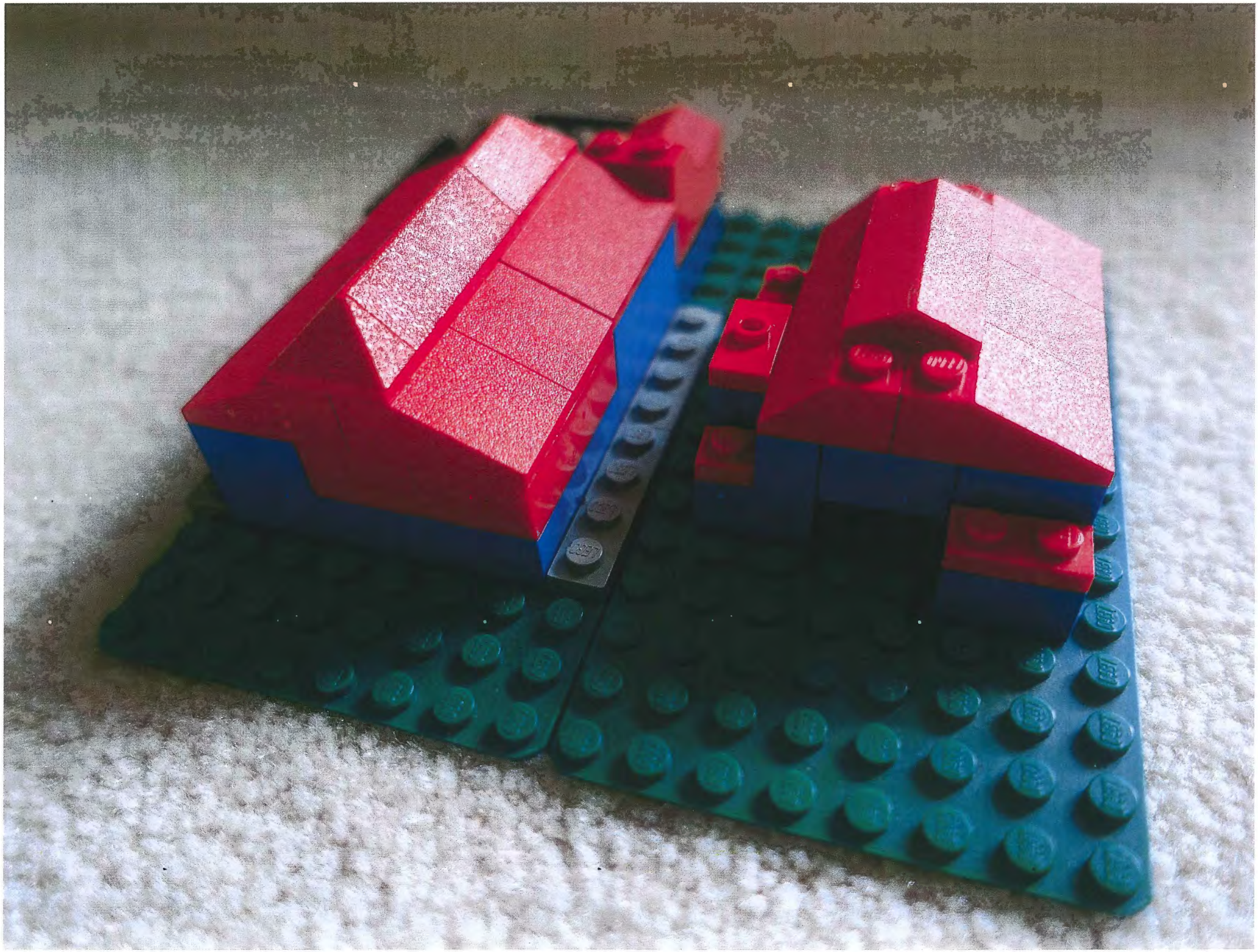
Appendices

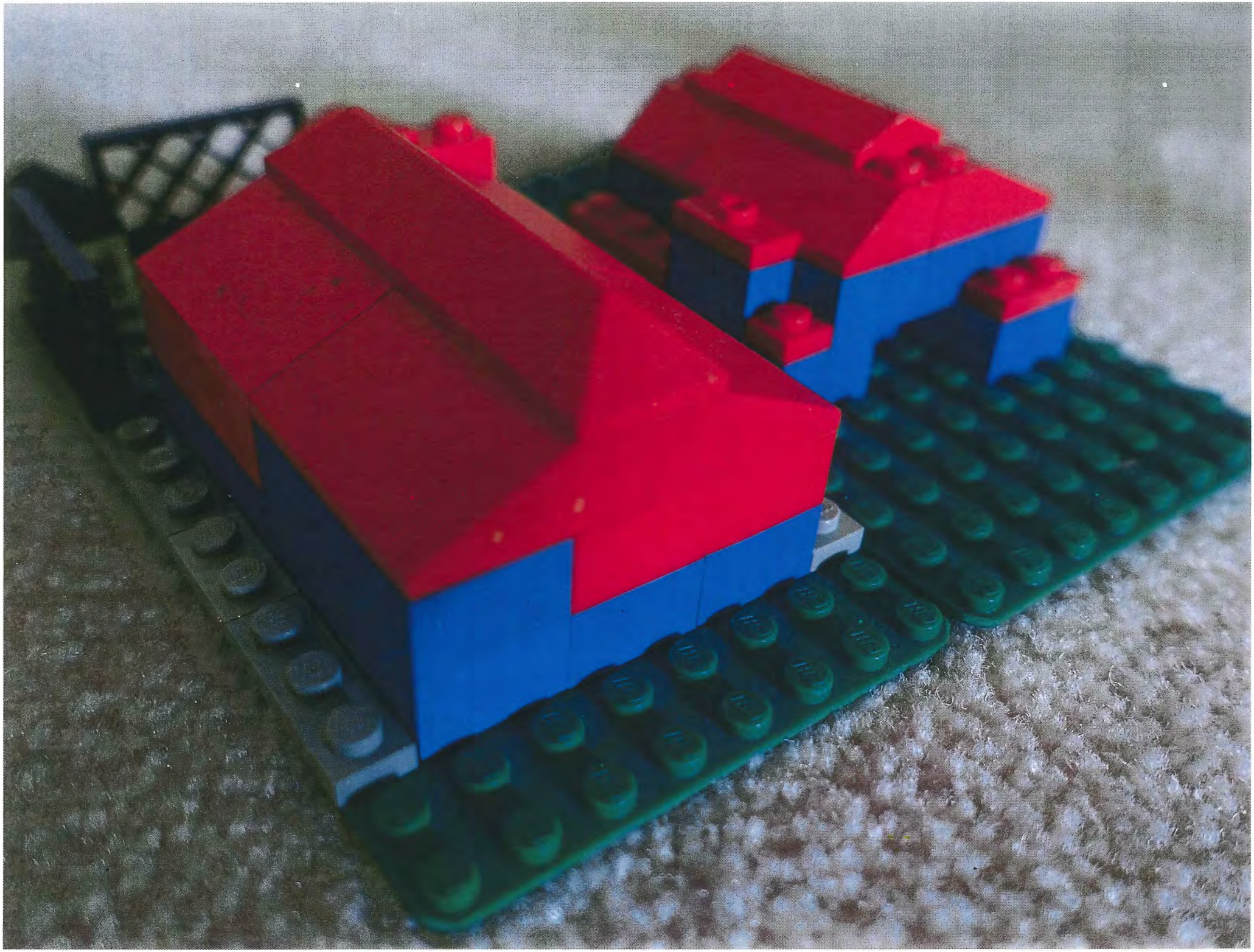
1) Lego Demonstration - Pictures
2) City of Seattle - Green Storm water Infrastructure Requirement Calculator











City of Seattle GSI to MEF Requirement Calculator (2013-03-01)

Building Permit No. →

Project Address →

Project Type →

Project Area → sf

New plus Replaced Impervious Area → sf

Area Requiring Mitigation → sf

Runoff Reduction Methods		Facility Size		Credit	Area Mitigated
Retained Trees					
Existing Evergreen	# Trees	Total Canopy Area of Trees	sf	x 20% Canopy (or min 100 sf/tree) =	
Existing Deciduous	# Trees	Total Canopy Area of Trees	sf	x 10% Canopy (or min 50 sf/tree) =	
New Trees					
New Evergreen		# Trees		x 50 sf/tree =	
New Deciduous		# Trees		x 20 sf/tree =	
				Total Area Mitigated by Trees =	sf
Dispersion [1]					
Downspout or Sheet Flow Dispersion		Dispersed Impervious Area	sf	x 100.0% =	sf

Infiltration and Reuse Facilities		Facility Size		Sizing Factor	Area Mitigated
Infiltrating Facilities					
Bioretention Cell (without Underdrain)					
1 Contributing Area	sf	Bioretention Bottom Area	sf	Select Project Type	sf
Ponding Depth	in				
Design Infiltration Rate	in/hr				
2 Contributing Area	sf	Bioretention Bottom Area	sf	Select Project Type	sf
Ponding Depth	in				
Design Infiltration Rate	in/hr				
3 Contributing Area	sf	Bioretention Bottom Area	sf	Select Project Type	sf
Ponding Depth	in				
Design Infiltration Rate	in/hr				
Detention Cistern to Bioretention Cell (BC) (without Underdrain) [2]					
Contributing Area	sf	Bioretention Bottom Area	sf	Select Project Type	sf
Number Cisterns					
BC Ponding Depth	in				
BC Design Infilt Rate	in/hr				
Permeable Pavement Facility (may receive run-on) [3]					
Contributing Area	sf	Permeable Pavement Area	sf	Enter Contributing Area	sf
Ponding Depth [4]	in			Plus Permeable Pavement Facility Area =	sf
Design Infiltration Rate	in/hr				
Reuse Facilities [1]					
Rainwater Harvesting		Applicant must provide documentation of area mitigated by rainwater harvesting			sf

Impervious Surface Reduction Methods	Facility Size		Credit	Area Mitigated
Alternative Pavement Surfaces				
Permeable Pavement Surface (Subgrade Slope ≤2%)	Permeable Pavement Area	sf	x 100.0% =	sf
Permeable Pavement Surface (Subgrade Slope >2-5%)	Permeable Pavement Area	sf	x 55.0% =	sf
Alternative Roof Surfaces [1]				
Green Roof (Single/Multi-Course / 4" Growth Medium)	Green Roof Area	sf	x 55.0% =	sf
Green Roof (Multi-Course / 8" Growth Medium)	Green Roof Area	sf	x 84.0% =	sf
Partial Infiltration [1]				
Bioretention Cell with Detention (without Underdrain)				
Contributing Area sf				
Ponding Depth in	Bioretention Bottom Area	sf	Select Project Type →	sf
Design Infiltration Rate in/hr				

Non-Infiltrating Facilities		Facility Size		Credit	Area Mitigated
Non Infiltrating Facilities					
Bioretention Planter (with underdrain)					
Contributing Area	sf				
Ponding Depth	in	Bioretention Bottom Area	sf	Select Project Type	sf
Detention Cistern with Harvesting Capacity [5, 6]					
Contributing Area	sf	Min Cistern Area	sf	Select Project Type	sf
		Min Live Cistern Volume	gal		

Total Area Mitigated → 0 sf

Area Requiring Mitigation → sf

% Impervious Area Mitigated → %

GSI to MEF Target Achieved? →

Notes:

GSI - Green Stormwater Infrastructure; sf - square feet; in - inch; eqn - equation; BC - bioretention cell

min - minimum; ft - feet; in/hr - inch per hour; gal - gallons; infilt - infiltration

1. Single family residential projects and trail/sidewalk projects are not required to evaluate this BMP.
2. Each above ground cistern must have 6.68 sf minimum bottom area, a 0.25 inch orifice and a minimum of 3 feet of live storage above the orifice. If using two cisterns they must be connected and have only one orifice. Flow from cistern orifice must be routed to bioretention cell.
3. The area contributing runoff to a facility shall be no larger than 3 times the permeable pavement facility area corresponding to a minimum sizing factor of 33.3%.
4. Average subsurface ponding depth in aggregate storage reservoir.
5. Cistern must be above ground. Cistern area must be rounded up to next commercially available product. Cistern need not have more than 3 feet of live storage volume above orifice.
6. Water collected using the detention cistern may be used for non-potable uses only (e.g., irrigation). For additional uses of harvested water consider the "Rainwater Harvesting" BMP.

This calculator does not provide conveyance flow calculations.

Applicant is responsible to ensure system overflow conveyance is provided per Section 4.2.5 of the Stormwater Manual Volume 3.